ISSN 1913-9004 (Print)
ISSN 1913-9012 (Online)

International Business Research

Vol. 7, No. 10 October 2014

Canadian Center of Science and Education®

Editorial Board

Contents

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

How to Promote Adoption of Complex E-Services Innovation? An Institutional Factor Perspective

Chieh-Min Chou[1] & Yung-Yu Shih[2]

[1] Graduate Institute of Management of Technology, Feng Chia University, Taichung, Taiwan

[2] Department of Business Administration, NanFang College of Sun Yat-Sen University, Guangzhou, China

Correspondence: Chieh-Min Chou, Graduate Institute of Management of Technology, Feng Chia University, 100, Wen-Hwa Rd., Taichung 40724, Taiwan, ROC. E-mail: cmchou.fcu@gmail.com

Received: June 27, 2014 Accepted: September 2, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p1 URL: http://dx.doi.org/10.5539/ibr.v7n10p1

Abstract

By leveraging advanced information and communication technologies to provide innovative services through Internet, manufacturing service companies successfully integrate and coordinate the value chain activities to cost-effectively produce quality products for global customers. However, those complex electronic service (e-service) innovations usually are not necessarily adopted soon by customers as expected, which leads to slower investment returns and lower online service level. This study tried to understand the relationship between industry institutional factors and adoption intention of e-service innovation, and consider the moderating effect of e-service complexity. A survey included 263 respondent companies was conducted to collect empirical data from semiconductor industry. Research results shown that three institutional factors (technology standardization, propagating institution and institutional pressure) all have positive influence on the e-service innovation adoption intention. The e-service complexity has negative influence on the adoption intention and negatively moderates the effect of institutional pressure and propagating institution, while positively moderates technology standardization effect. Institutional factors can be useful strategic tools for promoting e-service innovation diffusion but need to consider innovation complexity. With the findings, this study contributes to academic understandings and provides several managerial implications for practitioners.

Keywords: e-service innovation, innovation adoption, institutional factor, innovation complexity

1. Introduction

As the industry becomes more and more disintegrated for seeking the benefits of specialty, the interactions among industrial organizations, especially in the supply chain ecosystem, are getting frequent and complicated. Recently, Taiwanese high-tech manufacturing service companies had been seizing the great opportunity of global outsourcing to successfully win business and serve worldwide customers through their flexible and efficient production capability. However, to integrate the supply chain activities as a whole to deliver completed product and service value to end market in the virtual value network, those firms need to reduce the cost and improve the quality of communication in the inter-organizational collaboration, therefore firms started to leverage the Internet technology for providing information services in an “online” or even “cloud” manner. This phenomenon, so called “e-service innovation”, is prevalent in many industries and gradually accepted as one of the major types of service delivery (Chatterjee & Segars, 2001). Although most of focal firms provide their customers with e-services, those innovations are not necessarily diffusing soon among the customers as expected, since not all customer firms will or are able to adopt those e-service innovations.

Traditional studies on innovation adoption were mainly subject to individual level. Recent studies shown that the institutional environment factors will influence the actions taken by organization in specific institutions context. Considering the adoption of inter-firm e-service innovation is a kind of organizational action, and it sometimes deeply involve firm’s strategic decision and resource commitment, this study tries to identify the critical factors of e-service innovation adoption from an institutional perspective. By collecting empirical data from a Taiwan semiconductor manufacturing company and its worldwide customers, this research intends to clarify the effects of institutional factors on e-service innovation adoption intention and the direct and moderating effects of e-service complexity. Based on the research results, this study contributes to academic understanding and provides several managerial implications for how to promote inter-firm e-service innovation from an institutional factor perspective.

2. Theoretical Background

2.1 Inter-Firm E-Services

Inter-firm e-services are meant by the services delivered to customers through the Internet and other electronic channels (Laudon & Traver, 2011). Based on information and communication technologies, e-services are used for interchanging business information and facilitating collaborative activities between firms. E-services are not only including inter-firm information systems integration, but also concerning organizational issues such as collaborative commerce, inter-organization process coordination, and partner relationship management. For different research purposes and viewpoints, a variety of names were used to label inter-firm e-services. Mayer-Guell (2001) defined Business-to-Business E-commerce as "the buying and selling of goods and services among businesses via the Internet." In this perspective, transaction is the focal point of inter-firm e-services. Some authors took points from the view of supply chain integration. Frohlich (2002) used "e-integration" to describe the Internet-based supply chain integration with upstream suppliers and downstream customers. Liu et al. (2010) defined the Internet-enabled supply chain management systems as the technical enabler of the orchestration of value chain operations across firm boundaries. The concept of inter-organization process coordination is the center of such viewpoint. Other researchers emphasized the functionalities of e-services and were interested in understanding how can such "e-business applications" help firms on strengthening their capabilities (Macher et al., 2002; Vakharia, 2002).

Considering the definition of business-to-business e-commerce put the focus on transactions; e-integration of supply chain mainly concerned about logistics process integration, and e-business application centered on business capabilities are all too narrow to appropriately describe the concept of "inter-firm e-services," this study adopted a construct of "e-services" proposed by Georgakopoulos et al. (2002), where the e-service was defined as "teams of applications and humans (participation electronically) that work together to provide a service or a product" in the inter-firm context. Cloud computing is another e-service trend now is emerging in industry. Different types of cloud computing, e.g. Infrastructure-as-a-Servcie (IaaS), Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS), provide customer with a variety of value and risk such as information property ownership, privacy and security policy.

Although Internet technologies are getting mature and give firms confidence of providing inter-firm e-services through technology innovations, the adopting rate of customer firms seems not so synchronous. When a firm invests resources to invent innovative e-services for their customers, it may become an important issue to speed up the diffusion of such innovation among the customer firms for harvesting the returns on the investment.

2.2 Adoption of Innovation

Diffusion of Innovation (DOI) Model describes the processes and components of an innovation being adopted autonomously by individuals (Rogers, 1995). This model provides a theory base to explain how the characteristics of innovation, the adopter characteristics, and the opinion leaders and change agents influence the diffusion of innovations. DOI model suggests that the diffusion process starts slowly among pioneering adopters, reaches take-off stage as a growing community of adopters is established and the effects of peer influence arise, and levels off as the population of potential adopters becomes exhausted, thus leading to an S-shaped cumulative adoption curve (Fichman, 2000). Lots of studies were supported the appropriation of diffusion of innovation model in information systems field (Brancheau & Wetherbe, 1990; Eneh, 2010). However, those evidences were mainly on the simpler innovations and the individual adopters (Fichman, 2000). Therefore, it applies less well to more complex innovations and to the adoption in and by organizations (Attewell, 1992).

To analyze the adoption of innovation at organization level, researchers need to realize the absence of a general theory and the necessity of developing a tailored theoretical perspective to specific innovations and/or particular adoption context. Markus (1987) introduced the "critical mass" effects when organizations adopted innovative communication technologies. Attewell (1992) discussed the influences which arising from some institutions for lowering knowledge barriers on complex organizational technologies adoption by organizations. By investigating the information systems innovations, Swanson (1994) included the IS unit characteristics into the classical model, classified the IT innovation types, and postulated differential effects of the same variables depending on IT innovation type. Those models revised the classical one for better fitting the specific research problem and context. Fichman (2000) argued that even if the diffusion of complex technology innovations are slow at the early stage because of complexity, expense, and compatibility, these characteristics can be moderated by the actions of institutions that seek to propagate those innovations. Those institutions include R&D laboratories, government agencies, technology vendors, consulting firms and user groups. Based on previous researches (Attewell, 1992; Fichman, 2000; Swanson & Ramiller, 1997), institutional propagating factors include promotion, advertising, pricing, technology simplification, technology sponsorship, subsidies, reputation, and industry competitiveness. Regarding the organization's actions, include adoption of e-service innovations, will be significantly influenced by propagating institutions.

The performance of information systems usually deeply rely on the information technology standard for the security and interconnectivity concerns (Li, 2004). For avoiding the technological lockout effects, firms will seriously consider not to use a private or closed technology standard if they need to adopt a necessary innovation (Schilling, 1998). Technological characteristics, such as networking protocol, are significantly influence the adoption of innovation (Kim & Song, 2009). In information technology field, most of open technology standards are developed and directed by official or industrial institutions (for example, the IEEE's WiFi standard workgroup). Therefore, this study considered the technology standardization as a kind of institutional factor affecting the adoption intention of e-service innovation.

2.3 Institutional Theory of Organization

According to institutional theory, an organization must satisfy its stakeholders to obtain the legitimacy for survival in competition environment. For earning the legitimacy, the organization's behaviors have to comply with the common shared value and norm of the stakeholders. Those common shared value and norm are presented on culture, politics, legal system, and industrial convention to constitute the institutional environment. The organization's behavior that comply with the institutions will be regarded as trustworthy and increase the legitimacy, so the organization tends to behave as the institution confined (Ashforth & Gibbs, 1990; Sharma et al., 2012).

Since the organization's actions will be dominated by institutional environment, there is a tendency of organization to imitate the more successful organizations because they have the higher legitimacy. Such organization behavior was known as "organizational isomorphism." The notion that isomorphism, both structural and procedural, will earn legitimacy for the organization is widely supported in research (Dacin, 1997; Deephouse, 1996). Although institutional theorists have done a lot of work on organizational problem, IS researchers still have few studies considering the institutional influence when investigating techno-social phenomenon (Liu et al., 2010). Orlikwski and Barley (2001) argued that IS researchers usually ignore the institutional factors in research problem domain, and it risks promoting an overly rational and technologically or economically determined view.

Institutional theory claims that the institutional environment provides norms for organizational structures, practices and operations. According to these norms, the environment is gradually developing rule-like social expectations which direct the behaviors of industrial organizations. Hence, when a firm is deciding whether or not to adopt an e-service innovation, the institutional expectations and factors will affect the intention (Zsidisin et al., 2005). The institutional expectations and influent factors can be categorized into three types of institutional pressures: mimetic pressure, coercive pressure and normative pressure (Liu et al., 2010). Mimetic pressure comes from a firm's perception of competitor's success actions (Dimaggio & Powell, 1983). The firm will benchmark how competitors operated and then to imitate these successful firms by adopting the same practice. Coercive pressure is meant by the pressure arises from political influences exerted by the powerful firms on which the focal firm relies (Teo et al., 2003). Usually an industrial dominant company, like Wal-Mart, can utilize the coercive pressure on those product companies that highly depend on its sales channel to accept innovative application of information systems (Premkumara, 2000). Normative pressure is defined as the pressure that originates from collective viewpoints among specific social contexts of what forms legitimate organizational behavior (Heugens & Lander, 2009). The shared norms among the industrial organizations will influence the behavior decision made by the firms hence the normative pressure is going to interference the adoption intention of e-service innovation as well.

Considering the diffusion of inter-firm e-service innovations is a techno-social question and the unit of analysis is organization, this study will adopt the suggestion of Orlikwski and Barley (2001) to include the institutional factors in research model. This study will empirically test the hypotheses on the impacts of institutional factors on the adoption intention of inter-firm e-service innovations.

3. Research Model

This study takes a broader prospective to define inter-firm e-services, which can be referred to any electronic delivery or interchange of services and information among firms. It probably is supply chain information integration, collaborative virtual design team, self-help online customer services, or other service delivered via electronic channel. In most cases, those e-services are quite complex either in process coordination or technologies used to implement it. As discussed in previous literature review, factors such as technology standardization, propagating institutions (e.g. promotion, advertising, pricing, technology support and reputation) and institutional pressures can have significant impacts on the adoption of complex innovations (Liu et al., 2010; Fichman, 2000). This study draws hypotheses from the institutional factors and innovation characteristic for testing the direct and moderating effects on e-service innovation adoption.

As we discussed in previous section, information system performance highly depends on the information technology standard for the security and interconnectivity concerns. When a firm is considering the technological lockout effects after adopting a new e-service innovation, a private or closed technology standard could be a critical negative factor when making the decision. In information technology field, most of open technology standards are developed and directed by official or industrial institutions. Firms adopt open or standardized technology enabled e-service innovation can reduce the risk of technological lockout, thereby to increase the willingness to utilize. In most cases, inter-firm e-services innovation requires customer firms to open networking connection for integrating or interchanging the information resources. It might increase the risk of information leakage or attack by external hackers from information security viewpoint. Customer firms with standard information security policy usually have higher control on external networking connection. Therefore, this study considered the technology standardization as a kind of institutional factor affecting the adoption intention of e-service innovation.

H1. Higher technology standardization will increase the adoption intention of e-service innovation.

Previous researches indicated the decision of adopting innovation would be influenced by different types of propagating institutions. If a firm heavily promoted its e-services innovation to customer firms, it will probably positively influence on the adoption intention. To consider the complexity of e-services innovation will discourage customers to adopt it, a firm can provide customer with technical support or training programs on implementation and usage to speed up the diffusion. In addition, a goodwill or reputation of a firm can help it to win the trust and favorable impression from customers thereby to increase the adoption intention on the e-service innovation, therefore:

H2. Stronger propagating institutions will increase the adoption intention of e-service innovation.

Institutional mimetic pressure is prevalent in industrial environment around organizations. The image of success held by the firm adopting innovation will reinforce such pressure (Haveman, 1993). In addition, complex technological innovation usually requires more organizational knowledge and absorptive capacity hence the firms will imitate the success innovation adopter with consideration of mitigating the information searching cost and risk of adoption (Fichman & kemerer, 1997).

Institutional coercive pressure refers to the formal and informal pressure exerted by a number of external organizations on the organization to adopt some of the organizational action (DiMaggio & Powell, 1983). Many e-services and innovative use is also possible from the mandatory institutional pressure. For example, Dell Computer requires its manufacturing vendor partners using electronic supply chain services innovation and the government requires companies to adopt the new International Financial Reporting Standards (IFRS) accounting principles arising from new information demand service innovation.

Institutional normative pressure is applied the relevant substantive organization and other organizations directly or indirectly linked relationship so that they can learn practice from each other to reduce costs and increase benefits. Thereby they will gradually produce similar values and ideas with each other, and they are considered over time logical way and ideas between groups would be formed and jointly follow the norms (Burt, 1987). The more often shared between groups and practice these specifications, which will be self-reinforcing in its rightful place among populations, and therefore will not follow the norms of the organization or group of individuals produce behavioral stress. If an enterprise can adopt innovative e-services into a customer base that is essentially universally accepted norms, then the institution will regulate the pressure using the customer's willingness to have a significant impact on innovation adoption.

H3. Larger institutional pressure will increase the adoption intention of e-service innovation.

In spite of the focus on the institutional factors, characteristic of innovation is also important factor to the adoption of innovations. Rogers (1995) defines several intrinsic characteristics of innovations, i.e. relative advantage, trialability, compatibility, complexity and observability, which influence an individual’s decision to adopt or reject an innovation. Since the unit of analysis is firm and the e-service innovation in business to business environment is specific to industrial context and needs, this study is interested in understanding the direct and moderating effects of innovation complexity on the adoption intention because B2B e-service innovation is usually regarded very complex (Macher et al., 2002). Hence, we develop two hypotheses below:

H4. More complex e-service innovation will decrease the adoption intention.

H5a. The complexity of e-service innovation will moderate the relationship between technology standardization and adoption intention.

H5b. The complexity of e-service innovation will moderate the relationship between propagating institution and adoption intention.

H5c. The complexity of e-service innovation will moderate the relationship between institutional pressure and adoption intention.

The complete research model is presented in figure 1.

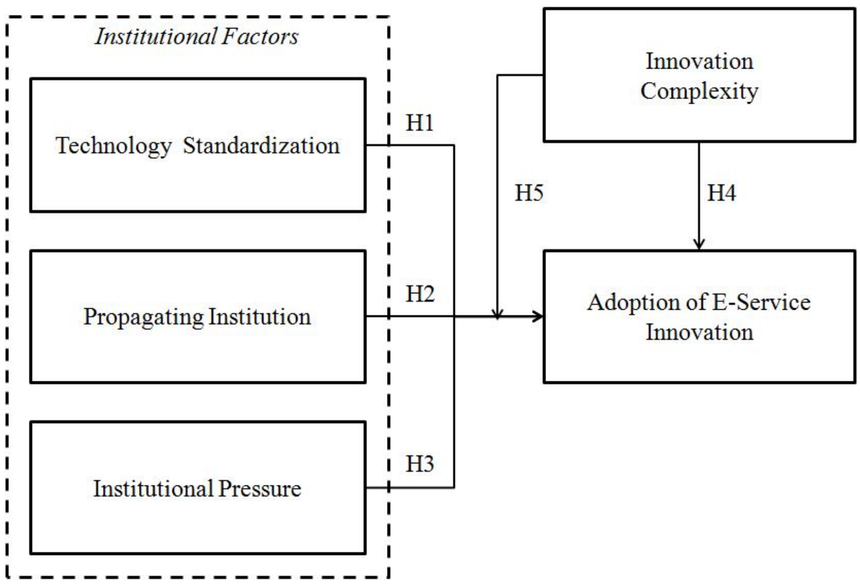


Figure 1. Research model

4. Research Method and Data Analysis

In order to test the research hypotheses, this study used mail and online survey methods to collect data from a Taiwanese semiconductor manufacturing service company's customers, which are mainly IC design houses and integrated device manufacturers. After two rounds of pretests with 15 industrial experts, we finalized the questionnaire and sent it (by electronic or traditional mail) to participating companies which are the potential users of the semiconductor manufacturing service company's e-service innovation. Based on the customer contact list provided by the cooperative company, total 437 companies were invited to fill in this survey of which 297 responded. The informants of responded companies all hold managerial or higher positions. Among the respondent data, 34 observations were discarded because of missing values and invalid responses, which made the final sample size for the analysis 263. Of the respondents, 25.5% of the responses were from the Asia-Pacific region, excluding Japan; 12% were from Europe; 14.4% were from Japan; and 48.1% were from North America.

4.1 Instrument Validation and Descriptive Statistics

For instrument validation, a confirmatory factor analysis was performed to assess convergent and discriminate validity. The factor loadings of all measurement items ranged from 0.62 to 0.93, which indicates that convergent validity is moderately acceptable (the details of the validation information are given in Table 1. We also assessed construct reliability by calculating composite reliability to respective latent variables as suggested by Segars (1997). The estimates of composite reliability of latent variables ranged from 0.87 to 0.91, significantly higher than the threshold of 0.7 suggested by Jo¨reskog and So¨rbom (1989). The Cronbach's α of all the latent variables exceeded 0.7, which is the threshold suggested by Sharma (1996).

Table 1. Factor structure matrix of loadings and cross-loadings

Scale Items	ADT	TES	PGI	INP	CPX
adt1	0.82	0.38	0.38	0.41	-0.47
adt2	0.89	0.44	0.21	0.46	-0.38
adt3	0.86	0.46	0.25	0.41	-0.38
tes1	0.43	0.88	0.18	0.45	-0.26
tes2	0.44	0.88	0.18	0.52	-0.27
tes3	0.40	0.81	0.15	0.50	-0.29
pgi1	0.12	0.06	0.62	0.04	-0.19
pgi2	0.23	0.14	0.77	0.10	-0.16
pgi3	0.32	0.17	0.92	0.16	-0.13
pgi4	0.32	0.22	0.90	0.23	-0.17
inp1	0.46	0.52	0.18	0.89	-0.43
inp2	0.42	0.53	0.19	0.90	-0.40
inp3	0.42	0.45	0.11	0.84	-0.54
cpx1	-0.31	-0.17	-0.17	-0.28	0.74
cpx2	-0.45	-0.33	-0.16	-0.53	0.93
cpx3	-0.47	-0.29	-0.17	-0.50	0.93

Nevertheless, composite reliability cannot reflect the extent to which variance is captured by the constructs. Therefore, an average variance extracted (AVE) estimate is adopted to acquire this information. Fornell and Larcker (1981) suggested that an acceptable AVE estimate should be higher than 0.5 for a construct's measure. In this study, all AVE estimates, with ranged from 0.64 to 0.77, were above this cut-off value (detailed information of measurement reliability and validity are shown in Table 2).

Table 2. Cronbach's α, AVE, composite reliability, and correlation matrix

	Cronbach's α	AVE	CR	ADT	TES	PGI	INP	CPX
ADT	0.81	0.73	0.89	0.86				
TES	0.82	0.74	0.89	0.50	0.86			
PGI	0.77	0.64	0.87	0.33	0.20	0.80		
INP	0.85	0.77	0.91	0.50	0.57	0.19	0.88	
CPX	0.83	0.75	0.90	-0.48	-0.32	-0.19	-0.52	0.87

Note. Square of root of AVE for each construct is shown in the diagonal of the correlation matrix. ADT: Adoption Intention; TES: Technology Standardization; PGI: Propagating Institution; INP: Institutional Pressure; CPX: Innovation Complexity.

4.2 Hypotheses Test

The study employed the partial least squares (PLS) method to test the research hypotheses using open source software Visual PLS 1.04b1 (Fu, 2006). Because this study considers the moderating effects of e-service innovation complexity, and the product-indictor approach of covariance-based structural equation modeling might be problematic (Chen et al., 2013), we used PLS for the testing of moderating effects like other previous information systems studies (Limayem et al., 2007). The test results show that all institutional factors have significant positive effects on e-service innovation adoption intention (ADT) at the significant level 0.05. Technology Standard (TES) has the largest path coefficient 0.261, which followed by the Institutional Pressure (INP) with the path coefficient 0.231 and the factor Propagating Institutions (PGI) has the smallest path coefficient 0.172. Not surprisingly, the complexity of e-service innovation (CPX) has significant negative influence on e-service innovation adoption intention. The path coefficient of CPX is -0.314 which exhibits the characteristic of e-service innovation itself significantly influence the adoption intention as DOI theorem expected. Based on the model test, the research hypotheses H1, H2, H3, and H4 are supported.

Regarding the moderating effect of e-service innovation complexity on the effect of institutional factors on adoption intention, this study used three product indicators to measure the moderating effects of e-service innovation complexity on Technology Standardization, Propagating Institutions and Institutional Pressure. All the three interaction effects of innovation complexity with institutional factors are significant. Complexity negatively moderates the effect of Propagating Institutions factor and Institutional Pressure factor on e-service adoption intention. That means when the e-service becomes more complex, the influence of these two institutional factors is going to be decreased. On the other hand, the more complex the e-service is the higher influence of Technology Standardization factor places on adoption intension, which can be evidenced by the positive coefficient of the interaction effect between Complexity and Technology Standardization. Hence, the hypothesis H5a, H5b and H5c are supported by this study. The R2 of the model is 0.414; therefore, the overall institutional factors and e-service innovation complexity can explain 41.4% variance of the adoption intention (the model test results are shown in Figure 2.

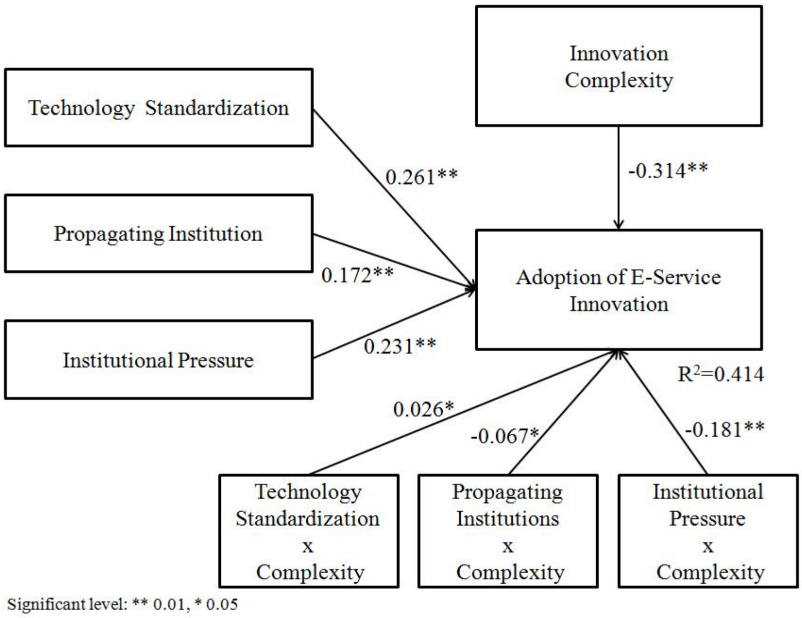


Figure 2. Model test results

5. Conclusion

Facing the keen and cruel competitions, firms are always seeking low cost, high quality ways to deliver their services and products to their customers. The fact is especially true to the firms in industrial value chain ecosystem due to today's business competition has already become a "chain-to-chain" rather than "firm-to-firm" competition. As the Internet technologies are getting mature, the potential of new information and communication technologies to transform business models, organizational structures, processes and the inter-firm relationship is now universally acknowledged (Chatterjee & Segars, 2001). More and more firms serve their customers through Internet or other electronic channels. The innovations of "e-services" are also dramatically growing and account for big portion of firm's services. Despite the firms started to innovate e-services to serve their customers, the factors affecting adoption intention are still not well understood.

Classical innovation diffusion model explains the adoption of innovation at individual level that is limited in explaining the e-service adoption behavior at firm level. Institutional theory has been well supported by empirical validation on the explanation power of the organizational actions, and identified the influences of institutional factors on innovation adoption as well. This study tries to understand the relationship between the institutional factors and the adoption intention of e-services innovation in semiconductor industry settings. With carefully designing the research architecture and collecting empirical data to test the hypotheses that draws from the related theories, this study found technology standardization, propagating institution and institutional pressure are all have significant positive influence on the e-service innovation adoption intention, while the complexity of the e-service has significant negative influence on the adoption intention. In addition, the complexity of e-service innovation also has significant negative moderating effect on the effect of institutional pressure on adoption intention. The moderating effect of e-service innovation complexity is not significant on the influential path from technology standardization and propagating institution to the adoption intention.

Several theoretical implications can be drawn from these results. To our knowledge, moderating effect of innovation complexity on the relationships between institutional factors and the adoption intention of e-service innovation has not been discussed in prior studies. The results of this study are a starting point for relevant research and establish basic understandings of innovation adoption in inter-firm e-service. This study also expanded on the model proposed by Liu et al. (2010), which only examined the effects of institutional pressures on eSCM adoption.

This study also has implications for practitioners and business managers. First, for the firm which likes to promote customers to adopt its e-service innovation, it should make sure the e-services are implemented with standard technologies for reducing the technological lockout effect risk of customers. This probably because customers enjoy the value provided by the e-service innovation but still would like to preserve the flexibility on choosing supply chain partners. Second, the e-service innovation firms can leverage the institutional pressures among the customers-in-competition to promote the innovation adoption and diffusion. Third, to establish propagating institutions for promoting the e-service innovation or strengthening the firm’s reputation, or providing customers with complete training program and technological support are all helpful to increase the adoption intention of e-service innovation. Finally, not surprising, the complexity of e-service innovation will deter customer’s adoption intention so that a firm should simplify the user interface and operation process of the e-service. Besides, because complexity of e-service innovation will negatively moderate the effect of institutional pressures, a firm should make the e-service complexity as low as possible when leveraging the institutional pressures to promote the e-service innovation. Since the moderating effects of e-service complexity are not significant on the other two institutional factors, it seems a reasonable strategy to set high priority to establish technology standardization and propagating institution when a firm wants to promote a e-service innovation.

This study has certain limitations although steps were taken during both hypotheses development and data collection. First, although the industry-specific path analysis was executed with a global sample size, specific cultural factors were not included in this study, and should be taken into account when applying the research results. Second, this study employed a cross-sectional design to examine the relationships between consumer’s intention of e-service adoption and institutional factors, and so all hypothetical causal relationships can only be regarded as inferred rather than proven. Given the above limitations, further research should be cautious when explaining and applying the research results.

References

Ashforth, B., & Gibbs, B. (1990). The double edge of organizational legitimation. *Organization Science, 1*(2), 177–194. http://dx.doi.org/10.1287/orsc.1.2.177

Attewell, P. (1992). Technology diffusion and organizational learning: The case of business computing. *Organization Science, 3*(1), 1–19. http://dx.doi.org/10.1287/orsc.3.1.1

Brancheau, J., & Wetherbe, J. (1990). The adoption of spreadsheet software: Testing innovation diffusion theory in the context of end-user computing. *Information Systems Research, 1*(2), 115–143. http://dx.doi.org/10.1287/isre.1.2.115

Burt, R. (1987). Social contagion and innovation: Cohesion versus structural equivalence. *American Journal of Sociology, 92*(6), 1287–1335. http://dx.doi.org/10.1086/228667

Chatterjee, D., & Segars, A. (2001). Transformation of the enterprise through e-business: An overview of contemporary practices and trends. *Report to the Advanced Practices Council of the Society for Information Management*.

Chen, G., Yang, S., & Tang, S. (2013). Sense of virtual community and knowledge contribution in a P3 virtual community motivation and experience. *Internet Research, 23*(1), 4–26. http://dx.doi.org/10.1108/10662241311295755

Dacin, M. (1997). Isomorphism in context: The power and prescription of institutional norms. *Academy of Management Journal, 40*(1), 46–81. http://dx.doi.org/10.2307/257020

Deephouse, D. (1996). Does isomorphism legitimate? *Academy of Management Journal, 39*(4), 1024–1039. http://dx.doi.org/10.2307/256722

DiMaggio, P., & Powell, W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147–160. http://dx.doi.org/10.2307/2095101

Eneh, O. (2010). Technology transfer, adoption and integration: A review. *Journal of Applied Sciences, 10*(16), 1814–1819. http://dx.doi.org/10.3923/jas.2010.1814.1819

Fichman, R. (2000). The diffusion and assimilation of information technology innovations. *Framing the domains of IT management*. Pinnaflex Educational Resources, Ohio.

Fichman, R., & Kemerer, C. (1997). The assimilation of software process innovations: An organizational learning perspective. *Management Science, 43*(10), 1345–1363. http://dx.doi.org/10.1287/mnsc.43.10.1345

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 28*(1), 39–51. http://dx.doi.org/10.2307/3151312

Frohlich, D. (2002). e-Integration in the supply chain: Barriers and performance. *Decision Sciences, 33*(4), 537–556. http://dx.doi.org/10.1111/j.1540-5915.2002.tb01655.x

Fu, J. (2006). *VisualPLS 1.04b1*. Retrieved from http://www2.kuas.edu.tw/prof/fred/ vpls/index.html

Georgakopoulos, D., Schuster, H., Cichocki, A., & Baker, D. (2002). Process-based e-service composition for modeling and automating zero latency supply chains. *Information Systems Frontiers, 4*(1), 33–54. http://dx.doi.org/10.1023/A:1015330421974

Haveman, H. (1993). Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative Science Quarterly, 38*(4), 593–627. http://dx.doi.org/10.2307/2393338

Heugens, P., & Lander, M. (2009). Structure! Agency! (and other quarrels): A meta-analysis of institutional theories of organization. *Academy of Management Journal, 52*(1), 61–85. http://dx.doi.org/10.5465/AMJ.2009.36461835

Jo ̈reskog, K., & So ̈rbom, D. (1989). *LISREL 7 User's Reference Guide*. Scientific Software, IL.

Kim, S., & Song, Y. (2009). Determinants influencing individuals' likelihood of adopting and actual use of blueberry. *Journal of Applied Sciences, 9*(20), 3662–3671. http://dx.doi.org/10.3923/jas.2009.3662.3671

Laudon, K., & Traver, C. (2011). *E-Commerce: Business, Technology, Society*. England: Pearson.

Li, X. (2004). Informational cascades in IT adoption. *Communications of the ACM, 47*(4), 93–97. http://dx.doi.org/10.1145/975817.975824

Limayem, M., Hirt, S., & Cheung, C. (2007). How habit limits the predictive power of intention: The case of information systems continuance. *MIS Quarterly, 31*(4), 705–737. http://www.jstor.org/stable/25148817

Liu, H., Ke, W., Wei, K., Gu, J., & Chen, H. (2010). The role of institutional pressures and organizational culture in the firm's intention to adopt internet-enabled supply chain management systems. *Journal of Operations Management, 28*(5), 372–384. http://dx.doi.org/10.1016/j.jom.2009.11.010

Macher, J., Mowery, D., & Simcoe, T. (2002). e-Business and disintegration of the semiconductor industry value chain. *Industry and Innovation, 9*(3), 155–181. http://dx.doi.org/10.1080/1366271022000034444

Markus, M. (1987). Toward a "critical mass" theory of interactive media: Universal access, interdependence and diffusion. *Communication Research, 15*(5), 491–511. http://dx.doi.org/10.1177/009365087014005003

Mayer-Guell, A. (2001). Business-to-business electronic commerce: The new economy's challenge to traditional American business values. *Management Communication Quarterly, 14*(4), 644–652. http://dx.doi.org/10.1177/0893318901144008

Orlikowski, W., & Barley, S. (2001). Technology and institutions: What can research on information technology and research on organizations learn from each other? *MIS Quarterly, 25*(2), 145–165. http://dx.doi.org/10.2307/3250927

Premkumara, G. (2000). Interorganization systems and supply chain management: An information processing perspective. *Information System Management, 17*(3), 1–14. http://dx.doi.org/10.1201/1078/43192.17.3.20000601/31241.8.

Rogers, E. M. (1995). *Diffusion of Innovations*. NY: Free Press.

Schilling, M. A. (1998). Technological Lockout: An Integrative Model of the Economic and Strategic Factors

Driving Technology Success and Failure. *The Academy of Management Review, 23*(2), 267–284. http://dx.doi.org/10.5465/AMR.1998.533226.

Segars, A. H. (1997). Assessing the unidimensionality of measurement: a paradigm and illustration within the context of information systems research. *Omega, 25*(1), 107–21. http://dx.doi.org/10.1016/S0305-0483(96)00051-5

Sharma, G., Bao, X., & Wang, Q. (2012). Public attitude, service delivery and bureaucratic reform in e-government: A conceptual framework. *Information Technology Journal, 11*(11), 1544–1552. http://dx.doi.org/10.3923/itj.2012.1544.1552

Sharma, S. (1996). *Applied Multivariate Techniques*. NY: John Wiley & Sons Inc.

Swanson, E. (1994). Information systems innovations among organizations. *Management Science, 40*(9), 1069–1092. http://dx.doi.org/10.1287/mnsc.40.9.1069

Swanson, E., & Ramiller, N. (1997). The organizing vision in information systems innovation. *Organization Science, 8*(5), 458–474. http://dx.doi.org/10.1287/orsc.8.5.458

Teo, H., Wei, K., & Benbasat, I. (2003). Predicting intention to adopt interorganizational linkages: An institutional perspective. *MIS Quarterly, 27*(1), 19–49. http://www.jstor.org/stable/30036518

Vakharia, A. (2002). e-Business and supply chain management. *Decision Sciences, 33*(4), 495–504. http://dx.doi.org/10.1111/j.1540-5915.2002.tb01653.x

Zsidisin, G., Melnyk, S., & Ragatz, G. (2005). An institutional theory perspective of business continuity planning for purchasing and supply management. *International Journal of Production Research, 43*(16), 3401–3420. http://dx.doi.org/10.1080/00207540500095613

Appendix

Appendix 1. Measurement items

Construct	Indicator	Measurement Items
Adoption	adt1	My company is contemplating to adopt this e-service in a year's time
Intention	adt2	My company is likely to adopt this e-service in a year's time
	adt3	My company is expecting to adopt this e-service in a year's time
Propagating	inp1	The supplier has a formal promotion program to introduce this e-service
Institution	inp2	The supplier has a technical support group to resolve my problem for using this e-service
	inp3	The supplier has a good reputation on delivering this e-service
	inp4	The supplier has a formal training program for using this e-service
Technology	tes1	This e-service is implemented by industrial standard networking protocol
Standardization	tes2	This e-service is implemented by industrial standard security architecture
	tes3	This e-service is implemented by industrial standard application development architecture
Institutional	inp1	Our main customers that matter to us believe that we should use this e-service
Pressure	inp2	This e-service has been widely adopted by our competitors currently
	inp3	Our main competitors that have adopted this e-service are more competitive
Innovation	cpx1	I am satisfied with the brand product/service
complexity	cpx2	I would re-purchase the brand product/service
	cpx3	The brand product/service is of the highest quality

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Measuring the Impact of Innovations in Bertheussen's 'Digital School Examinations'

Alan Fask[1], Fred Englander[1] & Zhaobo Wang[1]

[1] Silberman College of Business, Fairleigh Dickinson University, Madison, NJ, United States

Correspondence: Fred Englander, Silberman College of Business, Fairleigh Dickinson University, Madison, NJ, United States. E-mail: englandr@fdu.edu

Received: August 6, 2014 Accepted: August 28, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p11 URL: http://dx.doi.org/10.5539/ibr.v7n10p11

Abstract

This paper reviews Bernt Arne Bertheussen's recent article published in this journal which offers a promising new approach to teaching undergraduate finance courses. Bertheussen (2014) presents a comprehensive approach which argues that a greater emphasis on the use of spreadsheets satisfies the students' desires to develop increased experience, familiarity and skill in working with information and communication technology. Such a practice, suggests the author, would also nurture a deeper, more enduring understanding of the underlying finance concepts covered. The current review of this innovation offers Bertheussen substantial credit for an important innovation in finance pedagogy. However, this review does draw attention to and analyzes the substantial limitations in the approaches that Bertheussen utilizes to measure the effectiveness of this innovation. Alternative approaches to gauge the effectiveness of this new teaching method which might serve to persuade more instructors of the utility of such a pedagogical advancement are discussed.

Keywords: digital cheating, effectiveness of digital exam procedure, experimental and quasi-experimental research designs, surface versus deep learning

1. Introduction

In his article, "Digital School Examinations: An Educational Note of an Innovative Practice," Bertheussen (2014) presented a creative approach to the use of computer spreadsheets in the teaching and assessment of student performance in finance courses taught over a nine year period at a Norwegian university's business school. For two mandatory assignments and the final examination, students are asked to consider a problem presented in a spreadsheet and use the spreadsheet to develop a solution to the problem. Even though all of the students in a given class would receive comparable problems, the problems faced by individual students were not identical because key numerical values or parameters in the problems were programmatically randomized so that each student was presented with individualized problems. Bertheussen (2014) explains that this pedagogical innovation was implemented in order to (a) respond to student preferences for an instructional approach which made greater use of information and communication technology, (b) accomplish a higher order (i.e., 'deeper') level of learning of the relevant finance topics and (c) accomplish a hindrance of student cheating on the assignments and final examination. Bertheussen (2014, p. 136) states in the conclusion of his paper that these three research questions "guided our work."

The present authors believe that Bertheussen deserves substantial credit for this thoughtful and inventive pedagogical approach. His paper offered several potentially significant contributions to the literature by using an innovative spreadsheet based format for an undergraduate finance course. These contributions included:

- Theory based design. The course was not just developed to communicate the principles of finance to the students, but to also meet important theoretical educational goals. These goals included the embedding of both formative and summative components into the course. Furthermore, the important goal of fostering deep learning was explicitly addressed.
- Use of cheating deterrents. A number of procedures, including a scheme for numerical randomization of key parameters in problem sets, were integrated into the testing process for the explicit purpose of limiting cheating opportunities.
- Novel automated test scoring. Not only was test scoring automated, but the automated scheme actually

detected consecutive errors and modified test scores appropriately.

These above contributions are substantially meritorious. Bertheussen (2014) then proceeded to offer evidence supporting the empirical validation of the methodology. It is in this evidence where the paper requires further scrutiny, for the evidence is, at best, weak. While few real life investigations rarely meet the perfect standards of experimental design as, for example, outlined in Campbell & Stanley (1963), a reasonable attempt to emulate those standards should be considered in any empirical investigation claiming validity and reliability of conclusions. It is the intention of these comments to highlight the need for validation procedures which meet reasonable standards of study design when making claims of course effectiveness and hindrance of student cheating. The Bertheussen (2014) study is thus being used as an example of common study design failures. The objections to Bertheussen's (2014) efforts to offer validation of his approach focus on several issues.

2. Fostering Deep Learning

2.1 Research Design

Bertheussen (2014) utilizes a normal distribution of grade scores as a benchmark against which one may measure the success of his innovative approach. He argues that for a testing procedure to be successful, it should not deviate from a national average distribution of grades for an undergraduate finance course. This is a startling claim. Since this course design was implemented to provide an improved vehicle for learning, what is the justification for using what presumably are inferior national teaching approaches as a target for accomplishment? Indeed, a truly effective teaching approach would result in substantial negative skewness, with the bulk of the distribution being at higher grades. For this reason, the use of the normal distribution is also suspect. Additionally, the measures of success should have been explicitly detailed prior to the beginning of the study.

A more appropriate research design would have been to randomly assign students at the outset of the implementation of this new pedagogical approach to either a treatment group or a traditional course (representing a control or comparison group). Then, at the end of the course, the investigator would compare measures of effectiveness, such as mean course grades. It is to be hypothesized that the treatment (innovative) group will demonstrate higher mean grades and that these higher grades will be statistically significant. It is rarely wise to use a national standard, whether the national standard is normally distributed or otherwise, since the subjects in the national distribution are not necessarily equivalent to those in the group under study, in this case the students in the innovative group. Treatment and control/comparison groups randomly selected from the same population would be expected to be equivalent and therefore would yield meaningful measures for comparison. Among the classic sources that outline experimental and quasi-experimental research designs to evaluate the impact of interventions such as the use of spreadsheets with individualized questions that Bertheussen (2014) considers are those by Campbell and Stanley (1963), Cook and Campbell (1979) and Shadish, Cook and Campbell (2002). In recent issues in this journal, such experimental or quasi-experimental research designs have been utilized by Mitteleman, Macieira and Avila (2014) and Seetisarn and Chiaravutthi (2011).

In establishing a course design which puts great emphasis on spreadsheet construction, Bertheussen introduces an interesting tradeoff. With more time spent on spreadsheet construction, less time may be available for the presentation of traditional financial topics. Thus the "deep learning" which Bertheussen hopes to impart with the more challenging use of spreadsheets may be offset by the lack of deep learning in the areas of traditional financial topics to which the students are not exposed. That is, the opportunity cost aspect of Bertheussen approach is not explored. Thus test measures used to gauge course learning should include both spreadsheet and more traditional questions. It would not be surprising to see that Bertheussen's students perform better on spreadsheet problems than the more traditional problems. In any case, a test-control design, which randomly assigns one class to receive the traditional course and another receive Bertheussen's course might allow for measurement of the tradeoff. The class exam, which should be equivalent for both groups, should utilize a carefully crafted set of questions, avoiding a selection of questions which were more similar to the teaching methods experienced by either group.

2.2 Measuring Deep Learning

Bertheussen (2014) claims that the fact that some students could develop spreadsheets from scratch demonstrates that deep learning was achieved by these students. Certainly, in the current business environment, where spreadsheet facility is highly desired, if not required, of new finance employees, the ability to develop spreadsheets from scratch is a much desired skill. But does the demonstration by some students of this ability truly show that the innovative course led to deep learning? That is, it seems very reasonable that there is a continuum representing the "depth" of student learning and that questions which simply rely on the rote skills of students to memorize or apply a "cookbook" procedure may lie close to "surface learning" end of the continuum.

However, Bertheussen (2014) provides no truly persuasive evidence that the individualized spreadsheet base intervention that is discussed actually represents “deep” learning. That is, he does not apply any established instrument to demonstrate that his assignment and exam questions are more appropriately directed to imposing on students a need to accomplish deep learning. He only uses reports that the students did less well on those questions which applied the intervention. While the present authors are not concluding that deep learning might not be a plausible explanation for these results, it is also possible that the pattern of findings presented could (not necessarily ‘did’) result from other characteristics of the different types of questions—e.g., differences in the clarity of the questions or differences in the time spent on the material that are linked to the questions. Bertheussen may wish to define deep learning as the ability to create a spreadsheet from scratch; however, it is a leap to believe that this ability truly measures the deep learning construct.

On a much more practical level, Bertheussen (2014) did not measure student’s skill with spreadsheet at the beginning of the course. It is quite possible that those who were able to develop a financial spreadsheet from scratch, entered the course with better spreadsheet skills and that was the principle reason for their success, rather than the innovative course or the presumed accomplishment of deep learning.

3. Hindering Cheating on Digital Exams

Bertheussen (2014) provided a number of procedures including numerical randomization in their test problems and then claims that these procedures lead to a lower level of cheating. The basis of this claim is the lack of identical test response patterns among any of the students. However, even if there had been a perfect match, this need not demonstrate cheating. If two students studied together and misunderstood some solving procedures, they might well have responded in the same incorrect way, even in the absence of cheating. Therefore, it may be argued that a similarity in the pattern of responses among students is therefore, at best, a poor indicator of cheating. A growing literature on empirical methods to analyzing cheating has been developing over the last ten to fifteen years. The studies evaluating whether online examinations are more susceptible to cheating that Bertheussen (2014) cites (Grijalva, Nowell, & Kerkvliet, 2006; Lanier, 2006; Stuber-McEwen, Wiseley, & Hoggatt, 2009), which do not offer a clear consensus, are based on anonymous surveys of students. These surveys ask the student subjects about the extent to which they may have cheated in traditional, proctored exams relative to online exams. However, it seems reasonable to question how reliable these surveys may be. Should we expect the student subjects who may have cheated to admit it, even anonymously? Student personality may play a role not only in the propensity to cheat but in the pattern of responses to such survey questions. For example, a guilt ridden student may admit to cheating behavior even in the case of a very mild infraction. Alternatively, a sociopathic student may deny any cheating behavior even in the event of severe past cheating behavior.

A second methodological approach is to attempt an experiment or a quasi-experiment involving a comparison of exam performance between two groups of classes or students—a group taking online exams and a second group taking comparable or equivalent exams in a traditional, proctored setting. This quasi-experimental approach has been utilized less often (the present authors are only aware of the research efforts of Peng (2007), Harmon & Lambrinos (2008) and Yates & Beaudrie (2009) and would offer more credible results, especially to the extent that such a study is careful to insure that the composition of the two groups and the exams that they take are equivalent. A third approach, normally offering a greater level of credibility would be based on a randomized experiment. Such a research design studying online cheating was performed by Hollister and Berenson (2009). They studied two sections taking the same business computer skills course in the same semester. They were careful to assure that the students in each section had comparable abilities and characteristics. Once the semester was underway, Hollister and Berenson (2009) randomly assigned one of the sections to a traditional assessment mode (in-class, proctored exams) and the other section to an assessment mode based on online examinations. Another such experiment has been recently undertaken by Fask, Englander and Wang (2014). Two sections of introductory statistics were assigned to complete a practice final exam several days prior to the actual final exam. A short time before these exams, one section was assigned on a random basis to take the exams in a traditional, face-to-face environment and the second class was assigned to take those exams in an unproctored, online environment. The research design allowed separate estimates to be made of the effect of the testing environment (online or in-class) on exam performance and the effect of the online environment on students’ propensity to cheat.

The above research on measuring cheating raises the question of the implementation of those approaches to Bertheussen’s method of randomization of key question parameters to avert cheating. While this approach has intuitive appeal, confirmation of its effectiveness again requires a test-control study with one group receiving randomized questions and another receiving nonrandomized questions. The same test grading algorithm (whether automated or not) should be applied to both groups. It should be pointed out that Bertheussen is not clear as to the extent of proctoring during the exams. This is, of course, crucial information to understand cheating related issues. On one hand, Bertheussen (2014) discusses some of the previous research related to student cheating in general *and* in the case of online examinations. On the other hand, the author refers to exams in which the students "brought their own devises" (Bertheussen, 2014, p. 129) *and* states, "The final exam is not open-book ..." (Bertheussen, 2014, p. 132).

4. Other Measures of Program Success

First, Bertheussen (2014) notes that the course has existed for nine years and has been revised each year and was therefore considered a success. The longevity of the course only demonstrates the longevity of the course, not its success. Second, Bertheussen (2014) gave students a 1-5 Likert scale for two questions on their attitude towards the spreadsheet based course. The responses indicated a high level of satisfaction. This may very well be a reasonable conclusion. It should be pointed out, however, that the use of the t-distribution comparing responses (on a one to five scale) to the indifferent response (i.e., three on that scale) is problematic because the t-distribution is really not designed to be used for ordinal scales; a nonparametric approach would be preferred. It should also be pointed out that these results may well be subject to the "person-positivity bias" that pertains to such evaluations that was reported by Sears (1983). Sears (1983) found that when over 300,000 individual student research subjects at UCLA over fourteen school terms were asked to evaluate their professors on a nine point scale (where a 5 rating was labeled as average) professors were rated at 7.22 and courses were rated at 6.85. This suggests a strong positive bias in the evaluation of professors and courses which may well have applied to student satisfaction results that Bertheussen (2014) presented. Comparisons of the results to similar student feedback for similar business courses which did not involve the particular use of individualized spreadsheet assignments and exams (either in place before the intervention or for business courses at the same university) would offer stronger evidence of the positive student response to the intervention.

5. Conclusion

The above criticisms of Bertheussen's work are not intended to question the potential pedagogical value of the innovation that he advances. This innovation appears thoughtful and promising. These criticisms are meant to highlight the point that if claims of an intervention's success are to be made, they should be based on appropriate outcome measures that have been developed in a less ambiguous manner. The credibility of the rather impressive innovative course design which Bertheussen reported, is undercut, not enhanced, by ill-conceived measures of effectiveness. That is, Bertheussen's ability to persuade a greater proportion of fellow finance professors to adopt a similar pedagogical approach would be substantially greater if his research design and corresponding outcome measures were more carefully constructed.

References

Bertheussen, B. (2014). Digital school examinations: An educational note on an innovative practice. *International Business Research, 7*(6), 129–139. http://dx.doi.org/10.5539/ibr.v7n6p129

Campbell, D., & Stanley, J. (1966). *Experimental and quasi-experimental designs for research.* Skokie, IL: Rand McNally.

Cook, T., & Campbell, D. (1979). *Quasi-Experimentation: Design & analysis issues for field settings*. Boston: Houghton-Mifflin.

Entwistle, N., & Ramsden P. (1983). *Understanding pupil learning*. London: Croom Helm.

Fask, A., Englander, F., & Wang, Z. (2014). Do online exams facilitate cheating? An experiment designed to separate possible cheating from the effect of the online test taking environment. *Journal of Academic Ethics*, *12*(2), 101–112. http://dx.doi.org/10.1007/s10805-014-9207-1

Grijalva, T., Nowell, C., & Kerkvliet, J. (2006). Academic honesty and online courses. *College Student Journal*, *40*(1), 180–185.

Harmon, O., & Lambrinos, J. (2008). Are online exams an invitation to cheat? *Journal of Economic Education, 39*(2), 116–125. http://dx.doi.org/10.3200/JECE.39.2.116-125

Hollister, K., & Berenson, M. (2009). Proctored versus unproctored online exams: Studying the impact of exam environment on student performance. *Decision Sciences Journal of Innovative Education, 7*(1), 271–294. http://dx.doi.org/10.1111/j.1540-4609.2008.00220.x

Lanier, M. (2006). Academic integrity and distance learning. *Journal of Criminal Justice Education*, *17*(2), 244–261. http://dx.doi.org/10.1080/10511250600866166

Mittelman, M., Macieira, F., & Avila, M. (2014). It doesn't hurt to ask: Assessing default effects in a Brazil gas station. *International Business Research*, *7*(6), 61–66. http://dx.doi.org/ 10.5539/ibr.v7n6p67

Peng, Z. (2007). Giving online quizzes in corporate finance and investments for a better use of seat time. *The Journal of Educators Online, 4*(2), 1–18.

Sears, D. (1983). The person-positivity bias. *Journal of Personality and Social Psychology*, *44*(2), 233–250. http://dx.doi.org/10.1037/0022-3514.44.2.233

Seetisarn, P., & Chiaravutthi, Y. (2011). Thai Consumers willingness to pay for food products with geographical indications. *International Business Research, 4*(3), 161–170. http://dx.doi.org/10.5539/ibr.v4n3p161

Shadish, W., Cook, T., & Campbell, D. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Stamford, CT: Cengage Learning.

Stuber-McEwen, D., Wiseley, P., & Hoggatt, S. (2009). Point, click, and cheat: Frequency and type of academic dishonesty in the virtual classroom. *Online Journal of Distance Learning Administration*, *12*(3), 1–10. Retrieved from http://www.westga.edu/~distance/ojdla/fall123/stuber123.html

Yates, R., & Beaudrie, B. (2009). The impact of online assessment on grades in community college distance education mathematics courses. *The American Journal of Distance Education*, *23*(2), 62–70. http://dx.doi.org/10.1080/08923640902850601

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Value at Risk as a Tool for Mutual Funds Performance Evaluation

Reza Tehrani[1], Saeed Mirza Mohammadi[2] & Neda Sadat Nejadolhosseini[1]

[1] Department of Management, University of Tehran, Tehran, Iran

[2] School of Industrial Engineering, University of Science and technology, Tehran, Iran

Correspondence: Neda Sadat Nejadolhosseini, Department of Management, University of Tehran, Tehran, P.O. Box 6311-14155, Iran. Tel: 98-764-445-4547. E-mail: n_nhosseini@ut.ac.ir

Received: July 21, 2014 Accepted: August 11, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p16 URL: http://dx.doi.org/10.5539/ibr.v7n10p16

Abstract

The present study addressed the measurement of one-day-ahead Value at Risk (VaR) of Iranian mutual funds using GARCH parametric method and Monte Carlo Simulation non-parametric method. The Kupiec back testing results showed that both methods enjoy a high level of accuracy but based on simplified assumption of return distribution function in the parametric approach; Monte Carlo simulation produced better results. Furthermore, the adjusted Sharpe ratio and VaR were used to investigate the performance evaluation of the mutual funds.

Keywords: back-testing, downside risk, Monte Carlo Simulation, mutual funds, performance evaluation, Value at Risk (VaR)

1. Introduction

All types of investments, including mutual funds, involve risk. Higher risks are usually taken with the expectation of gaining higher returns at the cost of increased volatility so this results in the risk/return trade-off. In the last few years, mutual funds in Iran have attracted a lot of investments. To select the appropriate fund, investors need suitable performance evaluation methods to take the correct decision based on their risk.

Market risk is primarily estimated using position-based risk measures such as Value at Risk (VaR). VaR is applied to different kinds of financial instruments such as stock, bonds, foreign exchange, and derivative financial instruments. VaR is a statistical measure of total portfolio risk, based on the most current positions, which takes into account portfolio diversification and leverage (Jorion, 2009). Following the lead from both regulators and large international banks during the mid-1990s, almost all financial institutions now use some form of VaR as a risk metric. This almost universal adoption of VaR has sparked much controverdy (Alexander, 2008). Whilst VaR has become a universal risk metric used by banks and also by non-financial corporations, fund managers traditionally used quite different metrics (Alexander, 2008). Value at Risk measures the worst expected loss under normal market conditions over a specific time interval at a given confidence level.Alternatively, VaR is the lowest quantile of the potential losses that may occur within a given portfolio during a specified time period (Benninga, 2008). VaR is a quantile risk metric. However, when returns are normal, each quantile is just a multiple of standard deviation. As such, in this special case, VaR obeys the same rules as the standard deviation. Otherwise, VaR does not obey nice rules and it may not even be sub-additive (Alexander, 2008). Perhaps the greatest advantage of VaR is that it summarizes in a single, easy to understand number of the downside risk of an institution due to financial market variable. No doubt, this explains why VaR is fast becoming an essential tool for conveying trading risks to senior management, directors, and shareholders (Jorion, 2007).

To calculate VaR, a number of methods such as parametric, historical simulation, and Monte Carlo simulation can be used.

Wiener (2012) used VaR approach based on queuing theory to evaluate risk measurement systems and optimizing the selection process in banks. Bryant and Liu (2011), Zhao et al. (2011), and Cullen et al. (2012) investigated risk associated withmutual funds. Białkowskia and Otten (2011) studied the performance of mutual funds in Poland. Eling (2008) compared different performance measures for fund evaluations. Deb and Barenjee (2009) used three parametric models and one non parametric model for equity mutual funds in India to predict their weekly VaR. They also employed two back testing approaches. Gallsli and Guesmi (2008) compared parametric method, historical simulation, and Monte Carlo simulation to determine the most pertinent methodology of VaR in 14 Tunisian open-end funds portfolios. The results pointed to the Monte Carlo simulation superiority over the two other approaches. Weng and Trück (2011) identified risk factors for Asia-focused hedge funds through a modified style analysis technique to provide appropriate forecasts for volatility and Value-at-Risk of the index. They further evaluated the performance of thesemodels with respect to VaR estimation. Feng (2008) used traditional Sharpe index with standard deviation as a risk variable compared to VaR as the substitute for standard deviation in Chinese mutual funds to find a better fund performance measure.

In this paper, the value at risk of mutual fund is calculated by parametric and non-parametric methods. The remainder of the paper is structured as follows. Section 2 describes the method and state the problem, Section 3 presents the data analysis, and finally Section 4 discusses the results of the study.

2. Method

The sample data included daily returns of Iran mutual funds active from 2009 to 2012 and were calculated as follows:

$$r_t = Ln(NAV_t/NAV_{t-1}) \quad (1)$$

VaR is a loss that we are fairly sure will not be exceeded if the current portfolio is held over some period of time. When VaR is estimated from a return distribution, it is expressed as a percentage of the portfolio's current value. Since the current value of the portfolio is observable, it is not regarded as a random variable (Alexander, 2008). The calculation methods of VaR in literature have been divided into parametric and non-parametric methods.

2.1 GARCH Method to Estimate VaR

Normality assumption of returns seems to be in conflict with the empirical properties of most financial time series. We can use methods that try to relax the strong assumption of normality. The parametric methods assume a specific distribution of returns. They use estimation methods like maximum likelihood estimation (MLE) to measure the relevant parameters of the distribution, which are then used to forecast the future return distribution and VaR as well. Following Engle's research (1982), Bollerslev developed the generalized autoregressive conditional heteroskedasticity (GARCH) model in 1986. This relatively simple statistical analysis is used to discover the existence of any clustering behavior in volatility. It is also possible to observe any leptokurtosis effects in the distribution of returns. The GARCH (1, 1) framework is the simplest and most popular model available through Bollerslev work. This framework is used to define the conditional mean and variance as follows (Gregoriou, 2009):

$$X_t = \mu + \sigma_t \varepsilon_t \quad (2)$$

$$\sigma_t^2 = \omega + \beta\sigma_{t-1}^2 + \gamma\sigma_{t-1}^2\varepsilon_{t-1}^2 \ with\ \omega > 0, \beta \geq 0,$$
$$\gamma > 0, and\ \beta + \gamma < 0 \quad (3)$$

Eventually, VaR is calculated as follows (Alexander, 2008):

$$VaR_a = \phi^{-1}(1-\alpha)\sigma - \mu \quad (4)$$

2.2 Monte Carlo Simulation to Estimate VaR

Monte Carlo simulation is more flexible than parametric models. As with historical simulation, Monte Carlo simulation allows the risk manager to use actual historical distributions for risk factor returns. A large number of randomly generated simulations are run forward in time using volatility and correlation estimates chosen by the risk manager. Each simulation will be different but, in total, the simulations will aggregate to the chosen statistical parameters. This method is more realistic and, therefore, is more likely to estimate VaR more accurately (Choudhry, 2006).

2.3 Kupiec Test

The first logical way to evaluate prediction ability of VaR model is counting the number of times in which the real loss is greater than the predicted loss by VaR. If VaR is independent, the comparison of the real results estimated by this model will be considered successful in terms of correctness and vice versa. We define failure and success as an event. The relevant null hypothesis is $H_0: a = a_0$. Further, the appropriate likelihood return statistic is asymptotically distributed as a chi-squared distribution (Gregoriou, 2009):

$$LR_{PF} = 2[ln(a^x(1-a)^{T-x}) - ln(a_0^x(1-a_0)^{T-x})] \quad (5)$$

Unfortunately, as Kupiec observed, these tests have a limited ability in distinguishing among alternative hypotheses. However, these approaches have been employed by regulators for the analysis of internal models in which the different models are categorized in back testing (Gregoriou, 2009).

3. Results

Firstly, time series are examined with respect to stationary data and autocorrelation. The result of augmented Dickey-Fuller test allows us to affirm that funds returns present stationary series. The value of Durbin-Watson test for the sample funds is between 1.94 to 2.019 or approximately equal to 2, indicating no serial correlation.

Using GARCH method, conditional mean, conditional variance, and VaR is calculated at confidence levels of 99% and 95%.

Table 1. Estimation of VaR using GARCH (1, 1)

Mutual Fund	Conditional Mean	Conditional	VaR (=0.01)	VaR (=0.05)
Amin Global	0.055	0.164	-0.327	-0.215
Arian	0.085	0.676	-1.489	-1.027
Agah	0.1	0.438	-0.92	-0.621
Novin Bank	0.104	0.723	-1.578	-1.085
Tejarat Bank	0.137	0.311	-0.587	-0.375
Saderat Bank	0.14	0.735	-1.57	-1.069
Melli Bank	0.055	0.517	-1.149	-0.796
Bourse Bime	0.105	1.12	-2.5	-1.737
Boursiran	0.105	0.589	-1.265	-0.863
Pasargad	0.094	0.988	-2.205	-1.531
Pooya	0.105	0.699	-1.522	-1.046
Pishtaz	0.137	0.49	-1.003	-0.669
Pishgam	0.061	0.541	-1.199	-0.83
Hafez	0.086	0.478	-1.026	-0.7
Khobregan	0.102	0.295	-0.584	-0.383
Razavi	0.067	1.147	-2.602	-1.82
Sahm Ashna	0.114	0.662	-1.427	-0.976
Shadab	0.034	0.715	-1.629	-1.141
Kaspian Mehr	0.044	0.538	-1.209	-0.842
Yekom Iranian	0.047	0.389	-0.859	-0.594

To use Monte Carlo simulation, it is needed to fit the best distribution function on the existing data. For good of fitness test, chi-square test and Kolmogorov-Smirnov test were applied. The resulting distribution function and parameter values are shown in Table 2. Based on the daily limitation of stock price volatility, the fund returns including the portfolio of stock have little volatility too. Most of the daily returns are near zero and return distribution function is inclined from normal to distribution functions as Laplas and Cauchy. After determining distribution function in each fund, 1000 numbers were produced randomly by fitted distribution function and VaR was calculated. Then, to increase the accuracy of calculations, this was repeated 100 times and final VAR of average of one-hundred VaR was obtained.

Table 2. Estimation of VaR using Monte Carlo simulation

Mutual Fund	Fitted Distribution Function	VaR (=0.01)	VaR (=0.05)
Amin Global	Cauchy(=0.0687, μ=0.04744)	-0.646	-0.265
Arian	Cauchy(=0.225, μ=0.0468)	-2.533	-1.029
Agah	Laplace (=3.4352, μ= 0.0602)	-1.085	-0.617
Eghtesad.novin Bank	Cauchy(=0.225, μ=0.0468)	-1.085	-0.617
Tejarat Bank	Error(k=1, =0.4051, μ=0.1014)	-0.984	-0.556
Saderat Bank	Laplace(=2.5498, μ=0.0937)	-1.432	-0.812
Melli Bank	Cauchy(=0.2447, μ= 0.02796)	-2.622	-1.11
Bourse Bime	Error(k=1.3, =0.5116, μ=0.0906)	-1.595	-0.952
Boursiran	Laplace(=2.8287, μ=0.08098	-1.286	-0.729
Pasargad	Cauchy(=0.2678, μ=0.0437)	-2.259	-1.082
Pooya	Error(k=1.0223, =0.4938, μ=0.0891)	-1.251	-0.717
Pishtaz	Error(k=1, =0.4993, μ=0.9141)	-1.273	-0.713
Pishgam	Error(k=1.3908, =0.3535, μ=0.0444)	-0.85	-0.538
Hafez	Cauchy(=0.1745, μ=0.0523)	-1.911	-0.786
Khobregan	Cauchy(=0.06, μ=0.17)	-2.483	-0.812
Razavi	Cauchy(=0.2293, μ=0.0586)	-2.164	-0.942
Sahm Ashna	Error(k=1.1445, =0.4993, μ=0.0563)	-1.263	-0.766
Shadab	Cauchy(=0.2155, μ=0.0224)	-2.794	-1.063
Kaspian Mehr Iranian	Laplace(=2.83, μ=0.0227)	-1.347	-0.793
Yekom Iranian	Cauchy(=0.0797, μ=0.0597)	-1.681	-0.401

For Kupiec back testing, the data for the third quarter of 2011 were used as out of sample data to define VaR error in future data.

Table 3. Statistical results of Kupiec test for VaR using parametric and non-parametric approaches

	Garch(1,1)		Monte Carlo	
Mutual Fund	=0.01	=0.05	=0.01	=0.05
Amin Global	0.153	0.624	1.327	2.296
Arian	1.166	1.735	1.166	1.735
Agah	17.726	2.702	1.166	2.702
Novin Bank	1.166	6.523	0.253	6.523
Tejarat Bank	17.726	6.523	2.147	2.702
Saderat Bank	1.166	1.166	1.166	1.166
Melli Bank	1.166	0.004	1.166	1.166
Bourse Bime	1.735	0.395	0.395	5.077
Boursiran	1.735	1.328	1.735	1.328
Pasargad	0.624	0.802	2.296	14.851
Pooya	1.166	0.395	1.735	2.702
Pishtaz	0.004	4.45	1.166	1.328
Pishgam	0.328	1.328	1.328	14.384
Hafez	0.004	6.523	1.166	2.702
Khobregan	4.45	11.514	1.166	2.702
Razavi	1.166	1.328	1.735	24.285
Sahm Ashna	0.328	4.45	0.395	4.45
Shadab	2.702	6.523	1.166	2.702
Kaspian Mehr Iranian	1.735	0.328	1.166	0.004
YekomIranian	1.166	1.166	1.166	1.166

According to Kupiec back testing, test statistics should follow chi-square distribution with 1 degree of freedom. Furthermore, based on two-way nature of the test, the statistics should be between 0.0009821 and 5.02389.

4. Discussion

Based on the results of Kupiec test, GARCH (1, 1) method produced correct prediction for 18 mutual funds at confidence level of 99% and had correct prediction for 15 mutual funds at confidence level of 95%. Monte Carlo simulation method accurately predicted almost all funds at the confidence level of 0.99%. It also correctly predicted 15 mutual funds at confidence level of 95%. Therefore, the Monte Carlo simulation had better prediction results. This is in line with Gallsli & Guesmi (2008).

As mentioned earlier, performance evaluation of mutual funds consists of returns and risk simultaneously. After calculating VaR as risk measure, an adjusted Sharpe ratio with average daily return was used to evaluate the performance of mutual funds. The results are shown in table 4:

Table 4. Performance evaluation of mutual funds using adjusted Sharpe ratio with VaR

	Mutual Fund	(R-Rf)/VaR		Mutual Fund	(R-Rf)/VaR
1	Tejarat Bank	0.094	11	Melli Bank	0.021
2	Pooya	0.067	12	Pasargad	0.019
3	Pishtaz	0.064	13	Razavi	0.018
4	Saderat Bank	0.061	14	Khobregan	0.016
5	Boursiran	0.056	15	Arian	0.015
6	Agah	0.048	16	Yekom Iranian	0.014
7	Sahm Ashna	0.046	17	Pishgam	0.013
8	Bourse Bime	0.040	18	Hafez	0.010
9	Novin Bank	0.031	19	Kaspian Mehr Iranian	-0.002
10	Amin Global	0.022	20	Shadab	-0.012

As shown in the table Tejarat Bank mutual fund occupied the first position while Shadab fund with a negative risk premium occupied the last position in sorting risk adjusted returns. Agah fund had the highest returns but it invested more in risky assets than in other funds with a VaR value of 1.085. So it occupied the sixth position, which means that the investors experience more risk to achieve a suitable return.

5. Conclusion

Value at Risk (VaR) is one of the important methods of risk calculation. In this study, GARCH and Monte Carlo simulation were used to calculate the VaR of Iranian mutual funds and Kupiec test was used to evaluate the two methods. The results indicated that that both models were almost efficient but in some funds, due to difference of data distribution function from normal distribution, parametric method produced higher errors at a high confidence level. The calculated VaR was used to evaluate performance of funds. Accordingly, the investors are recommended to use VaR as effective parameters for decision making purposes.

References

Alexander, C. (2008). Market Risk Analysis. *Value-At-Risk Models*, *IV*. John Wiley & Sons Ltd.

Benninga, S. (2008). *Financial Modeling* (3rd ed.). London, England: The MIT Press.

Białkowskia, J., & Otten, R. (2011). Emerging market mutual fund performance: Evidence for Poland. *North American Journal of Economics and Finance*, *22*, 118–130. http://dx.doi.org/10.1016/j.najef.2010.11.001

Bollerslev, T. (1986). Generalized Autoregressive Conditional Heteroskedasticity. *Journal of Econometrics*, *31*, 307–327. http://dx.doi.org/10.1016/0304-4076(86)90063-1

Bryant, L. L., & Liu, H. C. (2011). Mutual fund industry management structure, risk and the impacts to shareholders. *Global Finance Journal*, *22*, 101–115. http://dx.doi.org/10.1016/j.gfj.2011.10.002

Choudhry, M. (2006). *An Introduction to Value-At-Risk* (4th ed.). John Wiley & Sons Ltd.

Chretien, S., & Coggins, F. (2010). Performance and conservatism of monthly FHS VaR: An international investigation. *International Review of Financial Analysis, 19*, 323–333. http://dx.doi.org/10.1016/j.irfa.2010.08.006

Cullen, G., Gasbarro, D., & Monroe, G. S. (2012). Changes to mutual fund risk: Intentional or mean reverting? *Journal of Banking & Finance , 36*, 112–120. http://dx.doi.org/10.1016/j.jbankfin.2011.06.011

Deb, S. G., & Banerjee, A. (2009). Downside Risk Analysis of Indian Equity Mutual Funds: A Value at Risk Approach. *International Research Journal of Finance and Economics*, (23), 216–230.

Eling, M. (2008). Does the Measure Matter in the Mutual Fund Industry? *Financial Analysts Journal*, *64*(3). http://dx.doi.org/10.2469/faj.v64.n3.6

Engle, R. (1982). Autoregressive Conditional Heteroskedasticity with Estimates of the Variance of UK Inflation. *Econometrica*, *50*, 654–708. http://dx.doi.org/10.2307/1912773

Feng, J. (2008). *Evaluation The Performance of Chinese Mutual Funds: A Study of the Application of Value-at-Risk.* (Unpublished master's thesis), University of Nottingham, Ningbo, China.

Gallsli, M. I., & Guesmi, A. (2008). Value-at-Risk In Mutual Funds Which Methodology of Estimation. *2 ème Conférence Euro-Africaine en Finance et Economie (CEAFE).* Tunis.

Jorion, P. (2007). *Value At Risk: The New Benchmark for Managing Financial Risk* (3rd ed.). McGraw-Hill Companies.

Jorion, P. (2009). *Financial risk manager handbook* (5th ed.). Wiley finance series.

Khalili, A. M., & Yeke, Z. A. (2010). Estimation of industrial market risk on basis of Value at Risk. *Financial Studies Journal*, *7*(1), 47–72.

Mohammadi, S., Raee, R., & Feiz, A. A. (2008). Calculation of parametric Value at Risk Using ARCH models in TSE. *Financial Research Journal*, *10*(1&2).

Raee, R., & Saeedi, A. (2008). *Introduction to financial Engineering and Risk management* (3rd ed.). Tehran: SAMT.

Shahmoradi, A., & Zangene, M. (2007). Calculating VaR for TSE indices with parametric methods. *Economic Research Journal*, *79*, 121–149.

Weng, H., & Trück, S. (2011). Style analysis and Value-at-Risk of Asia-focused hedge funds. *Pacific-Basin Finance Journal*, *19*, 491–510. http://dx.doi.org/10.1016/j.pacfin.2011.05.002

Wiener, Z. (2012). The value of Value-at-Risk: A theoretical approach to the pricing and performance of risk measurement systems. *Journal of Economics and Business, 64*, 199–213. http://dx.doi.org/10.1016/j.jeconbus.2012.02.002

Zhao, X., Wang, S., & Lai, K. K. (2011). Mutual funds performance evaluation based on endogenous benchmarks. *Expert Systems with Applications, 38*, 3663–3670. http://dx.doi.org/10.1016/j.eswa.2010.09.022

Copyrights

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Do Institutional Investors Influence R&D Investment Policy in Firms with High Information Asymmetry?

Ricky W. Scott[1]

[1] Donald R. Tapia School of Business, Saint Leo University, Saint Leo, Florida, USA

Correspondence: Ricky W. Scott, Donald R. Tapia School of Business, University Campus – MC 2011, P.O. Box 6665, Saint Leo University, Saint Leo, FL 33543-6665, USA. Tel: 1-352-588-8304. E-mail: ricky.scott@saintleo.edu

Received: August 1, 2014 Accepted: August 12, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p22 URL: http://dx.doi.org/10.5539/ibr.v7n10p22

Abstract

This paper seeks to determine if institutional investors influence corporate research and development (R&D) investment policies by encouraging R&D investment in firms with high information asymmetry. The effect of changes in institutional investor levels to subsequent changes in R&D investment levels are examined using firm and year fixed effect regressions and difference-GMM regressions. Increased institutional ownership leads to increased R&D investment and this relationship is stronger in firms with higher information asymmetry. Institutional investors encourage higher R&D investment primarily in firms with high information asymmetry indicating they have an advantage in discerning the value of R&D investments in such firms. Institutions are an important and increasing force in U.S. stock ownership. The results in this paper indicate that institutional investors have an advantage in discerning the value of R&D investments in firms with high information asymmetry. The presence of institutional investors encourages the management of such firms to make long-term investments in R&D.

Keywords: institutional investors, R&D, investment policy, managerial myopia

1. Introduction

The amount of investment to make in research and development (R&D) is a key financial decision for many companies. Theoretically, R&D investment should only be made if it is beneficial to shareholders. Support for the point of view that R&D investment is generally beneficial to shareholders is provided by the finding of Chan, Lakonishok, and Sougiannis (2001) that higher R&D and increases in R&D are positively associated with future returns. Still, management may be hesitant to increase R&D because investors tend to underreact to the benefits of R&D increases and the benefits from R&D investment are much more uncertain than the benefits from other investments such as investments in property, plant, and equipment (Eberhart, Maxwell, & Siddique, 2004; Kothari, Laguerre, & Leone, 2002).

The uncertain nature of R&D investment can incentivize management to underinvest in R&D to the detriment of shareholders (Porter, 1992). Management may choose to increase short-term earnings by underinvesting in R&D. This outcome is made possible because R&D is expensed immediately while its benefits are often not recognized for years. This incentive to underinvest in R&D can create an agency problem if management decides to underinvest to benefit themselves in the short-term at the expense of long-term shareholder interests. Managers have been shown to knowingly invest at a sub-optimal level in R&D to meet earnings-based compensation goals (Harter & Harikumar, 2004), to meet an earnings target (Baber, Fairfield, & Haggard, 1991; Graham, Harvey, & Rajgopal, 2005), to facilitate a pending stock issuance (Bhojraj & Libby, 2005), and to exceed analysts' earnings forecasts (Bhojraj, Hribar, Picconi, & McInnis, 2009).

If managers underinvest in R&D, institutional investors may serve to mitigate, exacerbate or have no effect on this problem. Institutional investors such as banks, insurance companies, mutual funds, pension funds, and charitable endowments own nearly 70% of the shares of U.S. corporations (Bogle, 2010). Therefore, it is likely that they have the clout to affect management decisions on many matters at many companies. Previous research has provided evidence that institutions encourage (Bange & De Bondt, 1998) and discourage (Samuel, 2000) R&D investment. Still, there is ample evidence that institutional investors are more effective monitors than other investors (Almazan, Hartzell, & Starks, 2005; Maug, 1998; Parrino, Sias, & Starks, 2003).

I determine the influence that institutional investors have on R&D investment. Then, I analyze the effect that information asymmetry has on this influence.

Firms in which investors know relatively more about the firm's future prospects are considered low information asymmetry firms. The importance of information asymmetry in R&D budgets to investors is demonstrated by Aboody and Lev (2000) who find that R&D is a major contributor to insider gains and information asymmetry between insiders and investors.

Information asymmetry is likely to be important to the relationship between institutional investors and R&D. Institutional investors have an informational advantage over other shareholders which varies with firm characteristics and information asymmetry (Bennett, Sias, & Starks, 2003). Institutions have an informational advantage in newly public firms (Field & Lowry, 2009) and seasoned equity offerings (Chemmanur, He, & Hu, 2009) which is largely the result of better analysis of publicly available information. If institutional investors encourage R&D investment more in low information asymmetry firms, it indicates that they are not more effective than other investors at monitoring firms which are difficult to monitor. Conversely, if institutional investors have a more positive effect on R&D investment in high information asymmetry firms, it shows that institutional investors are effective monitors of firms that are difficult for other investors to monitor.

My results indicate that institutional investors encourage higher R&D investment overall. I also provide evidence that institutional investors induce R&D investment more effectively in firms with high information asymmetry.

2. Literature Review

There is evidence that increased R&D investment is viewed favorably by investors (Sundaram, John, & John, 1996). Despite this benefit, management may have incentives to underinvest in R&D. Management might underinvest because of their concentrated wealth in the firm leads them to be risk averse (Stein, 1988) or because they wish to manage earnings (Stein, 1989) or because they wish to protect earnings-based compensation (Bange & De Bondt, 1998). Management also may underinvest to avoid hostile takeovers and to appease influential investors with short time horizons (Froot, Perold, & Stein, 1992; Stein, 1988). In contrast, increased investment may lead to increased firm size and increased power and compensation for managers (Jensen, 1986).

Empirical studies provide support for the assertion that managers sometimes engage in managerial myopia (sacrificing long-term value creation to meet short-term goals) by underinvesting in R&D. Holden and Lundstrum (2009) report that managers increase R&D and their firms become less likely to beat analysts' earnings forecasts after the introduction of long-term stock options (LEAPS) for their firm. They argue that the decline in the use of sub-optimal R&D investment to manage earnings is caused by the new-found ability of informed traders to profit from their long-term superior information through the use of LEAPS. Some firms underinvest in R&D to manage earnings (Cheng, Subramanyam, & Zhang, 2007). CEOs spend less on R&D near the end of their careers presumably so they can reap the benefits of higher short-term earnings in lieu of the long-term benefits of R&D that they will not be around to enjoy (Dechow & Sloan, 1991). In contrast, there is research indicating CEOs do not underinvest in R&D. Gibbons and Murphy (1992) find that R&D spending tends to be the largest during a CEO's final years in office. Cazier (2011) argues that CEOs that are nearing retirement do not reduce R&D investment.

Others have demonstrated that institutional investors can have an effect on R&D investment. Huang and Shiu (2009) find that foreign institutional investor ownership in Taiwanese firms leads to higher R&D investment and better firm performance. Institutional investors have an influence on R&D investment in technology and healthcare firms (Le, Walters, & Kroll, 2006). Institutional investors have been shown to affect R&D investment through activist actions (David, Hitt, & Gimeno, 2001).

3. Hypothesis

The influence institutional investors can wield is reflected in the view of CFOs that institutional investors important investors that influence stock price and affect cost of capital (Graham et al., 2005). This influence gains empirical evidence from the finding of Gillan and Starks (2007) that institutional investors can influence management through the threat of divesting their shares. The first part of my hypothesis is that institutional investors will encourage management to raise R&D investment.

Previous research has provided evidence that institutional investors' informational advantage over other investors gives them the ability to be more effective monitors. The superior monitoring ability of institutional investors may vary with the level of firm information asymmetry between insiders and outside shareholders. Zeckhauser and Pound (1990) provide evidence that monitoring by another group of informed investors, shareholders that own more than 15% of a firm, is only effective in firms with low information asymmetry. This indicates that it is possible that institutional shareholders will not be able to effectively monitor R&D investment in firms with high information asymmetry. On the other hand, institutional investors may be able to more effectively exploit their informational advantage in firms with high information asymmetry leading to more effective monitoring of R&D in such firms. This conjecture is the basis for my hypothesis.

H1: Institutional investors will encourage higher R&D investment, especially as information asymmetry *increases*.

To support my hypothesis, I must demonstrate a causal relationship in which institutional investors effect a change in R&D investment and not the other way around. Therefore, I must employ statistical methods that establish causality.

4. Data, Methods and Summary Statistics

4.1 Data

I gather institutional and insider ownership data on U.S. listed companies from CDA/Spectrum Compact Disclosure for each year from 1990 to 2005. I exclude utilities and financial firms because they are highly regulated. I then merge this ownership data with firm characteristic data from Compustat. Firms with missing data or data from too few firm-years to perform required analysis are excluded from that analysis. The final sample consists of 2,769 firms and 18,434 firm-years.

Primarily, I measure R&D investment as R&D investment per share (adjusting for stock splits) (Bushee, 1998). I measure R&D investment as R&D to assets for some robustness analysis. R&D to sales has often been used in past research as a measure of R&D investment. This measure is not appropriate for my analysis because my sample has many small firms with negligible sales. Therefore, using R&D to sales ironically greatly increases the importance of firms with low sales to regression analysis.

R&D investment per share is very useful in determining if a firm increased or decreased its R&D investment, but it fails to provide a useful scale for linear regression analysis. Therefore, I use logit regressions with a binary dependent variable indicating either R&D increases or decreases. Following (Coles, Daniel, & Naveen, 2006), I assume missing values of R&D expenditures are zero.

I use control variables in my regressions to isolate the relationship between institutional ownership and R&D investment policy. I begin with the same controls used by Wahal and McConnell (2000) in their analysis of institutional investors effect on R&D with one exception; I substitute q for the book-to-market ratio. Following Dlugosz, Fahlenbrach, Gompers, and Metrick (2006), q is calculated as the market value of assets divided by the book value of assets where market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes.

I use total debt to total assets as a control because debt competes with R&D for firm cash flow. Earnings before interest and taxes (EBIT) scaled by total assets is used because earnings are often used to fund R&D. Insider owners have been shown to influence corporate policies (Morck, Shleifer, & Vishny, 1988). Therefore, I use insider percentage ownership and insider percentage ownership squared as controls. Firm size is controlled for using log of sales.

I add control variables to those used by Wahal and McConnell (2000). Capital expenditures compete with R&D for funds so capital expenditures scaled by assets is used as a control (Bushee, 1998). A control for firm life-cycle, retained earnings to the book value of total equity, which is used by DeAngelo, DeAngelo, and Stulz (2006) is used because R&D investment tends to change as a firm matures. Log of equity market capitalization is used to control for firm size because smaller firms are more likely to have less cash available for R&D investment (Jalilvand & Harris, 1984). Free cash flow scaled by total assets is used because limited cash flow can lead to reduced R&D (Bushee, 1998). Free cash flow is defined as net income plus depreciation and amortization minus capital expenditures.

Edmans (2009) and Bhide (1993) have theorized that investors with large holdings effect on investment policy is reliant on stock liquidity. Therefore, I use firm stock turnover as a control for liquidity. Firm stock turnover is defined as the number of common shares traded in a year divided by common shares outstanding. Detailed definitions of all variables are shown in Table 1.

4.2 Methods

It is important to my analysis to determine is if institutional investors influence R&D investment. If R&D investment levels influence institutional investors, this can distort my results. Therefore, I use a regression methodology which establishes causality and controls for endogeneity. Initially, I attempted two-stage least squares' regressions with instrumental variables. Unfortunately, I was unable to find instrumental variables which met statistical and conceptual requirements.

Table 1. Variable definitions-R&D

Variable	Description	Definition
	Panel A: Summary Statistics and Correlation Table Variables	
N	Number of Firms	The number of firms.
Inst	Institutional Ownership	The fraction of shares owned by institutional investors.
R&D	R&D Expenses	Research and development expenses divided by previous year's sales
q	Investment Opportunities	Market value of assets to the book value of assets
MktCap	Market Capitalization	The dollar market value of common stock in millions.
LifeCycle	Firm Life-cycle	The ratio of retained earnings to total equity.
Liquidity	Stock Turnover	Number of common shares traded in a year divided by common shares outstanding
FCF	Free Cash Flow	Net income plus depreciation and amortization minus capital expenditures scaled by total assets.
	Panel B: Regression Dependent Variables (Measured as changes in values from year $t-1$ to t.)	
R&D_Incr	R&D Increase	Binary variable equal to one if there is an increase in R&D expenses per split-adjusted common share and zero otherwise.
R&D_Decr	R&D Decrease	Binary variable equal to one if there is a decrease in R&D expenses per split-adjusted common share and zero otherwise.
R&D_Assets	R&D to Assets	R&D expenses divided by previous year's total assets
	Panel C: Regression Independent Variables (Measured as changes in values from year $t-2$ to t - 1.)	
Inst	Institutional Ownership	The fraction of shares owned by institutional investors.
q	Investment Opportunities	Market value of assets to the book value of assets
Debt	Debt Ratio	Debt to assets.
ROA	Return on Assets	Earnings before interest and taxes divided by total assets.
Insider	Insider Ownership	The fraction of shares owned by insiders.
Insider2	Insider Ownership Squared	The squared value of Insider.
MktCap	Market Capitalization	The dollar market value of common stock in millions.
CapEx	Capital Expenditures	Capital expenditures to total assets
FCF	Free Cash Flow	Net income plus depreciation and amortization minus capital expenditures scaled by total assets.
Liquidity	Stock Turnover	Number of common shares traded in a year divided by common shares outstanding
LifeCycle	Firm Life-cycle	The ratio of retained earnings to total equity.
Revenue	Revenue	The logarithm of firm revenue.

I establish causality by using fixed effects regressions on changes in dependent variables from year t–1 to t on changes in independent variables from t–2 to t–1. Firm fixed effect regressions control for all stable characteristics of a firm including industry and unmeasured characteristics. I employ dummy variables for each year to account for time-varying omitted characteristics. Firm fixed effects with yearly dummy variables limit endogeneity problems. An intercept for each firm for each year is created by the use of yearly dummy variables and fixed effects. These intercepts are an average value of the unobserved fixed effects for each firm-year and are not relevant to my analysis. Therefore, their values are not reported.

I add robustness to my results and address potential endogeneity more comprehensively by using a difference generalized method of moments (GMM) methodology based on the Holtz-Eakin, Newey, and Rosen (1988) methodology with refinements and validity tests developed by Arellano and Bond (1991). I use the Stata command xtabond2 developed by (Roodman, 2009) to implement the methodology.

The difference GMM methodology is especially useful in panel samples like mine with a limited number of time periods and many firms. My sample consists of a maximum of 16 years of data for over 10,000 firms. Difference GMM uses lagged values of the dependent and independent variables of interest as instruments and removes fixed effects. It avoids endogeneity problems associated with autocorrelation in the dependent variable and with the inclusion of lagged independent variables. Almeida, Campello, and Galvao (2010) find that difference GMM is effective in regressions using sample data that contains firm-fixed effects and heteroskedasticity.

Difference GMM uses lagged endogenous regressors as instruments. This shrinks the sample size because at least one year of data has to be dropped for each firm. In my analysis, I only have to drop one year of data for each firm.

The dependent variables in my regressions depend on past realizations because current R&D investment policy is largely dependent on past R&D investment policy. In my difference GMM robustness checks, the independent variables of interest are assumed to be endogenous. In fact, the main purpose of difference GMM robustness checks is to control for the expected endogenous relationship between R&D investment policy and institutional ownership.

My implementation of difference GMM results in the following model.

$$\Delta Policy_{it} = \Delta Policy_{it-1} + \Delta Inst_{it-1} + \beta \bullet \Delta Control_{it-1} + \Delta\varepsilon_{it} \quad (1)$$

In this model, $Policy_{it}$ represents the change in the firm R&D investment policy. $Policy_{it-1}$ represents the change in firm repurchase policy in the previous year. The independent variable $Inst_{it-1}$ represents the change in institutional ownership percentage in the previous year. $\mathrm{Control}_{it-1}$ represents a vector of time-varying firm level control variables. Year dummies are included as control variables to remove time-related shocks that affect all firms. The ε_{it} term represents a time-varying observation-specific error term. The difference GMM methodology uses first-differences thus removing the firm-fixed effects because they are time invariant.

I was able to use the first lag of independent policy and institutional variables in all my regressions as an instrument. I use two tests of model validity which are recommended by Roodman (2009): the Hansen-Sargan *J*-test and the Arellano-Bond test for second-order autocorrelation in differenced residuals. For both tests, a higher *p*-value indicates a valid model while *p*-values of less than 0.10 indicate an invalid model. AR(1) autocorrelation in differenced residuals is expected. The Arellano-Bond test for second-order autocorrelation is important because AR(2) autocorrelation indicates an invalid model. Therefore, I do not use any models in which the null hypothesis of no AR(2) autocorrelation is rejected at the 10% level.

4.3 Summary Statistics

Table 2 displays sample summary statistics. Panel A includes all firms and panel B includes only firm-years in which the firm made R&D investments. Statistics are shown for two time periods, 1990–1997 and 1998–2005, and for the total sample. Means are shown and medians are shown in parentheses below.

There are some notable patterns in the statistics. Institutional investors' percentage ownership increases from the early period to the late period. The institutional ownership levels for all firms and for firms that invest in R&D is rather similar. There is an increase in R&D expenses to sales from the first period to the next. Skewness in all groups is indicated in the R&D to sales ratio because the average is much higher than the median. This skewness is the result of a few firms with very large R&D to sales ratios.

Firm size and *q* increase also increase in the second time period. Firm life-cycle is proxied by retained earnings to total equity. The ratio is higher for more mature firms. Firms are more mature in the earlier years. This is probably a result of firms conducting initial public offerings as the internet bubble expanded. Firms with R&D expenses are less mature and have higher liquidity than firms overall.

Table 3 displays selected firm variables correlations. An asterisk denotes correlations that are significant at the 5% level. R&D to sales (*R&D*) and Tobin's *q* (*q*) are inversely related with institutional ownership (*Inst*). Institutional ownership is positively related to free cash flow to assets (*FCF*) and the market value of common stock (*MktCap*). My firm-life cycle proxy, retained equity to total equity (*LifeCycle*), is not significantly correlated with any of the other variables.

Table 2. Summary statistics

Panel A: All Firms								
Years	*N*	*Inst*	*R&D*	*q*	*MktCap*	*LifeCycle*	*Liquidity*	*FCF*
1990 - 1997	37492	28.9%	1.155	2.81	2106	-0.69	4.46	-0.16
		(23.6%)	(0.000)	(1.85)	(163)	(0.29)	(0.64)	(0.01)
1998 - 2005	42398	33.3%	1.656	4.68	4891	-0.53	4.80	-0.39
		(25.8%)	(0.003)	(1.86)	(350)	(0.18)	(0.86)	(0.01)
Total	79890	31.3%	1.433	3.82	3603	-0.61	4.64	-0.28
		(24.6%)	(0.000)	(1.85)	(239)	(0.24)	(0.74)	(0.01)
Panel B: Firms with R&D Expenses								
1990 - 1997	17240	29.8%	2.479	3.04	3007	-1.75	6.88	-0.11
		(24.1%)	(0.059)	(2.12)	(157)	(0.26)	(0.75)	(0.02)
1998 - 2005	21751	33.3%	3.197	3.97	6360	-0.48	6.30	-0.33
		(25.8%)	(0.096)	(2.23)	(317)	(0.01)	(1.01)	(-0.00)
Total	38991	31.8%	2.896	3.56	4894	-1.04	6.55	-0.24
		(24.9%)	(0.078)	(2.18)	(226)	(0.14)	(0.88)	(0.01)

Means are shown on the first row and medians are shown in parentheses on the second row.

Table 3. Correlations

	R&D	*Inst*	*q*	*MktCap*	*LifeCycle*	*Liquidity*
Inst	-0.0133*					
q	0.0028	-0.0135*				
MktCap	-0.0049	0.0865*	-0.0019			
LifeCycle	-0.0010	0.0013	0.0013	0.0009		
Liquidity	-0.0002	-0.0009	-0.0003	-0.0008	0.0002	
FCF	-0.0032	0.0232*	-0.4194*	0.0023	-0.0008	0.0000

* indicates two-tailed significance at 5%.

5. The Effect of Institutional Owners and Information Asymmetry on R&D Investment

Wahal and McConnell (2000) note that despite the advantages of R&D investment in the long-term; R&D reduces current income because it is expensed immediately. This provides an incentive for management to engage in managerial myopia by underinvesting in R&D. I mimic their method for showing a negative relationship between current R&D investment and current earnings using my sample.

I use firm fixed effect regressions using current year net income before extraordinary items divided by total assets from the previous year as the dependent variable. Current R&D expenditures divided by the previous year's sales is the only independent variable. The results, which are not shown in a table, provide evidence for a negative relationship between the two variables.

I run the regression for the entire sample, for 1990–1997, and for 1998–2005. The coefficient is significantly negative in each case with *t*-statistics of 8.58, 3.80 and 5.67 respectively. I run the regression on a yearly basis and the coefficient is negative for each year with a minimum *t*-statistic of 2.10. The value for R^2 is over 0.05 for all but two of the years. My findings are similar to that of Wahal and McConnell (2000) in that R&D investment reduces current earnings.

I use the following firm and year fixed effects logit model to examine the effect that institutional investor ownership levels have on R&D investment.

$$RDChg_{it} = Year_t + Firm_i + Inst_{it-1} + \beta \bullet Control_{it-1} + \varepsilon_{it} \tag{2}$$

The dependent variable $RDChg_{it}$ is a binary variable set to one if there is an increase in R&D investment per share. In a robustness check it is set to one if there is a *decrease* in R&D investment per share. The independent variable $Inst_{it-1}$ represents the effect that changes in institutional ownership percentage have on R&D investment increases (or decreases in the robustness check) in the following year.

Table 4. Institutional ownership and R&D

	(1)	(2)	(3)	(4)	(5)	(6)
	All Firms	All Firms	No R&D Incr. in year *t* - 2	R&D Incr. in year *t* - 2	1990–1997	1998–2005
	R&D_Incr	*R&D_Incr*	*R&D_Incr*	*R&D_Incr*	*R&D_Incr*	*R&D_Incr*
Inst		0.8576***	0.8496***	0.6722***	0.8601***	0.8353***
		(5.54)	(3.13)	(2.95)	(2.73)	(4.30)
q	-0.0406***	-0.0374***	-0.0366***	-0.0470***	-0.0797***	-0.0290***
	(4.97)	(4.64)	(2.94)	(3.23)	(3.17)	(3.46)
Debt	-0.0920	-0.0807	0.1262	-0.5816**	-0.7951**	-0.0231
	(1.18)	(1.04)	(1.10)	(2.39)	(2.27)	(0.33)
ROA	0.1942*	0.1969*	-0.0509	0.1756	0.8265**	0.1590
	(1.84)	(1.85)	(0.40)	(0.75)	(2.30)	(1.36)
Insider	-0.1552	-0.1622	-0.6080	0.8499	-0.8434	0.5605
	(0.46)	(0.48)	(1.12)	(1.57)	(1.36)	(1.28)
Insider2	0.3269	0.3213	1.0153	-0.7765	1.2460*	-0.7551
	(0.74)	(0.72)	(1.39)	(1.10)	(1.66)	(1.24)
MktCap	0.6717***	0.6324***	0.6192***	0.6859***	0.5291***	0.5797***
	(15.48)	(14.48)	(9.16)	(9.06)	(4.93)	(11.33)
CapEx	0.2181	0.1729	0.1679	-0.0410	-0.2828	0.5615*
	(0.96)	(0.76)	(0.47)	(0.12)	(0.67)	(1.77)
FCF	0.1560**	0.1637***	0.1714*	0.3113**	0.5970**	0.1402**
	(2.54)	(2.59)	(1.89)	(2.27)	(2.46)	(2.04)
Liquidity	-0.0001	-0.0001	-0.0001	0.0188	-0.0001	0.0215*
	(0.24)	(0.23)	(0.18)	(0.98)	(0.13)	(1.65)
LifeCycle	0.0001	0.0001	0.0001	-0.0025**	0.0001	0.0001
	(0.66)	(0.64)	(0.91)	(2.21)	(0.21)	(0.78)
Revenue	0.0912**	0.0849**	0.0272	0.2382***	-0.0477	0.0572
	(2.47)	(2.30)	(0.53)	(3.37)	(0.57)	(1.27)
Observations	18434	18215	6627	8630	4888	10919
Number of Firms	2769	2757	1607	1814	1236	2126
Pseudo R-sqr.	0.04	0.05	0.06	0.07	0.04	0.06

Absolute value of z statistics in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

This table reports estimates of firm and year fixed effect logit regressions of increases (from year *t* - 1 to *t*) in R&D expenditures (*R&D_Incr*). All independent variable values are calculated as changes in that independent variable from year *t* - 2 to *t* - 1. Regressions (1) and (2) include all firms. Regression (3) includes only firms that had no R&D increase in year *t* - 2 and regression (4) includes only firms that had an R&D increase in year *t* - 2. Regression (5) includes the years from 1990 to 1997. Regression (6) includes the years from 1998 to 2005.

In model 2, $Year_t$ represents year fixed effects and firm fixed effects are represented by $Firm_i$. $Control_{it-1}$ is a vector of time-varying firm level control variables which consists of: *q*, debt, ROA, insider ownership, insider ownership squared, log of market capitalization, capital expenditures to assets, free cash flow to assets, stock turnover, retained equity to total equity, and log of revenue. The error term is denoted by ε_{it}.

The independent variables are quantified as the change from year $t - 2$ to year $t - 1$. The dependent variable is quantified as the change in R&D from year t - 1 to year t. Firms that increase their R&D investment in every year of the sample and firms that don't increase their R&D investment in any year of the sample are dropped from the regression. This an advantage to the logit model since only firms that change R&D policy are included in regression samples.

Table 5. Institutional ownership, R&D, and firm life-cycle

	(1)	(2)	(3)
	Early *LifeCycle*	Middle *LifeCycle*	Late *LifeCycle*
	R&D_Incr	*R&D_Incr*	*R&D_Incr*
Inst	0.6381**	0.7078***	0.4883
	(2.09)	(2.80)	(1.43)
q	-0.0458***	-0.0334*	-0.0017
	(3.35)	(1.83)	(0.09)
Debt	-0.3202	-1.0502***	0.0176
	(1.08)	(2.89)	(0.26)
ROA	0.5454***	0.6316	-0.1661
	(3.55)	(1.37)	(0.97)
Insider	0.3653	-0.0498	-0.6912
	(0.62)	(0.08)	(0.99)
Insider2	-0.1883	0.2393	1.0595
	(0.23)	(0.30)	(1.18)
MktCap	0.5805***	0.6403***	0.5050***
	(8.46)	(6.70)	(4.64)
CapEx	0.6182	0.1985	-0.6114
	(1.58)	(0.50)	(0.91)
FCF	0.0582	0.6432**	0.2967*
	(0.73)	(1.97)	(1.91)
Liquidity	0.0847***	0.0017	-0.0929**
	(3.84)	(0.09)	(2.03)
LifeCycle	0.0002	-0.0460	-0.0002
	(1.12)	(1.13)	(0.52)
Revenue	-0.0130	0.1008	0.3387**
	(0.30)	(0.85)	(2.41)
Observations	4637	5793	5693
Number of Firms	1028	1154	855
Pseudo R-squared	0.09	0.06	0.03

Absolute value of z statistics in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

This table reports estimates of firm and year fixed effect logit regressions of increases (from year t - 1 to t) in R&D expenditures (*R&D_Incr*). All independent variable values are calculated as changes in that independent variable from year t - 2 to t - 1. Sample firms used in regressions (1), (2), and (3) include only Early, Middle, and Late *LifeCycle* firms, respectively. The Early, Middle, and Late *LifeCycle* groups include the lowest three, middle four, and highest three *LifeCycle* deciles from year t - 1, respectively. Deciles are formed on a yearly basis.

The effects that institutional ownership changes have on per share increases in R&D investment in the subsequent year are displayed in Table 4. The second regression shows that increased institutional ownership increases the probability that a firm will increase R&D investment in the ensuing year. This could be because institutional investors tend to invest more in firms that regularly increase their R&D investment. Therefore, the third regression is run only on firms that did not increase R&D investment in year *t* – 2. Once again, an increase in institutional investor ownership increases the probability of an R&D investment increase in the ensuing year. The last regression is run on firms that increased R&D investment in year *t* – 2. Evidently, institutional investors encourage R&D investment increases in firms that had previously increased their R&D as well. The fifth and sixth regressions demonstrate that higher institutional ownership results in increased R&D for both the 1990 – 1997 and 1998 – 2005 time periods.

Table 6. R&D and firm life-cycle (GMM)

	(1)	(2)	(3)
	All Firms	Early *LifeCycle*	Late *LifeCycle*
	R&D_Assets	*R&D_Assets*	*R&D_Assets*
Inst	0.0744**	0.0950*	0.0537
	(2.02)	(1.73)	(0.95)
R&D_Assets	0.2364**	0.2167**	-0.0971
	(2.43)	(2.45)	(0.55)
q	0.0392***	0.0357***	0.0415*
	(2.73)	(3.77)	(1.95)
Debt	-0.0442	0.1095	-0.0130
	(0.29)	(0.63)	(0.28)
ROA	0.1129	-0.0665	0.0741
	(1.21)	(0.62)	(1.15)
Insider	0.9170*	0.6558*	-0.0378
	(1.72)	(1.79)	(0.07)
Insider2	-1.6853**	-1.2905**	-0.0613
	(2.15)	(2.18)	(0.08)
MktCap	-0.1634**	-0.1351***	-0.1605
	(2.49)	(2.99)	(1.43)
CapEx	-0.0658	-0.1652	0.5296
	(0.30)	(0.45)	(1.60)
FCF	-0.0575	0.0729	-0.0562
	(0.61)	(1.02)	(0.77)
Liquidity	0.0000	0.0000	0.0000
	(0.13)	(0.01)	(0.68)
LifeCycle	0.0000	0.0000	-0.0004
	(0.22)	(0.21)	(0.74)
Revenue	0.0074	0.1379***	-0.0850
	(0.21)	(3.04)	(1.45)
Observations	14341	6759	7859
Firms	3127	2029	1768
Chi2 (*p*-value)	0.000	0.000	0.049

J *p*-value	0.343	0.676	0.569
AR(2) *p*-value	0.610	0.189	0.213
Inst lag limits	None	None	None
R&D lag limit	3	1	None

Robust z stats in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%.

This table reports estimates generated by difference GMM of changes (from year t - 1 to t) in R&D expenditures divided by assets (*R&D_Assets*). All independent variable values are changes from year t - 2 to t - 1. Regressions (2) and (3) include only Early and Late *LifeCycle* firms (the lowest and highest five deciles from year t - 1), respectively. Deciles are formed on a yearly basis. *J* is the Hansen-Sargan test of overidentifying restrictions. AR(2) is the Arellano-Bond test of second-order autocorrelation in the errors. Independent variables *Inst* and *R&D_Assets* are instrumented using GMM-type instrument lags. The maximum available lags which produce a valid model are used.

An increase in institutional investor ownership percentage generally leads to increased R&D investment, no matter if the firm increased their R&D investment in the previous year or not.

A logical extrapolation from this finding is that institutional owners will discourage R&D decreases. I verified this by running regressions identical to those in Table 4, but with a *decrease* in R&D investment as the binary dependent variable. The results (not displayed) are virtually a mirror image of the Table 4 results indicating that institutional owners discourage cuts in R&D.

My hypothesis states that institutional investors will encourage R&D investment more in firms that have high information asymmetry because their superior monitoring ability will allow them to discern the value of R&D investments more readily in such firms. I test this hypothesis using retained earnings to total equity (*LifeCycle*) as a proxy for information asymmetry. DeAngelo et al. (2006) use this measure as a proxy for firm life-cycle. They assert that this is a valid proxy for firm information asymmetry. This assertion appears logical because the more mature a firm is the more information an investor will have about the firm to judge its prospects, all else being equal.

I sort the sample of firms each year into information asymmetry deciles. I assign each firm-year to one of three groups. Firms in the bottom three deciles (Early *LifeCycle*) have high information asymmetry, those in the next four deciles (Middle *LifeCycle*) have moderate information asymmetry, and those in the highest three deciles (Late *LifeCycle*) have low information asymmetry.

The median R&D to sales ratio for firm-years in which a firm made an R&D investment in the early, middle, and late *LifeCycle* groups are 19.26%, 6.95% and 3.40% respectively. The percentage of firm-years in which the firm made an R&D investment in the early, middle, and late *LifeCycle* groups are 60%, 44% and 47% respectively. Thus, firms earlier in their *LifeCycle* (with higher information asymmetry) are prone to invest more and more often in R&D.

I run regressions using the firm and year fixed effects model 2 that shows the effect that changes in institutional ownership have on R&D investment increases in the subsequent year. Regressions are run on the early, middle, and late *LifeCycle* groups separately based on which group a firm is in during year t – 1. The results are shown in Table 5.

The first two regressions show that institutional investors encourage R&D increases in firms with high and moderate information asymmetry. The third regression shows that institutional investors do not encourage R&D investment increases at a significant level in firms with low information asymmetry. The pattern indicates that institutional investors encourage R&D investment more in firms with higher information asymmetry.

Table 6 displays my results using the Arellano and Bond (1991) difference linear GMM dynamic panel data methodology. This methodology controls for endogeneity issues. Difference GMM is a linear method. Therefore, I use changes in R&D to assets as my dependent variable when using this method. The results indicate that increased institutional investor ownership levels gives rise to an increase in R&D investment. Regression 2 indicates that increased institutional investor ownership levels leads to increased R&D in firms with high information asymmetry. Institutional investors have no significant effect on R&D in firms with high information asymmetry (regression 3).

In another robustness check which is displayed in Table 7, I use R&D intensity (R&D to total assets) instead of firm life-cycle (retained earnings to the book value of total equity) as a proxy for firm information asymmetry and get results which indicate that institutional investors encourage R&D in all firms, but this relationship appears to get stronger as R&D intensity (and information asymmetry) increases.

My results are consistent with the assertion that the superior monitoring ability of institutional investors allows them to discern the value of R&D investments more readily than other investors, even in firms with high information asymmetry.

Table 7. R&D and R&D Intensity

	(1)	(2)	(3)
	Low *R&D_Assets*	Medium *R&D_Assets*	High *R&D_Assets*
	R&D_Incr	*R&D_Incr*	*R&D_Incr*
Inst	0.6061*	0.6958**	1.3596***
	(1.90)	(2.48)	(4.41)
q	-0.0992*	-0.1526***	-0.0467***
	(1.71)	(5.61)	(4.22)
Debt	-0.1701	-0.1101	0.0520
	(0.52)	(0.37)	(0.45)
ROA	0.2177	0.8210**	-0.0103
	(0.50)	(2.47)	(0.06)
Insider	-0.7198	0.1148	0.8346
	(1.08)	(0.18)	(1.15)
Insider2	0.9051	-0.0948	-0.9809
	(1.05)	(0.11)	(1.00)
MktCap	0.7306***	0.9929***	0.7954***
	(5.15)	(9.19)	(9.95)
CapEx	0.8465	0.7958	0.8958**
	(1.45)	(1.62)	(1.97)
FCF	0.0500	0.1900	0.4066***
	(1.05)	(1.25)	(2.76)
Liquidity	0.0199	0.0156	-0.0001
	(0.49)	(0.83)	(0.16)
LifeCycle	0.0036	0.0003	-0.0000
	(1.50)	(0.84)	(0.09)
Revenue	0.0361	0.1874*	0.0331
	(0.26)	(1.69)	(0.60)
Observations	4848	6044	3856
Number of Firms	828	1145	817
Pseudo R-squared	0.03	0.08	0.12

Absolute value of z statistics in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

This table reports estimates of firm and year fixed effect logit regressions of increases (from year t - 1 to t) in R&D expenditures (*R&D_Incr*). All independent variable values are calculated as changes in that independent variable from year t - 2 to t - 1. Sample firms used in regressions (1), (2), and (3) include only Low, Medium and High *R&D_Assets* firms, respectively. The Low, Medium and High *R&D_Assets* groups include the lowest three, middle four, and highest three *Liquidity* deciles from year t - 1, respectively. Deciles are formed on a yearly basis.

6. Discussion

Institutional investors are important owners of U.S. corporations, owning approximately 70% of U.S. publicly owned shares. The amount of investment that a firm allocates to research and development (R&D) is an important policy decision for many corporations.

Institutional investors are better informed than other investors. Institutional owners should be able to gauge the long-term benefit of R&D investment more precisely than non-institutional investors. Therefore, I propose a hypothesis that predicts that the positive relationship between institutional investors and future R&D investment will strengthen in firms with higher information asymmetry. My results support this prediction. I find that Institutional investors encourage higher R&D investment primarily in firms with high information asymmetry indicating they have an advantage in discerning the value of R&D investments in such firms.

This study is limited to U.S. listed stocks and thus is only directly applicable to U.S. firms and the institutional investors that invest in them. Further research is required to see if the findings here can be expanded to include firms from other countries.

Institutional investor increases precede increases in research and development (R&D) investment overall and specifically in firms with higher information asymmetry. Institutional investors effectively induce management to conduct long-term R&D investment policies that are advantageous to the firm. This should increase firm value and benefit all owners of the company. Additionally, this should benefit the management of the firm as they are encouraged to invest in R&D projects that may only benefit the company in the long-term. Determining if firm value actually increases from the influence of institutional investors on R&D investment policy is a subject for future research.

References

Aboody, D., & Lev, B. (2000). Information Asymmetry, R&D, and Insider Gains. *Journal of Finance*, *55*(6), 2747–2766. http://dx.doi.org/10.1111/0022-1082.00305

Almazan, A., Hartzell, J. C., & Starks, L. T. (2005). Active institutional shareholders and costs of monitoring: Evidence from executive compensation. *Financial Management*, *34*(4), 5–34. http://dx.doi.org/10.1111/j.1755-053X.2005.tb00116.x

Almeida, H., Campello, M., & Galvao, A. F. (2010). Measurement errors in investment equations. *Review of Financial Studies, 23*(9), 3279–3328. http://dx.doi.org/10.1093/rfs/hhq058

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies, 58*(2), 277–297. http://dx.doi.org/10.2307/2297968

Baber, W. R., Fairfield, P. M., & Haggard, J. A. (1991). The effect of concern about reported income on discretionary spending decisions: The case of research and development. *Accounting Review, 66*(4), 818–829.

Bange, M. M., & De Bondt, W. F. (1998). R&D budgets and corporate earnings targets. *Journal of Corporate Finance, 4*(2), 153–184. http://dx.doi.org/10.1016/S0929-1199(98)00006-6

Bennett, J. A., Sias, R. W., & Starks, L. T. (2003). Greener pastures and the impact of dynamic institutional preferences. *Review of Financial Studies, 16*(4), 1203–1238. http://dx.doi.org/10.1093/rfs/hhg040

Bhide, A. (1993). The hidden costs of stock market liquidity. *Journal of Financial Economics, 34*(1), 31–51. http://dx.doi.org/10.1016/0304-405X(93)90039-E

Bhojraj, S., Hribar, P., Picconi, M., & McInnis, J. (2009). Making sense of cents: An examination of firms that marginally miss or beat analyst forecasts. *The Journal of Finance, 64*(5), 2361–2388. http://dx.doi.org/10.1111/j.1540-6261.2009.01503.x

Bhojraj, S., & Libby, R. (2005). Capital market pressure, disclosure frequency-induced earnings/cash flow conflict, and managerial myopia. *The Accounting Review, 80*(1), 1–20. http://dx.doi.org/10.2308/accr.2005.80.1.1

Bogle, J. C. (2010, 19 January). Restoring Faith in Financial Markets. *The Wall Street Journal*, p. A17.

Bushee, B. J. (1998). The influence of institutional investors on myopic R&D investment behavior. *Accounting Review, 73*(3), 305–333.

Cazier, R. A. (2011). Measuring R&D curtailment among short-horizon CEOs. *Journal of Corporate Finance,* *17*(3), 584–594. http://dx.doi.org/10.1016/j.jcorpfin.2011.02.005

Chan, L. K., Lakonishok, J., & Sougiannis, T. (2001). The Stock Market Valuation of Research and Development Expenditures. *Journal of Finance, 56*(6), 2431–2456. http://dx.doi.org/10.1111/0022-1082.00411

Chemmanur, T. J., He, S., & Hu, G. (2009). The role of institutional investors in seasoned equity offerings. *Journal of Financial Economics, 94*(3), 384–411. http://dx.doi.org/10.1016/j.jfineco.2008.12.011

Cheng, M., Subramanyam, K., & Zhang, Y. (2007). *Earnings Guidance and Managerial Myopia*. Working paper, Kellogg School of Management, Northwestern University, Evanston.

Coles, J. L., Daniel, N. D., & Naveen, L. (2006). Managerial incentives and risk-taking. *Journal of Financial Economics, 79*(2), 431–468. http://dx.doi.org/10.1016/j.jfineco.2004.09.004

David, P., Hitt, M. A., & Gimeno, J. (2001). The Influence of Activism by Institutional Investors on R&D. *Academy of Management Journal, 44*(1), 144–157. http://dx.doi.org/10.2307/3069342

DeAngelo, H., DeAngelo, L., & Stulz, R. M. (2006). Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory. *Journal of Financial Economics, 81*(2), 227–254. http://dx.doi.org/10.1016/j.jfineco.2005.07.005

Dechow, P. M., & Sloan, R. G. (1991). Executive incentives and the horizon problem: An empirical investigation. *Journal of Accounting and Economics, 14*(1), 51–89. http://dx.doi.org/10.1016/0167-7187(91)90058-S

Dlugosz, J., Fahlenbrach, R., Gompers, P., & Metrick, A. (2006). Large blocks of stock: Prevalence, size, and measurement. *Journal of Corporate Finance, 12*(3), 594–618. http://dx.doi.org/10.1016/j.jcorpfin.2005.04.002

Eberhart, A. C., Maxwell, W. F., & Siddique, A. R. (2004). An Examination of Long - Term Abnormal Stock Returns and Operating Performance Following R&D Increases. *The Journal of Finance, 59*(2), 623–650. http://dx.doi.org/10.1111/j.1540-6261.2004.00644.x

Edmans, A. (2009). Blockholder trading, market efficiency, and managerial myopia. *The Journal of Finance, 64*(6), 2481–2513. http://dx.doi.org/10.1111/j.1540-6261.2009.01508.x

Field, L. C., & Lowry, M. (2009). Institutional versus individual investment in IPOs: The importance of firm fundamentals. *Journal of Financial and Quantitative Analysis, 44*(3), 489–516. http://dx.doi.org/10.1017/S0022109009990032

Froot, K. A., Perold, A. F., & Stein, J. C. (1992). Shareholder Trading Practices And Corporate Investment Horizons. *Journal of Applied Corporate Finance, 5*(2), 42–58. http://dx.doi.org/10.1111/j.1745-6622.1992.tb00489.x

Gibbons, R., & Murphy, K. J. (1992). Does Executive Compensation Affect Investment? *Journal of Applied Corporate Finance, 5*(2), 99–109. http://dx.doi.org/10.1111/j.1745-6622.1992.tb00493.x

Gillan, S. L., & Starks, L. T. (2007). The Evolution of Shareholder Activism in the United States. *Journal of Applied Corporate Finance, 19*(1), 55–73. http://dx.doi.org/10.1111/j.1745-6622.2007.00125.x

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics, 40*(1), 3–73. http://dx.doi.org/10.1016/j.jacceco.2005.01.002

Harter, C. I., & Harikumar, T. (2004). Management Compensation And Project Life. *Journal of Applied Business Research (JABR), 20*(4), 65–71.

Holden, C. W., & Lundstrum, L. L. (2009). Costly trade, managerial myopia, and long-term investment. *Journal of Empirical Finance, 16*(1), 126–135. http://dx.doi.org/10.1016/j.jempfin.2008.05.001

Holtz-Eakin, D., Newey, W., & Rosen, H. S. (1988). Estimating vector autoregressions with panel data. *Econometrica: Journal of the Econometric Society, 56*(6), 1371–1395.

Huang, R. D., & Shiu, C. Y. (2009). Local effects of foreign ownership in an emerging financial market: Evidence from qualified foreign institutional investors in Taiwan. *Financial Management, 38*(3), 567–602. http://dx.doi.org/10.1111/j.1755-053X.2009.01048.x

Jalilvand, A., & Harris, R. S. (1984). Corporate Behavior in Adjusting to Capital Structure and Dividend Targets: An Econometric Study. *The Journal of Finance, 39*(1), 127–145. http://dx.doi.org/10.1111/j.1540-6261.1984.tb03864.x

Jensen, M. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *Corporate Finance, and*

Takeovers. American Economic Review, 76(2), 323–329.

Kothari, S., Laguerre, T. E., & Leone, A. J. (2002). Capitalization versus expensing: Evidence on the uncertainty of future earnings from capital expenditures versus R&D outlays. *Review of Accounting Studies, 7*(4), 355–382. http://dx.doi.org/10.1023/A:1020764227390

Le, S. A., Walters, B., & Kroll, M. (2006). The moderating effects of external monitors on the relationship between R&D spending and firm performance. *Journal of Business Research, 59*(2), 278–287. http://dx.doi.org/10.1016/j.jbusres.2005.04.003

Maug, E. (1998). Large Shareholders as Monitors: Is There a Trade-Off between Liquidity and Control? *Journal of Finance, 53*(1), 65–98. http://dx.doi.org/10.1111/0022-1082.35053

Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics, 20*(1), 293–315. http://dx.doi.org/10.1016/0304-405X(88)90048-7

Parrino, R., Sias, R. W., & Starks, L. T. (2003). Voting with their feet: Institutional ownership changes around forced CEO turnover. *Journal of Financial Economics, 68*(1), 3–46. http://dx.doi.org/10.1016/S0304-405X(02)00247-7

Porter, M. E. (1992). Capital disadvantage: America's failing capital investment system. *Harvard Business Review, 70*(5), 65–82.

Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. *Stata Journal, 9*(1), 86–136.

Samuel, C. (2000). Does shareholder myopia lead to managerial myopia? A first look. *Applied Financial Economics, 10*(5), 493–505. http://dx.doi.org/10.1080/096031000416370

Stein, J. C. (1988). Takeover threats and managerial myopia. *The Journal of Political Economy, 96*(1), 61–80.

Stein, J. C. (1989). Efficient capital markets, inefficient firms: A model of myopic corporate behavior. *The Quarterly Journal of Economics, 104*(4), 655–669.

Sundaram, A. K., John, T. A., & John, K. (1996). An empirical analysis of strategic competition and firm values the case of R&D competition. *Journal of Financial Economics, 40*(3), 459–486. http://dx.doi.org/10.1016/0304-405X(95)00853-7

Wahal, S., & McConnell, J. J. (2000). Do institutional investors exacerbate managerial myopia? *Journal of Corporate Finance, 6*(3), 307–329. http://dx.doi.org/10.1016/S0929-1199(00)00005-5

Zeckhauser, R. J., & Pound, J. (1990). Are large shareholders effective monitors? An investigation of share ownership and corporate performance. In R. G. Hubbard (Ed.), *Asymmetric information, corporate finance, and investment* (pp. 149–180). Chicago: University of Chicago Press, 1990.

Copyrights

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Regional Traffic & Medical Services and Cost Efficiency of International Tourist Hotels in Taiwan

Jin-Li Hu[1], Fang-Yu Yeh[2] & Yun-Chih Tsai[1]

[1] Institute of Business and Management, National Chiao Tung University, Taiwan

[2] Science & Technology Policy Research and Information Center, National Applied Research Laboratories, Taiwan

Correspondence: Jin-Li Hu, Institute of Business and Management, National Chiao Tung University, Taiwan. Tel: 02-23-812-386 ext. 57641. E-mail: jinlihu@gmail.com

Received: August 3, 2014 Accepted: September 2, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p36 URL: http://dx.doi.org/10.5539/ibr.v7n10p36

Abstract

This study analyzes how regional public transport facilities and medical services affect the efficiency of international tourist hotels (ITHs). First, we adopt data envelopment analysis (DEA) to measure the cost efficiency of international tourist hotels in Taiwan during 1998 to 2009. Next, we use the truncated regression to estimate the effect of traffic convenience and medical services on cost efficiency. The distance to international airports and distance to MRT station have significantly negative effects on cost efficiency of international tourist hotels, while the distance to the freeway exit, distance to bus station, and pick-up service, chain system, and shorter operating year have significantly positive impacts on their cost efficiency. The shorter distance to the hospital and more hospitals in a region significantly improve cost efficiency of ITHs in Taiwan.

Keywords: international tourist hotels, cost efficiency, travel convenience, medical services

1. Introduction

The demand for travelling has been increasing rapidly along with the economic growth and the dramatically improved quality of life. In recent years, tourism not only has become the main source of foreign exchange earnings, but also plays an indispensable role in economic development in most countries. The tourism industry is also one of the six emerging industries in Taiwan, and many strategies are developed to attract tourists in recent years. With the active promotion of the tourism industry by the Taiwanese Government, it has become more and more important in the economic development. Between 2005 and 2009, revenue of the tourism industry has increased by 4.5%, from 1.98% to 2.07% of GDP, and the number of employment has also increased by 32.8%, from 205,000 to 273,000 people (Chou et al., 2011).

According to the statistical results of the Taiwan Tourism Bureau, most tourists chose to lodge in the hotels, and they spent 39.32% of their total traveling expenditures in hotels (Chou et al., 2011). Tourists spent NT$ 165 billion dollars in the international tourist hotels (ITHs), which accounts for 62.12% among the total accommodation expenditures (Chou et al., 2011). Thus, international tourist hotel industry is one of the key successful sectors of the tourism industry. Since 1987, Taiwanese government has gradually removed the constraints in the *Regulation for the Management of Tourist Hotel Enterprises*; consequently the number of international tourist hotels in Taiwan has risen from 44 in 1985 to 70 in 2010, meanwhile becoming more competitive. In order to survive and gain profits, efficiency is an essential factor to be considered when developing strategies. Efficiency measurement can help the hotel managers control idle resources in the operating process as well as improve the allocation of resources, and it also enables the hotels to find their own strengths and weaknesses by comparing with the performance of the whole industry (Chen, 2007; Honma and Hu, 2012). Consequently, it is important to evaluate the efficiency appropriately and to utilize the factors which can improve the efficiency.

Transportation is the key factor for tourists to visit each tourist attraction, and it is also essential in tourism activities. A well-developed infrastructure for transportation is an important factor for tourists to choose and reach their destinations, and it is also one of the basic requirements for the development of tourism (Akama & Kieti, 2003). In addition, people may get sick or injured by accidents while travelling. If the patient could not receive immediate and appropriate medical treatment, then the degree of traveling risk shall increase and it will reduce the tourists' willingness to visit this destination again. Therefore, we want to analyze the effect of traffic convenience and medical services on the cost efficiency of hotels.

In this study, the cost efficiency of international tourist hotels in Taiwan during 1998-2009 is analyzed with a two-stage procedure. In the first stage, we adopt data envelopment analysis (DEA) to compute and rank the hotels according to their efficiency. In the second stage, we use the truncated regression suggested by Simar and Wilson (2007) to find out the effects of environmental variables (i.e., traffic convenience and regional medical services) on cost efficiency scores. We hope to assist the hotel manager, the hotel investor and the government to improve the hotel efficiency through the perspectives of transportation and public medical services.

The structure of this study is as follows: Section 2 gives a literature review on hotel efficiency and the interactive relations of traffic convenience and public medical services to tourism. Section 3 introduces the methodology and the data. Section 4 discusses the empirical results, and the conclusion is located in Section 5.

2. Literature Review

2.1 Hotel Efficiency

The concept of using frontier production function to measure efficiency is proposed by Farrell (1957), and he is the first one to divide cost efficiency into technical efficiency and allocative efficiency. Recently, there are more and more cases of study using the frontier approach to measure hotel performance, and DEA and SFA are two primary methods available to be found.

Anderson et al. (1999) use SFA to analyze the operating efficiency of 48 hotels in U.S.A. The input variables include the number of full-time equivalent employees, the number of rooms, total gaming related expenses, total food and beverage expenses and other expenses, while the output variables include the total revenues of rooms, gamming, food and beverage and other revenues. The results show that the average efficiency value of these hotels is 89.4%, which is comparatively higher and in consistent with the condition of a highly efficient and competitive market.

Barros and Mascarenhas (2005) analyze the efficiency of 43 Portuguese state-owned hotels by DEA. The input variables include the number of full-time equivalent employees, the book value of the premises, and the number of rooms, while the output variables include sales, the number of guests, and the aggregated number of nights spent. The results show that there are only four hotels achieving technical efficiency and allocative efficiency, and the hotels close to main tourist routes or with more rooms receive higher efficiency scores. Organizational management environments with accountability, transparency and efficiency incentives may also improve the hotel performance.

Barros and Dieke (2008) use revenue per room as the output variable, and they use total cost and investment expenditure as the input variables to analyze the technical efficiency of 12 Luanda hotels by DEA. Their study finds that the efficiency of these hotels may increase during the observation period, but at a decreasing rate. In addition, market share and joint members of a group may also positively affect the efficiency of these hotels.

There are also some researchers studying the efficiency of hotels in Taiwan. Tsaur (2001) investigate 53 international tourist hotels in Taiwan from 1996 to 1998 by DEA under 7 input and 6 output variables. The average operating efficiency is 87.33%, and the efficiency score for the catering divisions (89.05%) is better than that of the room divisions (71.3%). The hotels in chain operation are more efficient than others.

Hwang and Chang (2003) adopt DEA and the Malmquist method to measure the managerial performance of 45 international tourist hotels in Taiwan and the change of efficiency from 1994 to 1998. The result reveals that the efficiency of each hotel is significantly different according to its sources of customers and management styles. The study categorizes the hotel industries into six groups, based on efficiency and the change of efficiency, and suggests that the hotel managers can make strategies according to the characteristics of each group.

Chen (2007) studies the operating performance of 55 international tourist hotels by SFA and finds that the average efficiency is 80.3%. The highest efficiency score is 97.72%, and the lowest is 34.34%. A comparison between the efficiency of chain and non-chain hotels indicates that the former is better than the latter.

Hu et al. (2009) use two-stage DEA to compute and explain the cost efficiency of international tourist hotels in Taiwan. The input variables include the number of rooms, the number of employees, and total floor space of catering division, while the output variables include total revenues of food and beverages, total revenues of rooms, and other revenues. The result shows that the average cost efficiency is 57%, and the cost inefficiency is due in large part to technical inefficiency. The hotels in chain systems, located in resort areas, with a higher occupancy rate or near the international airports show significantly higher efficiency scores.

Chen et al. (2010) also employ DEA to measure the cost efficiency of international tourist hotels from 1997 to 2007 by using three input variables and three output variables. The research use Tobit regression in the second stage to analyze the effects of tourist nationalities on the cost efficiency of hotels.

Assaf et al. (2010) apply meta-frontier with four input variables and five output variables to analyze 78 international tourist hotels in Taiwan. They separate hotels into groups by size, ownership and classification. The result shows that the chain hotels, the larger hotels, and the international tourist hotels have higher efficiency scores.

2.2 Traffic Convenience and Medical Services

There are plenty of studies indicating that the development of transportation has deep connection with tourism industry. Khadaroo and Seetanah (2008) prove that transport infrastructure is an important factor in improving the international tourism flows. Prideaux (2000) outlines a transport cost model that identifies the significance of transport as a factor in destination development as well as in the selection of destinations by tourists. Transportation is also a key factor in the hotel industry, especially for the new investor and the travelers. Chou et al. (2008) probe into the indicators considered by investors in evaluating the location selection of hotels, showing that easy access to tourist attractions from hotel is an important factor. The convenience of location and parking are also two important factors for customers when choosing hotels (Saleh & Ryan, 1992).

This study measures from an economic perspective of the traffic convenience of hotels and tries to apply the concept of the travel cost method (TCM), which is widely used to estimate the value of non-market goods, to the hotel efficiency research. The traditional TCM model estimates the number of trips as a demand function by using the cost of traveling to the site (Loomis et al., 2000). However, the number of trips is underestimated because it did not consider traveling time in the traditional method. Brown and Nawas (1973) construct a travel cost model including transportation cost, time cost and access cost, and Earnhahrt (2004) further proves that transportation cost and time cost have a significantly negative effect on recreational demand.

Prideux (2000) points out that the distance travelled is a key factor in determining the importance of transportation cost when selecting a destination because it includes both the actual fare cost and the time element. Shieh et al. (2014) find that generally most tourists in Taiwan prefer a larger, older, and closer-to-airport hotel. We use the distance between each international tourist hotels and each public transport facility to represent transportation cost. The shorter distance from public transport facilities to hotels, the less transport cost spent, making it more convenient to access. We want to study in details whether traffic convenience would affect the efficiency of hotels, and what kind of public transport facilities would help improve the efficiency of their nearby hotels.

Medical concern is one of the major risk factors by tourists before traveling (Carter, 1998; Lepp & Gibson, 2003). International travelers may encounter the risks of receiving physical or psychological illness due of weather and hygiene problems, and the risks will be higher if countries visited provide inadequate medical services (World Health Organization, 2011). Tsaur et al. (1997) further demonstrated that medical support is also an important factor in evaluating health risks.

Public medical service is also a factor affecting tourists' decisions when choosing destinations. According to the previous investigations, sufficient public medical services have a positive impact on tourism development (Gauci et al., 2002). Batabyal & Ghosh (2012) also point that the development of medical sector may significantly increase in tourist arrivals. The result of Yang et al. (2010) is similar to other studies. They analyze the cases of tourist arrivals in China and find that sufficient public health care is helpful in attracting international tourists. In this study, we are also concerned about whether medical resources would influence the cost efficiency of hotels.

There are plenty of studies in hotel efficiency, and we summarize them in Table 1. We find that type (Tsaur, 2001; Hwang & Chang, 2003; Chen, 2007; Barros & Dieke, 2008; Hu et al., 2009, 2010; Chen et al., 2010; Assaf et al., 2010), location (Hwang & Chang, 2003; Barros & Mascarenhas, 2005; Chen, 2007; Hu et al., 2009; Hu et al., 2010), scale (Barros & Mascarenhas, 2005; Assaf et al., 2010), and the distance to the international airport (Hu et al., 2009; Chen, 2010; Shieh et al. 2014) are four variables used mostly in the existing literature for explaining the hotel efficiency. In the above literature, distance to an international airport is the only variable which is related to transportation. Since there is a strong relationship between traffic convenience and the hotel industry, we try to apply the concept of transportation cost to the research in hotel efficiency by using also other traffic-related variables, for example, the distances between public transport facilities and hotels. Public medical services are also an important concern in international travel, but there is currently lacking in any study which discusses the effect of medical services to hotel efficiency. We believe that more medical resources available for a hotel, the higher efficiency scores it would get. This is a new idea in the hotel industry. Overall, this study aims to focus on the issue that which kind of public transportation facilities will help improve the efficiency scores of their nearby hotels, and the actual effects of medical services on the hotel efficiency.

Table 1. Literature on hotel efficiency

Authors	Method	Unit	Main findings
Anderson et al. (1999)	SFA	48 America hotels, 1994	The average efficiency score is 89.4%, and it's consistent with a highly efficient and competitive market.
Barros & Mascarenhas (2005)	DEA	43 Portuguese hotels, 2001	Scale economies, organizational governance environmental and location affect the efficiency of hotels.
Barros & Dieke (2008)	DEA	12 Luanda hotels, 2000-2006	The efficiency score increase over the studied period. Greater market share and network management can improve the efficiency.
Tsaur (2001)	DEA	53 Taiwan hotels, 1996-1998	The average efficiency is 87.33%. The chain-hotels have higher efficiency scores.
Hwang & Chang (2003)	DEA	45 Taiwan hotels, 1994-1998	The average efficiency is 79.16%. The resort hotels and the international chain hotels have better performance.
Chen (2007)	SFA	55 Taiwan hotels, 2002	The average efficiency is 80.3%. The hotels of chain operation and the hotels located in resort area are more efficient.
Hu et al. (2009)	DEA	66 Taiwan hotels, 1997-2006	The average cost efficiency is 91.15%. Chain system, resort area, higher occupancy rate and near the international airports improve efficiency scores.
Chen et al. (2010)	DEA	Taiwan hotels, 1997-2007	The chain system, shorter distances to the international airport and established year can improve cost efficiency. The tourists' nationalities affect the cost efficiency.
Assaf et al. (2010)	Meta-frontier	78 Taiwan hotels, 2004-2008	The chain hotels, the large hotels and the international tourist hotels have higher efficiency scores.

3. Methodology and Data

3.1 Data Envelopment Analysis

Development envelopment analysis is a linear programming methodology to measure the efficiency of homogeneous decision-making units (DMUs). Reynolds (2003) points out that DEA focuses managers' attention on specific actions that will improve productivity; therefore, DEA holds great promise for studies aimed at enhancing productivity in hospitality-related operations. The DEA concept is proposed by Farrell (1957) and uses the production frontier to measure the performance. Charnes et al. (1978) construct the first DEA model based on Farrell. They adopt linear programming with multiple inputs and multiple outputs to measure the cost efficiency under the presumptions of constant returns to scale and input orientation. This model is called the CCR model. A fundamental assumption under the CCR model is constant returns to scale (CRS).

We apply the input-oriented CCR model to measure the technical efficiency (TE_{CRS}) of ITHs. It means that we want to study how much inputs can be reduced without changing the outputs. Then the cost minimization DEA model under the CRS assumption is applied to compute the cost efficiency (CE_{CRS}) of ITHs. Finally the allocative efficiency under the CRS assumption can be found by the following relation:

$$AE_{CRS} = CE_{CRS}/TE_{CRS} \tag{1}$$

The ranges of CE, TE, and AE are all between 0 and 1. A DMU has cost, technical, or allocative efficiency when its CE, TE, or AE is 1, respectively.

3.2 Truncated Regression

Past researches often use Tobit regression in the second stage to analyze the impact of environmental variables on cost efficiency. However, Simar and Wilson (2007) indicate that the DEA efficiency estimates are serially correlated in a complicated and unknown manner in the second stage when using Tobit regression; therefore, the results will be inappropriate and invalid. Simar and Wilson (2007) demonstrate that the estimated result of truncated regression is better than Tobit regression. Therefore, we apply the truncated regression in the second stage.

3.3 Data Sources and Variable Definitions

The operation of an organization is a procedure to transfer the inputs to the outputs. Mostly, outputs of hotels are measured by their revenues. The revenues of food, beverage and lodging are the main sources and account for about 80% of the total revenues of the international tourist hotels in Taiwan. Other revenues, for example revenues of swimming, services revenues of laundry, rent and services, etc., are accounted for less than 20%. On the other hand, the inputs of hotels include employees, equipment, and capitals, etc. The salaries of employees represent the human resources of the hotel. The number of rooms and the total floor spaces of catering divisions represent the capital investment of the hotels (Hwang & Chang, 2003).

Table 2. Definitions of outputs, inputs, input prices and environmental variables

Variables	Definitions
Outputs	
Total revenues of food and beverage	This includes incomes from sale of foods, snacks, alcohol, beverages in dining room, coffee room, banquet, and night club (tips are not included), measured in NTD.
Total revenues of rooms	This includes incomes from lease of rooms (tips are not included), measured in NTD.
Other revenues	This includes incomes other than the two items mentioned above. They include operating revenues from lease of store space, laundry, swimming pool, ball courts, barber shop, beauty salons and bookstores, measured in NTD.
Inputs	
Number of guest rooms	These include the amount of guest rooms that can be provided for rent from an international tourist hotel. Accordingly, the unit of measurement is simply "rooms", without subsequent adjustment for size or quality.
Number of employees	Total employees involved in the operation of international tourist hotels, including medium- and high-ranking executives, guest room and catering staff, cooks, maintenance crews, and repairmen.
Total floor spaces of catering divisions	This includes the total floor spaces used by the operational units of all hotels' catering facilities, measured in Ping (1 Ping = 3.305785 square meters).
Input prices	
Average price of room operations	This refers to the total operating expenses per room, measured in NTD/room. We use the total revenue of a hotel divided by the number of rooms.
Average annual employee wage	This includes salary and related expenses per employee, measured in NTD/individual.
Average price of F&B operations	This refers of catering department expenses per square meter of floor space, measured in NTD/Ping.
Environmental variables	
Distance to public transport facilities	The distance between hotels to the nearest public transport facilities which include airport, train station, MRT station, freeway exit, bus stop. Distance to MRT station is expressed by dummy variable, "1" represents less than 1 km.
Distance to hospital	The distance between hotels to the nearest hospital, measured in kilometer.
The number of hospitals	The number of hospitals in each county in Taiwan.
The number of medical personnel per ten thousand	Measured in each county in Taiwan
Pick-up service	"0" represents no, and "1" represents yes.
Type	"0" represents independent management, and "1" represents hotels joining a chain.
Year	1998 is year 1 and 1999 is year 2, and so on
Location	"0" represents metropolitan area, and "1" represents resort area

We use the independently pooled panel data which are unbalanced from 1998 to 2009. All the operating variables are collected from the annual Operating Report of International Tourist Hotels in Taiwan published by Taiwan Tourism Bureau. The number of the international hotels varies every year since some of them would fail to reach the criterion set by the government and would be removed from the list. The followings are the numbers of observations from 1998 to 2009: 1998(52), 1999(54), 2000(54), 2001(54), 2002(55), 2003(57), 2004(57), 2005(56), 2006(57), 2007(57), 2008(58), and 2009(56), making 667 observations in total.

The definitions and the descriptive statistics of input variables, output variables, input prices, and environmental variables are described in Tables 2 and 3.

Table 3. Descriptive statistics of outputs, inputs, and input prices

Variables	Units	Mean	SD	Min	Max
Outputs					
Total revenues of food and beverage	10^3 NT$	275,345	274,072	3,965	1,318,317
Total revenues of rooms	10^3 NT$	238,404	217,399	7,339	1,456,306
Other revenues	10^3 NT$	98,269	141,214	0	1,415,516
Inputs					
Number of guest rooms	Number	72,996	43,638	3,910	246,626
Number of employees	Number	335	229	32	1,230
Total floor space of catering division	Ping (1 Ping = 3.305785 square meters)	1,191	1,364	48	16,022
Input prices					
Average price of room operations	NT$	3,060	1,336	867	9,334
Average employee annual wage	NT$	526,014	156,231	62,239	971,509
Average price of F&B operations	NT$	106,027	98,404	2,374	1,962,222

Note: The base year for all monetary units is 1998.

4. Empirical Results

4.1 Operational Efficiency Analysis

This study adopts input-oriented DEA approach to compute the cost efficiency of international tourist hotels in 1998-2009 by using the Deap 2.1 software kindly provided by Professor Tim Coelli. The average cost efficiency score is 62.41%. It means that hotels in Taiwan can reduce their input costs by 37.59% without decreasing any output.

Cost efficiency can be divided into technical efficiency and allocative efficiency. Technical efficiency is the ability to maximize the output under given input, while allocative efficiency is the ability to use the inputs and outputs to reach the best proportion given their prices. The trends of the average values of cost efficiency, technical efficiency and allocative efficiency in 1998–1999 are showed in Figure 1. The direction of cost efficiency is very similar to allocative efficiency. That is, the effect of allocative efficiency on cost efficiency is relatively large compared to technical efficiency, and this result is in consistent with the finding in Hu's research in 2009.

We can find 3 obvious recessions in 1999–2000, 2002–2004 and 2006–2007. A 7.3-magnitude earthquake struck Taiwan in 1999 and took 2415 lives. Its epicenter was situated in Nantou which is one of the famous tourist attractions in Taiwan. Some of the hotels there collapsed and had to rebuild due to the earthquake. Therefore, the low cost efficiency in 1999–2000 may reflect the impact of this serious disaster.

The reduction of cost efficiency in 2002–2004 is possibly due to SARS. The first case of SARS appeared in China in 2002 and spread to other countries around the world explosively, and it caused 73 deaths in Taiwan. The international tourist arrivals declined by 24.5% compared to 2004. It affected the safety of travelling in Taiwan and the efficiency of ITHs.

The last recession in the Figure 1 between 2006 and 2007 may be influenced by the political instability. In late

2006, demonstration campaigns and incidents were held to pressure the President Shui-bian Chen to resign, resulting in the massive political and social turmoil in Taiwan. The occupancy rate of ITHs is 47.43% only in 2007, and it has been the lowest figure in the recent twelve years.

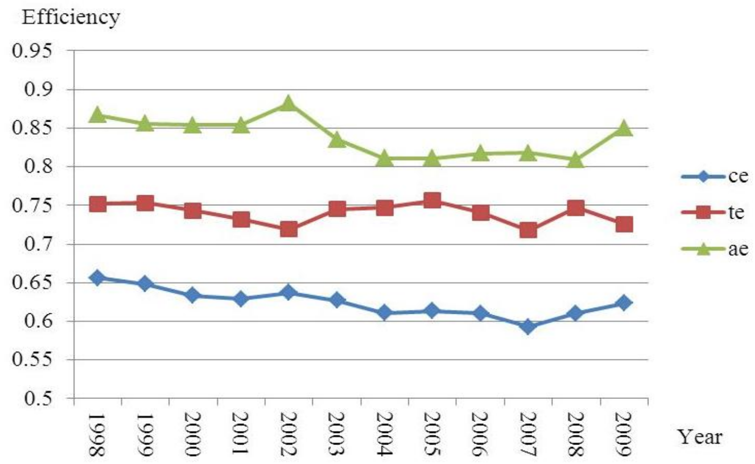


Figure 1. Average efficiency scores of international tourist hotels in Taiwan during 1998-2009

Table 4. Top 5 cost-efficient and cost-inefficient hotels in 1998-2009

CE Ranking	Taiwan ITH Name	CE	TE	AE
Top 5 cost-efficient hotels				
1	Lalu hotel	1.00	1.00	1.00
2	Grand Formosa Regent Taipei	0.99	1.00	0.99
3	Grand Hyatt Taipei	0.98	1.00	0.98
4	Far Eastern Plaza Hotel Taipei	0.96	0.99	0.97
5	The Westin Hotel	0.92	0.98	0.93
Top 5 cost-inefficient hotels				
65	The Hibiscus Resorts	0.34	0.40	0.87
66	Taipei Fortuna Hotel	0.34	0.40	0.83
67	Hotel Kingdom	0.33	0.46	0.74
68	Jen Dow International Hotel	0.30	0.36	0.82
69	Park Hotel	0.27	0.35	0.77
Average of all hotels		0.62	0.74	0.84

Table 4 shows the average efficiency, technical efficiency, and allocative efficiency of top 5 cost-efficient and cost-inefficient hotels during 1998–2008. The cost efficiency score of Lalu hotel located in Nantou is the highest, which is equal to 1. The efficiency of Park hotel located in Taichung is 26.88% and which is the poorest among all the ITHs. In Table 4, we also can find that the allocative efficiency scores of top 5 cost-inefficient hotels are similar to the overall average, while their technical efficiency is much lower than the overall average score and the top 5 efficient hotels. It indicates that technical inefficiency is the main factor of cost inefficiency. Namely, these inefficiency hotels may have too many unneeded resources or be inefficient in execution. We suggest hotel managers to focus on utilizing resources effectively to create maximum outputs by making appropriate marketing or management strategies.

4.2 Result of Truncated Regression

We use two models to test the effect of transportation cost (model A) and medical services (model B) on the efficiency of hotels by truncated regression. Six environment variables included in model A are: distance to the international airport (DAIR), distance to bus stop (DBUS), distance to freeway exit (DFW), distance to MRT exit (DMRT; 0= less than 1 KM, 1= further than 1 KM), distance to train station (DTRAIN) and pick-up service (SER; 1=yes, 0=no). Three environment variables included in model B are: distance to hospital (DHOS), the number of hospitals (NHOS) and the number of medical personnel per ten thousand (PEO). Three environment variables used in both models are: type of operation (TYPE; 1=chain, 0=independent), established years (YEAR) and type of location (LOC; 1=resort area, 0=metropolitan area). The cost efficiency scores are dependent variables in both models.

Table 5. Estimated results of truncated regression on cost efficiency

Independent variables	Model A	Model B
	Cost efficiency	Cost efficiency
Constant	0.5712^{***}	0.5003^{***}
	(<.001)	(<.001)
DAIR	-0.0004^{**}	
	(0.0325)	
DBUS	$5.3E\text{-}05^{***}$	
	(0.0079)	
DFW	0.0004*	
	(0.0526)	
DMRT	-0.1473^{***}	
	(<.001)	
DTRAIN	0.0015	
	(0.2227)	
SER	0.0766^{***}	
	(0.0020)	
DHOS		-0.0040^{***}
		(0.0011)
NHOS		$5.7E\text{-}05^{***}$
		(<.001)
PEO		−6.6E-05
		(0.4761)
TYPE	0.1338^{***}	0.1112^{***}
	(<.001)	(<.001)
YEAR	-0.0015^{***}	-0.0032^{***}
	(0.0045)	(<.001)
LOC	−0.0084	0.1370^{***}
	(0.8321)	(<.001)

***, **, and * represent significance at the 1%, 5%, and 10% levels.

The number in the parenthesis () is the P-value.

The estimated results of two truncated regressions are listed in Table 5. As for the impact of travel convenience, distance to the international airport and the distance to MRT station have a significantly negative impact on the efficiency, while the distance to the freeway exit, distance to bus station, and pick-up service have significantly positive impacts on the cost efficiency. This means that a hotel close to the airport and MRT station, far away from the bus station and freeway exit, or with pick-up service has significantly higher cost efficiency. The results may be driven by the preference of travelers. According to the statistics from Taiwan Tourism Bureau, about 99% of international tourists visited Taiwan by taking airplanes, and about 60% of them lodged in Taipei in 2009. Taipei is the most developed region with MRT system in Taiwan. It implies that hotels near the airport and MRT stations or with pick-up services are more convenient to be accessed by international tourists and can receive higher cost efficiency scores.

As for the impact of medical services, the coefficient for the distance to hospital is significantly negative, and the coefficient for the number of hospitals is significantly positive. In other words, the shorter distance between hotels and hospitals, or there are more hospitals available in a region, the higher cost efficiencies of these hotels would have.

The coefficients of the type of operation and the established year are significant in both models. The type of operation being chain-operated and latter established year would increase the cost efficiency of ITHs. The type of location shows a significantly positive effect on efficiency in model B, suggesting that hotels located in resort areas has better cost efficiency.

5. Conclusion

With the rapid growth of economy and more attention given to recreation, tourism has become an important industry in many countries, among which Taiwan is of no exception. The number of hotels has increased dramatically since 1985, and the hotel industry is becoming oversupplied. With the growing competition in the sector, the efficiency of hotel management has become a key factor in gaining profit. Although plenty of studies have analyzed the international tourist hotel efficiency in Taiwan, we try to take a more rigorous approach to explain the cost efficiency in a different way. We apply input-oriented cost DEA to compute the cost efficiency of international tourist hotels and adopt a truncated model to explain the cost efficiency by introducing variables of traffic convenience and medical services.

The cost efficiency of international tourist hotels in Taiwan from 1998 to 2009 is 62.41%. We can find that infectious diseases, natural disasters and unstable politics are reasons of the declination of average cost efficiency, and most of these factors are unavoidable. Therefore, the hotel managers are suggested to work out strategies previously and invest appropriately to avoid being bankrupted in the recession of the tourism industry. The government should design an effective response mechanism for emergencies such as infectious diseases and natural disasters to minimize any loss and regain shortly the international tourists' confidence in having a trip in Taiwan. For those cost-inefficient hotels, technical inefficiency due to their idle resources is possibly the main cause. Thus, we suggest those hotel managers to maximize the outputs with given inputs by making better management and promotion strategies.

In the result of truncated regression, we point that the hotels near international airports, MRT stations or other pick-up services may have higher cost efficiency. This can be shown that the hotels near airports and MRT stations are easier to be accessed by international tourists. Based on the result of the truncated regression, we suggest that hotels near international airports, MRT stations, and with pick-up services shall gain advantages in advertisement and on the websites to attract more tourists and achieve a better performance. For new investors in the hotel industry, they should regard the distance factor, such as distance to an international airport and an MRT station, as an important factor in selecting hotel location. The government also needs to be dedicated to the transportation development, especially to the means of transportation between hotels, airports, and scenic spots for promoting the coordination between the tourist and hotel industries.

As for the medical services, the shorter distance to a hospital or more hospitals in a region, the higher cost efficiency of the hotel will have. It can be regarded also that hotels with more medical resources nearby are more efficient. Medical tourism is a hot issue in recent years. After allowing the residents in mainland China to visit Taiwan, medical tourism has been regarded an enormous commercial opportunity to be exploited. To follow this trend, we suggest the hotel managers to cooperate with the traveling agencies and the hospitals for effectively introducing a medical travel itinerary. It is also available to integrate health-care programs into the hotel services to satisfy the customers' needs of medical treatments. Introducing the programs, services and other information about medical tourism through hotel websites to attract international travelers is also an effective way to be used. For the government, it is suggested to improve the medical standard in Taiwan and to introduce a better medical environment when promoting the tourist business. With the improvement of medical environment, the number of international tourists shall grow, and the hotels in Taiwan shall achieve a better performance.

The results of other environment variables are similar to the previous studies. The hotels operating in chain system may have higher cost efficiency scores than those of the hotels operating independently. Hotels with shorter operating years generally receive higher efficiency scores. We find that most inefficient hotels are depending on independent management and with longer operating years. We suggest that these cost-inefficient hotels are in need of introducing a modernized management and meanwhile finding their own market positions. The Lalu hotel which operates independently is a successful example for these hotels. The Lalu hotel positions itself as a top-end resort hotel, having its architecture designed in natural beauty and providing its customers with high-class and customized services. It is the most famous and cost-efficiency international tourist hotel in Taiwan.

In future research, we may add the preferences of tourists with different nationalities or the main purposes of trips as a variable to the model to analyze the effects of travel convenience and medical services on the hotel selection. In addition, adding hotels in other Asian countries for observation will help us compare their differences.

Acknowledgements

The authors thank two anonymous referees of this journal of the valuable comments. Financial support from Taiwan's Ministry of Science and Technology is gratefully acknowledged (NSC100-2410-H-009-051).

References

Akama, J. S., & Kieti, D. M. (2003). Measuring tourist satisfaction with Kenya's wildlife safari: a case study of Tsavo West National Park. *Tourism Management, 24*(1), 73–81. http://dx.doi.org/10.1016/S0261-5177(02)00044-4

Anderson, R. I., Fish, M., Xia, Y., & Michello, F. (1999). Measuring efficiency in the hotel industry: a stochastic frontier approach. *International Journal of Hospitality Management, 18*(1), 45–57. http://dx.doi.org/10.1016/S0278-4319(98)00046-2

Assaf, A., Barros, C. P., & Josiassen, A. (2010). Hotel efficiency: A bootstrapped metafrontier approach. *International Journal of Hospitality Management, 29*, 468–475. http://dx.doi.org/10.1016/j.ijhm.2009.10.020

Barros, C. P., & Dieke, P. U. C. (2008). Technical efficiency of African hotels. *International Journal of Hospitality Management, 27*(3), 438–447. http://dx.doi.org/10.1016/j.ijhm.2007.11.004

Barros, C. P., & Mascarenhas, M. J. (2005). Technical and allocative efficiency in a chain of small hotels. *Hospitality Management, 24*(3), 415–436. http://dx.doi.org/10.1016/j.ijhm.2004.08.007

Batabyal, D., & Ghosh, B. K. (2012). A study of foreign tourist arrivals to India: A descriptive study through empirical evidences. *South Asian Journal of Tourism and Heritage, 5*(1), 91–102.

Brown, W. G., & Nawas, F. (1973). Impact of aggregation on the estimation of outdoor recreation demand functions. *American Journal of Agricultural Economics, 55*(2), 246–249.

Carter, S. (1998). Tourists' and travellers' social construction of Africa and Asia as risky locations. *Tourism Management, 19*(4), 349–358. http://dx.doi.org/10.1016/S0261-5177(98)00032-6

Charnes, A. W., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research, 2*(6), 429–444. http://dx.doi.org/10.1016/0377-2217(78)90138-8

Chen, C. F. (2007). Applying the stochastic frontier approach to measure hotel managerial efficiency in Taiwan. *Tourism Management, 28*(3), 696–702. http://dx.doi.org/10.1016/j.tourman.2006.04.023

Chen, C. T., Hu, J. L., & Liao, J. J. (2010). Tourists' nationalities and the cost efficiency of international tourist hotels in Taiwan. *African Journal of Business Management, 4*(16), 3440–3446.

Chou, C. E., Li, C. Y., & Tsai, Y. P. (2011). *Taiwan Tourism Satellite Account 2009*. Taipei: Taiwan Tourism Bureau.

Chou, T. Y., Hsu, C. L., & Chen, M. C. (2008). A fuzzy multi-criteria decision model for international tourist hotels location selection. *International Journal of Hospitality Management, 27*(2), 293–301. http://dx.doi.org/10.1016/j.ijhm.2007.07.29

Earnhahrt, D. (2004). Time is money: improved valuation of time and transportation costs. *Environmental and Resource Economics, 29*(2), 159–190. http://dx.doi.org/10.1023/B:EARE.0000044604.77782.6b

Farrell, M. J. (1957). The measurement of productive efficiency. *Journal of the Royal Statistical Society, Series A, 120*(3), 253–290. http://dx.doi.org/10.2307/2343100

Gauci, A., Gerosa, V., & Mwalwanda, C. (2002). *Tourism in Africa and the multilateral trading system: challenges and opportunities*. Background Paper for the Economic Commission for Africa, Addis Ababa.

Honma, S., & Hu, J. L. (2012). Analyzing Japanese hotel efficiency: A DEA application. *Tourism and Hospitality Research, 12*(3), 155–167. http://dx.doi.org/10.1177/1467358412470558

Hu, J. L., Chiu, C. N., Shieh, H. S., & Huang, C. H. (2010). A stochastic cost efficiency analysis of international tourist hotels in Taiwan. *International Journal of Hospitality Management*, *29*(1), 99–107. http://dx.doi.org/10.1016/j.ijhm.2009.06.005

Hu, J. L., Shieh, H. S., Huang, C. H., & Chiu, C. N. (2009). Cost efficiency of international tourist hotels in Taiwan: A data envelopment analysis application. *Asia Pacific Journal of Tourism Research*, *14*(4), 371–384. http://dx.doi.org/10.1080/10941660903310060

Hwang, S. N., & Chang, T. Y. (2003). Using data envelopment analysis to measure hotel managerial efficiency change in Taiwan. *Tourism Management, 24*(4), 357–369. http://dx.doi.org/10.1016/S0261-5177(02)00112-7

Khadaroo, J., & Seetanah, B. (2008). The role of transport infrastructure in international tourism development: A gravity model approach. *Tourism Management, 29*(5), 831–840. http://dx.doi.org/10.1016/j.tourman.2007.09.005

Lepp, A., & Gibson, H. (2003). Tourist roles, perceived risk and international tourism. *Annals of Tourism Research, 30*(3), 606–624. http://dx.doi.org/10.1016/S0160-7383(03)00024-0

Loomis, J., Yorizane, S., & Larson, D. (2000). Testing significance of multi-destination and multi-purpose trip effects in a travel cost method demand model for whale watching trips. *Agricultural and Resource Economics Review, 29*(2), 183–191.

Prideaux, B. (2000). The role of the transport system in destination development. *Tourism Management, 21*(1), 53–63. http://dx.doi.org/10.1016/S0261-5177(99)00079-5

Reynolds, D. (2003). Hospitality productivity assessment using data envelopment analysis. *Cornell Hotel and Restaurant Administration Quarterly, 44*(2), 130–138. http://dx.doi.org/10.1016/S0010-8804(03)90026-7

Saleh, F., & Ryan, C. (1992). Client perceptions of hotels: A multi-attribute approach. *Tourism Management, 13*(2), 163–168. http://dx.doi.org/10.1016/0261-5177(92)90058-F

Shieh, H. S., Hu, J. L., & Gao, L. Y. (2014). Tourist preferences and cost efficiency of international tourist hotels in Taiwan. *International Journal of Marketing Studies*, *6*(3), 35–48. http://dx.doi.org/10.5539/ijms.v6n3p35

Simar, L., & Wilson, P. W. (2007). Estimation and inference in two-stage, semi-parametric models of production process. *Journal of Econometrics*, *136*(1), 31–41. http://dx.doi.org/10.1016/j.jeconom.2005.07.009

Taiwan Tourism Bureau (1999–2010). *Operating Report of International Tourist Hotels in Taiwan*. Taipei.

Tsaur, S. H. (2001). The operating efficiency of international tourist hotels in Taiwan. *Asia Pacific Journal of Tourism Research, 6*(1), 73–81. http://dx.doi.org/ 10.1080/10941660108722090

Tsaur, S. H., Tzeng, G. H. & Wang, K. C. (1997). Evaluating tourist risks from fuzzy perspectives. *Annals of Tourism Research*, *24*(4), 796–812. http://dx.doi.org/10.1016/S0160-7383(97)00059-5

World Health Organization (WHO). (2011). *International travel and health*. Switzerland.

Yang, C. H., Lin, H. L., & Han, C. C. (2010). Analysis of international tourist arrivals in China: The role of World Heritage Sites. *Tourism Management, 31*(6), 827–837. http://dx.doi.org/10.1016/j.tourman.2009.08.008

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

What Determines the Technological Capabilities of the Agribusiness Sector in Mexico?

Alejandra López-Salazar[1], Celina López-Mateo[1] & Rubén Molina-Sánchez[1]

[1] Department of Finance and Administration, University of Guanajuato, Guanajuato, México

Correspondence: Alejandra López-Salazar, Department of Finance and Administration, University of Guanajuato, Celaya, Guanajuato, México. Tel: 52-462-598-5922 ext. 1662. E-mail: alelopez.salazar@yahoo.com

Received: August 12, 2014 Accepted: August 26, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p47 URL: http://dx.doi.org/10.5539/ibr.v7n10p47

Abstract

Technological capabilities are of great importance for the social and economic development of a country, especially in developing countries such as Mexico, and in strategic sectors like agribusiness. Seventy-one companies from the manufacturing sector of the agri-food industry in the Laja-Bajío region are studied in order to analyze the internal factors that encourage the development of technological capabilities. A model is proposed to analyze the variables that influence technological capacity, such as, cultural capital, social capital, information technologies, investment in R&D, age and size. The results show that social capital, investment in R&D, age and size are variables that help explain the level of technological capability. This has implications for academia, business, and the government.

Keywords: technological capabilities, agribusiness sector, resource-based view

1. Introduction

Studies on technological capabilities are extremely relevant, not only to industrialized countries but also to developing ones. This is due to the fact that the environment is forcing companies to develop skills that allow them to implement technological changes in order to stay competitive. The pressure to improve products and services (especially from international competition), the macroeconomic environment, and the availability of ever more efficient and complex technologies are some of the factors that influence the development of technological capabilities (Lall, 1992).

Contrary to the traditionalist approach, which minimizes the importance of technological development in developing countries, this study is based on evolutionary theories because: a) they emphasize on learning in order to generate technical change; b) there are differences between the capabilities of companies to assimilate the technologies and to generate technological changes; c) differences exist not only at the macro-level, but also between sectors and companies (Lugones, Gutti & Le Clech, 2007; Bell & Pavitt, 1995; Dosi, 1988). Evolutionary theories state that "technological knowledge is not shared equally among firms, nor is it easily imitated by or transferred across firms. Transfer necessarily requires learning because technologies are tacit, and their underlying principles are not always clearly understood" (Lall, 1992; p. 166). The simple viewpoint considers that the acquisition and accumulation of capital goods and knowing how to operate that technology has limited studies on technological capacities in these countries, especially in certain sectors.

The development of technological capabilities is a fundamental pillar for the economic and social development of a country, because it raise productivity levels, quality, and efficiency in the use of resources, generating improvements in products and processes, expansion into new markets with more value-added products and services, all of which enhance the competitive edge of the organization. However, companies face a series of obstacles before they may improve their technological capabilities; firstly, they must possess a mixture of resources and skills in order to generate technical change, which are not easy to acquire, transfer nor share (Lall, 1992), and secondly, because technological development implies an economic risk for the companies and the investment may not lead to the planned benefits (Whitfield, 2012) and may in fact incur hidden costs (costs that are unlikely to be recovered), which may be a disincentive for innovation.

Due to the fact that companies in developing countries do not have the same level of maturity in their technological capabilities as their counterparts in industrialized countries, they obtain greater performance despite having the same technology because they have reached high levels of efficiency in their operations, functions and routines (Lall, 1992). As such, the technological capabilities of a company should be analyzed with a distinct focus to that assumed in developed countries. Technological capabilities should be analyzed based on a more *ad hoc* assessment, depending on the context and the industry to which it belongs.

Accordingly, the objective of this study is to analyze the internal factors that encourage the processes of technological capability development in agri-food companies. The analysis was undertaken at the microeconomic level, based on resource-based view of the firm, without neglecting the environmental (Note 1) factors that influence the development of technological capabilities.

The current research is centered on the agri-food industry due to the great importance that it has for the economy of the Laja-Bajío region of the State of Guanajuato and for the difficulties that have presented themselves in order to compete internationally. According to the latest census data, the agri-food industry in the Laja-Bajío region generates 40% of jobs, over 30% of the production, and more than 50% of the inversion in the state (INEGI, 2009). Even though the agri-food industry has grown in the last ten years, the number of companies has decreased, and small businesses have not survived new market conditions, increasing the inequality between subsectors of the industry (Martín & Estrada, 2011).

Another reason to focus this study on the agri-food industry is the lack of studies on underdeveloped countries that analyze the technological capabilities of the sector. Dutrénit, Vera-Cruz and Arias (2003) mention that little attention has been placed on analyzing the factors that stimulate the process of technological capacity development and that we do not yet understand the differences in technological capacities per industrial sector. In light of this issue, it is necessary to find the elements that may ignite the development of technological abilities of the agri-food sector.

This paper is organized into four sections. The first section is an introduction to the issue and the objective of the study. The second section offers the theoretical foundation of technological capabilities and the hypotheses are stated. Subsequently, the methodology and measurement of variables are presented. The results and discussion are shown in the fourth and fifth sections respectively. The paper ends with conclusions drawn from the results.

2. Theoretical Background

2.1 Resource Based View of the Firms

The Resource Based View of the Firm sustains that companies must base their strategies on the resources and capabilities they possess because they are unique and heterogeneous among companies, and because they are the basis of sustained competitive advantage (Barney, 1991). Consequently, it is the endowment of resources and capabilities that explains differences in business results (Rumelt, 1984). Resources are defined as “stocks of available factors that are owned or controlled by the firm” and capabilities are the “firm’s capacity to deploy resources, usually in combination, using organizational processes, to effect a desired end” (Amit & Shoemaker, 1993:35). Capabilities are understood as the set of organizational routines and complex patterns of interaction between people and resources (Grant, 1991) that establish the guidelines for task development, for which there is a dynamic component in capabilities and also the static component of resources. Not all resources and capabilities have the potential to generate competitive advantage. Only those resources and capabilities that are valuable, rare, difficult to imitate and difficult to substitute are the source of competitive advantage (Barney, 1991).

According to Hitt and Ireland (2000), capabilities are generally developed through the transmission and interchange of information and knowledge between the personnel of the company, resulting in collective learning in the organization (Prahalad & Hamel, 1990). In this sense, “the ability to use knowledge to develop new products, services and processes… is essential to the development of technological capabilities” (Zahra, Neubaum & Larrañeta, 2007:1070). Due to the fact that technological knowledge isn’t easy to imitate, transfer, or share among companies (Lall, 1992) is considered a strategic resource with the potential to develop sustained competitive advantage (Barney, 1991), on condition that mechanisms are established to acquire it, spread awareness of it, and codify it (Zahra et al., 2007). The level of technological knowledge will be determined by the set of abilities, skills, and experience that the company possesses, combined with industry and market factors (Lall, 1992).

2.2 Technological Capabilities

Diverse definitions have been used to describe technological capabilities. Kim (1997; p. 86) conceptualizes technological capacities as “the ability to make an effective use of technological knowledge in efforts to assimilate, use, adapt and change the existing technologies, which may result in development of technology and development of new products and process in response to changing economic environment". Hobday and Rush (2007; p. 1341) define it as "the accumulated knowledge, skill experience and organizational base which enable a firm to acquire, develop and use technology to achieve competitive advantage".

These definitions state the special importance of the use of knowledge as a central element of technological capability. The differences in the accumulated body of knowledge of the company, the way in which they use knowledge and the ways they increase it are fundamental aspects for the accumulation of technological capabilities. As such, the development of technological capabilities implies the existence of abilities and knowledge that cannot be explained, recognized or easily (tacitly) transmitted, which implies a process of learning that requires a conscious effort (Whitfield, 2012). Nonaka and Takeuchi (1995, cited in Mendes & DuBois, 2012) comment that tacit knowledge should be transformed into explicit knowledge through conversation mechanisms, evidenced in routines, procedures, manuals, among others.

Learning takes place through three processes; the first, is the acquisition of knowledge from internal or external sources; the second, is the socialization of knowledge, and the third is the codification of that knowledge. This implies that individual learning is turned into organizational learning, and that this learning process is what allows technological capability to accumulate (Figueiredo, 2003).

Other authors focus more generally on the abilities and resources necessary to develop innovative processes and products. Such is the case of Figueiredo (2002; p. 74) who defines technological capabilities as "resources needed to generate and manage improvement in processes and production organization, products, equipment and engineering projects". Morrison, Pietrobelli, and Rabelloti (2007 cited in Cuero, Un Nabi & Dornberger, 2012) considered that technological capabilities do not only comprise of technical skills, but also directive, and organizational skills.

Technological Capability in this paper is understood as the resources needed to generate and manage the technical change through improving the production capabilities and incremental adaptation of technology (Bell & Pavitt, 1995).

There are three key kinds of capability: technological (acquire, use, adapt, improve and create new technology), innovation and absorption (identify, assimilate and exploit new knowledge). As these capabilities have common elements they are generally studied together, because there is a relationship of containment between them. That is to say, the capability for absorption is vital for the capability of innovation and subsequently for technological capability (Lugones, Gutti & Le Clech, 2007). Therefore, talking about technological capabilities (Lugones, Gutti & Le Clech, 2007) implies that the capabilities of innovation and absorption are already considered.

According to Lall (1992), technological capabilities are categorized by their level of complexity in basic, intermediate and advanced; additionally, they sustain that the level of technological capabilities depends on three principle functions: investment, production and networking. Investment capabilities are skills that can allow for the detection and acquisition of technology in order to create new products and services; production capabilities are skills that permit using, adapting, improving or innovating the available technology to create new products and services; production capabilities are skills that allow us to use, adapt, improve or innovate the available technology and that guarantees the maximum operative efficiency; and, the networking capabilities are skills that the company has to use the information that it receives from the exterior with the objective to advance its knowledge.

The level of technological capacity that a company reaches is unequal in its technical functions because companies tend to develop one function more than the other, given the demands of each industry; as such, each company maintains a rhythm of accumulation of technological capacities that are very distinct and yet within the same company, the accumulation is discontinuous at different periods of time (Dutrénit et al., 2003).

Contrary to Lall (1992), Garcia and Navas (2007) propose a typology of technological capabilities as a function of the evolution of the technology of the industry (exploration and exploitation) and of the evolutionary cycle (exclusivity and non-exclusivity). Specifically, they identify the technological capabilities of exploration such as those abilities "oriented towards the permanent development of the incorporation of new knowledge that assumes the constant redefinition of the current technological trajectory" (183). While technological capabilities of exploitation imply the ability to use the dominant technology of the industry, and depending on the diffusion of the technology in the industry, it is classified as exclusive or non-exclusive.

The majority of studies on technological capacities at the business level has centered on analyzing the impact of the technological capabilities on business performance (Welter, Bosse & Alvarez, 2013; Tsai, 2004; Schoenecker & Swanson, 2002; Lee, Lee & Pennings, 2001). Such is the case of Ju, Zheng, Yong, and Lu (2013) who conducted a comparison of the impact of technological capabilities on the patterns of growth and performance of 448 local and foreign companies in China. This study shows substantial differences in the levels of improvement and ROA (Return on Investments). Domínguez and Brown (2004) found a positive correlation between the technological capabilities and performance through the profit margin and labor productivity. On the other hand, Krasnikov and Jayachandran (2008) determined that the technological capabilities improve the performance because it increased product innovation and production efficiency. Only Schoenecker and Swanson (2002) found that technological capabilities do not impact financial performance of companies.

Other works have focused on analyzing the relationship of technological capabilities with knowledge management (Zahra, Neubaum & Larrañeta, 2007), with the impact of the turbulence of technology and the market (Su, Peng, Shen & Xiao, 2013), with innovation (Zheng & Wu, 2010), with branching (entry into new niches) (Kotha, Zheng & George, 2011) and with the internationalization process (Kuramoto & Kindl, 2012).

A body of research has focused on describing the technological capabilities of specific sectors and countries. For example, Sánchez, García, Álvarez and Lavín (2013) analyzed the innovation capability of assembly plants in the electronics sector; Rasiah (2009) describes and compares the technological capability of automotive companies between Malaysia and Indonesia; and, Brito, Garambullo and Ferreiro (2014) studied the accumulation of technological capability in the electronics industry in Tijuana, Mexico.

Katz (1986) undertook a study where it was shown that companies from Latin America maintain an active attitude towards technology, manifested in the ability to adapt, improve, and export technology transferred by industrialized countries. From these results, diverse works centered on determining the process of technological capability development (that is to say, how to generate technological capability) based on the study of learning processes, developing taxonomy that shows the accumulation d of technological capabilities (Figueiredo, 2003; Lall, 1992; Bell & Pavitt, 1995).

Additionally, research has been undertaken that analyzed the cooperation, as a specific element of technological capabilities, and its relation to business performance, finding that cooperation impacts productivity (Belderbos, Carree & Lokshin, 2004), increases the intensity and commitment of R&D, increases the probability of developing new products (Becker & Dietz, 2004; Surroca & Santamaría, 2007) and helps improve initial performance of recently created businesses (Baum, Clabrese & Silverman, 2000).

2.3 Conceptual Framework

Given the focus of the studies on technological capability, which have centered on analyzing the impact of the capabilities in the business performance and in developing taxonomies specific to determined industries, it is necessary to focus the attention on the factors that accelerate the development of the technological capability of companies, specifically in sectors of great economic relevance such as agroindustry.

Figure 1 shows the conceptual framework researched. Using the Resources-Based View as a base, the analysis of cultural capital, social capital, information technologies, investment in R&D and age are proposed as relevant factors that encourage the development of technological capability at the company level.

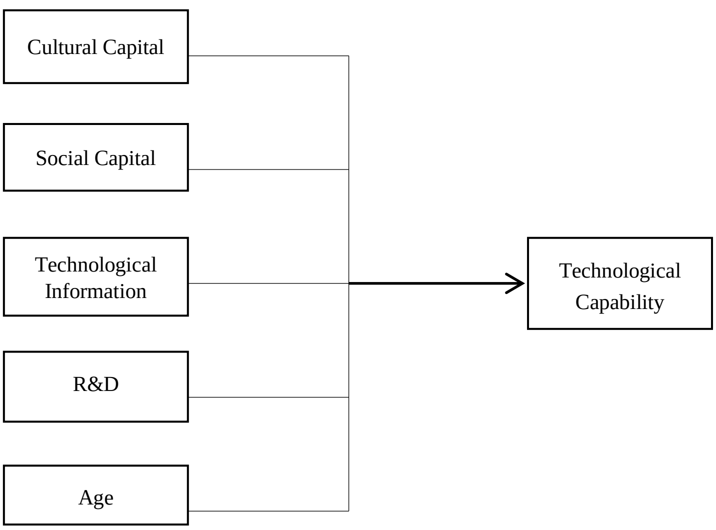


Figure 1. Conceptual framework

Figure 1 shows the proposed variables for analysis in the explicative technology capability model.

2.4 Research Hypotheses

Cultural capital is understood as the set of capabilities of the people who participate in the organization, principally based on their level of education. Cultural capital determines the capacity for analysis, problem solving, acquire new knowledge and to extrapolate from one field of work to another, undertaking distinct tasks and proposing new ideas (Contreras, López & Molina, 2011). Cultural capital also makes reference to organizational culture, as it is of vital importance for establishing policy and programs that support an innovation culture (Alharthey, Rasli, Yusoff & Al-Ghazali, 2013). As Bell and Pavitt (1995) mentioned, specialized resources, such as qualified human capital, allows increasing efficiency in the use of technology. Thus, the first hypothesis is as follows:

H1: Cultural capital from personnel positively influences technological capabilities of agri-food industries.

Social capital is another factor that impacts the ways of learning of the businesses and also their technological capabilities. Social capital is "the combination of resources that are bound to the possession of a sustainable network of more or less institutionalized relationships…that are linked to belonging to a group, such as groups of agents that are not endowed with common goods, but are joined by permanent and useful ties" (Bourdieu, 1980; p. 2). Social capital is a process that does not come about spontaneously, but the relationships based on confidence and knowledge of the people. According to Julien (2006), social capital is a lubricant to accelerate interrelations, based on trust, rules, and integrity.

Learning is generated in social relationships of people and their quality depends on the agents involved. Therefore, "in order to establish a relationship of learning there must first exist a social relationship between agents that want to learn and that can teach and that depends on the social concretion of the knowledge or information transfer. In this sense, the transfer of learning is given firstly through social relationships between people" (Contreras, Arroyo & López, 2012). Through the relationship network that the company establishes with the environment (clients, providers, universities, government, research centers, among others) a favorable environment is created for cooperation in distinct areas, either for sharing information, detect market opportunities, attend to new needs or combine resources between companies that will result in innovation in products or processes. Accordingly, the second hypothesis is as follows:

H2: Social capital positively influences technological capabilities of agri-food companies.

The ability to select and use information in an efficient and effective manner is considered a capability with the potential to generate competitive advantage (Ferguson, Mathur & Shah, 2005). Specifically, Huber (1990) sustains that technological information allows improving and accelerating the ability for learning and for acquiring knowledge, being fundamental for the development of technological capabilities. Technological information are tools that allow: a) concentrate and administer the information generated, b) share information quickly, c) improve operational process and product management, and d) codify the knowledge base. Technological information also allows better planning and coordination of internal company relationships (Pigni, Ravarini & Saglietto, 2010), which is where the necessary knowledge is generated to develop technical improvements in processes and products. Dewett and Jones (2001) found that technological information has positive effects on organizational innovation because it facilitates the process of collaboration between workers. These observations suggest the following hypothesis:

H3: The use of technological information positively influences the technological capabilities of agri-food companies.

The importance that the company places on continually increasing its technological capacity determines the financial and human resources that are directed towards this objective. Without those resources, an organization will find it difficult to generate new technology. Diverse authors have found a positive relationship between investment in R&D and good company performance (Geroski & Machin, 2013; Coad & Roa, 2008; Yasuda, 2005; Cooper & Kleinschmidt, 1996; Chan, Martin & Kesinger, 1990). Nevertheless, other researchers (Jaruzelski, Dehoff & Bordia, 2005) have obtained ambiguous results as a function of the temporal period of analysis, of the industry and the country. Subsequently, it is important to evaluate the impact of R&D on the development of technological capabilities in the agri-food industry. Thus, the hypothesis is as follows:

H4: The investment in research and development positively influences the technological capabilities of agri-food companies.

Experiences in agribusiness are an important factor for the accumulation of technological skills that with time develop and improve their skills, which allows them to operate most efficiently. According to Whitfield (2012), lack of experience in an industry puts obstacles between the ability to identify key factors for success, using technology to the max, reaching high levels of efficiency, implementing production practices with international standards, identifying the tendencies of the consumer as much as competitors. For this, businesses with more time on the market possess a greater body of accumulated knowledge that is the basis for generating technological capabilities. Hence, the following hypothesis is:

H5: Age positively influences the technological capacity of agri-food businesses.

3. Method

3.1 Research Methodology

The focus of the research is quantitative, through data collection and analysis the stated hypotheses were tested, and the factors that determine technological capacity of an organization were determined. This is an explicative research.

A total of 71 companies from the manufacturing sector of the agri-food industry in the Laja-Bajío (Note 2) region were interviewed. The companies had the following characteristics: 26% were micro, 33% small, 25% medium and 16% large. The majority of the companies interviewed had more than 10 years on the market (87%).

The National Chamber of the Transformation Industry (CANACINTRA) in the city of Celaya, Guanajuato, Mexico, through the Knowledge Consortium (Consorcio del Conocimiento) (Note 3), provided a directory of approximately 200 companies in the agri-food industry. From this directory, the first contact with the companies was made via telephone, by email and through visits to their work sites with the objective of concerting appointments to apply the research instrument. The survey was applied in person or by phone during 2013. The subjects of the study were the owners of the companies, general managers, and personnel of the companies' middle-mana3gement.

A multiple regression analysis was applied in order to determine the variables that impact technological capability in the agri-food sector companies, using the following model:

$$TC = \beta_1 CUL + \beta_2 SOC + \beta_3 IT + \beta_4 INV + \beta_5 AGE + \beta_6 SIZ + \varepsilon \quad (1)$$

3.2 Measurement of Variables

Taking as a base the proposal of Lugones et al. (2007), technological capability was evaluated on the basis of three factors: 1) level of automation of the main production process, 2) technological position compared to the competition, and 3) number of prototypes and patents registered o in process of registration. Based on said technological capability criteria, it is classified as advanced, intermediate and basic (Lall, 1992). Evaluating the technological capabilities implies not only having improved skills in order to use technology more efficiently, but it implies incorporating changes in a systematic way for which the evaluation of technological capabilities should include technology acquisition, but above all technical change, evaluated through patents.

Table 1 shows the measurements of the cultural capital, social capital, incorporation of technological information, investment in R&D, age, and size variables.

Table 1. Measurement of variables

Variables	**Code**	**Components**	**Definition**
Technological Capability	TC	Automation	Level of automated and computerized tool use in the principal production process.
		Technological position	Level of technology in relation to principal competitors.
		Prototypes & Patents	Level of involvement in intellectual property activities.
Cultural Capital	CUL	Managerial educational level (EDU)	Level of knowledge that a person acquires through a formal education.
		Staff training (TRA)	Process of training to develop skills that improve performance.
		Incentives (INC)	Benefits given in order to implement improvements in processes, equipment, products, creation of new products or proposing viable projects for improvement.

Social Capital	SOC	Cooperation with suppliers (COS)	Links developed with suppliers in order to achieve long-term mutual benefit.
		Cooperation with clients (COC)	Links developed with the clients in order to achieve mutual benefit.
		Cooperation with Universities (COU)	Links developed with universities or research centers to achieve mutual benefit.
Incorporation of technological information	IT	Use of technological information (IT)	Incorporation of Information Communication Technologies in the management of production.
Investment in R&D	R&D	Research & Development (R&D)	Budget set aside for research and investigation in technology.
Age of the company	AGE	Years on the market (AGE)	How long the Company has been on the market.
Size of the company	SIZ	Number of employees (SIZ)	Total number of employees that work for the organization.

Table 1 shows the components and definitions of the variables.

4. Results

The principal economic activities that the companies develop in the agri-food business are: elaboration animal feed; grinding grains and oleic seeds; elaboration of sugar, chocolates, candy, and other similar products; preservation of fruits, vegetables and stews; elaboration of milk products, slaughtering, packing and processing meat from livestock and birds; the preparation and packaging of fish and seafood; and, the elaboration of bread products and tortillas (INEGI, 2007).

Regarding the technological capacity of the companies, data analysis shows that 32% of the companies count on a high level of automation in their principal productive process, 60% possess a medium level (50% mechanical machinery and/or automated) and 7% use manual tools in their transformation process. In terms of technological position of the market, a little more than a third of the companies (37%) thought they had better technology in their processes in relation to competitors, 42% think that they have similar technology to competitors and only 21% express being at a technological disadvantage in comparison with their competitors. Only 21% have registered patents, 20% are in the process of registering patents and 53% have developed prototypes. In summary, technological capacity is basic in 27% of companies, intermediate in 58% and advanced in 15%.

In terms of cultural capital, evaluated by the educational level of the manager, it should be highlighted that 72% of companies are directed by personnel with bachelor’s degrees and only 13% with technical or other lower educational level. More than half of the companies (between 52% and 63%) train their workers in machine management, quality and continuous improvement in processes and products, work organization, security and hygiene, teamwork and formal education. Around 70% of companies offer incentives to personnel so that they can improve processes, equipment, and/or products, in order to create new products or to propose new ways to enhance performance.

The main collaboration that companies have with suppliers is by contracts of post-sale technological assistance (72%). Only a quarter transfer technology with their suppliers, collaborate with them in order to implement technological development or design collaborative strategies. In relation to the collaboration with clients, the majority of the companies did linking activities, with current or potential clients. Of the sample, 90% of companies formed networks to understand their principle needs, 84% to implement product and process improvements, 81% for technological development, 75% to transfer technology to clients, and 77% to share information and to design collaborative strategies. The activities in collaboration with universities or research centers were less frequent, where only 60% of companies took part; however, of those, 73% maintain strong links.

The use of technological information is low, and only 25% of the companies use it for production management. A such, the results show a little more than half of the companies setting aside part of the budget for continuous improvement activities, research and development. Only a quarter specified the percentage of sales that are set-aside for R&D.

In relation to the age of the company, 13% had been on the market for less than 10 years, 37% between 11 and 37 years and, half of the companies have been competing for more than 20 years.

Table 2. Correlation matrix

	EDU	TRA	INC	COS	COC	COU	IT	R&D	SIZ	AGE	TC
EDU	1										
TRA	.485**	1									
INC	.381**	.411**	1								
COS	.477**	.370**	.483**	1							
COC	.200	.337**	.459**	.411**	1						
COU	-.022	.280	.438*	.318**	.330*	1					
IT	.184	-.001	-.093	.067	-.245*	-.077	1				
R&D	.482**	.164	-.009	.283*	-.139	-.017	.494**	1			
SIZ	.650**	.320**	.168	.458**	.092	-.080	.387**	.595**	1		
AGE	.336**	.102	.058	.278*	.125	-.096	.146	-.213	,498**	1	
TC	.570**	.472**	.236	.588**	.292*	.078	.169	.544**	.658**	.444**	1

**The correlation is significant to the 0.01 level. *The correlation is significant to the 0.05 level. Table 2 shows the indices of correlation between independent and dependent variables.

As far as the correlation indices are concerned, Table 2 shows that the relationship between independent variables are not so high so they should not distort the statistical meaning and invalidate the model. The technological capabilities variable has a medium positive and significant relationship with educational level, training, and cooperation with suppliers, investment in R&D, size, and age of the company. Cooperation with clients was found to have a significant relationship with technological capabilities, but it is a weak relationship. Incentives and cooperation with universities is not related to the technological capability of the company.

Table 3. Multiple regression analysis

Variables	Model 1	Model 2
Educational Level of Management (EDU)	-.088	
Employee Training (TRA)	.022	
Incentives (INC)	-.077	
Cooperation with Providers (COS)	.203**	
Cooperation with clients (COC)	.129**	
Cooperation with universities (COU)	-.035	
Cultural capital		.087
Social capital		.174**
Incorporation of ICT (IT)	-.163	-.114
Investment in R&D (R&D)	.426***	.388***
Age (AGE)	.008	.010***
Size (SIZ)	.000	.000*
Constant	1.245***	1.754*
F	7.222***	14.787***
Prob > F	.000	.000
R^2 adjusted	.60	.57
Breush- Pagan	.05	.51
Prob > 2	.8273	.4769
Ramsey Test	.35	.09
Prob > 2	.8273	.9663

*** Significance to the 1% level; ** Significance to the 5% level; *significance to the 10% level. This table presents the regression results, principally showing the coefficients of the variables, the F statistic, the adjusted R square value, the Breush-Pagan and the Ramsey tests.

Table 3 represents two models. In the first, the components of the social capital and cultural capital variables are analyzed in a disaggregate way. The results show that 60% of the variation in the technological capabilities may be explained by the model variables 1. Cooperation with suppliers, clients, and R&D investment all have positive and significant correlations ($p < 0.05$). The rest of the variables had no significant relationships. In the second model, a regression with the social and cultural capital variables explains the 57% of the variation of the technological capabilities. In this analysis, the social capital, investment in R&D, age and size show positive and significant coefficients ($p < .10$)

The Breush-Pagan test was applied to detect heteroscedasticity, given that it is common in cross-sectional data. There are problems of heteroscedasticity. The Ramsey test is used to detect omitted variables, which supports the results obtained with the applied regression. The null hypothesis states that the model has not omitted any variables. At a significance level of 10%, it is found that it is not necessary to include more independent variables in the model. Model 2 continues to have problems of heteroscedasticity, but this is lower in relation the previous model. It also passes the Ramsey test at 10% significance.

5. Discussion

This study seeks to identify the internal factors that influence the development of technological capabilities in the agri-food industry. In the results of both models, cultural capital does not exert any influence on the technological capabilities of the agri-food companies, and therefore hypothesis 1 is not accepted. Even though the educational level, training and incentive schemes are important elements that allow us to obtain and improve the body of knowledge and skills of the personnel in order to apply them to daily functions, they are not characteristically distinctive between companies of the sector, as they show high levels in their descriptive statistics.

Social capital turns out to be the internal factor that has the greatest influence on driving technological capabilities, showing that technological progress is generated through the interaction between users and technology suppliers when they develop the best proposals for the users, as such generating a dynamic of continuous adaptation to technology. In the same way, clients play a major role in the modifying, design and construction processes of greatest value. The above is congruent with Lall (1992) and Bell and Pavitt (1995) in relation to the dependence of technological capabilities, not only as an investment that the company makes, but also of their level of linking with external actors, which are those that support the learning process. According to the above, the second hypothesis is maintained.

Cooperation with suppliers and clients has a greater relevance than cooperation with universities, according to the results of the first model. The statistics found a low level of networking with universities. Regarding the above, there are limitations such as the lack of trust, reluctance to share confidential company information, the level of commitment of the universities, and formalities in the accomplishment of goals, delivery targets and service continuity (López, López & Molina, 2013). On the other hand, cooperation with universities may acquire greater relevance when the companies achieve a higher level of technological capabilities, as they may not be attractive partners for universities to collaborate with until that point. It should be pointed out that the companies recognize the benefits of collaborating with universities, as those that do maintain strong and active networks.

Regarding technological information, hypothesis 3 is rejected, as it did not result significant in either of the two models. Although the use of technological information does not help to explain the development of technological capabilities, it is important to consider that the use of technological information may support those capabilities in an indirect way that facilitates the management of information and the codification of knowledge. As such, only a quarter of the companies use technological information, being principally the larger and more economically solvent companies that are able to invest in it.

Investment in R&D is a factor that helps to explain the level of technological capabilities; therefore, hypothesis 4 is maintained. R&D allows the company to take advantage of knowledge, skills and accumulated experience of the organization in order to generate better techniques in the products and processes, in such a way as generate competitive advantage. Although, the designation of resources to R&D activities will depend on the financial capability and the company culture, it is essential that this activity is present in organizations, as it supports the development of technological capabilities. Of course, that the only allocation of resources to R&D does not assures the development of patents or prototypes, as there are other factors that should be present in order to generate them.

The results show that age positively influences the technological capacity of companies. Therefore, hypothesis 5 is maintained. Young businesses are not as efficient as mature companies because they have not yet learned from experience and from the development of abilities to improve their production techniques and to operate more efficiently. Therefore, with time they have developed the necessary skills to acquire and maximally use the knowledge that they possess, which are reflected in the greater capability to generate technical change. Finally, and in relation to the size of the company, it was found that larger companies possess greater levels of technological capacities.

6. Conclusions

The objective of this study was to analyze the internal factors that influence the development of technological capabilities in agri-food companies. The findings show that social capital, investment in R&D, age, and size of the company are all variables that explain the level of technological capability of the agri-food sector. The educational level of management and training of personnel, even though it doesn't help to explain the level of technological capabilities, there is a significant positive relationship with those capabilities.

The findings have diverse implications for academics, practitioners, and government. The academic implications of this study advance knowledge with respect to technological capabilities. First, the study supports the existing knowledge on technological capabilities in the agri-food industry in developing countries, through an explanatory model of technological capabilities. Second, this model includes the analysis of social capital as a determinant variable in the study of the technological capabilities, and that few studies have considered as relevant. Third, the results show the pertinence for propose multivariate models that generate a more complete vision of the explanatory factors of the development of technological capabilities.

In relation to practitioners, they should consider investing more heavily in R&D in order to use the knowledge generated in the organization and transform it into innovations and improvements in products and processes. In addition, companies should be aware of the benefits that cooperation with suppliers and clients bring to implement new collaborative strategies and to realize technological developments. Once the company has reached medium levels of technological capabilities, it should try to generate collaborations with universities and research centers, where a higher technological level is necessary in order to obtain the clear advantages of networking.

For the governmental sector, it is necessary to develop public policy that support the development of technological capabilities focused on financing innovative projects, fiscal incentives for the acquisition and development of technology, training programs and proposals for new support frameworks for external networking, specifically for the agri-food industry.

Future research should concentrate on studying those factors that impact on technological capabilities, increasing the size of the sample, applying comparisons between states and industries, and above all, incorporating the modified variables such as business strategy and the entrepreneurial orientation of the company.

Acknowledgments

We thank to the Direction of Support for Research and the Graduate School (DAIP) of the University of Guanajuato for the support in the translation of this research work.

References

Alharthey, B., Rasli, A., Yusoff, R., & Al-Ghazali, B. (2013). Impact of Innovation Culture on Human Resources Management Practices. *International Journal of Academic Research, 5*(3), 60–63.

Amit, R., & Schoemaker, P. (1993). Strategic Assets and Organizational Rent. *Strategic Management Journal, 14*, 33–46. http://dx.doi.org/10.1002/smj.4250140105

Barney, J. (1991). Firm Resource and Sustained Competitive Advantage. *Journal of Management, 17*(1), 99–120. http://dx.doi.org/10.1177/014920639101700108

Baum, J., Calabrese, T., & Silverman, B. (2000). Dont go it Alone: Alliance network Composition and Startups' performance in Canadian Biotechnology. *Strategic Management Journal, 21*, 267–294. http://dx.doi.org/10.1002/(SICI)1097-0266(200003)21:3%3C267::AID-SMJ89%3E3.0.CO;2-8

Becker, W., & Dietz, J. (2004). R&D Cooperation and innovation activities of firms- evidence for the German manufacturing industry. *Research Policy, 33*, 209–223. http://dx.doi.org/10.1016/j.respol.2003.07.003

Belderbos, R., Carree, M., & Lokshin, B. (2004). Cooperative R&D and firm performance. *Research Policy, 33*, 1477–1492. http://dx.doi.org/10.1016/j.respol.2004.07.003

Bell, M., & Pavitt, K. (1995). The Development of Technological Capabilities. In Irfan ul Haque (Ed.), *Trade, technology, and International Competitiveness*. EDI (Economic Development Institute) DEVELOPMENT STUDIES. The World Bank Washington, DC.

Bourdieu, P. (1980). El Capital Social. Notas Provisorias. *Actas de Investigaciones en Ciencias Sociales, 31*.

Brito, J., Garambullo, A., & Ferreiro, V. (2014). Aprendizaje y Acumulación de Capacidades Tecnológicas en la Industria Electrónica de Tijuana. *Revista Global de Negocios, 2*(2), 57–68.

Chan, S., Martin, J., & Kensinger, J. (1990), Corporate Research and Development Expenditures and Share Value. *Journal of Financial Economics, 26*(2), 255–276. http://dx.doi.org/10.1016/0304-405X(90)90005-K

Coad, A., & Rao, R. (2008), Innovation and firm growth in high tech sectors: A quantile regression approach. *Research Policy, 37*(4), 633–648. http://dx.doi.org/10.1016/j.respol.2008.01.003

Contreras, R., Arroyo, B., & López, A. (2012). *Formas de Aprendizaje en las Mipymes. Una perspectiva Socio-cultural*. México: Universidad de Guanajuato.

Contreras, R., López, A., & Molina, R. (2011). *Emprendimiento: dimensiones sociales y culturales en las Mipymes*. México: Ed. Pearson.

Cooper, R., & Kleinschmidt, E. (2007). Winning Businesses in Product Development: The Critical Success Factors. *Research Technology Management*, May-Jun.

Cuero, Y., Un Nabi, M., & Dornberger, U. (2012). Technological Capability Improvement as Result of the Entrepreneur's Search for innovation in the SMEs in Colombia. *Journal of Marketing Development & Competitiveness*, *6*(4), 1–16.

Dewett, T., & Jones, G. (2001). The Role of Information Technology in the Organization: A Review, Model, and Assessment. *Journal of Management, 27*, 313–346. http://dx.doi.org/10.1177/014920630102700306

Domínguez, L., & Brown, F. (2004). Medición de las Capacidades Tecnológicas de la Industria Mexicana. *Revista de la Cepal, 83*, 135–151.

Dosi, G. (1988). Sources, Procedures, and Microeconomic Effects of Innovation. *Journal of Economic Literature, XXVI*(september), 1120–1171.

Dutrénit, G., Vera-Cruz, A., & Arias, A. (2003). Diferencias en el Perfil de Acumulación de Capacidades Tecnológicas en tres Empresas Mexicanas. *El Trimestre Económico, 70*(277), 109–165.

Ferguson, G., Mathur, S., & Shah, B. (2005). Evolving from information to insight. *MIT Sloan Management Review, 46*(2), 51–58.

Figueiredo, P. (2002). Learning Processes features and Technological Capability-Accumulation: Explaining Inter-Firm Differences. *Technovation, 22*, 685–698. http://dx.doi.org/10.1016/S0166-4972(01)00068-2

Figueiredo, P. (2003). Learning, Capability Accumulation and Firms Differences: Evidence from latecomer Steel. *Industrial and Corporate Change, 12*(3), 607–643. http://dx.doi.org/10.1093/icc/12.3.607

García, F., & Navas, J. (2007). Las capacidades tecnológicas y los resultados empresariales. Un estudio empírico en el sector biotecnológico español. *Cuadernos de Economía y Dirección de la Empresa, 32*, 177–210.

Geroski, P., & Machin, S. (2013), Think Again. Do innovating firms outperform non innovators? *Business Strategy Review, 24*(2), 82–86. http://dx.doi.org/10.1111/j.1467-8616.2013.00959.x

Grant, R. (1991). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review, 33*(3), 114–135. http://dx.doi.org/10.2307/41166664

Hitt, M., & Ireland, R. (2000). Technological Learning, Knowledge Management, Firm Growth and Performance: An Introductory Essay. *Journal of Engineering & Technology Management, 17*(3/4), 231–246. http://dx.doi.org/10.1016/S0923-4748(00)00024-2

Hobday, M., & Rush, H. (2007). Upgrading the Technological Capabilities of Foreign Transnational Subsidiaries in Developing Countries: The Case of Electronics in Thailand. *Research Policy, 36*, 1335–1356. http://dx.doi.org/10.1016/j.respol.2007.05.004

Huber, (1990). A Theory of the Effects of Advanced Information Technologies on Organizational Design, Intelligence, and Decision Making. *Academy of Management Review, 15*(1), 47–71. http://dx.doi.org/10.2307/258105

INEGI. (2007). Sistema de Clasificación de América del Norte.

INEGI. (2009). Censos Económicos.

Jaruzelski, B., Dehoff, K., & Bordia, R. (2005). Money Isn't Everything. *Strategy+Business Magazine, 41*. Retrieved from http://www.strategy-business.com/article/05406

Ju, M., Zheng, K., Yong, G., & Lu, J. (2013). Technologival Capability Growth and Performance Outcome: Foreign Versus Local Firms in China. *Journal of International Marketing, 21*(2), 1–16. http://dx.doi.org/10.1509/jim.12.0171

Julien, P. (2006). *Emprendimiento Regional y Economía del Conocimiento; una Metáfora de las Novelas Policiacas*. Colombia: Ed. Pontificia Universidad Javeriana.

Katz, J. (1986). *Desarrollo y crisis de la capacidad tecnológica latinoamericana.* El caso de la industria metalmecánica. Buenos Aires: CEPAL.

Kim, L. (1997). *From Imitation to Innovation. The Dynamics of Korea's Technological Learning*. Boston MA: Harvard Business School Press. Retrieved May 20, 2008, from http://www.oei.es/memoriasctsi/mesa14/m14p01.pdf

Kotha, R., Zheng, Y., & George, G. (2011). Entry Into New Niches: The Effects of Firm Age and the Expansion of Technological Capabilities on Innovative Output and Impact. *Strategic Management Journal, 32*, 1011–1024. http://dx.doi.org/10.1002/smj.915

Krasnikov, A., & Jayachandran, S. (2008). The Relative Impact of Marketing. Research-and-Development, and Operations Capabilities on Firm Performance. *Journal of Marketing, 72,* 1–11.

Kuramoto, R., & Kindl, S. (2012). Internationalization Process and Technological Capability Trajectory of Iguacu. *Journal of Technology Management & Innovation, 7*(2), 117–129. http://dx.doi.org/10.4067/S0718-27242012000200010

Lall. S. (1992). Technological capabilities and industrialisation. *World Development, 20*(2), 165–86. http://dx.doi.org/10.1016/0305-750X(92)90097-F

Lee, C., Lee, K., & Pennings, J. (2001). Internal Capabilities, External Networks, and Performance: A Study on technology-Based Ventures. *Strategic Management Journal, 22*, 615–640. http://dx.doi.org/10.1002/smj.181

López, A., López, C., & Molina, R. (2013). *Capacidades Tecnológicas y de Innovación de la Industria Agroalimentaria de la Región Laja-Bajío*, Conference Preceedings ACACIA 2013.

Lugones, G., Gutti, P., & Le Clech, N. (2007). Indicadores de Capacidades Tecnológicas en América Latina. *CEPAL- Serie Estudios y Perspectivas*, (89). 1–68.

Martín, M., & Estrada, S. (2011). *Desarrollo Agroindustrial en México, In A propósito del Sistema Sectorial de Innovación en la Agroindustria Mexicana*. México: Ed. Universidad de Guanajuato y Universidad Michoacana de San Nicolás de Hidalgo.

Mendes, M., & DuBois, F. (2012). Technological Capabilities of Brazilian Shipbuilding Suppliers. *Journal of Technology Management & Innovation, 7*(2), 39–50.

Pigni, F., Ravarini, A., & Saglietto, L. (2010). An Explorative Analysis of the Effects of Information and Communication Technologies and Inter-Organizational Relationships on Supply Chain Management Systems. *Supply Chain Forum: International Journal, 11*(4), 36–48.

Prahalad, C., & Hamel, G. (1990). The Core Competence of the Corporation. *Harvard Business Review,* mayo-junio, 79–91.

Rasiah, R. (2009). Technological Capabilities of Automotive Firms in Indonesia and Malaysia. *Asian Economic Paper, 8*(1), 151–169.

Rumelt, R. (1984). *Toward a Strategic Theory of the Firm. Competitive Strategic Management* (pp. 556–570). New Jersey: Prentice-Hall. Englewood Cliffs.

Sánchez, M., García, F., Álvarez, M., & Lavín, J. (2013). Technological Capabilities: Construction and Evaluation of the Delphi case in Tamaulipas (México). *Revista de Estudios en Contaduría, Administración e Informática, 2*(4), 54–75.

Schoenecker, T., & Swanson, L. (2002). Indicators of Firm Technological Capability: Validity and Performance Implications. *IEEE Transactions on Engineering Management, 49*(1), 36–44. http://dx.doi.org/10.1109/17.985746

Su, Z., Peng, J., Shen, H., & Xiao, T. (2013). Technological Capability, Marketing Capability, and Firm Performance in Turbulent Conditions. *Management and Organization Review, 9*(1), 115–137.

Surroca, J., & Santamaría, L. (2007). La Cooperación Tecnológica como determinante de los resultados empresariales. *Cuadernos de Economía y Dirección de la Empresa, 33*, 31–62.

Tsai, K. (2004). The Impact of Technological capability on Firm Performance in Taiwan's electronics Industry. *Journal of High Technology Management Research, 15*(2), 183–195. http://dx.doi.org/10.1016/j.hitech.2004.03.002

Welter, C., Bosse, D., & Alvarez, S. (2013). The Interaction Between managerial and Technological Capabilities as a Determinant of Company Performance: An Empirical Study of Biotech Firms. *International Journal of Management, 30*(1), 272–284.

Whitfield, L. (2012). Developing Technological Capabilities in Agro-Industry: Ghana's Experience with Fresh Pineapple Exports. *Journal of Development Studies, 48*(3), 308–321. http://dx.doi.org/10.1080/00220388.2011.635198

World Economic Forum. (2013). The Global Competitiveness Report 2012–2013.

Yasuda, T. (2005). Firm growth, size, age and behavior in Japanese manufacturing. *Small Business Economics, 24*(1), 1–15. http://dx.doi.org/10.1007/s11187-005-7568-y

Zahra, S., Neubaum, D., & Larrañeta, B. (2007). Knowledge Sharing and Technological Capabilities: The Moderating role of Family Involvement. *Journal of Business Research, 60,* 1070–1079. http://dx.doi.org/10.1016/j.jbusres.2006.12.014

Zheng, K., & Wu, F. (2010). Technological Capability, Strategic Flexibility, and Product Innovation. *Strategic Management Journal, 31*, 547–561.

Notes

Note 1. The strength of institutions, infrastructure, macroeconomic stability, the efficiency of the market of goods, the financial market, and the labor market are factors that affect the technological capabilities of companies (World Economic Forum, 2013).

Note 2. The Laja-Bajío region comprises of the municipalities of Apaseo el Alto, Apaseo el Grande, Celaya, Comonfort, Cortazar, Jaral del Progreso, Santa Cruz de Juventino Rosas, Tarimoro, and Villagrán.

Note 3. Association in charge of generating a culture of innovation in companies through networking between companies, research centers, and universities, through the elaboration of innovation and technology development projects.

Appendix

This appendix presents the study's measures for technological capabilities, cultural capital, social capital, R&S, technological information and permanence in the market.

Section 1. Technological capabilities

a. Characteristics of the main productive process.
b. Technological position of your company in relation to the competition (ahead of the competition, like most of the companies in the sector, more efficient technology).
c. Intellectual property actions (prototypes, registration of patents, patents registered).

Section 2. Cultural Capital

a. School level of managers and production manager.
b. Training frequency: 1) modern equipment; 2) learn new ways of organizing work; 3) increase the quality and continuous improvement of processes and products; 4) security and hygiene; 5) teamwork; 6) formal education.
c. Type of incentives that the company uses.

Section 3. Social Capital

a. Frequency of the activities of cooperation with suppliers: 1) Technological assistance after-sales contracts; 2) transfer of technology to enhance efficiency, quality and local supply; 3) collaboration for technological development; 4) share information to develop collaborative strategies.
b. Frequency of the activities of cooperation with current or potential clients: 1) meet main needs of the

customer; 2) participation of clients in the improvement of products and processes; 3) collaboration with clients on technological developments; 4) technology transfer to clients; 5) share information to develop collaborative strategies.

c. Frequency of the activities of cooperation with Universities and research centers.

Section 4. Other variables

a. Use of technological information for the production management

b. Percentage of sales allocated to activities of continuous improvement, R&D and innovation.

c. Age of the company

d. Size of the company

Copyrights

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Strategy and Execution: Lessons Learned from the Public Sector

Ali M. Al-Khouri[1,2]

[1] Director General, Emirates Identity Authority, Abu Dhabi, UAE

[2] Professor of Identity and Security, British Institute of Technology and E-commerce, London, UK

Correspondence: Ali M. Al-Khouri, Director General, Emirates Identity Authority, Abu Dhabi, UAE. E-mail: ali.alkhouri@emiratesid.ae

Received: August 6, 2014 Accepted: August 19, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p61 URL: http://dx.doi.org/10.5539/ibr.v7n10p61

Abstract

The concept of strategic management in the public sector has attracted great attention in the past two decades. Unfortunately, current research shows that more attention is given to strategy development phases but less to strategy implementation. In fact, there is little literature about public sector strategies in the existing body of knowledge. In this article, we provide a short case study of strategy implementation at one of the most successful public sector organizations in the United Arab Emirates. The Emirates Identity Authority (Emirates ID) is a renowned government agency with an international reputation for its strategic planning and execution. The content of this article covers the 2010–2013 strategy at Emirates ID. We attempt to briefly analyze how the strategy impacted the overall organizational performance at Emirates ID and also attempt to explain some underlying factors that contributed to the overall success of the strategy. Finally, we draw on some of the lessons learned from this strategy exercise in terms of the challenges faced and how they have been tackled.

Keywords: strategy development, strategy execution, strategy implementation, strategic management, national ID, balance scorecard, project management, lessons learned

1. Introduction

Strategy, in its broadest definition, is referred to the "set of plans and policies by which a company aims to gain advantages over its competitors" (Skinner, 1969, p. 139). Other pragmatic definitions of strategy describe it in terms of answering the questions "where to go" and "how to get there" (Eisenhardt, 1999). Although the concept of competition may sound irrelevant in a governmental context, globally competitive environments have pushed governments worldwide to compete head to head in overall governance and various developmental fields. As a result, the topic of strategy in the public sector has been gaining greater attention in the past few years. However, there is not enough literature around public sector strategies in the existing body of knowledge.

This is viewed to be of particular importance, specifically if we take into account the high failure rates of strategies worldwide. On average, most strategies deliver only 63% on their performance potential, and many executives put this figure at 50% (Mankins & Steele, 2005). Figure 1 depicts the specific places where strategic planning and execution break down.

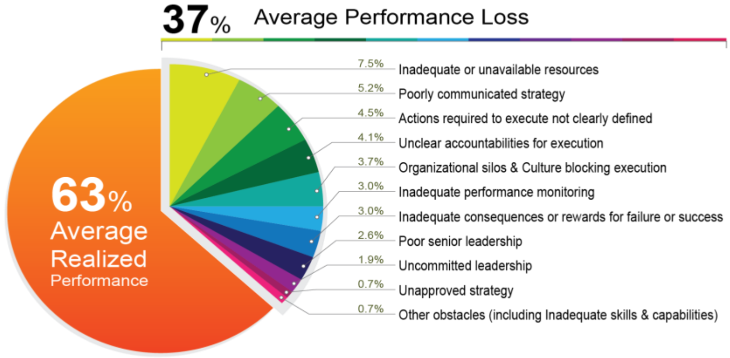


Figure 1. Strategy breakdowns

Source: Mankins & Steele (2005).

Carroll and Mui (2005) have researched 750 of the biggest business failures in the last 25 years and found that 46% of the catastrophes stemmed from misguided strategies. This shows that the single most acute cause of business failure has been a misguided or wrong strategy. Although there cannot be a right or wrong approach (i.e., what has worked for one organization may not necessarily work for another), we are of the belief that unbiased, published case studies will support the development of knowledge in this critical field of practice. This is where our article comes into play.

The focus of this article is to provide insights into a strategy development effort at one of the most successful public sector organizations in the United Arab Emirates. It explains the organization's overall strategy as well as how it achieved its set goals and objectives. The overview covers the 4-year strategy cycle of 2010–2013 and attempts to briefly analyze how the strategy impacted overall organizational performance. It also explains some of the underlying factors that have contributed to the overall success of the strategy and draws some lessons learned in terms of the challenges faced and how they were overcome.

This article is structured as follows. In Section 2, we briefly explain the research methodology we followed for this article. In Section 3, we provide a short overview about the organization being researched. In Section 4, we describe the 2010–2013 strategy of the Emirates Identity Authority. In Sections 5 and 6, we explain the strategy's objectives and how they impacted the organization's overall performance. In Section 7, we provide some foundational learned lessons, and we also explain the challenges and how the solutions were implemented. In Section 8, we conclude the article.

2. Research Methodology

The purpose of this study is to provide a short case study of a strategy implementation at a government organization. The research approach followed in this article is a case study design. The reason for choosing a case study research design was because it is recognized as an ideal tool when a holistic, in-depth investigation is needed for investigating trends and specific situations (Feagin et al., 1991). Moreover, researchers have argued that certain kinds of information can be difficult, or even impossible, to tackle by means other than qualitative approaches, such as case study-based strategies (Sykes, 1990).

The selection of the organization was based on two issues: accessibility and its renowned international reputation for its strategic planning and execution as well as the alignment of strategy with organizational goals and objectives. The research design for this study is a descriptive and interpretive case study that is analyzed through qualitative methods. Data collection involved secondary sources (e.g., publications and technical documentation analysis) and primary sources (e.g., the active role of the author in the organization that facilitated contact with social actors).

3. Emirates Identity Authority: Overview

The Emirates ID Authority (Emirates ID) is a federal government organization in the United Arab Emirates. It began its journey in 2004 as a federal juridical government body with an independent budget and its own legal framework to facilitate achieving its objectives. The decree empowered the authority to develop and implement a sophisticated and state-of-art nationwide identity management infrastructure. The scheme involves enrolling the entire UAE population, including citizens and legal residents, and issuing them with unique identification numbers and smart cards that are linked with their biographical and biometric details.

4. 2010–2013 Strategy: Definition & Aspirations

In the definition of Emirates ID's strategic direction for 2010–2013, there was a distinct aim for national and individual security, the simplification of transactions, and service excellence, with an immediate requirement for Emirates ID to fulfill its mandate to enroll 100% of the residents and citizens of the United Arab Emirates who would serve to drive the near-term strategic focus. Considering the fact that Emirates ID was rapidly approaching a turning point in the evolution of its operating model, the strategy had to cater to the progression to the next level of identity sophistication, such as the support of the simplification of transitions and facilitation of innovative e-services. Figure 2 depicts the business operating model developed at Emirates ID that illustrates the expected transition in the organization's value chain.

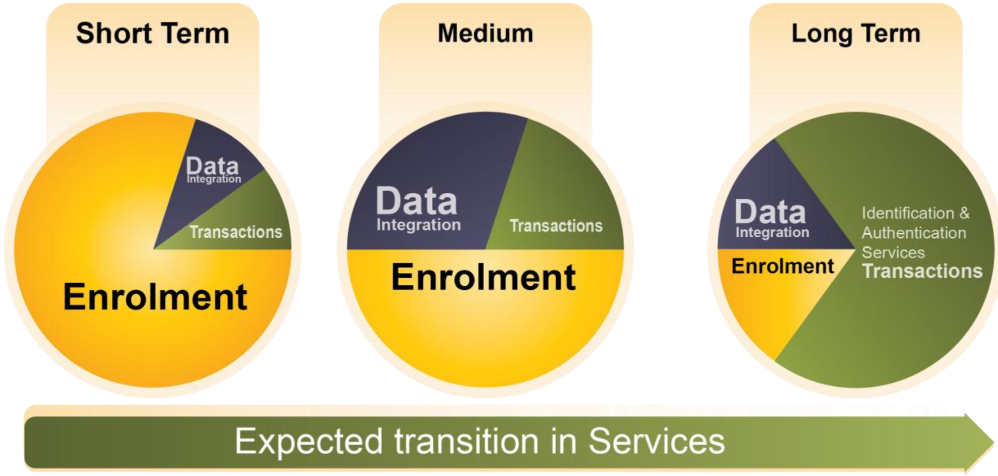


Figure 2. Emirates ID operating model

The definition of the strategy followed a systematic and formal strategy development process that was formulated by the UAE prime minister's office and mandated for use by all UAE federal government entities. The process defined various criteria and controls to ensure integration and consistency across activities and projects as well as the achievement of goals and objectives. The phases of strategy development included a series of key controls:

- Compliance of Emirates ID's vision with the vision and strategy of the federal government;
- Establishing Emirates ID's mission based on its vision;
- Identifying organizational values to support the achievement of Emirates ID's objectives;
- Determining strategic objectives;
- Developing a number of initiatives and programs to meet the targeted objectives;
- Defining strategic performance indicators for initiatives and programs;
- Setting projects to implement the adopted initiatives and programs;
- Distributing projects across Emirates ID's organizational units; and
- Setting operational performance indicators for projects.

The above controls translated into the 2010–2013 strategy map depicted in Figure 3. Strategic initiatives were geared toward the achievement of the strategic objectives as well as the implementation plans for said initiatives, with an eye toward the capacity to adequately measure performance on all fronts by means of operational and strategic key performance indicators.

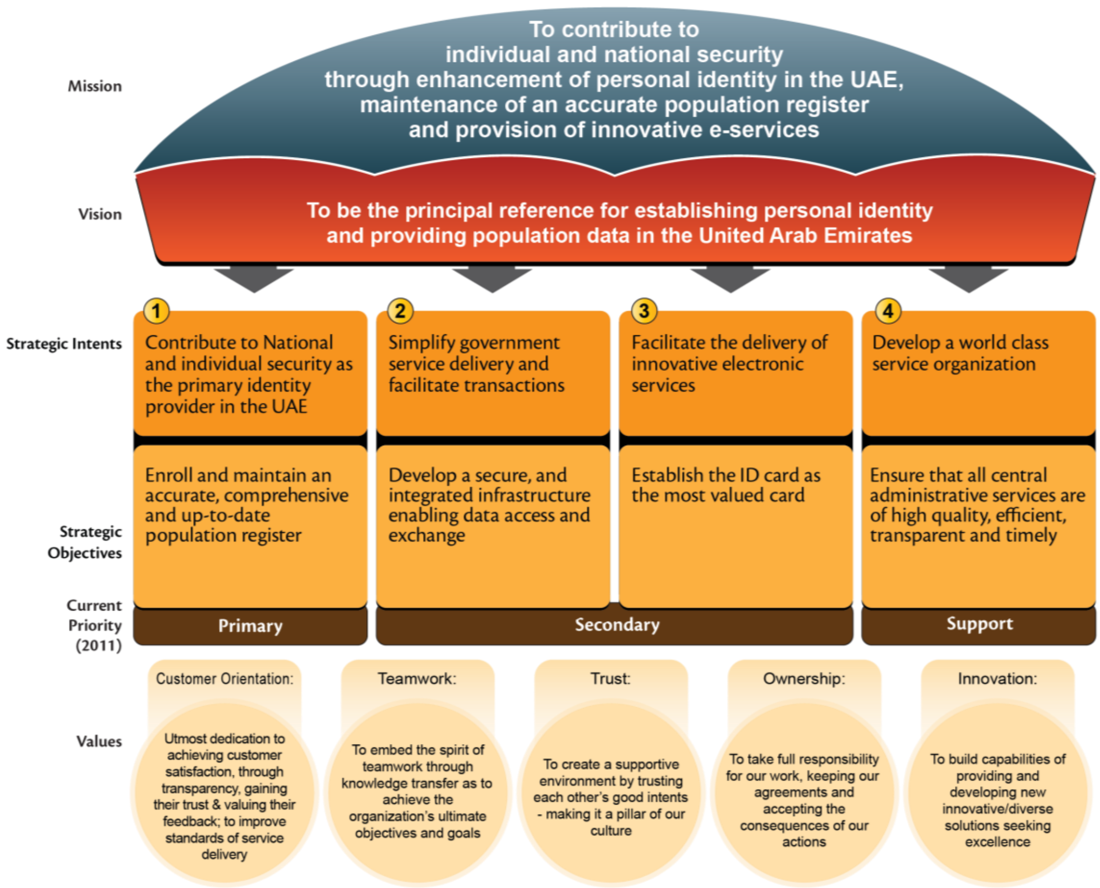


Figure 3. Emirates ID 2010–2013 strategy map

A great amount of attention was given to the development of the strategy map that was later used as a communication medium across the organization. The simplicity of its content and illustration contributed to first shortening the circulation time and, hence, the internal and external awareness of the new strategy and second a holistic view for all departments and units of the overall organizational objectives, leading them to concentrate on outcomes, rather than outputs. In the following sections, we will provide a short overview of the progress made in each of the four strategy objectives.

5. Strategy Objectives Execution

5.1 Objective 1: Enroll and Maintain an Accurate, Comprehensive, and Up-To-Date Population Register

Achieving Emirates ID's objective of enrolling the UAE population and maintaining an accurate, comprehensive, and updated population register required the completion of some key activities; i.e., re-engineering registration processes fifth, maximizing the registration center's capacity to better manage the flow of customers, and maintaining the accuracy of recorded data. The key success factors involved in enrolling and maintaining an accurate, comprehensive, and up-to-date population register were determined to be an upgrade of the registration process, the timely printing of ID cards, and the ability to manage the flow of customers, as well as the accuracy of data.

The attainment of these success factors was bolstered by the introduction of strategic initiatives, the introduction of key performance indicators geared toward the measurement of the initiatives involved, as well as strategic key performance indicators designed to assess the overall progress in terms of the objective itself. This objective was determined to be the primary priority following a 2011 revision of Emirates ID's strategy. See the Appendices section for more details on some measured and analyzed key performance indicators (KPIs).

5.2 Objective 2: Develop a Secure and Integrated Infrastructure Enabling Data Access and Exchange

To develop a secure and integrated infrastructure, Emirates ID focused on the development of interfaces to interact with other entities. Emirates ID also developed the ability to manage the flow of data as well as apply rigorous security protocols to ensure protection and safe access to its data. These steps were seen to be key success factors in the achievement of the objective at large.

The progress of this objective was monitored by indicators (shown in the Appendices section) that were designed to determine how secure the authority's infrastructure was in terms of data sharing as well as how satisfied the authority's external partners were with current data-sharing options.

5.3 Objective 3: Establish the ID Card as the Most Valued Card for Government and Individual Customers

In order to gauge whether the ID card is, indeed, the most valued card in the UAE, Emirates ID planned to not only embed high added-value services that could be accessed by customers using the information stored on the card (or on the information database) but to also rate its value as a card, based on the number of daily transactions that potential card users may conduct. To deliver this strategic objective, Emirates ID focused upon expanding its partner base (with an initial emphasis on the government sphere with a later inclusion of private sector companies, as well) to adopt the card and promote usability.

The authority liaised with its partners to develop world-class e-government services that were informed by an e-services delivery model framework developed in the UAE. The authority also published its first service catalog to help individual, government, and private sector customers understand what services are available to them and how to access them in a demonstrable bid to increase the awareness of the various functions of the ID card.

5.4 Objective 4: Ensure that All Internal and External Functions and Services Are Customer Focused, Efficient, and Effective

Many of Emirates ID's endeavors concentrated on enhancing its employees' understanding of its strategic goals, specifically toward improved responsiveness to customer needs and higher-quality services. The authority has built a service-based organization that is focused on attaining objectives; improving customer service; and establishing efficient, results-oriented internal and external services. Emirates ID also promoted a focus on performance monitoring, competency development, and the provision of the best possible services.

By enhancing, as well as both proactively and reactively acting upon its feedback channels, offering its people sufficient training to provide world-class services, and tailoring said services to cater to specific customer segments, Emirates ID geared itself toward providing an optimal level of value to its customers. With a focus on achieving excellence, Emirates ID adopted initiatives that championed innovation. These initiatives were designed with an eye toward aiding the authority in building and fostering an organizational culture that embraces a forward-looking mindset and promotes empowerment across the organization's staff.

6. Strategy Impact on the Organization

Figure 4. 2010–2013 strategy impact on performance

The new strategy had a tangible positive impact on the authority's overall performance. (See also Figure 4.) This was visible not only in improved performance indicator results but also in terms of greater leadership, team collaboration, and employee engagement in adopting the new strategy. Below are some key areas that we determined to have been positively affected:

6.1 Enabled Enrollment Acceleration

The new strategy acted as an enabler for the acceleration of enrollment rates by facilitating the implementation of reengineered enrollment processes and active monitoring of enrollment processes. There was an:

- Increase in the population register from fewer than 1 million to more than 8 million. This also meant an eight-fold upsurge compared to the earlier period of operation; and
- Increase in the average daily enrollment from under 5k/day to more than 20k/day.

6.2 Performance Tracking and Reporting

Regular monitoring and internal–external reporting of key performance indicators contributed to the following:

- Improvement in KPI results and a more prevalent culture of accountability for KPI results;
- Emphasis on the monitoring of capacity utilization rates at registration centers; and
- Elimination of root causes/drivers for bottlenecks across enrollment business process steps.

6.3 Increased Customer Centricity

The organization paid particular attention to the development of a customer-centric culture. In fact, all of its initiatives were primarily driven by customer needs and wants. As such, Emirates ID culture promoted:

- Ongoing efforts to monitor and improve customer experience; and
- Periodical streamlining of enrollment and card delivery procedures and enhancement of existing and introduction of new customer touch points.

6.4 Skills Development

The new strategy played a key role in pushing and accelerating organizational efforts in the development of technical and soft skills of the strategy of the department team and department project managers. These skill sets involved the following:

- Taking an unstructured problem and selecting appropriate information to analyze the issues while keeping in mind the final objectives and not succumbing to micromanagement;
- Independently developing and applying a well-thought-out, comprehensive plan;
- Conducting research that has predefined objectives, is gathered by leveraging appropriate secondary sources, and is supported by meaningful data;
- Adeptness at quantitative and qualitative analytical techniques;
- Rapidly executing project tasks by focusing on core issues and effectively managing deadlines with limited guidance; and
- Summarizing/synthesizing relevant findings and implications into well-structured presentations.

7. Lessons Learned

Key factors that contributed to overall success at Emirates Identity Authority were leadership commitment, vigorous and dynamic management mindset, clear visualization of expected outcomes, simplified decision models based on facts rather than feelings, constant communication, and periodical reviews of our plans to adjust them to changing internal and external environments (Al-Khouri, 2012b).

While the planning and execution of the Emirates ID 2010–2013 strategy generated outstanding accomplishments and results, the team also faced some functional and technical challenges. These served as learning points and inputs for the formulation and execution of its later (2014–2016) strategy. These were largely segmented into the following areas: strategy execution, performance management, and strategic vs. operational governance. In each of these areas, Emirates ID encountered challenges from which lessons were learned. Figure 5 provides a summary of these lessons, which are discussed next.

Figure 5. Key lessons from Emirates ID's strategy implementation

7.1 Strategy Execution

7.1.1 Challenge

The limited pool of internal resources available for the proper execution of all strategic initiatives defined in the 2010–2013 strategic plan was a notable challenge for Emirates ID. This limitation led to the small number of available skilled resources being stretched across too many initiatives, consequentially leading to a decrease in the resources' engagement level and output.

Although a key accomplishment for Emirates ID has been the immense pace at which it has rolled out its key initiatives to close gaps identified during the strategy development phase, this approach has also had an indirect downside: adoption of such a rapid change has led to a lack of prioritization, thereby leading to competing priorities for many parts of the organization and the incomplete implementation of some initiatives.

Underlying drivers for this have been the limited adherence by management to predefined project plans, calling for the phased rollout of initiatives, and the lack of a central program management office that is responsible for maintaining an integrated master plan and enforcing disciplined issue-management processes and standardized project reporting.

7.1.2 Solution

Action plans incorporated a new approach to ensure that all strategic initiatives are properly funded and supported by teams with the right competencies and skill sets to manage and execute them. The high-level strategic initiatives initially defined by the leadership team were assigned to sector and departmental executives, who were given the responsibility for translating the initiatives into specific projects with detailed implementation plans, budget estimation, the identification of competencies required to execute them, and the definition of the expected (quantifiable) impact each project would bring to corporate targets and objectives.

After all of the initiatives were described, a second prioritization process took place in order to define an integrated roadmap based on the availability of resources (both human and financial) and a robust change management plan to incorporate the missing competencies and skills of the internal team. Finally, projects were incorporated into the operational plans of each department and accountability for the execution and reporting was assigned to the department managers.

7.2 Performance Management

7.2.1 Challenge

During the development of the strategy, a detailed assessment on management processes was performed throughout the organization. A common need was identified: a performance management and reporting system to support the decision-making process at all organizational levels. The absence of an automated strategy management tool to measure and report on strategy performance resulted in various forms of inefficiencies and inconsistencies during the 2010–2013 timeframe.

Reporting was limited to Excel and PowerPoint, and the time spent on manual data collection and consolidation processes was time that should have, in theory, been dedicated to performance analysis. Risk management and personal scorecard management were also identified as additional functionalities that would be required in the near future.

7.2.2 Solution

To tackle this issue, a well-structured process was followed to identify detailed business, technical, and functional requirements and select vendors for the solution. After several rounds of product demonstrations from the shortlisted vendors, a "vendor's scorecard" was developed and software was selected. The chosen solution derived decision making at all organizational levels, taking the organization to the next step of strategy execution where each employee was able to visualize his contribution to the corporate strategy using an integrated, online, cloud-based platform.

7.3 Strategic vs. Operational Governance

7.3.1 Challenge

Another challenge faced during the execution of the strategy was the time consumed by the senior management team in the identification and implementation of solutions for tactical and/or operational issues, thereby "distracting" the focus from strategic governance to operational governance—leading to an overburdened and singular steering committee (through weekly management team meetings) that maintained oversight across almost all initiatives.

7.3.2 Solution

To prevent such situations, the mid-management team was asked to take on a more proactive, independent role in issue identification and resolution, whereas the senior management team would ensure that these individuals would be empowered to make decisions and given room to learn from their mistakes. The governance process was redesigned, as described above, to facilitate this process, empowering the different management levels to recommend solutions and take actions regarding operational issues during the weekly management meetings, while strategic issues were discussed during the quarterly strategy review meetings.

8. Concluding Remarks

Governments' strategies normally tend to be clear, to some extent, regarding their vision and high-level outcomes when they are first developed; however, our experience indicates that many formulated government strategies do not capture or take into account the complexity or nature of these strategies at the execution stage. As a result, they face significant difficulties in articulating their requirements in terms of clear objectives, actionable initiatives, and precise and measurable performance indicators. In fact, strategies in governments, due to their multifaceted nature, face a greater risk of failure than those in the private sector. We need to always remember that complexity can easily destroy the value we intend to bring through our strategies. It should, therefore, be the goal of every organization to decrease complexity wherever and whenever deemed possible.

The strategy implementation in the researched organization, as shown in this article, yielded successful outcomes after 4 years of well-planned and disciplined execution. The outlined case study illustrates the need to focus on adding value beginning with strategy development and during execution. However, it is also important to remember that there will never be a "one-size-fits-all" recipe for success; nevertheless, learning from others' experiences may feed existing limited knowledge pools, especially from some of the untapped explorations. Our case study has, at least, a few things to offer!

References

Al-Khouri, A. M. (2007). Using Quality Models to Evaluate National ID systems: the Case of the UAE. *International Journal of Social Sciences, 1*(2), 117–130.

Al-Khouri, A. M. (2012b). Targeting Results: Lessons Learned from the UAE National ID Program. *Global Journal of Computer Application and Technology, 2*(1), 830–836.

Al-Khouri, A. M. (2014). Fusing Knowledge Management into Public Sector Corporates Excellence Culture: A Review of the Field and The Case of Emirates Identity Authority. *Journal of Knowledge Management, Economics and Information Technology, 4*(3), 1–60.

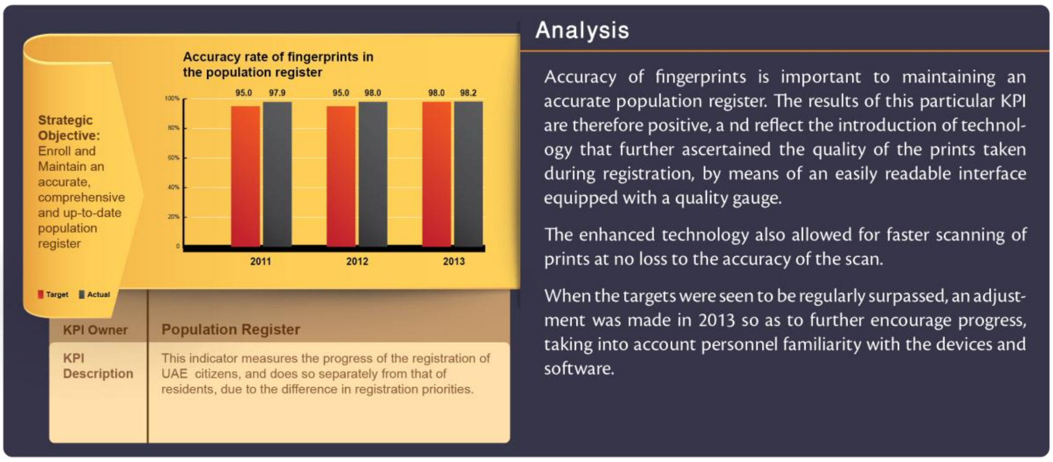
Carroll, P, B., & Mui, C. (2008). Failed Strategies. What CEO's can learn from the billion dollar mistakes. *Chief Executive*, (236), 44–46.

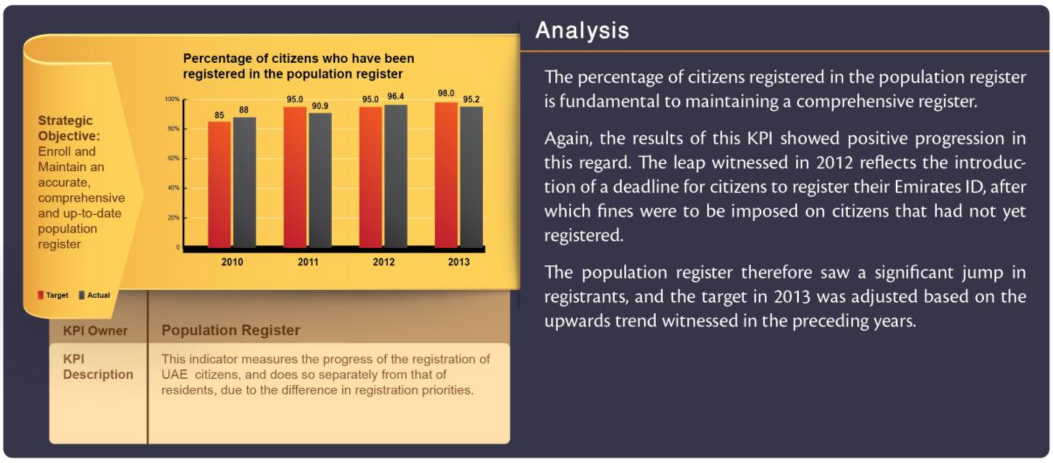
Eisenhardt, K. M. (1999). Strategy as Strategic Decision Making. *Sloan Management Review, 40*(3), 65–72.

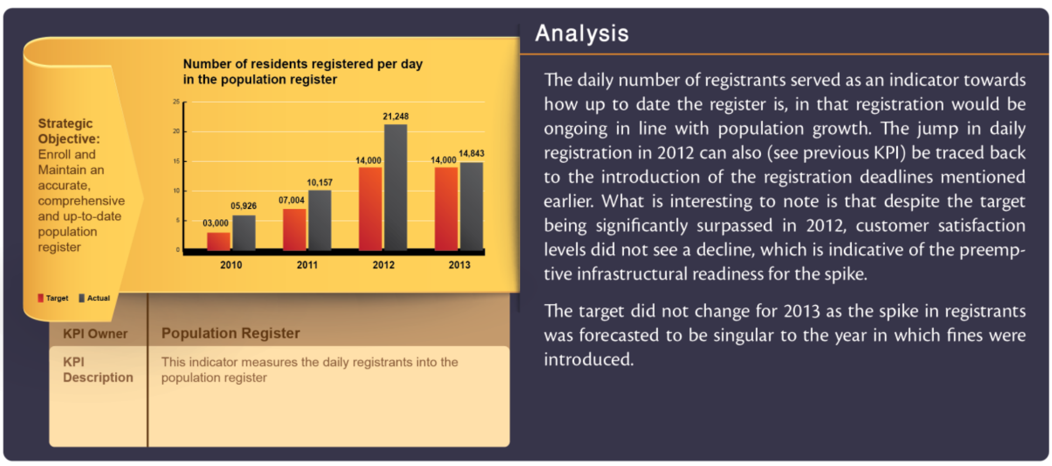
Skinner, W. (1969). Manufacturing – Missing Link in Corporate Strategy. *Harvard Business Review*, May-June 1969.

Appendix

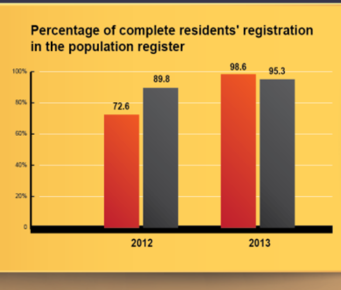
Appendix 1. Measured and analyzed KPIs







Strategic Objective: Enroll and Maintain an accurate, comprehensive and up-to-date population register



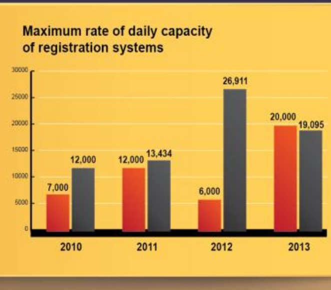
KPI Owner	Population Register
KPI Description	This indicator measures the percentile completion of resident registration as compared to data provided by the Ministry of Interior

Analysis

The percentage of resident registration within the population register was measured distinctly from citizen registration so as to maintain segmentation, thereby enabling targeted communication in reaction to results, when and if necessary. Similar to the KPI that measured the same percentage for nationals, the leap in 2012 figures reflect the introduction of registration deadlines. Given the incentive to register for and acquire an ID card, the percentage of residents registered within the Population Register saw a significant jump.

The target in 2013 was then adjusted based on the increased figures seen in 2012.

Strategic Objective: Enroll and Maintain an accurate, comprehensive and up-to-date population register



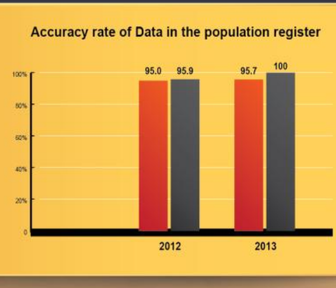
KPI Owner	Service Centers
KPI Description	This indicator measures the capacity of the registration centers & preventive medicine centers in order to ensure that planned enrollment capacity is sufficient.

Analysis

The maximum daily capacity of the systems is key to managing the flow of customers, in that adequate systems needed to be put in place to accommodate registrants/transactions. Again, the introduction of the fines is also behind the jump witnessed in the figures for 2012. Seeing as there was an expected influx of registrants during that time period, Emirates ID took an active interest in both simplifying the customer journey as well as ensuring that the service centers had the capacity to receive the influx. This increased capacity was a result of process reengineering coupled with the introduction of further preventive medicine centers (PMC) in a bid to increase capacity.

Given that the spike in registrants was expected for 2012, the target was then decreased in 2013, given that significantly

Strategic Objective: Enroll and Maintain an accurate, comprehensive and up-to-date population register



KPI Owner	Population Register
KPI Description	This indicator measures the accuracy of the data in the population register, in terms of the number of accurate files / total number of files audited during the measurement period.

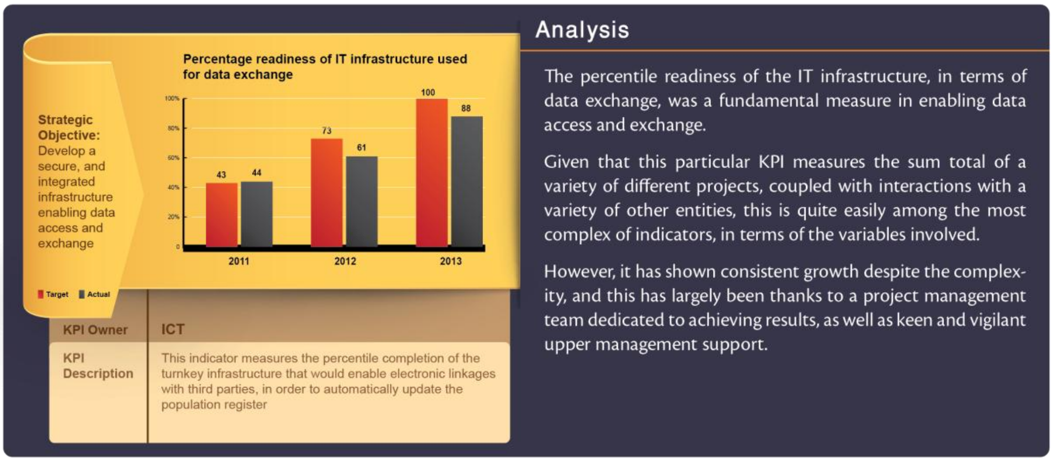
Analysis

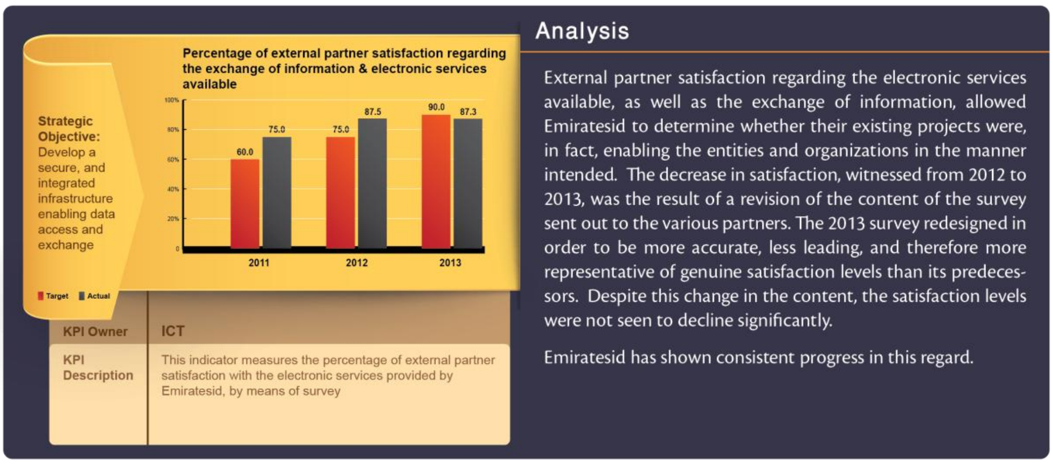
The measure of the percentile accuracy of data within the population register is key to ensuring that the population register is, in fact, accurate.

Given that among the primary sources of raw data into the population register resulted from manual data entry, this allowed for Emiratesid to take advantage of the personnel that had been released by the decrease in required capacity for 2013 in the service centers and employ them in data audit instead.

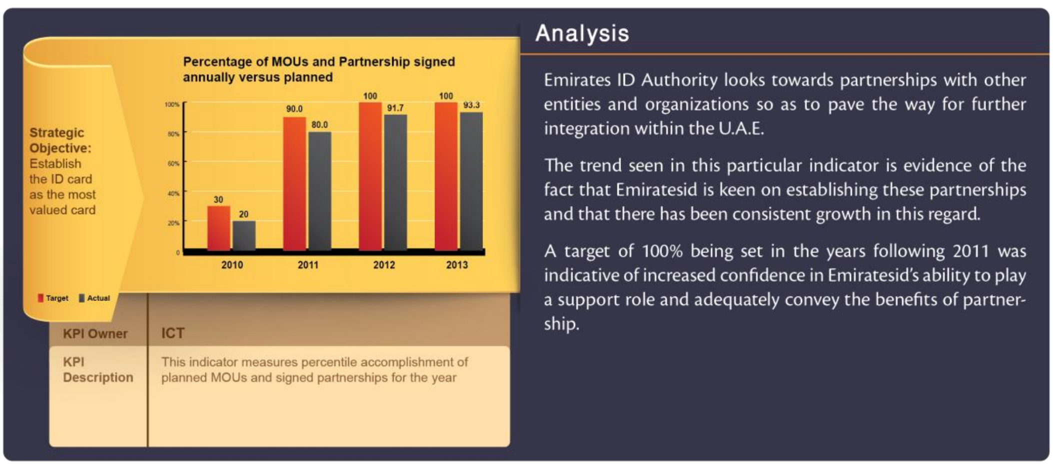
The resultant increase in percentile accuracy is largely credited to the increased loyalty and diligence of in-sourced staff (as opposed to out sourcing), as well as the introduction of further internal checks. In addition, certain ID cards were due for renewal in 2013, and this allowed for the opportunity to conduct cleansing and rectify the errors identified in previous years.

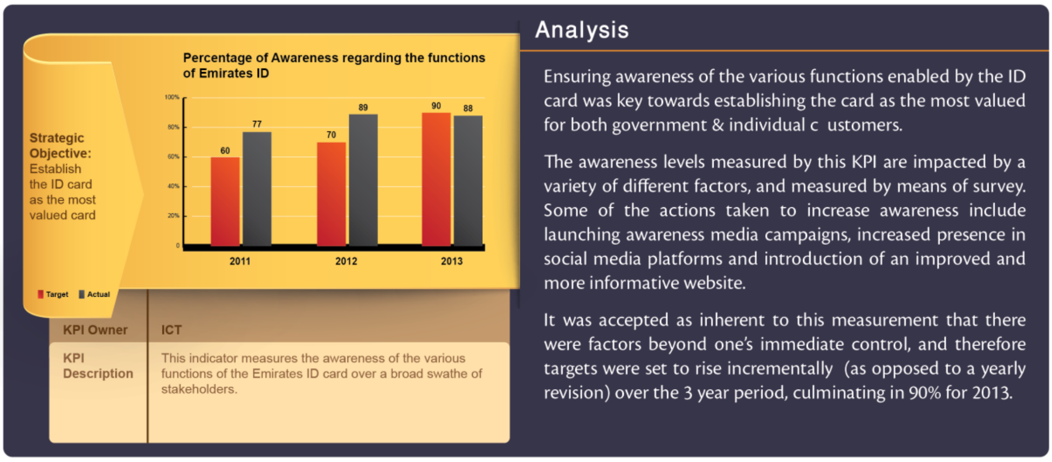
Appendix 2. Measured and analyzed KPIs



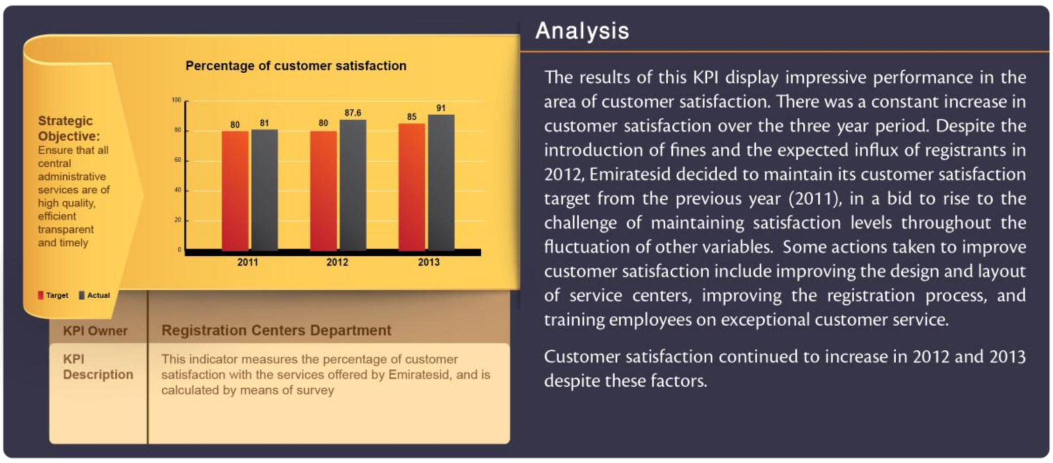


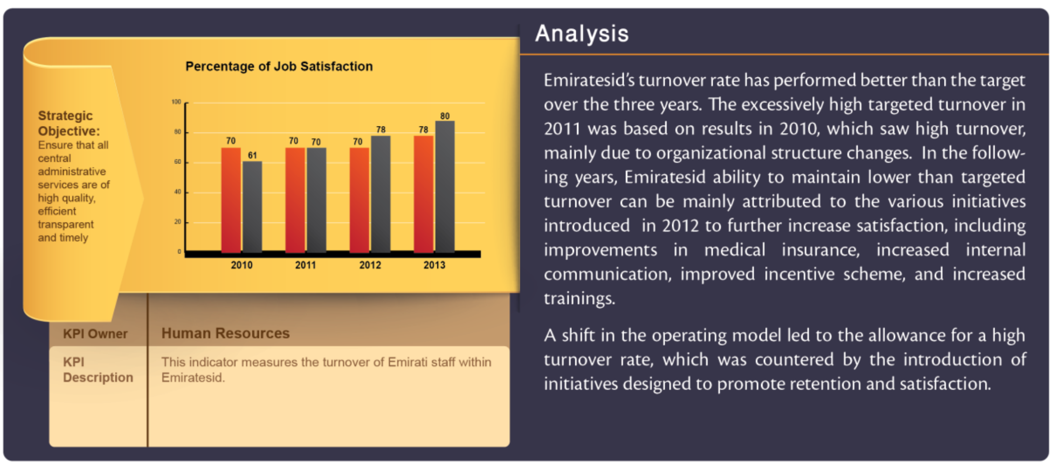
Appendix 3. Measured and analyzed KPIs

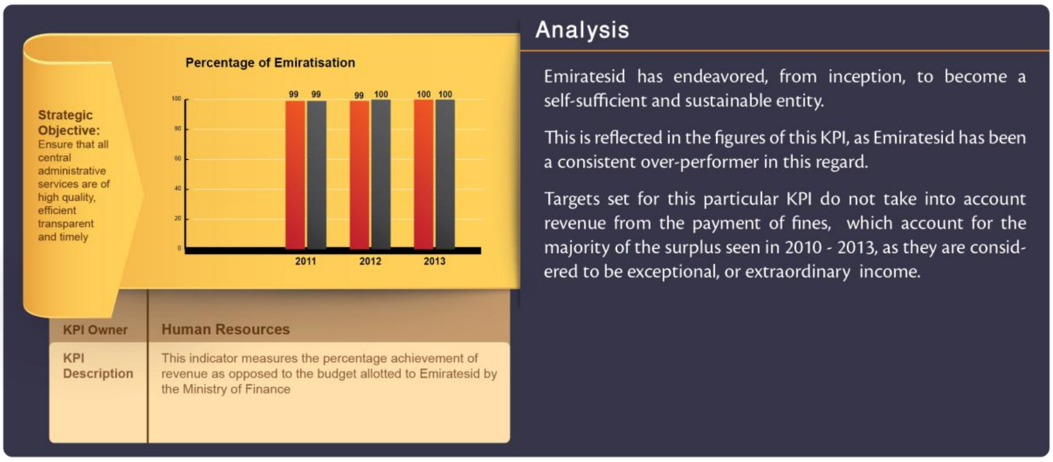


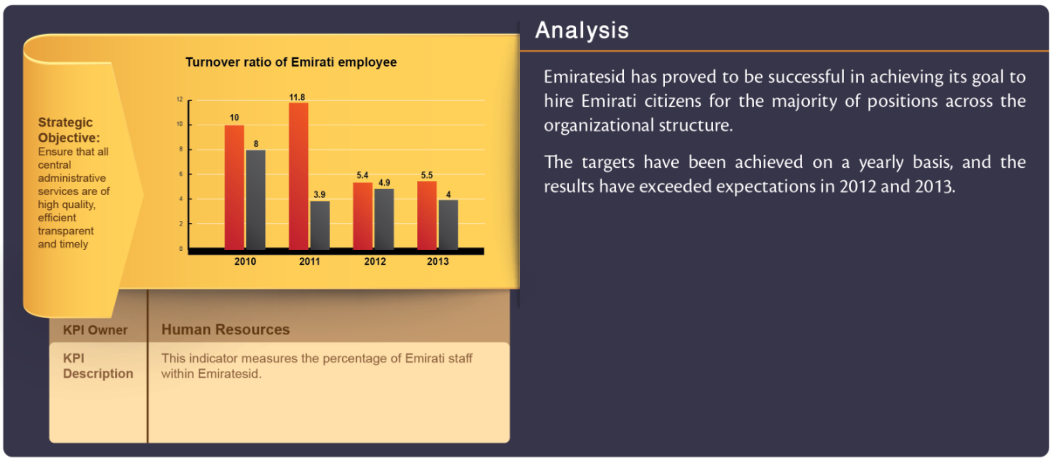


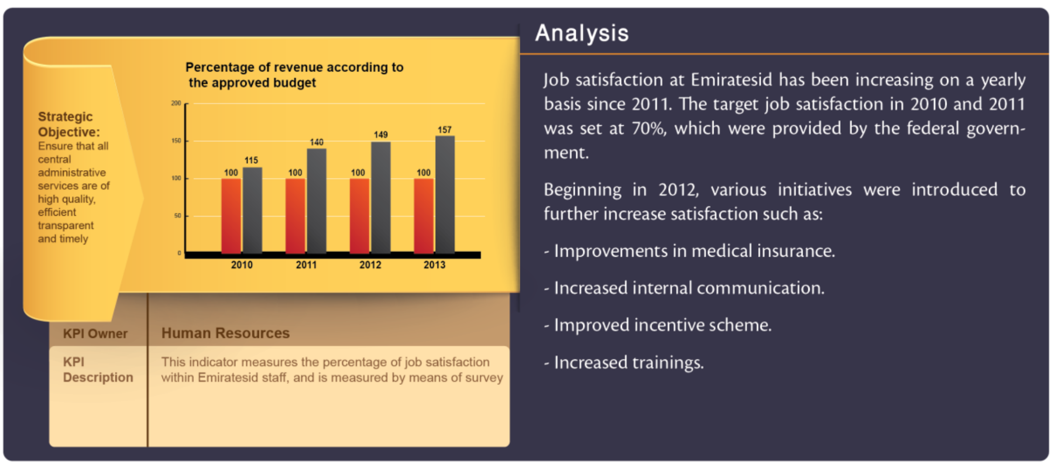
Appendix 4. Measured and analyzed KPIs






Percentage of Emiratisation
99 99 99 100 100 100
2011 2012 2013
Strategic Objective:
Ensure that all central administrative services are of high quality, efficient transparent and timely
KPI Owner
Human Resources
KPI Description
This indicator measures the percentage achievement of revenue as opposed to the budget allotted to Emiratesid by the Ministry of Finance
Analysis
Emiratesid has endeavored, from inception, to become a self-sufficient and sustainable entity.
This is reflected in the figures of this KPI, as Emiratesid has been a consistent over-performer in this regard.
Targets set for this particular KPI do not take into account revenue from the payment of fines, which account for the majority of the surplus seen in 2010 - 2013, as they are considered to be exceptional, or extraordinary income.


Turnover ratio of Emirati employee
10 8 11.8 3.9 5.4 4.9 5.5 4
2010 2011 2012 2013
Strategic Objective:
Ensure that all central administrative services are of high quality, efficient transparent and timely
KPI Owner
Human Resources
KPI Description
This indicator measures the percentage of Emirati staff within Emiratesid.
Analysis
Emiratesid has proved to be successful in achieving its goal to hire Emirati citizens for the majority of positions across the organizational structure.
The targets have been achieved on a yearly basis, and the results have exceeded expectations in 2012 and 2013.


Percentage of revenue according to the approved budget
100 115 100 140 100 149 100 157
2010 2011 2012 2013
Strategic Objective:
Ensure that all central administrative services are of high quality, efficient transparent and timely
KPI Owner
Human Resources
KPI Description
This indicator measures the percentage of job satisfaction within Emiratesid staff, and is measured by means of survey
Analysis
Job satisfaction at Emiratesid has been increasing on a yearly basis since 2011. The target job satisfaction in 2010 and 2011 was set at 70%, which were provided by the federal government.
Beginning in 2012, various initiatives were introduced to further increase satisfaction such as:
- Improvements in medical insurance.
- Increased internal communication.
- Improved incentive scheme.
- Increased trainings.

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Individual Factors Influencing Career Growth Prospects in Contexts of Radical Organizational Changes

David E. Okurame[1]

[1] Department of Psychology, University of Ibadan, Nigeria

Correspondence: David E. Okurame, Department of Psychology, University of Ibadan, Nigeria. E-mail: daveokurame@yahoo.com

Received: July 16, 2014 Accepted: August 25, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p74 URL: http://dx.doi.org/10.5539/ibr.v7n10p74

Abstract

This study examined the influence of individual factors (demographic variables, self-efficacy beliefs and personal growth initiative) on career growth prospects within the context of radical organizational changes such as downsizing, mergers and acquisition. Data were collected using the questionnaire method from 199 employees in branches of a commercial bank located in a major city in South-Western Nigeria. Results of the simple multiple regression analysis showed that educational attainment ($\beta = -.15$, $p < .05$), tenure in the banking sector ($\beta = -.41$, $p < .01$), basic monthly income ($\beta = .46$, $p < .001$) and job status ($\beta = .34$, $p < .01$) are significant demographic factors in career growth prospects. The analysis of covariance which controlled for covariates revealed significant differences in the career growth prospects of employees with low levels of self-efficacy and those with high levels – in favor of the latter. In contrast, high or low levels of personal growth initiative resulted in comparable levels of career growth prospects. Self-efficacy beliefs and personal growth initiative interacted significantly to affect career growth prospect such that greater levels of career growth prospect was expressed irrespective of whether an employee is high or low on personal growth initiative when self-efficacy belief is high. Implications of findings are discussed.

Keywords: career, banking sector, personal growth initiative, self-efficacy beliefs, downsizing, acquisition, demographic data, Nigeria

1. Introduction

Employees often hope to grow in their profession and to achieve a distinguished career (Okurame & Balogun, 2005). The probability that this will come to fruition is the underlying thrust of career growth prospect. Defined as the chances of getting promoted and obtaining career development experiences, career growth prospect is arguably an essential source of motivated work behavior (Weer, 2006; Okurame, 20012a). The mere expectation of moving up an organization's hierarchy through promotion and obtaining beneficial career development experiences increases an employee's effort and motivates a strong involvement in organizational and career activities (Mowday, Porter & Steers, 1982; Eisenberger, Lieberman & Williams, 2003). Indeed, empirical investigations have shown that such optimism is accompanied by job effectiveness (Avey, Nimnicht & Pigeon, 2010), increased job attendance (Eisenberger, Huntington, Hutchison & Sowa, 1986), a greater willingness to remain with an organization, and pro-social actions from employees (Meyer & Allen, 1984; Brief & Motowidlo, 1986; O'Reilly & Chatman, 1986; Okurame, 2012a). Again, when employees have favorable perceptions of prospects for career growth, they tend to be more willing to go along with work changes and strive to stay up-to-date on their work activities even when it is not particularly convenient for them. The proven importance of career growth prospect, therefore, demands that adequate empirical attention be paid to it.

Further justifications for the present study is provided in the next section, followed by a literature review that examines the potential link of individual factors (demographic variables, self-efficacy beliefs and personal growth initiatives) to career growth prospects. The subsequent two sections explain the data generation process and the results of data analyses respectively. The last three sections discuss findings in relation to the literature, draw conclusions with practical implications of findings and highlight study limitations respectively.

1.1 Justification for the Study

Given the significance of career growth prospects for employee performance, many organizations have made efforts to be responsive to the career needs of employees through education, mentoring, training and upward promotion for deserving employees. It is expected that this would increase the possibility of career growth and encourage employees to go the extra mile in the discharge of their assigned duties. However, career growth has become a major challenge for employees in modern organizations due to drastic organizational changes. Given the global economic climate, organizations are reorganizing staff and culture, collapsing organizational layers, downsizing, and engaging in mergers or acquisition to enhance solvency and remain competitive. Unfortunately, this trend tends to reduce opportunities for hierarchical promotion among surviving employees (Heslin, 2005) and creates uncertainties that have heightened the need to focus empirical attention on career growth and development (Whiston & Blustein, 2010).

In the Nigerian environment, the phenomenon is clearly evident in the banking sector and has raised concerns for obvious reasons. Employees in the Nigerian banking sector have great expectations of career growth in their organizations but prevailing circumstances in the sector make meeting such expectations a challenge (Okurame, 2012a). In the prevailing circumstances, bank employees need to work even harder to merit being put up for the limited career growth openings. Although, the literature (Brutus, Ruderman, Ohlott, & McCauley, 2000) suggests that these changes may offer opportunities for development experiences and content advancement, limited opportunities for hierarchical advancement which necessarily occur (Heslin, 2005) may hinder favorable perceptions of career growth prospects. Indeed, empirical investigation reveals that promotions and upward movement through an organization’s hierarchy is a valued index of career growth and a successful career in the Nigerian context (Okurame, in press). A promotion within an organization’s hierarchy generally represents status and increased responsibility, reflects a recognition of an employee’s worth in the organization, a better pay, and creates opportunities for even further advancement (London & Stumpf, 1983). It is logical, therefore, to expect that having to work even harder and to wait until there is an opening for upward movement (which may never come in years) may foster perceptions of unmet career growth expectations in the sector.

The expectancy approach to employee efficiency suggests that bank employees will constantly be encouraged to exert effort to perform well in needed organizational functions when there is an expectation that this will always be followed by valued career outcomes (Okurame & Balogun, 2005). Therefore, unmet expectations of an upward movement in a career within an organization would be expected to bring harrowing experiences to employees with attendant negative consequences for motivation and performance in organizational roles (Ivancevich & Matteson, 1980; Okurame & Balogun, 2005). Consequently, an empirical investigation of factors that may enhance or inhibit career growth prospect is important and necessary to enhance its role in the effectiveness of the Nigerian banking sector. Although speculation about the helpful influence of individual factors is making the rounds, these are largely based on logical reasons rather than empirical. Thus, the present study examined the influence of individual factors (demographic variables, self-efficacy beliefs and personal growth initiative) on career growth prospects to fill the identified gap in literature. Gaining a better understanding of the ways in which these variables impact career growth prospect has practical importance as this will offer organizations an insight into policies and programs that will increase prospects of career growth among their employees. This is important and necessary especially for organizations that consider meeting the career growth needs of their employees a strategic factor in attracting and retaining talented staff. Equally important, the findings will offer employees who are committed to a career in the banking sector, valuable insights into how prospects for career growth can be enhanced.

2. Literature Review

2.1 Demographic Variables and Career Growth Prospects

Although, no research has investigated the direct influence of demographic variables on career growth prospects in the literature, considerable research evidence suggests that demographic variables are valuable factors in career attitude and growth (e.g. Powell & Butterfield, 1994; Okurame & Balogun, 2005; Sullivan & Arthur, 2006; Grimland, Vigoda-Gadot & Baruch, 2012; Okurame, 2012b). For example, gender differences have been linked to career attitudes. While men tend to be more motivated by promotion, women build careers that are relational based (Inceoglu, Segers, Bartram & Vloeberghs, 2008). Besides, the complexity of career for men and women differ (Huang, El-Khouri, Johaneson, Lindroth & Sverko, 2007). Compared to women, men are more under social pressure to earn an income which is enhanced by hierarchical promotion (Richter, 2011).

Findings in the literature showed that age as well may account for differences in career growth prospects as it influences the extent to which an employee may be able to resist social pressure regarding the usefulness of hierarchical promotion (Sullivan, Martin, Carden & Mainiero, 2003). The literature suggests that an employee’s career attitude is less guided by social pressure about what to do as he or she gets older (Inceoglu et al., 2008;

cited in Segers, Inceoglu. Vloeberghs, Bartram, & Hendericks, 2008). Conversely, however, research findings show that employees with higher levels of education, status and work experience undertake more development activities and pay greater importance to hierarchical promotion than their counterparts at lower levels (Cheramie, Sturman & Walsh, 2007; cited in Segers, Inceoglu, Vloeberghs, Bartram & Hendericks, 2008). It is logical, therefore, to expect that the demographic data of employees would influence their perceptions of career growth prospects.

2.2 Self-Efficacy Beliefs and Career Growth Prospect

Self-efficacy belief is a construct within the social cognitive theory which reflects an individual's judgment of his or her capability to do well in a range of situations or tasks (Bandura, 1978; Ashford & LeCroy, 2010; Lunenburg, 2011). It is not necessarily based on actual ability, but on what is believed by an individual. Indeed, actual ability and beliefs about such abilities scarcely tally as people with competencies often express low self-efficacy beliefs such that it limits what they do with their skills (Pajares, 2002). Social cognitive theory argues that individuals are capable of reflecting on previous actions and utilize the outcomes of such reflections as a guide for determining future behavior especially in challenging moments (Stajkovic & Luthans, 1998; Bandura, 2001; Nevid, 2009). Unless an individual believes he or she can accomplish a desired outcome, sufficient inspiration to act or persevere will be lacking (Bandura, 2001). Self-efficacy or the belief in one's ability to attain a goal determines the actions that an individual takes and the extent to which they pursue such goals, and their outcome expectations (Bandura, 1997; Turan, Valcke, Aper, Koole & Derese, 2013). Consequently, the potential impact of self-efficacy beliefs on career growth or its prospect stems from its influence on an individual's achievement striving and persistence in the face of career challenges (Bandura, 1982; Lent & Hackett, 1987; Gist & Mitchell, 1992; Stajkofic & Luthans, 1998; Ballout, 2009; Oni, 2013; Wright, Jenkins-Guarnieri & Murdock, 2013).

Without a doubt, if a worker has good self-efficacy beliefs, this can lead to high aspirations and a stronger commitment to set goals in the face of challenges (Bandura, 1997; Wu, 2002; Okurame, 2006). Findings of studies have underscored the importance of efficacy beliefs in career-related performance (Lent & Hackett, 1987; Lent, Brown, Talleyrand, McPartland, Davis, Chopra, Alexander, Suthakaran & Chai, 2002). A belief in self-efficacy enhances perceived personal control over career growth opportunities (Gist & Mitchell, 1992; Schwarzer & Scholz, 2000; Malherbe, Stell & Theron, 2003), improves the individual's ability to cope with pressure and challenging tasks (Williams & Willians, 2010), and positively impacts on self-sufficiency (Saks, 1995), job planning and team work performance (Chen, Webber, Bliese, Mathieu, Payne, Born & Zaccaro, 2002; Fort, Jacquet & Leroy, 2011). Conversely, low self-efficacy increases pessimism about an individual's ability to accomplish an endeavor, leading to lower utilization of skills and a lack of effort (Bandura & Cervone, 1983; Schwarzer & Scholz, 2000). Therefore, it is logical to expect that bank employees with high levels of self-efficacy beliefs will have high expectations about performing well, making them approach career issues and career growth opportunities with greater determination. On the contrary, bank employees who feel that their effort cannot lead to desired career outcome, will be less willing to engage in career related behavior, and this should in turn, diminish their feelings of prospects for career growth. Consequently, it is expected that high levels of self-efficacy will result in greater levels of career growth prospects compared to low levels of self-efficacy beliefs.

2.3 Personal Growth Initiative (PGI) and Career Growth Prospects (CGP)

Personal growth initiative is another variable which has been canvassed as an important factor in career growth prospects in the Nigerian banking sector. Defined as the intentional and active involvement of an individual in the process of personal growth (Robitschek, 1998), it is theoretically assumed to contain both cognitive and behavioral components (Robitschek, 2003). Personal growth initiative involves a readiness for change, an ability to be strategic in an effort to attain goals, an ability to identify and access resources, intentional follow-up behavior and a pre-occupation with self-improvement (Robitschek, Ashton, Spering, Murray, Geiger, Martinez & Shotts, 2010). Although the construct which has its roots in positive psychology is at its infancy; it is emerging as a useful approach for helping human development, prosperity and personal fulfillment through self-determination. Positive personal growth initiative spurs confidence in the ability to handle challenging life and career events and to take advantage of growth opportunities (Robitschek, Ashton, Martinez, Murrey & Shotts, 2009; Ayub & Igbal, 2012; Sharma & Rani, 2013; Yakunina, Weigold & Weigold, 2013). It makes employees adopt a proactive approach to work which is characterized by a long-term goal-oriented focus and going beyond job requirements even in the face of obstacles (Robitschek & Cook, 1999).

People with a high personal growth initiative actively seek out self-change and self-growth experiences, setting explicit growth goals and foreseeing success in uncertain situations (Sharma & Rani, 2013). Setting explicit personal growth goals makes it possible for individuals to direct their attention and effort towards relevant goal attainment activities and optimal functioning (Karakowsky & Mann, 2008; Weigold, Porfeli, & Weigold, 2013). Often, they seek and acquire knowledge of the process of personal growth in their fields by keeping abreast of procedures and specific things needing change (Sharma & Rani, 2013). Findings show that individuals with high personal growth initiative scores report greater problem solving activities and hope in doing well, especially in tasks that demand awareness and intentionality (Whittaker & Robitschek, 2001; Shorey, Little, Snyder, Kluck & Robitschek, 2007). Given that individuals with high scores on personal growth initiative tend to seek growth experiences and have a high level of future-oriented growth, it is logical to expect that they would report greater levels of career growth prospects. Consequently, this study proposes that a bank employee's personal growth initiative would significantly distinguish him or her on career growth prospects.

2.4 Interaction Effects of Self-Efficacy Beliefs and PGI on CGP

The possibility that efficacy beliefs and personal growth initiative may interact to significantly affect career growth prospects seems logical and robust. Arguably, self-efficacy beliefs may be an important factor in whether or not an individual engages in the self-determination tendencies of personal growth initiative, because a good level of self-efficacy provides the motivation for making personal growth plans and the effort to attain them. In a reverse manner, a tendency for personal growth initiative may also advance self-efficacy beliefs in ways that positively affect career growth prospects. Personal growth initiative is a self-change process that enhances the perception of an individual's skill and their ability to be strategic and successful (Robitschek et al., 2009). Self-efficacy beliefs and personal growth initiative are both future-related constructs and may combine in useful ways to affect expectations or prospects of career growth. Indeed, empirical evidence (i.e. Sharma & Rani, 2013) of the relationship between these variables emerged recently in a study among postgraduate students. Consequently, this largely untested assumption was examined in the present study.

2.5 Study Hypotheses

In view of the theoretical arguments, empirical findings and logical expectations discussed in the preceding paragraphs, the present study formulated and tested the following hypotheses: Hypothesis 1: Demographic data of respondents will have significant independent and joint influence on career growth prospects. Hypothesis 2: Bank employees with high scores on self-efficacy beliefs would report greater levels of career growth prospect compared to their counterparts with low scores on self-efficacy. Hypothesis 3: Bank employees with high scores on personal growth initiative would report greater levels of career growth prospect compared to their counterparts with low scores on personal growth initiative. Hypothesis 4: There would be significant interaction effects of self-efficacy beliefs and personal growth initiative on career growth prospect.

3. Method

3.1 Setting

The study was carried out among employees in branches of a bank in a major city in south-western Nigeria. The organization is a commercial bank which has been involved in restructuring, downsizing and acquisition. The career growth procedure of the bank gives preference to employees who meet the organization's key performance indices. Ultimately, therefore, employees in the organization take responsibility for their career growth.

3.2 Participants

Data for the study were collected from respondents who were selected through the purposive sampling method. They were employees who worked in the branches of the sampled bank. They were available at the time of survey and were willing to participate in the study. The respondents comprised 98 (49.2%) male and 101 (50.8%) female employees whose ages ranged from 18 to 50, with a mean age of 30.49 years (SD = 5.54). Participants were 155 (77.9%) junior, 30 (15.1%) middle level and 14 (7.0%) management staff. The majority of the respondents were married (51.8%, n = 103) – 48.2 percent were single. The average participant had worked for 4.86 years (SD = 4.25) in the banking sector and 2.96 years (SD = 2.21) in their current organization. Their highest educational qualification varied thus: 29 (14.6%) had ordinary national diploma, 49 (24.6%) held higher national diplomas, 97 (48.7%) held first degrees and 24 (12.1%) had postgraduate qualifications.

3.3 Measures

Data were collected through a questionnaire containing measures of demographic, self-efficacy beliefs and personal growth initiative that served as independent variables, and the dependent variable, career growth prospects.

3.3.1 Demographic Data

Demographic data included sex, age, marital status and highest educational attainment, tenure in the banking sector and with current organization, basic monthly income and job status. A single item was used in assessing each of these variables. Age, tenure in the banking sector, and tenure with current organization were measured as continuous variables. Other demographic data were dichotomized thus; sex (coded 1 = male; 2 = female), marital status (coded 1 = single; 2 = married), highest educational attainment (coded 1 = ordinary diploma; 2 = higher national diploma; 3 = first degree; 4 = postgraduate degree), basic monthly income level (coded 1 = up to 50, 000 naira; 2 = 50, 001 to 100, 000; 3 = 100, 001 and above), job status (coded 1 = junior officer; 2 = middle level officer; 3 = management staff).

3.3.2 Self-Efficacy Beliefs

This was assessed by a 10-item English version of the general self-efficacy beliefs scale developed by Schwarzer and Jerusalem (2000). The scale items evaluate the extent to which a respondent feels he or she can cope with adversities, perform difficult tasks and obtain desired outcomes. Sample items include ‘‘Thanks to my resourcefulness, I know how to handle unforeseen events”, “I can always manage to solve difficult problems if I try hard enough” and “It is easy for me to stick to my aim and accomplish my goals.’’ The authors reported coefficient alpha reliability estimates of between .75 and .90 for the scale in several studies. The scale has been used among Nigerian samples in a previous study (i.e., Okurame, 2006). In the current study, the coefficient alpha for the scale was .80. Participants were required to indicate the extent to which scale items reflect their person on a 4-point scale ranging from not at all true (1) to exactly true (4). High scores indicate high levels of general self-efficacy beliefs, while low scores indicate low levels of efficacy beliefs. Respondents with scores at and below the sample mean score in the present study were categorized as low, while their counterparts with scores above the sample mean were categorized as high.

3.3.3 Personal Growth Initiative

This variable was measured by a 9-item personal growth initiative scale developed by Robitschek, (1998). The scale measures a respondent’s ‘desire to be involved in changing and developing him/herself, and to actively and intentionally engage in the process of personal growth (Robitschek, 1998). Sample items include “I know what I need to do to get started toward reaching my goals”, “I have a plan for making my life more balanced,” and “if I want to change something in my life, I initiate the transition process.” The scale is a reliable measure of personal growth initiative which has demonstrated considerable construct validity (Robitschek, 1998, 1999; Martin, 2009). Evidence of scale validity was derived in this study from factor analyses results which revealed significant factor loadings of at least .64 and a .58 lowest item-total correlation. In the current study, the coefficient alpha for the scale was .79. Participants were required to specify the extent to which they agree or disagree with scale items on a 6-point scale ranging from definitely disagree (1) to definitely agree (6). High scores indicate high levels of personal growth initiative, while low scores indicate low personal growth initiative. Employees with scores at and below the mean score in the present sample were categorized as low, while their counterparts with scores above the sample mean score were categorized as high.

3.3.4 Career Growth Prospects

This was assessed using an 11-item scale modified from Weer (2006). The items measured an employee’s perception of the likelihood that he or she would move up his or her organization’s hierarchy through promotion and beneficial career development experiences. Sample items include: “I have reached a point in my career where it is unlikely that I will move higher in this organization”, “It is likely that my job in this organization will constantly challenge me” and “In this organization, the opportunities for promotion are limited for me”. The scale has been used in a previous study (i.e., Okurame, 2012a) of bank employees in Nigeria. Validation evidence for the scale in the current study was found in significant item-total correlations and factor analysis results which revealed that career growth prospect is a single construct. In the current study, the coefficient alpha for the scale was .76. Respondents expressed the extent to which they agree or disagree with scale items on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). High scores signify high levels of career growth prospects, while low scores signify low levels of career growth prospects.

3.4 Procedure

Data were collected through the questionnaire method during office hours in branches of the sampled banking organization. Permission to carry out the study in the selected banks was obtained from the head of the different units where questionnaires were administered. Potential participants were handed study questionnaires during regular working hours with the assistance of contact persons in each of the branches that served as a setting for the study. Employees were informed about the aim of the research and were encouraged to take part in the study. Respondents were told that participation in the study was not compulsory and that they could inform the researchers of their intention to withdraw from the study at any point in the research. They were assured that information supplied would be held in confidence and that the present research was purely for academic purposes. A total of 230 questionnaires with an attached consent page were handed to interested employees. Respondents were requested to fill the questionnaire at their leisure and submit the completed questionnaire to their organization's contact person for subsequent collection. Two hundred and twelve questionnaires were received at the close of survey. However, questionnaires that had missing data were eliminated, resulting in 199 questionnaires with complete data for analysis. This represents an 86.5 percent response rate.

4. Results

The present study utilized the simple multiple regression analysis and the analysis of covariance to explore the linkage among study variables. Hypothesis 1, which predicted that demographic data of respondents will have significant independent and joint influence on career growth prospects, was examined using the simple multiple regression analysis. The demographic variables that were introduced into the regression equation include: sex, age, marital status, highest educational qualification, and tenure in the banking sector, tenure in current organization, basic monthly income and job status. Table 1 presents the results of this analysis.

Table 1. Results of multiple regression analysis predicting career growth prospects

Variable	β	t	R^2	F
Sex	-.02	-0.227	.23***	7.159***
Age	.01	0.110		
Marital status	-.02	-0.189		
Education	-.15*	-2.010*		
Banking sector tenure	-.41**	-2.628**		
Organi zation tenure	.16	1.603		
Monthly basic income	46***	4.895***		
Job status	34***	3.459***		

** = p < .01. *** = p < .001.

Results in Table 1 revealed that all of the demographic variables jointly accounted for a significant variance in career growth prospect (R^2 = .23, p < .001). However, the independent influence of the variables on career growth prospects differed, indicating that hypothesis 1 was partly supported. As shown in Table 1, of all the demographic data examined in the study, educational attainment, tenure in the banking sector, basic monthly income and job status were the only variables with significant independent relationships with career growth prospects. Educational attainment (β = -.15, p < .05) and tenure in the banking sector (β = -.41, p < .01) had significant negative relationships with career growth prospect, indicating that the higher the number of years an employee has spent in the banking sector and the higher their educational attainment, the lower their reported level of career growth prospects, and vice versa. On the other hand, basic monthly income (β = .46, p < .001) and job status (β = .34, p < .001) were significantly and positively related to career growth prospects. Because basic monthly income (up to 50,000, between 50,001 and 100,000, and above 100, 000) and job status (junior, middle and management staff) were categorized into three levels in the study, further statistical analysis was carried out to examine career growth prospects across the three levels of each variable. This analysis involved the one way analysis of variance, which enabled the simultaneous consideration of the three groups on the dependent variable while avoiding probability pyramiding, and the protracted t-test multiple comparison test. Results of the analysis (not presented in table) showed that the main influence of basic monthly income was supported, F (2, 196) = 19.519, p < .001. The mean career growth prospects reported by employees with income levels of up to 50,000 (M = 38.7) and those with income levels of between 50,001 and 100,000 (M = 40.6) were comparable. However, both were significantly different from the level of career growth prospects expressed by employees with income levels of 100,001 and above (M = 44.4). Thus, the significantly higher level of career growth prospect reported by employees with income levels of 100,001 and above is the source of the significant influence of basic monthly income. Similarly, results of the one way analysis of variance (not presented in table) showed that the main influence of job status was supported, F (2, 196) = 10.683, $p < .001$. The mean career growth prospects reported by junior employees (M = 40.4) were significantly different from those reported by middle level (M = 44.3) as well as management officers (M = 46.2) whose scores were comparable. Thus, the significantly lower level of career growth prospects reported by junior employees is the source of the significant influence of job status.

The significant relationships of educational attainment, tenure in the banking sector, basic monthly income and job status with career growth prospects necessitated the consideration of these variables as covariates in the examination of hypotheses 2, 3, and 4. To reduce error variance, the demographic variables which have significant relationships with the dependent variable of study were selected as covariates for analysis (Cohen & Cohen, 1983). However, basic monthly income ($r = 0.68$, $p < .001$) and job status ($r = 0.74$, $p < .001$) were highly correlated with tenure in the banking sector. Consequently, basic monthly income and job status were removed from analyses to maintain power (Bordens & Abbott, 1988). Therefore, hypotheses 2, 3, and 4, which borders on the main and interaction effects of self-efficacy beliefs and personal growth initiative on career growth prospect, were tested using the analysis of covariance to enable the control of educational attainment and bank sector tenure which eventually served as covariates in the study.

Table 2. ANCOVA results for the main and interaction effects of self-efficacy beliefs and personal growth initiative on career growth prospects

Source	SS	df	MS	F
Educational attainment	10.03	1	10.03	0.313
Banking sector tenure	247.733	1	247.733	7.725**
Self-efficacy beliefs (SEB)	684.872	1	684.872	21.450***
Personal growth initiative (PGI)	115.672	1	115.672	3.607
SEB x PGI	143.951	1	143.951	4.489*
Error	6189.108	193	32.068	
Total	348678	199		

* = $p < .05$. ** = $p < .01$. *** = $p < .001$.

Hypothesis 2 predicted that employees who score high on self-efficacy beliefs will report a significantly greater level of career growth prospects compared to their counterparts who score low on self-efficacy beliefs. The results presented in Table 2 show that the main effects of self-efficacy beliefs on career growth prospects was significant, F (1, 193) = 21.450, $p < .001$. A comparison of mean scores revealed that employees who are high on self-efficacy beliefs (M = 43.2) reported greater levels of career growth prospects compared to their counterparts with low personal growth initiative (M = 39.4), hence, hypothesis 2 was supported.

Hypothesis 3 predicted that employees who are high on personal growth initiative will report significantly greater levels of career growth prospects compared to their counterparts who are low on personal growth initiative. Table 2 shows that the main effects of personal growth initiative on career growth prospects was not significant (F (1, 193) = 3.607, p ns), indicating that the mean career growth prospect scores of employees who are high on personal growth initiative (M = 42.1) are comparable to that of employees who are low on personal growth initiative (M = 40.5), hence hypothesis 3 was not supported.

Hypothesis 4 predicted that self-efficacy beliefs and personal growth initiative would interact significantly to influence career growth prospects. The results in Table 2 show that the interaction effect of self-efficacy and personal growth initiative on career growth prospects was significant, F (1, 193) = 4.489, $p < .05$. Hence, hypothesis 4 was supported. The significant interaction of self-efficacy beliefs and personal growth initiative yielded four groups of respondents. These include employees who are low on both self-efficacy beliefs and personal growth initiative (n = 48), those who are high on both self-efficacy beliefs and personal growth initiative (n = 65), those who are low on self-efficacy beliefs but high on personal growth initiative (n = 44), and employees who are high on self-efficacy beliefs but low on personal growth initiative (n = 42). Results of protracted t-test multiple comparison post hoc analysis of mean scores on career growth prospects of the four groups are presented in Table 3.

Table 3. Protracted multiple comparisons for interaction effects of SEB and PGI on CGP

Interacting Cells	1	2	3	4	N	M	S.D
Low SEB/low PGI	-	-2.9^{**}	-5.5^{***}	4.7^{***}	48	37.8	6.38
Low SEB/high PGI		-	-1.9^{*}	-1.8^{*}	44	41.1	5.5
High SEB/low PGI			-	0.2	42	43.3	5.04
High SEB/high PGI				-	65	43.1	5.85

SEB = Self-efficacy beliefs. PGI = Personal growth initiative.

CGP = Career growth prospect. * = p < .05. ** = p < .01. *** = p < .001.

Table 3 reveals that the mean score of employees who are low on both self-efficacy and personal growth initiative is significantly different from the mean scores of all other groups. The low self-efficacy beliefs – high personal growth initiative group was significantly different from the high self-efficacy beliefs – low personal growth initiative group as well as the high self-efficacy beliefs – high personal growth initiative. The level of career growth prospects reported by the high self-efficacy – low personal growth initiative group were comparable with that reported by the high self-efficacy beliefs – high personal growth initiative group. This pattern of interaction is presented in figure 1.

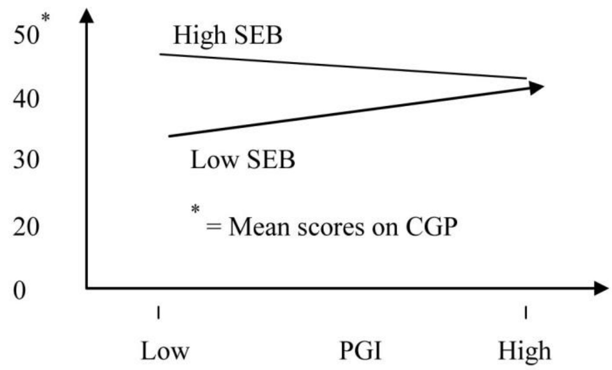


Figure 1. Interaction effects of SEB and PGI on CGP

Figure 1 shows that greater levels of career growth prospect are expressed irrespective of whether an employee is high or low on personal growth initiative when self-efficacy belief is high. As shown in figure 1, the least level of career growth prospect is reported by employees when their levels of self-efficacy belief and personal growth initiative are both low.

5. Discussion

The study investigated the role of demographic variables and the influence of self-efficacy beliefs and personal growth initiative (individual factors) on career growth prospect in the Nigerian banking sector. Findings of the study are partly in line with postulations in the extant literature about how these variables relate to career growth prospects. The study found educational attainment, tenure in the banking sector, basic monthly income and job status to be relevant demographic factors in career growth prospects. It also established a significant main effect of self-efficacy belief as well as a significant interaction effect of efficacy beliefs and personal growth initiative on career growth prospects. Study findings set the empirical foundation for the theory that employee demographic data, efficacy beliefs and personal growth initiative are useful factors in career growth prospects.

The first hypothesis of the study examined the differences in career growth prospects that may result from a respondent's demographic data such as sex, age, marital status, highest educational attainment, tenure in the banking sector, current organizational tenure, and income and job status. Although, all demographic factors acting together accounted for a significant variance in career growth prospects, findings show that highest educational attainment, tenure in the banking sector, basic monthly income and job status were the only variables with a significant independent relationship with career growth prospects. The non-significant relationship of age, sex and marital status with career growth prospects implies that young and old, male and female as well as married and single employees reported comparable levels of career growth prospects. This finding particularly contradicts the arguments and findings of previous studies (e.g. Sullivan et al., 2003; Huang et al., 2007; Inceoglu et al., 2008; cited in Segers et al., 2008; Richter, 2011) that age and gender are significant factors in career attitudes. While education and bank sector tenure were negatively related to career growth prospects, the relationship of basic monthly income and job status with career growth prospects were positive.

The negative relationship between bank sector tenure and career growth prospects implies that the longer the tenure of an employee in the banking sector and the more educated they are, the lower their reported level of career growth prospects, and vice versa. This represents an unexpected result when compared with the arguments of researchers (e.g. Cheramie et al., 2007: cited in Segers et al., 2008) that high levels of career experience and educational attainment necessarily spur development activities that enhance actual and favorable perception of growth prospects. An appropriate conclusion in the present study would therefore be that bank employees who have spent fewer years in the sector and who are comparatively less educated are at an advantage in respect to favorable perception of career growth. A probable explanation for the current finding may be that employees with less experience in the sector and those with comparatively lower educational attainment are more expectant of career growth and/or receive more career growth support than their opposite counterparts, making them more positive about career growth prospects. Another plausible reason would be that there are greater opportunities for low tenure bank employees and employees with lower educational attainment than for their opposite counterparts. Alternatively, it may be that low tenure bank employees and employees with low educational attainment feel a greater need to seek career growth and this, probably, enhances their perception of career growth prospects.

The positive relationships of basic monthly income and job status with career growth prospects imply that higher income levels and elevated job status foster a more favorable perception of career growth prospects among bank employees. This position is given credence by the results of the one-way analysis of variance and post hoc analysis that compared career growth prospects across the three levels of the two demographic variables. Unlike the results regarding tenure and educational attainment, the nature of the relationship between job status and career growth prospects is consistent with the conclusion of Cheramie et al. (2007) that higher status increases the importance of hierarchical promotion and fosters a more favorable perception of growth opportunities. Consequently, a likely explanation for this finding may be that higher levels of income and job status enhances the perception of further growth opportunities thereby augmenting perceived career growth prospects above that of their counterparts with lower income and job status. Alternatively, it could be argued that higher income and job status make bank employees feel a greater need to seek career growth opportunities in ways that ultimately enhance career growth prospects. Otherwise, a possible explanation for the findings would be that bank employees with higher levels of income and job status value career growth in their sector so much so that it provides them sufficient inspiration to report its prospects with greater enthusiasm compared to employees with low income and job status.

Results indicate a significant main effect of self-efficacy beliefs on career growth prospects. Mean comparison revealed that the level of career growth prospects reported by employees with high self-efficacy was greater than that reported by those who were low on self-efficacy. This implies that the higher a bank employee’s self-efficacy, the better their perception of career growth prospects. This finding is in line with theoretical arguments and results of studies in the extant self-efficacy literature. For example, the current finding supports the postulation of Bandura (1997) that belief in one’s ability to attain a goal determines achievement striving and leads to high expectations of success in a given task. It is also consistent with findings of previous studies that self-efficacy beliefs enhance favorable perceptions of control over career growth opportunities (Gist & Mitchell, 1992; Schwarzer & Scholz, 2000; Malherbe, Stell & Theron, 2003) and encourages commitment when faced with task challenges (Okurame, 2006). Consequently, and on the basis of the social cognitive theory, one probable explanation for the finding is that favorable levels of self-efficacy enhance a bank employee’s beliefs about being able to control career growth opportunities, causing them to routinely report favorable levels of career growth prospects. Alternatively, it may be that high self-efficacy beliefs make it possible for a bank employee to engage in actual career growth activities within their organization, such that this adequately fosters favorable perceptions of prospects for career growth.

That personal growth initiative did not have a significant main effect on career growth prospect implies that it does not appreciably enhance or diminish a bank employee’s level of career growth prospect. Consequently, the level of career growth prospects reported by employees who scored high on personal growth initiative and those who scored low were comparable. This is an unexpected finding because it contradicts the position of the literature on the influence of personal growth initiative on career growth prospect. Previous studies (e.g.

Robitschek et al, 2010; Robitschek, Ashton, Spering, Geiger, Byers, Schotts & Thoen, 2012) have reported that personal growth initiative spurs readiness for change in the face of challenges; enhances strategy in effort and intentional follow-up behavior aimed at taking advantage of growth opportunities and fulfilling growth goals. The current findings, therefore, suggest that high or low levels of personal growth initiative do not exclude a bank employee from the career challenges of their sector. One probable explanation for the non-significant main effect in the current finding is that personal growth initiative, on its own, may not be useful in revealing differences in the career growth prospects of bank employees.

The finding that career growth prospects is significantly influenced by the interaction effects of self-efficacy beliefs and personal growth initiative, implies that different levels of the two variables have implications for prospective career growth. Given that the main effect of personal growth initiative on career growth prospect is not significant, the interaction effect also implies that this variable is only relevant within the context of an employee's level of self-efficacy. The results of multiple comparison of interacting cells showed that the weakest level of career growth prospect was obtained when self-efficacy and personal growth initiative are both low while greater levels were obtainable irrespective of whether a bank employee is high or low on personal growth initiative only when self-efficacy belief is high. The implication of this finding is that low levels of self-efficacy and personal growth initiative inhibit elevated levels of career growth prospects and combining these variables to attain superior levels of career growth prospects is possible only when self-efficacy is high.

6. Conclusions and Practical Implications of Findings

The findings of this study are of particular practical relevance to organizations, especially the Nigerian banking sector, that desire to be responsive to the career needs of employees despite inhibiting organizational changes. Results suggest that career growth prospect is amenable through intervention, making it possible for the management to influence perception of career growth prospects within their organization. The findings of this study will go a long way in making it possible for both management and employees to facilitate prospects for career growth. Findings show that the management will need to pay adequate attention to demographic factors such as educational attainment, tenure in the banking sector, basic monthly income and job status which were found to be significant variables in prospects for career growth. Higher monthly income and job status makes it more likely for some employees to have expectations of further career growth, signifying that low levels predispose employees to an unfavorable perception of career growth. In contrast, higher educational attainment and longer tenure in the banking sector were found to inhibit favorable levels of career growth prospects. Interventions should therefore be styled to address the concerns of this category of employees.

Findings show that higher levels of self-efficacy are associated with higher levels of career growth prospects. Management intervention should therefore aim at enhancing the self-efficacy beliefs of employees in order to foster prospects for career growth. This would also make it possible to tap into the positive combined effects of self-efficacy and personal growth initiative as the study's findings showed that superior levels of career growth prospects are possible in such circumstance.

7. Limitations of Study

Though this study extends our understanding of the influence of self-efficacy beliefs and personal growth initiative on career growth prospects, caution is required in the interpretation of results for a number of reasons. First, data for the study are subject to the usual limitations of a survey research, as they were obtained from self-report instruments. This call for caution as under or over reporting cannot be totally ruled out despite the use of psychometrically sound measures. Second, the study is an exploratory research. Therefore, data from employees in a single organization in the Nigerian banking sector may not typify organizations in general. This calls for caution in generalizing study findings to include employees in the banking sector in general or in other organizational contexts.

References

Ashford, J. B., & LeCroy, C. W. (2010). *Human behavior in the social environment: A multidimensional perspective* (4th ed.). Belmont, CA: Wadsworth, Cengage Learning. Retrieved from http://books.google.com/books?id=R8-HitN5Jp0C

Avey, J. B., Nimnicht, J. L., & Pigeon, N. G. (2010). Two field studies examining the association between positive psychological capital and employee performance. *Leadership and Organisational Development Journal, 31*(5), 384–401. http://dx.doi.org/10.1108/01437731011056425

Ayub, N., & Iqbal, S. (2012). The relationship between personal growth initiatives, psychological well-being and psychological distress among adolescents. *Journal of Teaching and Education, 1*(6), 101–107.

Ballout, H. I. (2009). Career commitment and career success: moderating role of self-efficacy. *Career Development International, 14*(7), 655–670. http://dx.doi.org/10.1108/13620430911005708

Bandura, A., & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. *Journal of Personality and Social Psychology, 45*, 1017–1028. http://dx.doi.org/10.1037/0022-3514.45.5.1017

Bandura, A. (1978). Reflections on self-efficacy. *Advances in Behavioral Research and Therapy, 1*(4), 237–269. http://dx.doi.org/10.1016/0146-6402(78)90012-7

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 122–147. http://dx.doi.org/10.1037/0003-066X.37.2.122

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Bandura, A. (2001). Social cognitive theory: an agentive perspective. *A Review of Psychology, 52*, 1–26. http://dx.doi.org/10.1146/annurev.psych.52.1.1

Bordens, K. S., & Abbott, B. B. (1988). *Research Design and Methods: A Process Approach*. Mountain View, CA: Mayfield Publishing Company.

Brief, A. P., & Motowidlo, S. J. (1986). Pro-social organisational behaviours. *Academy of Management Review, 10*, 710–725.

Brutus, S., Ruderman, M., Ohlott, P., & McCauley, C. (2000). Developing from job experiences: the role of organisation-based self-esteem. *Human Resource Development Quarterly, 11*, 367–380. http://dx.doi.org/10.1002/1532-1096(200024)11:4<367::AID-HRDQ4>3.0.CO;2-6

Chen, G., Webber, S. S., Bliese, P. D., Mathieu, J. E., Payne, S. C., Born, D. H., & Zaccaro, S. J. (2002). Simultaneous examination of the antecedents and consequences of efficacy beliefs at multiple levels of analysis. *Human Performance, 15*, 381–409. http://dx.doi.org/10.1207/S15327043HUP1504_05

Cheramie, R. A., Sturman, M. C., & Walsh, K. (2007). Executive career management: Switching organizations and the boundaryless career. *Journal of Vocational Behaviour, 71*, 359–374. http://dx.doi.org/10.1016/j.jvb.2007.09.002

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioural sciences*. Hillsdale, NJ: Erlbaum.

Eisenberger N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science, 302*, 290–292. http://dx.doi.org/10.1126/science.1089134

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organisational support. *Journal of Applied Psychology, 75*, 51–59. http://dx.doi.org/10.1037/0021-9010.75.1.51

Fort, I., Jacquet, F., & Leroy, N. (2011). Self-efficacy, goals and job search behaviour. *Career Development International, 16*(5), 469–481. http://dx.doi.org/10.1108/13620431111168886

Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review, 17*, 183–211.

Grimland, S., Vigoda-Gadot, E., & Baruch, Y. (2012). Career attitudes and success of managers: the impact of chance event, protean, and traditional careers. *The International Journal of Human Resource Management, 23*(6), 1074–1094. http://dx.doi.org/10.1080/09585192.2011.560884

Heslin, P. A. (2005). Conceptualizing and evaluating career success. *Journal of Organizational Behavior, 26*, 113–136. http://dx.doi.org/10.1002/job.270

Huang, Q., El-Khouri, B. M., Johansson, G., Lindroth, S., & Sverke, M. (2007). Women's career patterns: A study of Swedish women born in the 1950s. *Journal of Occupational and Organizational Psychology, 80*, 387–412. http://dx.doi.org/10.1348/096317906X119738

Inceoglu, I., Segers, J., Bartram, D., & Vloeberghs, D. (2008). *Age differences in work motivation*. Paper presented at the 23rd Annual Conference of the Society for Industrial and Organizational Psychology, San Francisco.

Ivancevich, J. M., & Matteson, M. T. (1980). *Stress and Work*. Scott, Foresman and Co., Glenview, IL.

Karakowsky, L., & Mann, S. L. (2008). Setting goals and taking ownership: Understanding the implications of participatively set goals from a causal attribution perspective. *Journal of Leadership & Organizational*

Studies, 14, 260–270. http://dx.doi.org/10.1177/1071791907308047

Lent, R. W., & Hackett, G. (1987). Career Self-Efficacy: Empirical Status and Future Directions. *Journal of Vocational Behavior, 30*, 347–382. http://dx.doi.org/10.1016/0001-8791(87)90010-8

Lent, R. W., Brown, S. D., Talleyrand, R., McPartland, E. B., Davis, T., Chopra, S. B., Alexander, M. S., Suthakaran, V., & Chai, C. M. (2002). Career choice barriers, supports, and coping strategies: College students' experiences. *Journal of Vocational Behavior, 60*, 61–72. http://dx.doi.org/10.1006/jvbe.2001.1814

London, M., & Stumpf, S. (1983). Effects of candidate characteristics on management promotion decisions: an experimental study. *Personnel Psychology, 36*(2), 241–259. http://dx.doi.org/10.1111/j.1744-6570.1983.tb01435.x

Lunenburg, F. (2011). Self-efficacy in the workplace: implications for motivation and performance. *International Journal of Management, Business, and Administration*, *14*(1).

Malherbe, D. G., Stell, H. R., & Theron, W. H. (2003). The contribution of self-efficacy and outcome expectations in the prediction of exercise adherence. *South African Journal for Research in Sport, Physical Education and Recreation*, *25*(1), 71–82. http://dx.doi.org/10.4314/sajrs.v25i1.25832

Martin, H. (2009). *Personal growth initiative as a moderator of expressive writing tasks: test of a matching hypothesis*. Master's Thesis, Faculty of the Graduate School of the University of Maryland, College Park.

Meyer, J. P., & Allen, N. J. (1984). Testing the 'side-bet theory' of organisational commitment: some methodological considerations. *Journal of Applied Psychology, 69*, 372–378. http://dx.doi.org/10.1037/0021-9010.69.3.372

Mowday, R. T., Porter, l. W., & Steers, R. M. (1982). *Employee-organisational linkages: The psychology of commitment, absenteeism, and turnover*. New York, NY: Academic Press.

Nevid, J. S. (2009). *Psychology: Concepts and applications* (3rd ed.). Boston: Houghton Mifflin Company.

O'Reilly, C., & Chatman, J. (1986). Organisational commitment and psychological attachment: The effects of compliance, identification, and internalization on pro-social behaviour. *Journal of Applied Psychology, 71*(3), 492–499. http://dx.doi.org/10.1037/0021-9010.71.3.492

Okurame, D. E., & Balogun, S. K. (2005). Role of Informal Mentoring in the Career Success of First-line Bank Managers: a Nigerian case study. *Career Development International, 10*(6/7), 512–521. http://dx.doi.org/10.1108/13620430510620584

Okurame, D. E. (2006). Role of self-efficacy beliefs in goal commitment: a case study of the 20th Nigerian university games chess event. *South African Journal for Research in Sports, Physical Education and Recreation, 28*(2), 113–120.

Okurame, D. E. (2012a). Impact of career growth prospects and formal mentoring on organisational citizenship behaviour. *Leadership and Organisational Development Journal*, *33*(1), 66–85. http://dx.doi.org/10.1108/01437731211193124

Okurame, D. E. (2012b). Linking work-family conflict to career commitment: the moderating role of gender and mentoring. *Journal of Career Development, 39*(5), 423–442. http://dx.doi.org/10.1177/0894845310391903

Okurame, D. E. (In press). *Perceptions of career success and new career orientation occurrence in the academia*. Manuscript submitted for Publication.

Oni, S. (2013). *Challenges and prospects in African education system*. North America: Trafford Publishing.

Pajares, F. (2002). *Overview of social cognitive theory and of self-efficacy*. Retrieved from http://www.emory.edu/EDUCATION/mfp/eff.html

Powell, G. N., & Butterfield, D. A. (1994). Investigating the glass ceiling phenomenon: an empirical study of actual promotions to top management. *Academy of Management Journal, 37*(1), 68–86. http://dx.doi.org/10.2307/256770

Richter, A. (2011). *Job Insecurity and Its Consequences: Investigating Moderators, Mediators and Gender.* (Doctoral dissertation, Stockholm University, Sweden). Retrieved from http://www.diva-portal.org/smash/get/diva2:453238/FULLTEXT01.pdf

Robitschek, C. (1998). Personal growth initiative: The construct and its measure. *Measurement and Evaluation in Counselling and Development, 30*, 183–198.

Robitschek, C. (2003). Validity of Personal Growth Initiative Scale scores with a Mexican American College Student Population. *Journal of Counseling Psychology, 50*(4), 496–502. http://dx.doi.org/10.1037/0022-0167.50.4.496

Robitschek, C., & Cook, S. W. (1999). The influence of personal growth initiative and coping styles on career exploration and vocational identity. *Journal of Vocational Behaviour, 54*, 127–141. http://dx.doi.org/10.1006/jvbe.1998.1650

Robitschek, C., Ashton, M. W., Spering, C. C., Geiger, N., Byers, D., Schotts, G. C., & Thoen, M. A. (2012). Development and psychometric evaluation of the Personal Growth Initiative Scale–II. *Journal of Counselling Psychology, 59*, 274–287. http://dx.doi.org/10.1037/a0027310

Robitschek, C., Ashton, M. W., Spering, C. C., Murray, D. D., Geiger, A. N., Martinez, M., & Shotts, G. C. (2010). *Measuring Multidimensional Personal Growth Initiative: Development of the Personal Growth Initiative Scale – II*. Manuscript submitted for publication.

Robitschek, C., Ashton, M. W., Spering, C. C.. Martinez, M., Shotts, G. C., & Murray, D. (2009). *Development of the Personal Growth Initiative Scale – II*. Poster presented at the 2009 World Congress on Positive Psychology, Philadelphia, PA.

Saks, A. M. (1995). Longitudinal field investigation of the moderating and mediating effects of self-efficacy on the relationship between training and newcomer adjustment. *Journal of Applied Psychology, 80*, 211–225. http://dx.doi.org/10.1037/0021-9010.80.2.211

Schwarzer, R., & Jerusalem, M. (2000). General perceived self-efficacy. Retrieved from http://www.fu-berlin.de/gesund/skalen/langu.../hauptteil_general_perceived_self-efficac.htm

Schwarzer, R., & Scholz, Z. U. (2000). *Cross-cultural assessment of resources: The general perceived self-efficacy scale*. Paper presented at the First Asian Congress of Health Psychology: Health Psychology and Culture, August 28 – 29, Tokyo, Japan.

Segers, J., Inceoglu, I., Vloeberghs, D., Bartram, D., & Henderick, E. (2008). Protean and boundaryless careers: A study on potential motivators. *Journal of Vocational Behavior, 73*, 212–230. http://dx.doi.org/10.1016/j.jvb.2008.05.001

Sharma, H. L., & Rani, R. (2013). Relationship of Personal Growth Initiative with Self- Efficacy among University Postgraduate Students. *Journal of Education and Practice*.

Shorey, H. S., Little, T. D., Snyder C. R., Kluck, B., & Robitschek, C. (2007). Hope and personal growth initiative: a comparison of positive, future oriented constructs. *Personality and Individual Differences, 43*, 1917–1926. http://dx.doi.org/10.1016/j.paid.2007.06.011

Stajkofic, A. D., & Luthans, F. (1998). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin, 124*, 240–261. http://dx.doi.org/10.1037/0033-2909.124.2.240

Sullivan, S. E., & Arthur, M. B. (2006). The evolution of the boundaryless career concept: Examining physical and psychological mobility. *Journal of Vocational Behavior, 69*, 19–29. http://dx.doi.org/10.1016/j.jvb.2005.09.001

Sullivan, S. E., Martin, D. F., Carden, W. A., & Mainiero, L. A. (2003). The road less travelled: How to manage the recycling career stage. *Journal of Leadership & Organizational Studies, 10*(2), 34–42. http://dx.doi.org/10.1177/107179190301000204

Turan, S., Valcke, M., Aper, L., Koole, S., & Derese, A. (2013). Studying self-efficacy beliefs in medical education, *Procedia-Social and Behavioural Sciences, 93*, 1311–1314. http://dx.doi.org/10.1016/j.sbspro.2013.10.034

Weer, C. H. (2006). The impact of non-work role commitment on employees' career growth prospect. Retrieved from http://idea.library.drexel.edu/bitstream/1860/1165/1/weer_christy.pdf

Weigold, I. K., Porfeli, E. J., & Weigold, A. (2013). Examining tenets of personal growth initiative using the personal growth initiative scale-II. *Psychological Assessment, 25*(4), 1396–1403. http://dx.doi.org/10.1037/a0034104

Whiston, S. C., & Blustein, D. L. (2013). *The impact of career interventions: Preparing our citizens for the 21st century jobs.* (Research Report). National Career Development Association (www.ncda.org) and the Society for Vocational Psychology (www.div17.org/vocpsych/).

Whitaker, A. E., & Robitschek, C. (2001). Multidimensional family functioning as predictors of personal growth initiative. *Journal of Counselling Psychology, 48*, 420–427. http://dx.doi.org/10.1037/0022-0167.48.4.420

Williams, T., & Williams, K. (2010). Self-efficacy and performance in mathematics: Reciprocal determinism in 33 nations. *Journal of Educational Psychology, 102*(2), 453–466. http://dx.doi.org/10.1037/a0017271

Wright, S. L., Jenkins-Guarnieri, M. A., & Murdock, J. (2013). Career development among first-year college students, college self-efficacy, student persistence, and academic success. *Journal of Career Development, 40*(4), 292–310. http://dx.doi.org/10.1177/0894845312455509

Wu, W. (2002). *An empirical study of past performance, goal commitment, computer self-efficacy, computer performance of computer skill learner-an integration of social cognitive theory and goal-setting theory.* Retrieved from http://www.ntnu.edu.tw/acad/epub/j47/se471-3.htm

Yakunina, E. S., Weigold, I. K., & Weigold, A. (2013). Personal growth initiative: Relations with acculturative stress and international student adjustment. *International Perspectives in Psychology: Research, Practice, Consultation, 2*(1), 62–71.

Copyrights

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Is Equity Market Efficient? Evidence from a Small Open Economy

Taylan T. Doğan[1] & Emre Aksoy[2]

[1] Department of Econometrics, Kırıkkale University, Yahsihan, Kırıkale, Turkey

[2] Department of Economics, Kırıkkale University, Yahsihan, Kırıkale, Turkey

Correspondence: Taylan T. Doğan, Kırıkkale University, Yahsihan, Kırıkale, Turkey. Tel: 90-318-357-4242, Ext: 2279. E-mail: taylan.dogan@kku.edu.tr

Received: August 5, 2014 Accepted: August 20, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p88 URL: http://dx.doi.org/10.5539/ibr.v7n10p88

Abstract

This study investigates relationships between macroeconomic variables and stock market over the period of 1987Q1-2012Q1 for Turkey. The study is conducted by evaluating 2001 crisis, the most severe crisis in the history of Turkey which caused a cyclical shift, which has not been in consideration by the previous literature. This study used Toda and Yamamoto (1995) method to uncover those relationships. Here, those investigations provide information on whether Turkish stock market is efficient or not and whether the stock market can be used as a leading indicator for one or more fundamental macroeconomic variables. The results indicated that 2001 crisis had statistically significant impact on the stock market and Turkish economy. Before 2001 crisis, the stock market was not efficient but after 2001 crisis the stock market became efficient. The stock market was also found as a leading indicator for the real economic activity that is consistent with the literature findings on Turkey.

Keywords: efficient market hypothesis, stock market, macroeconomic variables, leading indicators, cyclical shifts

1. Introduction

As a source of risk, modern financial theory focuses on systematic factors and in the long-run return on an individual asset is accepted to reflect change in systematic factors, so modern financial theory suggests that financial assets' market is related to economy's financial and real segments (Ahmed, 2008, p. 142). According to this, the stock market either follows change in economic factors or it moves before the economic factors. This is based on Fama (1970)'s efficient market hypothesis, which assumes that stock price reflects all past information so by using past information nobody obtains above normal returns. If it does so, a market can be called as informationally efficient and if it is otherwise, it can be called as informationally inefficient.

There is a huge literature on researching market efficiency since it was coined as a hypothesis. Interest rate, exchange rate, real gross domestic product (RGDP), inflation rate and money supply are considered to be the most relevant indicators on the state of the economy. Macroeconomic developments affect all the actors operating in an economy. As a result, it is expected that these factors affect the stock market. For this reason, the macroeconomic variables -the main indicators of the economy- and the stock market are expected to be causal relationships.

This study tests two hypotheses that were suggested by Fama (1970). In fact, these hypotheses are essentially two sides of the same coin. First one is that, by using past information of economy, can someone predict stock market outcome? And if it can be made, then relevant stock market is inefficient. Otherwise, the stock market can be considered as efficient. The second hypothesis is whether Istanbul Stock Exchange (ISE) can be used a leading indicator for any fundamental macroeconomic variables. According to literature findings, there is no consensus on the existence and nature of relationship between key macroeconomic variables, at least the ones included in this study, and stock market. Furthermore, according to literature review, there is not much study on Turkish economy in this respect. In addition, the studies in the literature have covered shorter time period compared to this study. This study investigates long-run relationship between stock market and abovementioned fundamental macroeconomic variables over the period of 1987Q1 to 2012Q1 by using Toda and Yamamoto (1995). According to the study results, the 2001 crisis extracts statistically significant negative influence on stock market and points out that the stock market before 2001 crisis was inefficient. On the other hand, after 2001 crisis stock market became efficient.

The following parts of this study consist of a literature review that discuss briefly economic literature on theoretical and empirical relationship between the macroeconomics variables and stock market, model that is used in this study and empirical application, and conclusion which the results of this study are discussed.

2. Literature Review

In following Fama (1970) one of earliest studies on this topic is made by Chen, Roll and Ross (1986). Chen et al. (1986) expressed existence of the economic situation as state of economy, researched causal relationship between state of economy and stock market, and obtained mixed result for existence of efficiency. After that point, lots of studies were conducted on stock market and macroeconomic variables relationship. Here below, first the theories which associate the related macroeconomic variables to stock market will be discussed, empirical findings will be mentioned, and the recent literature that used similar methodology to the study will be discussed.

There are various theories that associate macroeconomic variables to stock market. Economy theory claims that interest rate and returns on stocks are inversely related with different reasons, e.g. present value, opportunity cost, asset portfolio allocation (Horobet & Dumitrescu, 2009). There are studies supporting this negative relationship between those two variables (Fama & Schwert, 1977; Chen et al., 1986; Cook & Hahn, 1988; Abdullah & Hayworth, 1993; Jensen & Johnson, 1995). Yet, Ratanapakorn and Sharma (2007) studied the US and found that stock market was negatively related with long-term interest rate but positively related with short-term interest rate.

In contemporary literature, there are theories relate stock market returns to Exchange rate, such as good market approach (Dornbush & Fisher, 1980), portfolio balance approach (Branson & Henderson, 1985). Empirically, the relationship between stock price or stock performance and exchange does not present a consistent result in the literature. Some studies find positive relationship between exchange rate and stock market for the US (Agarwal, 1981; Soenen & Hennigar, 1988), and some other studies find negative relationships between them (Ratapakorn & Sharma, 2007). In multi country studies, however, the relationship is positive for some countries and negative for some other countries (Soenen & Agarwal, 1989; Mao & Kao, 1990).

According to Morck, Shleifer, Vishny, Shapiro, and Poterba (1990), stock market plays three roles in the economy: (i) it is an passive indicator for future economic activity, but investors do not make investment decision based on this activity; (ii) it provides information regarding future event that would be right or wrong; (iii) it is perhaps the most common theory on stock market, which affects cost of investment funds so as investments. Greenwood and Smith (1997) suggests that stock market reduces cost of mobilizing financial funds and creates opportunities to companies to find liquid financial resources cheaply. Holsmtröm and Tirole (1993) claims that stock market improves resources allocation in terms of international risk-sharing. In addition to those three, recently, another channel relates stock market to real economic activity. That is, increasing stock market value affects consumers' expectations positively so consumers spend more money than if it is otherwise (Jansen & Nahuis, 2003). This suggests that the relationship between real sector and stock market is related through consumers' expectations. This also extracts influence over investments. Similar expectations lead investors to increase investment expenditures. Positive expectations on investor side create positive expectations on consumer side as well, so this becomes self-feeding process.

As understood above, the theory suggests a positive relationship and causal relationship that runs from stock market to real economic activity. Ratapakorn and Sharma (2007) supported this positive relationship for the US. On the other hand, some other studies claimed that stock market affected real economic activity negatively: Deverux and Smith (1994) claimed that international risk-sharing would reduce efficiency of resource allocation; Bhide (1993) argued that speculations and volatility in stock market would reduce efficiency of investments and this would severely affect real economic activity; lastly, Mauro (1995) suggested that developing stock market would reduce public sector savings so as growth. The last point is thought to lose its importance in Turkey after initializing "Transition to a Strong Economy Program" in 2000 crisis (Central Bank of Turkey, 2001) and with development of ISE. Yet some other studies has found no correlation between stock market and real economic activity and claimed that the relationship between them broke up (Stock & Watson, 1990, 1998; Binswanger 1999, 2004; Mao & Wu, 2007). Those studies are either for the US or developed countries.

The literature provides similar results to above-mentioned perspective on relationship between stock market and inflation. Based on empirical findings, some theoretical views suggest negative relationship between them; while some others suggest positive relationship between them.

Fama (1981) put the negative relationship and this relationship relied on empirical findings that the theory constructed on top of this base. There were studies that support this negative relationship for the US (Schwert, 1990; Barro, 1990; Fama 1990; Dominian, Glister, & Louton, 1996; Choi, Smith, & Boyd, 1995; Foresti, 2006) and for G7 countries (Hassapis & Kalyvitis, 2002). Even though there were studies in the literature that supported this negative relationship, there were some other claims that there was positive relationship between those two. If the companies are net borrower, increase in inflation would reduce loans of the companies so inflation increase the value of companies (Kessel, 1956; Fisher, 1930) claims that nominal return on stocks and expected inflation moves one to one and investors buy stocks to protect themselves from inflation, which is called as Fisher effect. In cross-sectional study, Al Khazali (2004) found supporting evidence for both negative relationship in short-run and positive relationship in long-run.

There were studies that support Fisher effect but most of the studies supported negative relationship between stock market and inflation (Litner, 1975; Bodie, 1976; Jaffe & Mandelker, 1976; Nelson, 1976; Fama & Schwert, 1977; Fama, 1981; Geske & Roll, 1983; Gultekin, 1983; Solnik, 1983; LeRoy, 1984; James, Koreisha, & Partch, 1985; Stulz, 1986; Kaul, 1987; Lee, 1992; Marshall, 1992; Al-Khazali, 2004). But if the relationship between inflation and stock prices was calculated by covering longer time periods, the results supported the hypothesis Fisher’s effect claimed (Kaul, 1987; Boudoukh & Richardan, 1993). Yet there were studies that support positive relationship between stock market and inflation, for example Firth (1979) for the United Kingdom, Abdullah and Hayworth (1993), Graham (1996) and Ratapakorn and Sharma (2007) for the US and Gultekin (1983) claimed no relationship between those two variables according to his cross-sectional study on 26 countries.

Monetary policy can extract either positive or negative effect on stock market. Market players hold money beside other assets in their portfolio and as the monetary policy changes, the amount of money besides other assets in portfolio also change, which is called as portfolio effect or substitution effect (Hamburger, 1966, 1977, 1983). This is a direct effect of change in amount of money. There is also indirect effect that the change in money supply would also change inflation expectation, interest rate and discount rate and at this point a negative relationship would be possible but other indirect channels create positive impacts on stock price. For example, decline in interest rate would increase investment and increase in money supply also increases in amount of fund available for investments (Thornbecke, 1997; Bernanke & Kurtner, 2005). Thus, changes in stock prices can possibly change the amount of money in portfolio and the supply of money also adjusts according to change in demand of money. Besides it, Bernanke and Kutner (2005) claimed that holding stock in portfolio carried monetary value for an investor and is perceived as risk. If the monetary value of a stock is high, it becomes more and more attractive. Therefore, Bernanke and Kutner (2005) claimed that monetary policy influenced stock market through change in monetary value of stock and perceived risk.

Empirically, some studies has predicted positive relationship between stock market and money supply (Palmer, 1970; Sprinkel, 1971; Rozeff, 1974; Ho, 1983; Smirlock & Yawitz, 1985; Cook & Hanh, 1988, Fung & Lie, 1990; Malliaris & Urrutia 1991; Fosback 1991; Abdullah & Hayworth, 1993; Lin 1993; Dhakal, Kandil, & Sharma, 1993; Fitzpatrick, 1994; Cheng, 1995; Alexakis, Apergis, & Xanthakis, 1996; Thorbecke, 1997; Ratanapakorn & Sharma, 2007) and some other studies detected negative relationship between them (Bodie, 1976; Fama, 1981; Geske & Roll, 1983; Pearce & Rolley, 1983; Pearce, 1983). Further, Friedman (1988) mentioned wealth and substitution effect of change in stock price. Therefore, as increase in stock price create either positive or negative influence on money supply depending on wealth effect or substitution effect. If wealth effect is dominant, then money supply increase and if substitution effect is dominant, a negative relationship would arise. Firedman (1988) expected wealth-effect dominancy so that there is positive relationship between those two variables. On the other hand, Mukherjee and Naka (1995) claimed similar relationship as expansion in real economic activity would increase optimism in economy and it would increase demand for money and stock market. The monetary expansion would arise as a result. As a conclusion, literature agreed on only one issue: there is a relationship between money supply and stock market but it does not agree the sign or direction of this relationship.

In conclusion as seen above, there are various theories relating to concerned macroeconomic variables and stock market. Here, we further briefly review recent literature empirical findings that have used similar methodology around what the study is testing. Even though earlier studies are for developed countries and relied on testing existing relationships and direction of these relationships between macroeconomic variables and recently more and more studies become available for developing countries as well.

Studies researched macroeconomics variables and stock market relationship has found mixed results on efficiency and leading indicators. The results vary according to the methodology, time and country. Most of above studies did provide information regarding Fama (1970) hypothesis but they only put the very existing relationship and gave reasoning following the research. There are lots of studies found stock markets are informationally inefficient (Thornbecke, 1997 for the US; Erbaykal & Okuyan, 2007 for Turkey; Bhattacharya & Mukherjee, 2002; Chakravarty, 2005; Ahmed, 2008; Ahmad, 2009 for India; Kwon & Shin, 1999 for Korea; Rasiah & Ratneswary, 2010 for Malaysia; Bahadur G. C. & Neupane, 2006; Bhattarai & Joshi, 2009 for Nepal; Plinkus, 2009 for Lithuania). Further, Horobet and Dumitrescu (2009) studied four east European countries, Li and Wu (2008) and Lin, Li, and Liu (2007) studied very same four East Asia countries and all of them found that all stock markets were not informationally efficient. Also there were studies found stock market efficient, for example, Aydemir (2008) and Kaplan (2008) found that Turkish stock market were informationally efficient.

On the other hand, Al-Khazali (2004) studied nine Asian countries and found their stock markets were informationally efficient. Ajayi, Friedman, & Mehdian (1998) studied fifteen developed and developing countries together, 8 developing Asian markets and 7 developed markets. Developed countries stock market found to be informationally efficient and developing countries stock market, in general, found to be informationally inefficient. Ajayi and Mougoué (1996) studied eight developed countries stock market. In general, developed countries stock markets were not informationally efficient as opposed to what Ajayi et al. (1998) found. Abdalla and Murinde (1997) studied four developing stock market and found three of them informationally inefficient and one of them found informationally efficient.

Studies on market efficiency also provided information on leading indicators. Stock market was found as leading indicator for real economic activity and interest rate for the US (Lee, 1992), for real economic activity for Turkey (Erbaykal & Okuyan, 2007; Kaplan 2008; Aydemir, 2008). For India, stock market was found as leading indicator for inflation (Bhattacharya & Mukherjee, 2002), for money supply (Chakravarty, 2005), for export, exchange rate, and IPI (Ahmed, 2008), and for real economic activity (Ahmad, 2009). Stock market has been found as leading indicator for real economic activity and money supply for Korea (Kwon & Shin, 1999). Stock market has been found as leading indicator for monetary policy for Nepal (Bhattarai & Joshi, 2009). Plinkus (2009) used forty macroeconomic variables and found stock market as a leading indicator for, such as money supply, CPI for durable goods. For Romania, stock market has been found as leading indicator for interest rate, for Czech Republic and Romania, stock markets have been found as leading indicator for CPI and for Poland stock market has been found as a leading indicator for exchange rate (Horobet & Dumitrescu, 2009). Al Khazali (2004) examined 9 Asian countries and studied expected and unexpected inflation on stock markets and found out that only Philippines stock market acts as a leading indicator for expected inflation. Ajayi et al. (1998) studied 15 developing and developed countries and for developed economies, stock markets have been found as leading indicators for exchange rate and for developing economies, there were no such findings. Ajayi and Mougoué (1996) studied 8 developed countries and studied exchange rate, except for United States, and the findings indicated that those stock markets were found as leading indicators for exchange rate. Abdalla and Murinde (1997) found stock market as a leading indicator for Philippines.

On the other hand, Karamustafa and Küçükkale (2003) studied money supply, exchange rate, current account balance and IPI and found no causality at all by using Granger (1969). Hence, stock market cannot be used as a leading indicator. Pethe and Karnik (2000) studied India by using ECM and obtained no causality between stock market and macroeconomic variables, exchange rate, interest rate and IPI.

Abovementioned studies research this relationship through Granger causality framework by using VAR, VECM or Toda and Yamamoto (1995) if data does not allow running ECM. The literature review suggests that the relationship between stock market and macroeconomic variables around efficient market hypothesis still is an empirical issue to study. Here we extend the data set by including more recent data and adding an exogenous break that is thought to create cyclical shift and should be taken into consideration.

3. Data and Application

The article used quarterly data over 1987Q1–2012Q2 period to study causal relationships between Istanbul Stock Exchange (ISE) and macroeconomic variables for Turkey. The time span was determined by data availability. Macroeconomic variables are interest rate (INTEREST), exchange rate (EXRATE), real GDP (RGDP), inflation (INFLATION), and money supply (M1). International Financial Statistics (IFS), database of Monetary Fund (IMF) is used to obtain data set and the index variable for ISE is obtained through Central Bank of Turkey website. INTEREST rate is defined as an interest rate paid for 1-year term deposit; EXRATE is defined as amount of US dollar bought by per 1000000 Turkish Liras that become a new Turkish Lira on the first of January, 2005 and that 1 new Turkish Lira = 1000000 Turkish Lira (Note 1). Hence to become consistent with period before change, this type of exchange rate is used; RGDP is obtained as nominal GDP divided by GDP deflator; INFLATION is obtained by using Consumer Price Index (CPI) and estimating INFLATION_t = LN

$(CPI_{t-1}/CPI_t)*100$; M1 was readily available in IFS database in terms of million new Turkish Liras. As stock market variable, ISE composite price index (ISE100) is used. ISE100 closing values are available daily and three month average is taken and used in this study (Note 2).

The financial crisis happened in 2001 in Turkey started from public industry and spread out to the financial industry and affected real industry adversely. The crisis became the most severe crisis in the history of the country. In order to stabilize the economy "Transition to Strong Economy" program was implemented. There were five basic pillars of this program. The first one was fighting against inflation firmly within floating exchange rate system, the second one was restructuring banking sector, the third one was strengthening public finance, the fourth one was running an income policy in line with inflation targets, and the last one was preparing legal infrastructure to implement those changes within an efficient, flexible and transparent framework. Those measures implemented after 2001 crisis, extracted serious impacts, first, on financial industry and, later, on real economy. The banking sector has the largest share in finance industry and a closer look on the arrangements for the financial sector showed that "Banking Industry Restructuring Program" in May 2001 by the Banking Regulation and Supervision Agency (BRSA) was the main one. This program consisted of restructuring state banks and bringing affected private banks from crisis to financial health. In addition, to increase the effectiveness of surveillance and supervision in the banking sector, and to bring the sector to a more efficient and competitive level; the program also included the realization of the legal and institutional arrangements; for restructuring of the financial sector in respect of supervision and control, capital adequacy, risk regulations, accounting standards, independent auditing, credit and share holding constraints, the recapitalization of banks, regulations for private financial institutions, arrangements for the supervision and co-operation agreements concluded with foreign countries. Therefore, the 2001 financial crisis was an important milestone for the financial markets in Turkey and the effects of these changes on the financial markets are taken into account.by creating a dummy variable. The created dummy variable is called as Crisis2001, which takes 0 before 2001Q1 and takes values 1on and after 2001Q1.

First of all, a series of diagnostic checks, including graphing and correlograms, were used to see whether data contain trend and seasonality (Note 3). The results are indicated that INFLATION and RGDP series exhibit seasonality and after 2001 crisis it can clearly be seen that the nature of economy changed and entered into another phase. Therefore, in order to extract seasonality from those two series, this study uses the TROMA/SEATS method, which is the most common method used for seasonal adjustment in recent literature. After de-seasonalizing, RGDP and INFLATION are called as RGDP_SA and INFLATION_SA respectively. Further, the graphs and correlograms also indicated that there are strong trends all the series used in this study. Therefore, the natural logarithms of all variables are taken in order to reduce the impact of outliers and smoothes out time series. After taking natural logarithm, letter L is added to the front of each variable such that ISE100 become LISE100 after taking logarithm.

Three analyses were conducted. The first analysis used full-sample and the other two used sub-samples. The first sub-sample covers the period before 2001 crisis and the other sub-sample covers the period after 2001 crisis. Later, the study formally tested whether the series have unit root and the results are reported in the Table 1. According to ADF test results, some of the variables are integrated level and the others are integrated at the first difference: At full sample INFLATION_SA, at the sub-sample before 2001 crisis LISE100, LRGDP_SA and INFLATION_SA and at the sub-sample after 2001 crisis LEXRATE variables are accepted I (0) and the rest of variables are accepted I (1) series. Therefore maximum integration order is determined as 1.

Table 1. Augmented Dickey Fuller test (ADF)

	Full-Sample (1987Q2-2012Q1)			
	Level		First Difference	
Variables Names	Constant	Constant+Trend	Constant	Constant+Trend
LISE100	-1.2368	-0.8852	-8.8190*	-8.8450*
LINTEREST	-0.7209	-2.5118	-9.2554*	-9.3711*
LEXRATE	-3.9708*	0.4665	-7.6930*	-9.0613*
LRGDP_SA	-0.2111	-3.0536	-10.3280*	-10.2892*
INFLATION_SA	-1.8366	-3.7859**	-10.7008*	-10.6612*
LM1	-3.0185**	0.8279	-2.9462**	-12.7012*
	Sub-Sample (1987Q2-2000Q4)			
	Level		First Difference	
Variables Names	Constant	Constant+Trend	Constant	Constant+Trend
LISE100	-0.3817	-4.7975*	-6.8320*	-6.8492*
LINTEREST	-2.9231**	-2.9772	-7.3057*	-7.3182*
LEXRATE	0.1564	-2.1144	-7.7110*	-7.6495*
LRGDP_SA	-0.6817	-3.5542**	-8.9953*	-8.9090*
INFLATION_SA	-6.0072*	-5.9122*	-8.1937*	-8.2608*
LM1	1.8239	-3.1492	-7.7260*	-8.1862*
	Sub-Sample (2001Q1-2012Q1)			
	Level		First Difference	
Variables Names	Constant	Constant+Trend	Constant	Constant+Trend
LISE100	-1.1436	-2.1963	-5.0758*	-5.0268*
LINTEREST	-3.2260**	-2.2784	-4.7341*	-5.2542*
LEXRATE	-5.2291*	-5.0945*	-8.2552*	-8.0503*
LRGDP_SA	-0.4860	-2.0177	-5.4969*	-5.4543*
INFLATION_SA	-2.4887	-3.1457	-14.1701*	-15.6335*
LM1	-1.8784	-1.4922	-3.5874**	-8.5081*

Note. *, %1significant, **, %5 significant and ***, %10 significant level. In order to get rid of autocorrelation, the Schwarz Information Criteria Used in those tests.

After unit root tests the Granger Causality method proposed by Granger (1969) is used. This method is one of the most common methods used in the literature. The mathematical representation of this method is shown in the Equation (1) and (2) below.

$$Y_t = \lambda_0 + \sum_{k=1}^{p+d_{\max}} \lambda_k Y_{t-k} + \sum_{k=1}^{p+d_{\max}} \vartheta_k X_{t-k} + \varepsilon_{1,t}, \tag{1}$$

$$X_t = \gamma_0 + \sum_{k=1}^{p+d_{\max}} \gamma_k Y_{t-k} + \sum_{k=1}^{p+d_{\max}} \kappa_k X_{t-k} + \varepsilon_{2,t}, \tag{2}$$

The model given in the Equations (1) and (2) is called as VAR(p+dmax). λ_0 and γ_0 are constant terms, λk, ϑk, γk, and κk are the parameters associated to lagged variables of Yt and Xt series, and ε1,t and ε2,t are identically and independently distributed error terms with mean 0 and constant variance. Rambaldi and Doran (1996) suggested a Toda and Yamamoto (1995) Granger causality test based on the model given in the Equations (1) and

(2). Here, the above equations are estimated by using Seemingly Unrelated Regression method. After that, by using MWALD tests ϑk, k=1, 2..p, parameters are tested jointly in the Equation (1) to extract whether Xt is Granger cause of Yt and, similarly, γk, k=1, 2..p, parameters are tested jointly in the Equation (2) to extract whether Yt is Granger cause of Xt. The reason using the Toda and Yamomoto test suggested by Rambaldi and Doran (1996) is to ease the application and the second reason is that in the case of a cointegration the existence of unit root creates various problems (Toda & Phillips, 1993; Dufour & Renault, 1998). If the degree of cointegration of time series and the number of cointegrated vectors between variables are determined wrongly, the statistical interpretation between variables also can also be wrong. On the other hand, the used Toda and Yamamoto (1995) is independent from these problems.

Table 2. Granger causality (long-run relationships) between ISE100 and macroeconomic variables (full-sample) (SC=1,k+dmax= 1+1=2)

Hypotheses Tested (H_0)	MWALD	P Value	Est. Coeff. for Crisis2001	P Value	Hypotheses Tested (H_0)	MWALD	P Value	Est. Coeff. for Crisis 2001	P Value
From INTEREST to ISE100	1.88(+)	0.17	-0.36*	0.00	From ISE100 to INTEREST	2.71***(-)	0.10	-0.02	0.08
From EXRATE to ISE100	0.41 (-)	0.52	-0.36*	0.00	From ISE100 to EXRATE	0.01 (-)	0.91	-0.04	0.51
From RGDP_SA to ISE100	0.49(+)	0.49	-0.36*	0.00	From ISE100 to RGDP_SA	6.33**(+)	0.01	-0.03**	0.05
From INFLATION_SA to ISE100	0.04(-)	0.85	-0.36*	0.00	From ISE100 to INFLATION_SA	2.44(+)	0.12	1.10	0.51
From M1 to ISE100	10.25*(+)	0.00	-0.36*	0.00	From ISE100 to M1	2.48(+)	0.12	-0.01	0.84

*, %1 significant, **, %5 significant, ***, %10 significant. Est. is Abbreviation for Estimated and Coeff. Is abbreviation for Coefficient.

According to full sample results in the Table 2, Turkish stock market was not efficient since there is Granger causality from money supply to stock market and the dummy variable for the crisis 2001 is found to be statistically significant in the equation that stock market is dependent variable. Hence, 2001 crisis extract negative influence on stock market performance over the investigated period. Again, as seen in the Table 2, Turkish stock market can be used as leading indicator for interest rate and real GDP. Further the dummy variable only extract positive and statistically significant influences on real GDP in the cases of macroeconomic variables are dependent variables. Here the sign of causality were also investigated. Money supply affects stock market positively. On the other hand, stock market affects interest rate negatively and real GDP positively.

Table 3. Granger causality (long-run relationships) between ISE100 and macroeconomic variables (sub-sample before 2001 crisis) (SC=1,k+dmax= 1+1=2)

Hypotheses Tested (H_0)	MWALD	P Value	Hypotheses Tested (H_0)	MWALD	P Value
From INTEREST to ISE100	1.7941 (+)	0.1804	From ISE100 to INTEREST	6.1448**(-)	0.0132
From EXRATE to ISE100	0.0038(+)	0.9508	From ISE100 to EXRATE	0.0093(+)	0.9232
From RGDP_SA to ISE100	0.1438(+)	0.7045	From ISE100 to RGDP_SA	3.0120***(+)	0.0827
From INFLATION_SA to ISE100	0.8180(+)	0.3658	From ISE100 to INFLATION_SA	2.0572(+)	0.1515
From M1 to ISE100	10.6135*(+)	0.0011	From ISE100 to M1	2.4928(+)	0.1144

*, %1significant, **, %5 significant, ***, %10 significant.

In the Table 3, the sub-sample results before 2001 crisis are presented. These results are the same to the full-sample results. In the Table 4, on the other hand, after 2001 crisis, the stock market became efficient. Namely, there was no causality detected from macroeconomic variables to stock market. After 2001 crisis while the stock market can, still, be used as a leading indicator for real GDP, it cannot be used as a leading indicator for interest rate but now it became a leading indicator for exchange rate.

Table 4. Granger causality (long-run relationships) between ISE100 and macroeconomic variables (sub-sample after 2001 crisis) (SC=1,k+dmax= 1+1=2)

Hypotheses Tested (H_0)	MWALD	P Value	Hypotheses Tested (H_0)	MWALD	P Value
From INTEREST to ISE100	0.7434(-)	0.3886	From ISE100 to INTEREST	0.3653(-)	0.5456
From EXRATE to ISE100	1.4044(-)	0.2360	From ISE100 to EXRATE	7.5888*(+)	0.0059
From RGDP_SA to ISE100	0.2653(-)	0.6065	From ISE100 to RGDP_SA	23.0830*(+)	0.0000
From INFLATION_SA to ISE100	0.7332(-)	0.3919	From ISE100 to INFLATION_SA	0.3925(+)	0.5310
From M1 to ISE100	1.3094(+)	0.2525	From ISE100 to M1	0.6038(-)	0.4371

*, %1significant, **, %5 significant, ***, %10 significant.

4. Conclusion

This study worked on the relationships between ISE100, the stock composite index, and macroeconomic variables for Turkey. As working on this relationship, study used all available up to date data; very wide selection of macroeconomic variables compared to earlier literature on Turkey and considered a cyclical shift happened in 2001. According to the findings; Turkish stock market became efficient after 2001 crisis. Yet in the case of full sample and before the 2001 crisis, both of the findings are the same, the stock market inefficiency were consistent in result with Erbaykal and Okuyan (2007) and inconsistent with Aydemir (2008) and Kaplan (2008).

On the other hand, before crisis, at the case of full sample stock market in Turkey was found to be used as a leading indicator for two macroeconomic variables that are, interest rate and real GDP. For the rest of the variables, there was no such relationship detected. Those results were consistent with Erbaykal and Okuyan (2007) Kaplan (2008) and Aydemir (2008) since they all found stock market as a leading indicator for real economic activity.

Furthermore the cyclical change happened in February 2001, were not considered by earlier literature. This study considered this piece of information and found statistically significant results in two cases. It looks like that 2001 crisis extracts statistically significant influence on the stock market and real GDP. However, the study did not expect statistically insignificant results at any case for the dummy variable for the crisis.

References

Abdalla, I. S. A., & Murinde, V. (1997). Exchange Rate and Stock Price Interactions in Emerging Financial Markets: Evidence on India, Korea, Pakistan and The Phillippines. *Applied Financial Economics, 7*, 25–35. http://dx.doi.org/10.1080/096031097333826

Abdullah, D. A., & Hayworth, S. C. (1993). Macroeconometrics of Stock Price Fluctuations. *Quarterly Journal of Business and Economics, 32*(1), 50–67.

Agarwal, R. (1981). Exchange Rate and Stock Prices: A Study of U.S. Capital Markets under Floating Exchange Rate. *Akron Business and Economics Review, 12*(2), 7–12.

Ahmad, N. (2009). Linkage Between Stock Market and Manufacturing Sector in India: A Time Series Analysis. *The Icfai Journal of Applied Finance, 15*(1), 43–55.

Ahmed, S. (2008). Aggregate Economic Variables and Stock Markets in India. *International Research Journal of Finance and Economics, 14*, 141–164.

Ajayi, R. A., & Mougoué, M. (1996). On the Dynamic Relation between Stock Prices and Exchange Rates. *The Journal of Financial Research, 19*(2), 193–207.

Ajayi, R. A., Friedman, J., & Mehdian, S. M. (1998). On the Relationship between Stock Returns and Exchange Rate: Tests of Granger Causality. *Global Finance Journal, 9*(2), 241–251.

http://dx.doi.org/10.1016/s1044-0283(98)90006-0

Alexakis, P., Apergis, N., & Xanthakis, E. (1996). Inflation Volatility and Stock Prices: Evidence from ARCH Effects. *International Advances in Economic Research, 2*(2), 101–112. http://dx.doi.org/10.1007/bf02295049

Al-Khazali, O. M. (2004). The Generalized Fisher Hypothesis in the Asian Markets. *Journal of Economic Studies, 31*(2), 144–157. http://dx.doi.org/10.1108/01443580410527123

Aydemir, O. (2008). Hisse Senedi Getirileri ve Reel Sektör Arasındaki İlişki: Ampirik Bir Çalışma. *İ.İ.B.F. Dergisi, Afyon Kocatepe Üniversitesi, 2*, 37–55.

Bahadur G. C., Surya, & Neupane, S. (2006). Stock Market and Economic Development: a Causality Test. *The Journal of Nepalese Business Studies, 3*(1), 36–44. http://dx.doi.org/10.3126/jnbs.v3i1.481

Barro, R. J. (1990). The Stock Market and Investment. *Review of Financial Studies, 3*, 115–32. http://dx.doi.org/10.1093/rfs/3.1.115

Bernanke, B. S., & Kuttner, K. N. (2005). What Explains the Stock Market's Reaction to Federal Reserve Policy. *Journal of Finance, 60*, 1221–1257. http://dx.doi.org/10.1111/j.1540-6261.2005.00760.x

Bhattacharya, B., & Mukherjee, J. (2002). *The Nature of the Causal Relationship Between Stock Market and Macroeconomic Aggregate in India: An Empirical Analysis*. Paper presented in the 4th Annual Conference on Money and Finance, Mumbai.

Bhattarai, R. C., & Joshi, N. K. (2009). Dynamic Relationship among the Stock Market and the Macroeconomic Factors: Evidence from Nepal. *South Asia Economic Journal, 10*(2), 451–469. http://dx.doi.org/10.1177/139156140901000208

Bhide, A. (1993). The Hidden Costs of Stock Market Liquidity. *Journal of Financial Economics*, *34*(1), 31–51. http://dx.doi.org/10.1016/0304-405x(93)90039-e

Binswanger, M. (1999). *Stock Markets, Speculative Bubbles and Economic Growth*. Edward Elgar, Aldershot.

Binswanger, M. (2004). How Important Are Fundamentals? Evidence from A Structural VAR Model for the Stock Markets in the US, Japan and Europe. *Journal of International Financial Markets, Institutions and Money, 14*, 185–201. http://dx.doi.org/10.1016/j.intfin.2003.06.001

Bodie, Z. (1976). Common Stocks as a Hedge against Inflation. *Journal of Finance, 31*, 459–470. http://dx.doi.org/10.1111/j.1540-6261.1976.tb01899.x

Boudoukh, J., & Richardson, M. (1993). Stock Returns and Inflation: A Long Horizon Perspective. *American Economic Review, 83*, 1346–55.

Branson, W. H., & Henderson, D. W. (1985). The Specification and Influence of Stock Markets. *NBER Working Paper Series*, 1283.

Central Bank of Turkey, (2001). *Transition to a Strong Economy Program*. Retrieved from http://www.tcmb.gov.tr/tlkampanya/sss.html

Chakravarty, S. (2005). Stock Market and Macroeconomic Behavior in India. *Iegindia*, 1–13.

Chen, N., Roll, R., & Ross, S. (1986). Economic Forces and Stock Markets. *Journal of Business, 59*, 383–403.

Cheng, A. C. S. (1995). The UK Stock Market and Economic Factors: A New Approach. *Journal of Business Finance and Accounting, 22*, 129–142. http://dx.doi.org/10.1111/j.1468-5957.1995.tb00675.x

Choi, S., Smith, B. D., & Boyd, J. (1995). *Inflation, Financial Markets and Capital Formation*. Working Paper 556, Federal Reserve Bank Minneapolis.

Cook, T., & Hahn, T. (1988). The Information Content of Discount Rate Announcements and Their Effect on Market Interest Rates. *Journal of Money, Credit, and Banking*, *20*(2), 167–180. http://dx.doi.org/10.2307/1992108

Deverux, M. B., & Smith, G. W. (1994). International Risk Sharing and Economic Growth. *International Economic Review, 35*(3), 535–550. http://dx.doi.org/10.2307/2527072

Dhakal, D., Kandil, M., & Sharma, S. C. (1993). Causality between the money supply and share prices: a VAR investigation. *Quarterly Journal of Business and Economics, 32*(3), 52–74.

Dominian, D. L., Glister, J., & Louton, D. A. (1996). Expected Inflation, Interest Rates, and Stock Returns. *The Financial Review, 31*(4), 809–830. http://dx.doi.org/10.1111/j.1540-6288.1996.tb00898.x

Dornbush, R., & Fisher, S. (1980). Exchange Rate and Current Account. *American Economic Review, 70*, 960–971.

Dufour, J. M., & Renault, E. (1998). Short-run and Long-run Causalityin in Time Series: Theory. *Econometrica, 69*, 1099–1125. http://dx.doi.org/10.2307/2999631

Erbaykal, E., & Okuyan, H. A. (2007). Türkiye'de Temel Makroekonomik Değişkenler ile Hisse Senedi Fiyatları Arasındaki Nedensellik İlişkisi. *İktisat, İşletme ve Finans*, *260*, 66–79. http://dx.doi.org/10.3848/iif.2007.260.0064

Fama, E. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance, 25*, 318–417. http://dx.doi.org/10.2307/2325486

Fama, E. (1981). Stock Returns, Real Activity, Inflation and Money. *American Economic Review, 71*, 545–565.

Fama, E. (1990). Stock Returns, Expected Returns, and Real Activity. *Journal of Finance*, *45*, 1089–1108. http://dx.doi.org/10.1111/j.1540-6261.1990.tb02428.x

Fama, E., & Schwert, G. W. (1977). Asset Returns and Inflation. *Journal of Financial Economics, 5*, 115–146. http://dx.doi.org/10.1016/0304-405x(77)90014-9

Firth, M. (1979). The Relationship between the Stock Market Returns and Rates of Inflation. *The Journal of Finance, 34*(3), 743–749. http://dx.doi.org/10.1111/j.1540-6261.1979.tb02139.x

Fisher, I. (1930). *The Theory of Interest*. Newyork, NY: Macmillan.

Fitzpatrick, B. D. (1994). Stock Prices and Macroeconomic Data. *Journal of Applied Business Research, 10*(4), 69–77.

Foresti, P. (2006). Testing for Granger Causality between Stock Prices and Economic Growth. *MPRA Paper*, No 2962.

Fosback, N. G. (1991). *Stock Market Logic*. Florida: Dearborn Financial Publishing, Inc.

Friedman, M. (1988). Money and the Stock Market. *Journal of Political Economy, 96*(2), 221–245. http://dx.doi.org/10.1086/261534

Fung, H. G., & Lie, C. J. (1990). Stock market and economic activities: A causal analysis. In S. G. Rhee & R. P. Chang (Eds.), *Pacific-Basin Capital Markets Research*. Amsterdam, Netherlands: Elsevier Science Publishers.

Geske, R., & Roll, R. (1983). The Fiscal and Monetary Linkage between Stock Returns and Inflation. *The Journal of Finance, 38*(1), 1–33. http://dx.doi.org/10.1111/j.1540-6261.1983.tb03623.x

Graham, F. C. (1996). Inflation, Real Stock Returns, and Monetary Policy. *Applied Financial Economics, 6*, 29–35. http://dx.doi.org/10.1080/096031096334448

Granger, C. W. J. (1969). Investigating Causal Relations by Econometric Models and Cross-spectral Methods. *Econometrica, 37*(3), 424–438. http://dx.doi.org/10.2307/1912791

Greenwood, J., & Smith, B. D. (1997). Financial Markets in Development, and the Development of Financial Markets. *Journal of Economic Dynamics and Control, 21*(1), 145–181.

Gultekin, N. B. (1983). Stock Market Returns and Inflation: Evidence from Other Countries. *The Journal of Finance, 38*(1), 49–65. http://dx.doi.org/10.1111/j.1540-6261.1983.tb03625.x

Hamburger, M. J. (1966). The Demand for Money by Households, Money Substitutes, and Monetary Policy. *Journal of Political Economy, 74*, 600–623. http://dx.doi.org/10.1086/259223

Hamburger, M. J. (1977). The Behavior of the Money Stock: Is There a Puzzle?. *Journal Monetary Economics, 3*, 265–88. http://dx.doi.org/10.1016/0304-3932(77)90022-8

Hamburger, M. J. (1983). *Recent Velocity Behavior, the Demand for Money and Monetary Policy.* In Proceedings of the Conference on Monetary Targeting and Velocity, San Francisco: Fed. Reserve Bank San Francisco.

Hassapis, C., & Kalyvitis, S. (2002). Investigating the links between growth and real stock price changes with empirical evidence from the G-7 economies. *The Quarterly Review of Economics and Finance, 42*, 543–575. http://dx.doi.org/10.1016/s1062-9769(01)00111-9

Ho, Y. K. (1983). Money Supply and Equity Prices: An Empirical Note on Far Eastern Countries. *Economic Letters, 1*, 161–165. http://dx.doi.org/10.1016/0165-1765(83)90179-9

Holmström, B., & Tirole, J. (1993). Market Liquidity and Performance Monitoring. *Journal of Political Economy, 101*(4), 678–709. http://dx.doi.org/10.1086/261893

Horobet, A., & Dumitrescu, S. (2009). On the Causal Relationship between Monetary, Financial and Real Macroeconomic Variables: Evidence from Central and Eastern Europe. *Journal of Economic Computation and Economic Cybernetics Studies and Research, 3*, 77–94.

Jaffe, J. F., & Mandelker, G. (1976). The "Fisher Effect" for Risky Assets: An Empirical Investigation. *Journal of Finance*, 447–458. http://dx.doi.org/10.2307/2326616

James, C., Koreisha, S., & Partch, M. (1985). A VARMA Analysis of the Causal Relation among Stock Returns, Real Output and Nominal Interest Rates. *Journal of Finance, 40*, 1375–1384. http://dx.doi.org/10.1111/j.1540-6261.1985.tb02389.x

Jansen, W. J., & Nahuis, N. J. (2003). The Stock Market and Consumer Confidence: European Evidence. *Economics Letters, 79*, 89–98. http://dx.doi.org/10.1016/s0165-1765(02)00292-6

Jensen G. R., & Johnson, R. R. (1995). Discount Rate Changes and Security Returns in the U.S., 1962–1991. *Journal of Banking and Finance*, *19*(1), 79–95. http://dx.doi.org/10.1016/0378-4266(94)00048-8

Kaplan, M. (2008). The Impact of Stock Market on Real Economic Activity: Evidence from Turkey. *Journal of Applied Sciences*, *8*(2), 374–378. http://dx.doi.org/10.3923/jas.2008.374.378

Karamustafa, O., & Küçükkale, Y. (2003). *Long Run Relationship between Stock Market Returns and Macroeconomic Performance: Evidence from Turkey.* Retrieved from http://www.Repec.org

Kaul, G. (1987). Stock Returns and Inflation: The Role of Monetary Sector. *Journal of Financial Economics, 30*, 253–276. http://dx.doi.org/10.1016/0304-405x(87)90041-9

Kessel, R. A. (1956). Inflation-caused Wealth Redistribution: a Test of Hypothesis. *American Economic Review, 4*, 128–41.

Kwon, C. S., & Shin, T. S. (1999). Cointegration and Causality between Macroeconomic Variables and Stock Market Returns. *Global Finance Journal*, *10*(1), 71–81. http://dx.doi.org/10.1016/s1044-0283(99)00006-x

Lee, B. (1992). Causal Relations among Stock Returns, Interest Rates, Real Activity, and Inflation. *Journal of Finance, 47*, 1591–1603. http://dx.doi.org/10.2307/2328955

LeRoy, S. F. (1984). Nominal Prices and Interest Rates in General Equilibrium: Endowment Shocks. *Journal of Business*, *57*, 197–213. http://dx.doi.org/10.1086/296259

Li, M., & Wu, P. (2008). The Relationship between Money Supply and Stock Prices. *The Third International Conference on Innovative Computing Information (ICICIC'08)*. http://dx.doi.org/10.1109/icicic.2008.568

Lin, C., Li, M., & Liu, C. (2007). On Stock Market and Macroeconomic Variables: Evidence from Four Asian Tigers. *Innovative Computing, Information and Control, ICICIC'07, Second International Conference on (0-7695-2882-1)* (September 5–7, pp. 426–429). http://dx.doi.org/10.1109/icicic.2007.419

Lin, S. M. (1993). Stock Returns and Money Supply: A Comparison Among Three Asian Newly Industrialized Countries. In K. A. Wong, F. Koh & K. G. Lim (Eds.), *Proceedings of the Third International Conference on Asian-Pacific Financial Markets*. National University of Singapore, Singapore.

Litner, J. (1975). Inflation and Security Returns. *Journal of Finance*, *30*, 259–280. http://dx.doi.org/10.1111/j.1540-6261.1975.tb01809.x

Malliaris, A. G., & Urrutia, J. L. (1991). An Empirical Investigation among Real,Monetary and Financial Variables. *Economic Letters, 37*, 151–158. http://dx.doi.org/10.1016/0165-1765(91)90124-4

Mao, Y., & Wu, R. (2007). Does Stock Market Act as a Signal for Real Activity? Evidence from Australia. *Economic Papers, 26*(2), 180–192. http://dx.doi.org/10.1111/j.1759-3441.2007.tb01015.x

Mao, C. K., & Kao, G. W. (1990). On Exchange Rate Changes and Stock Prices Reaction. *Journal of Business Finance and Accounting, 17*(2), 441–449. http://dx.doi.org/10.1111/j.1468-5957.1990.tb01196.x

Marshall, D. A. (1992). Inflation and Asset Returns in a Monetary Economy. *Journal of Finance, 52*, 1315–42. http://dx.doi.org/10.1111/j.1540-6261.1992.tb04660.x

Mauro, P. (1995). Stock Markets and Growth: A Brief Caveat on Precautionary Saving. *Economic Letters, 47*(1), 111–116. http://dx.doi.org/10.1016/0165-1765(94)00511-y

Morck, R., Shleifer, A., Vishny, R. W., Shapiro, M., & Poterba, J. M. (1990). The Stock Market and Investment:

Is the Market a Sideshow? *Brookings Paper on Economic Activity, 1990*(2), 157–215.

Mukherjee, T. K., & Naka, A. (1995). Dynamic Relations between Macroeconomic Variables and the Japanese Stock Market: An Application of a Vector Error Correction Model. *Journal of Financial Research, 18*, 223–237.

Nelson, C. R. (1976). Inflation and Rates of Return on Common Stocks. *Journal of Finance, 31*, 471–483. http://dx.doi.org/10.1111/j.1540-6261.1976.tb01900.x

Palmer, M. (1970). Money Supply, Portfolio Adjustments and Stock Prices. *Financial Analyst Journal*, *26*, 19–22. http://dx.doi.org/10.2469/faj.v26.n4.19

Pearce, D. K. (1983). Stock Prices and the Economy. *Economic Review*, November, 7–22.

Pearce, D. K., & Roley, V. (1983). The Reaction to Stock Prices to Unanticipated Changes in Money: A Note. *Journal of Finance, 38*, 1323–1333. http://dx.doi.org/10.3386/w0958

Pethe, A., & Karnik, A. (2000). Do Indian Stock Markets Matter? Stock Market Indices and Macro-economic Variables? *Economic and Political Weekly, Money, Banking and Finance*, *35*(5), 349–356.

Plinkus, D. (2009). Stock Market and Macroeconomic Variables: Evidences from Lithinuia. *Economics and Management*, 884–891.

Rambaldi, A. N., & Doran, H. E. (1996). Testing for Granger Non Causality in Cointegrated Systems Made Easy. *Working Papers in Econometrics and Applied Statistics 88*. Department of Econometrics, the University of New England.

Rasiah, R., & Ratneswary, V. (2010). Macroeconomic Activity and the Malaysian Stock Market: Empirical Evidence of Dynamic Relations. *The International Journal of Business and Finance Research*, *4*(2), 59–69.

Ratanapakorn, O., & Sharma, S. C. (2007). Dynamic Analysis between the US Stock Returns and the Macroeconomic Variables. *Applied Financial Economics, 17*(5), 369–377. http://dx.doi.org/10.1080/09603100600638944

Rozeff, M. S. (1974). Money and Stock Prices: Market Efficiency and the Lag Effect of Monetary Policy. *Journal of Financial Economics*, *1*, 245–302.

Schwert, W. G. (1990). Stock Returns and Real Activity: A Century of Evidence. *Journal of Finance*, *45*, 1237–1257. http://dx.doi.org/10.2307/2328722

Smirlock, M., & Yawitz, J. (1985). Asset Returns, Discount Rate Changes, and Market Efficiency. *Journal of Finance*, *40*(4), 1141–1158. http://dx.doi.org/10.2307/2328399

Soenen, L. A., & Agarwal, R. (1989). *Financial Prices as Determinants of Change in Currency Values.* Paper Presented at the 25th Annual Meetings of Eastern Finance Association, Philadelphia.

Soenen, L. A., & Hennigar, E. S. (1988). An Analysis of Exchange Rate and Stock Prices: The US Experience between 1980 and 1986. *Akron Business and Economic Review, 19*(4), 71–76.

Solnik, B. (1983). The Relationship between Stock Prices and Inflationary Expectations: The International Evidence. *Journal of Finance, 38*, 35–48. http://dx.doi.org/10.2307/2327636

Sprinkel, B. W. (1971). *Money and Markets: A Monetarist View*. Richard D. Irwin Homevood.

Stock, J. H., & Watson, M. W. (1990). *Business Cycle Properties of Selected U.S. Economic Time Series, 1959-1988*. NBER Working Papers 3376, National Bureau of Economic Research, Inc. http://dx.doi.org/10.3386/w3376

Stock, J. H., & Watson, M. W. (1998). *Business Cycle Fluctuations in U.S. Macroeconomic Time Series*. NBER Working Papers 6528, National Bureau of Economic Research, Inc. http://dx.doi.org/10.3386/w6528

Stulz, R. M. (1986). Asset Pricing and Expected Inflation. *Journal of Finance, 41*, 209–223. http://dx.doi.org/10.2307/2328353

Thorbecke, W. (1997). On Stock Market Returns and Monetary Policy. *The Journal of Finance*, *52*(2), 635–654. http://dx.doi.org/10.1111/j.1540-6261.1997.tb04816.x

Toda, H. Y., & Phillips, P. C. B. (1993). Vector Autoregressions and Causality. *Econometrica*, *61*(6), 1367–1393. http://dx.doi.org/10.2307/2951647

Toda, H. Y., & Yamamoto, T. (1995). Statistical Inference in Vector Autoregressions with Possibly Integrated Processes. *Journal of Econometrics, 66*, 225–250. http://dx.doi.org/10.1016/0304-4076(94)01616-8

Notes

Note 1. Central Bank of Turkey (CBT), http://www.tcmb.gov.tr/tlkampanya/sss.html

Note 2. Daily data available after October, 23 1987. Before that date, data is available weekly.

Note 3. They are not reported but they can be supplied on demand.

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

An Embryonic Journey of Musical Entrepreneurship with "The Captain," Jorma Kaukonen, and His Co-Pilot, Vanessa

J. Michael Geringer[1] & Jeffrey Anderson[1]

[1] College of Business, Ohio University, Athens, Ohio, USA

Correspondence: J. Michael Geringer, College of Business–Center for International Business, Copeland Hall 401A, Ohio University, Athens, Ohio 45701, USA. Tel: 1-740-593-2036. E-mail: geringer@ohio.edu

Received: July 23, 2014 Accepted: August 13, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p101 URL: http://dx.doi.org/10.5539/ibr.v7n10p101

Abstract

The music business is a case study in how macro-environmental factors can radically transform an industry. Developments such as digital production and distribution, coupled with social media, crowdfunding, and changing consumer preferences, have dramatically transformed the business model for the recorded music industry in recent years and spurred the development of entrepreneurial business models to enable musicians to survive in their changing environment. As a solo artist and founding member of the musical groups Jefferson Airplane and Hot Tuna, Rock and Roll Hall of Fame musician Jorma ("The Captain") Kaukonen has recorded albums for major labels such as RCA, Sony, and Columbia, as well as independent labels such as Relix and Red House Records. In this interview, Jorma and his wife and business manager, Vanessa Kaukonen, discuss their experiences as musical entrepreneurs in the digital age, including their founding of the unique Fur Peace Ranch guitar camp in the hills of Appalachia. The entrepreneurial business undertakings of the Kaukonens highlight the potential for entrepreneurial musicians to develop innovative and sustainable business models for surviving in this new world of music.

Keywords: entrepreneur, music entrepreneurship, business model, music industry, musician, innovation, Jorma Kaukonen

1. Introduction

The music business is a case study in how macro-environmental factors can radically transform an industry. Developments such as digital production and distribution, coupled with social media, crowdfunding, and changing consumer preferences, have dramatically transformed the business model for the recorded music industry in recent years and spurred the development of entrepreneurial business models to enable musicians to survive in their changing environment. As a solo artist and founding member of the Jefferson Airplane and Hot Tuna, Jorma Kaukonen ("The Captain") has recorded albums for major labels such as RCA, Sony, and Columbia, as well as independent labels such as Relix and Red House Records. In this interview, Rock and Roll Hall of Fame musician Jorma Kaukonen and his wife and business manager, Vanessa Kaukonen, discuss their experiences as musical entrepreneurs in the digital age, including their founding of the unique Fur Peace Ranch guitar camp in the hills of Appalachia. The entrepreneurial business undertakings of the Kaukonens highlight the potential for entrepreneurial musicians to develop innovative and sustainable business models for surviving in this new world of music.

The next section provides a brief discussion of the backgrounds of the interviewees, Jorma and Vanessa Kaukonen. An overview of the recorded music industry and structural changes that have transformed this business is then provided, in order to highlight the context in which the Kaukonens' entrepreneurial music endeavors have been undertaken. We then provide the transcript of the interview with the Kaukonens. The interview itself was conducted on-site at the Kaukonens' entrepreneurial Fur Peace Ranch, which is located in the rural foothills of Darwin, Ohio. Questions were developed by the authors in advance and shared with the Kaukonens prior to the interview, although further exploration of key topics was initiated as the interview proceeded. The interview was recorded both digitally and on tape, transcribed into Microsoft Word, and then a word-by-word comparison of the printed and audio versions was conducted in order to ensure completeness. The resulting transcript was reviewed by the interviewees to ensure accuracy. Portions of the interview transcript were subsequently edited in order to provide a more concise presentation of key issues relevant to the musical entrepreneurship activities of the Kaukonens, and this edited transcript was again reviewed by the Kaukonens to ensure that no inaccurate or misleading comments resulted. Interview questions are preceded by “INT:” and the corresponding responses are indicated as coming from either Jorma or Vanessa.

Figure 1. Vanessa and Jorma Kaukonen in front of the Fur Peace Ranch main cabin

2. Background on the Interviewees: Jorma and Vanessa Kaukonen

2.1 Biography of Jorma Kaukonen

Jorma Kaukonen is a Grammy-nominated finger-style guitarist and a 1996 inductee into the Rock and Roll Hall of Fame. His career in music has spanned over 50 years and he is regarded as a leading practitioner and interpreter of American roots music. Born December 23, 1940, to a Finnish-American father and an American-born Russian Jewish mother, Jorma was raised in the Washington D.C. area. As a teenager, he learned to play guitar and formed a band named The Triumphs with future Jefferson Airplane bassist Jack Casady. While studying in Antioch College in Ohio, Jorma met Ian Buchanan, who introduced him to the elaborate finger-style fretwork of the Reverend Gary Davis. Later, during a college work-study program in New York, Jorma was introduced to Rev. Davis and many of the city's skilled folk-blues-bluegrass players.

Jorma moved to the San Francisco Bay Area in 1962 and enrolled in Santa Clara University, graduating with a bachelor’s degree in Sociology. He earned money by teaching guitar and playing in coffee houses, first as an accompanist to a young Janis Joplin and later as a solo performer. He was a founding member of the Jefferson Airplane, which emerged from the Haight-Ashbury culture of San Francisco to become one of the seminal rock bands of the 1960s. Anxious to play more, he and Airplane bassist Jack Casady formed the duo Hot Tuna as a side project. Hot Tuna survived the subsequent demise of the Airplane and the duo continues to perform to this day. As a solo musician and member of the Jefferson Airplane and Hot Tuna bands, Jorma has released more than 50 albums and played as a guest on dozens of projects for other artists.

Jorma’s song, “Embryonic Journey,” first appeared on Jefferson Airplane’s *Surrealistic Pillow* album in 1966. This song was subsequently incorporated in a number of movies, television shows, and commercials, and it has become one of his signature performances during live shows.

2.2 Biography of Vanessa Kaukonen

Vanessa Lillian Kaukonen is the CEO and co-owner of the Fur Peace Ranch in Meigs County, near the community of Darwin, Ohio. Vanessa earned a degree in Civil Engineering and Design from Hartford State Technical College before moving to Key West, Florida, to work on the design team for the Truman Annex. Before opening the Fur Peace Ranch in 1998, she managed several national recording artists and still works to manage her husband Jorma’s career. Vanessa used her civil engineering and design experience to conceptualize and build the entrepreneurial Fur Peace Ranch guitar camp.

Figure 2. Vanessa and Jorma Kaukonen in front of the Guitar Workshop at Fur Peace Ranch

3. Background on the Recorded Music Industry and Structural Changes that Have Transformed this Business

Recorded music sales in the U.S. peaked in 2000 when consumers purchased 943 million music CDs (The Economist, 2007). Digital distribution of music grew exponentially after 1999, when Napster introduced their revolutionary peer-to-peer service, which enabled people to share MP3 files, including copyrighted music, via a user-friendly interface. Although Napster was shut down by court order in 2001, due to concerns with copyright violations, the genie was out of the bottle and consumer migration to digital distribution of music continued its seemingly inexorable push forward. In 2003, Apple opened their iTunes music store, selling single songs for $0.99 apiece. In the next decade, annual recorded music sales in the U.S. plummeted nearly 40 percent, from $11.3 billion to $7.1 billion (Covert, 2013).

In the decades up to 1998, most records with substantial cultural impact were recorded in professional recording studios and distributed on LPs, tapes, and subsequently on compact discs by record labels, particularly those owned by the major music companies. The introduction of the Pro Tools digital audio workstation software in 1991 enabled individuals to record, mix and master professional quality music. When Pro Tools enabled 24-bit, 48 track engineering capability in 1997, entry barriers to the recording and engineering sector of the music industry experienced a rapid decline, which was manifested in a mass migration from the traditional conventional studio technology to lower cost alternatives, including inexpensive home studios or even recording and editing on a laptop computer.

Ironically, while total recorded music industry revenue is down appreciably, there are indications that consumers – particularly youth - are listening to music more than ever. What has changed is how they access and consume this music. In addition to continued access and downloading through a variety of peer-to-peer channels, the emergence of social listening sites like Pandora and Spotify have enabled consumers to pay less for accessing their music (albeit, sometimes in exchange for alternatives such as providing personal data that can be used for targeted advertisements) (Berklee College of Music, 2013).

The economic consequences of these changes have been profound for musicians. In 2000, professional musicians earned two-thirds of their income from pre-recorded music, via record labels, with the remaining one-third coming from concert tours, merchandise and endorsements. By 2007, those proportions had flipped. According to trade magazine Pollstar, concert sales in 2013 hit a record $5.1 billion, compared to the 2000 total of $1.7 billion (Pollstar, 2014).

Given the changes in the industry, there have never been better opportunities – and need – for musical entrepreneurs and the creation of new business models for the music industry. Digital distribution and recording have created low entry costs for the music industry. Armed with a laptop and a website, with little or no cash, a musician can make an impact on culture in ways that were impossible before. Many institutions of higher learning have recognized the opportunity to develop musical entrepreneurs and several have begun to offer course tracks and certificate programs, including the Berklee College of Music, which announced the launch of the Berklee Institute for Creative Entrepreneurship in 2014 (Balkin, 2014).

4. Interview with Jorma and Vanessa Kaukonen on Entrepreneurial Responses to Deal with the Transformation of the Music Industry

INT: Did you ever want to be anything besides a musician?

Jorma: I started playing music when I was 14 or 15 years old. I don't think I ever thought of it as a career or anything, although Jack (Casady) and I were in high school bands and we did get paid. The reality is that I really loved it. My metaphor for this would be to quote Chris Smither, "I fell into it as a kid and I never fell out of it." That's pretty much what happened in my case.

INT: Were there ever any times where you thought maybe you should try something else?

Jorma: No! No, I realized I was horribly underqualified for anything else. I might've even been underqualified to be a musician, too! *Laughter*. But I was really underqualified for anything that involved punching a time clock. I mean, I've had straight jobs and stuff. I worked for the government. I even took the civil service exam and, naah, it wasn't for me.

INT: So you grew up in the historic era of music. What do you see as being different about the business model today?

Jorma: Well, I'm sure there are a lot of different ways to look at this. If you think about when we came up, it was an era dominated by the major labels and when the minor labels were only doing folk stuff and reissues. You couldn't make a recording without having a deal because the studios were owned by the record companies and you couldn't afford to own the equipment yourself. Now we can do all the stuff ourselves, so it's a very different situation.

I was lucky to be in a band that had three great singers and they wrote great songs, in an era when the record companies were looking for that. But I think in some respects that bands such as the Jefferson Airplane were the transition between the old school and what happened later on, because we didn't toe the line like the labels wanted us to. The labels wanted us to use their producers and their studios and their studio musicians and ultimately get people to write songs in whatever mold was popular at the time. So we were fortunate to get a record deal back then, because in my opinion they thought that we fit into their model. They didn't realize that wasn't what we were at all! We pretty much did whatever we wanted to do. We got real lucky with the album Surrealistic Pillow, because that was really a commercial album. I don't think we set out to do that, because none of us were professional songwriters. In fact, before joining the Airplane, only two guys in the band, Spencer (Dryden) and Jack (Casady), had actually played in bands professionally! The rest of us were folkies. So we didn't have that thing like many of the LA guys had, where we needed a song with the right sound, where we needed a producer, and where it was "you do this and you do that" in order to make things happen. We foolishly thought we could do it all ourselves. And, as it turned out, we could!

Another thing is that we also got to work with some incredibly talented producers. Rick Jarrard, the guy who produced Surrealistic Pillow, realized who we were and so he had Jerry Garcia coproduce it. Even though he's not credited as a co-producer, Jerry was there and Rick realized that we would listen to him. As a result, it's a professionally produced album. Later on, we worked with Al Schmitt, a guy who'd done all of this Motown stuff. He somehow managed, out of the chaos that was us as the Airplane, to pull things together. In any case, we had those big hits. That's why we got into the Rock and Roll Hall of Fame, based on two hit songs: Somebody to Love and White Rabbit. And then we got to make a bunch of records that were okay. But we were never a hit-making machine like the Eagles, who were the epitome of that whole thing. Whatever the Eagles' formula was, it really worked. And then, as time went on, I guess that the technology really spelled the death knell for the major labels, because now anyone can do it.

INT: How do you make the major labels' business model work in this new world of music?

Vanessa: Marketing goes out over Twitter and Facebook now. That's the major marketing push these days. It's not the *Rolling Stone*, it's not Billboard. It's about who you've got out on the street.

Jorma: It's funny you asked me this question, because I'm really sort of old school about it. I'm still with kind of a large independent label called Red House, both my band Hot Tuna and myself individually. And before that, I did the album Blue Country Heart for Columbia Records, which was a major label. Had I not done that, I probably wouldn't have gotten a Grammy nomination, because it's still a bit of an old boys network. Anyway, when I got the deal with Columbia, my producer friend who got me the deal said, "Why do you want to do this? You could do it yourself, just like what the kids are doing these days." I said to him, "I want to do it because of the cachet." That's why I did that, and I still feel pretty much the same way about Red House, because it really takes a burden off me. We've been around for so long that our stuff kind of moves in its own sort of ponderous but somewhat predictable way, as opposed to really having to go out and bust your ass. Of course, we've got Twitter and Facebook and all that kind of stuff too, but that coupled with the fact that we've been around for so long makes things work for us at our level. A lot of the success stories that you see happening for younger artists, it is remarkable how they've thrown their hat in the ring and it's come up roses for them. They know how to do all this stuff and people like what they do. So I think in some respects, it's a blessing for everybody that the majors are not major anymore, although they still seem to be out there doing some of it. Can you even buy a single anymore? I mean, who knows. We cut singles, back in the day.

INT: Do the changes make it easier for musicians to be successful, having all the change in technology and venues?

Vanessa: I have a seven-year-old daughter, and the music that I listen to is the Hits One station on Sirius radio. When I can't listen to any more Bruno Mars, I go over to the Pulse station and they are marketing that in a completely different way. They're doing it through younger DJs. I listen to them, and they sound mature, but they are in their early 20s. So their language is different. I mean, what the heck is "twerky"? I mean, I think it fits for this generation, it connects with them. As Jorma said, with what we have today in terms of technology and everything, anybody with a little talent doesn't need a major label behind them to be successful.

Jorma: What Vanessa is talking about, with these hit channels on Sirius XM, when I listen to that stuff, the words mean nothing to me, they are from another universe. But when I hear the music, I hear disco. This is disco. So the music machine is still alive and well because it's not cheap to do this new stuff. They say all of these guys with a computer workstation know how to do this in their living room while they're watching the news or something, but I'll bet not. If you listen to the sound, a lot of that stuff is very skillfully produced.

INT: You still need talent to be successful in the music industry, don't you?

Jorma: Right, the machines are not going to do it for you. They are just instruments. In the beginning, I sort of looked at things like rap a bit askance. But when you listen to it, it's like when you listen to blues. There are a lot of different blues formats. Or if you listen to reggae, it's another format to convey your message. The same is true with rap. It's just another format to convey a message. The format I prefer has a lot more live instruments in it. But it's the same thing.

Vanessa: The wall in our Psylodelic Gallery, all of those quotes? That was at a time when people were shouting out, they were demanding to be heard for whatever reason, political or whatever. The stuff that I'm listening to on stations these days? They are also demanding to be heard. Now, does it have any substance to it? I even made a joke up on stage about Bruno Mars and that song Gorilla. It's all sex and getting messed up on alcohol and drugs. That's what that song is all about. "I got a body full of liquor and a cocaine kicker and I'm feeling 30 feet tall." So, okay, we know what you're doing tonight! But the language of a lot of the stuff that these guys are singing is so disrespectful, especially to women, and I don't want my daughter listening to that. The beat was so good, I initially thought, "Oh, my God! This is a great song!" Then I heard the words and I went, "Oh, my God! This is NOT a great song!" I don't want any daughter of mine thinking, whatever she does when she leaves the house when she's 18 years old or whatever, that having a belly full of liquor and a bunch of blow and letting some guy have his way with her - because he says he has a fistful of her hair and he's basically going to screw the heck out of her. I'm shocked! Is that what they are demanding to be heard?

Jorma: He's playing to his audience. (*laughter*) But I have to go on record and say this is nothing new. I remember an album that came out in the late 1960s, by Johnny and Shuggie Otis under the name of Snatch and the Poontangs, it makes this stuff look like kindergarten. That was all jailhouse stuff. So it's nothing new. Sex has been around a long time. Drugs have been around a long time. If you listen to the stuff that was on the radio back when I was a kid in DC, like Champion Jack Dupre singing, "I can't kick this habit, man, this junk is killing me," that was on popular radio. So this is nothing new. But if you are talking about content and messages, as an older guy, I'm not saying that things were better when I was younger. I'm not saying the new stuff is bad music. But I don't see any relevance, any social relevance, in most of the music that I am hearing in the popular realm.

You know, when Jellyroll did all those recordings for the Library of Congress, his original lyrics aren't on the Library of Congress recordings, because in that era in the United States we censored for sex, while in Europe they censored for violence. So all of the unexpurgated versions came out on discs from Europe, which is where I heard those tunes. There's nothing new under the sun.

Table 1. Overview of the Fur Peach Ranch

The Fur Peach Ranch (FPR), which began operation in 1998, is a seasonal music school located outside the community of Darwin in the Appalachian foothills of southeast Ohio. Conceived by Jorma and Vanessa Kaukonen as "a ranch that grows guitar players," the Fur Peace Ranch is not a fantasy camp. Students travel from around the world to learn from master performers like G.E. Smith, David Bromberg and Tommy Emanuel, with training delivered during a Friday-to-Monday schedule. While finger-style guitar is the popular format and Jorma is the most sought after teacher at FPR, the Ranch also offers instruction on a host of other instruments, from bass guitar to lap steel guitar, mandolin, percussion, vocals and songwriting.
The Fur Peace Ranch campus sits on 119 acres of forested rural farmland in southeast Ohio and includes 22 buildings, with a 200-seat performance hall, a full service restaurant, Ranch general store, and the Psylodelic Gallery. FPR students sleep in cozy two-person bunkhouses and dine on five-star quality meals in the camp's restaurant. The sounds of guitar fill the air well into the evening as students get together to practice and jam between and after attending instructional workshops. The camp experience includes a Saturday concert, usually performed by one of the camp instructors and with seating available to attendees from both the local community and hundreds of miles away. A Sunday student concert gives students an opportunity to show what they've learned during their camp experience, with Jorma typically working as a stage hand.
The value of the student experience at FPR is best measured by the level of repeat business. Labeled as "repeat offenders" by Jorma and Vanessa, more than 3,000 students have taken multiple workshops at the ranch; some have attended as many as 30 times.

INT: So we do have something new under the sun, Fur Peace Ranch, which is kind of unique as a concept. Can you give us an indication of where this idea originated and how it evolved over time?

Vanessa: We were living in Woodstock, New York, and Jorma gets a call from a friend who says he's selling his property in Ohio. God rest his soul, this friend was one of the original outlaws of Meigs County, Ohio. Jorma had known him for years, outside of the whole music scene.

Jorma: I had known him from South Florida in the early 1960s, when his motto was, "Drive the boat or fly the plane."

Vanessa: So he calls Jorma. I had never met him before, but I could hear him bellowing over the phone, "Jorma, I've got this land for sale."

Jorma: He talked really loud because on one of his flights to South America, he lost 10,000 feet of altitude in a matter of seconds and it just popped his eardrums. So he spoke really loud.

Vanessa: So I'm whispering to Jorma, "Hang the phone up! Are you crazy?" We'd only been married a couple of years and I'm like, "Ohio?" And Jorma says, "I'm going to go and take a look at it." So he goes and comes back three days later with a deed to some land in Ohio. I'm like, "We will never speak of this again, don't tell anybody we own land there!" Then, a year and a half later, we're driving to Ohio to look at the property and I'm crying the whole way here. I'm like, "What happened?" I was working in New York City, taking the train, and I was kind of loving life. Now I'm moving to … Middle Earth!

Jorma: I'll never forget sitting around the campfire here on the ranch during our first visit. A copperhead snake came out and I shot his head off with a 12-gauge shotgun. It was a great night! *Laughter*

Vanessa: He brought me to see the land and when I saw the snake, I said, "I'm going back to New York!" I hopped in the car and said, "I'll see you! Goodbye!" And I went back. Anyway, at that point it was a reality, we're moving here to the property. So we have this big blowout party in Woodstock, a big "We're moving to Ohio" party. Our friend, Chuck Fidel, had just come from the author T. Boyle's place. T. Boyle was up at Saratoga at the time, finishing the Road to Wellville or something. We told Chuck that we had bought land and we were moving to southeastern Ohio. Chuck said to Jorma, "Man, that's a fur piece from anywhere," and everybody chuckles and the laughter just went on and on. When the laughter finally stopped, I looked at my sister, Ginger, and said, "Fur Peace Ranch, where we're going to grow guitar players!"

Jorma: So before we even moved here, we had T-shirts and stationery. That's true!

Vanessa: We moved here and did nothing for a year. The land was here and there was a little dilapidated A-frame that became Jorma's old recording studio. This place was rough, so we didn't move onto the property itself. Instead, we found a farm 8 miles down the road, with this tiny little farmhouse. And I'm like, “I'm going to die here, I'm going to die here.” Then a year and a half later, maybe two years later, my sister was here, living and working with me, and I said to her, “What happened, Ginger? What happened to that idea? I know we joked about it back then, but we were going to grow guitar players!”

I was a civil engineer in another life, that's what I had done, and I wondered where to start. So Ginger and I took Tony Robbins’ 30-day Personal Power course and we did everything that he laid out for 30 days. While we were doing all that stuff, we were building our idea for this school, for this ranch where we were going to grow guitar players. When it was all over, I had a set of renderings and I had the business plan three-quarters of the way done. Ginger had created the schedule, the original schedule that we stick to until this day. We contacted dietitians and other professionals to see what was the optimum amount of time that a person can just sit and take a crash course in anything. When do they have to eat, when do they have to take a break, what are the health benefits, and so forth?

Jorma: I don't know anything about any of that stuff. I would have been sitting on a bale of hay with my guitar. *laughter*

Vanessa: So we said, “Okay, if we’re going to do this, what are we going to do? Workshops from Monday through Friday?” We decided no, because how are we going to get people to leave their jobs? We'll do it Friday through Monday. People are more apt to take a weekend off. So we stuck to that principle and to the schedule.

Not having built anything yet, I took this whole proposal package to my accountant and he told me, "Don't use any of your own money." I said, "But I have the money!" And he said, “Don't use your own money.” I remembered one of the things that Tony Robbins said, “If you are going to lose, lose big. And don't use your own money.” That's what he said. What's the worst that can happen? You fail and you start over. So I said okay and met with my local banker. At the time, I had just gotten a tattoo and I had an eyebrow ring. There was nothing I was going to do about the eyebrow ring, but the tattoo I tried to hide. It was a hot summer day. I stood out on that hill over there on the Ranch and I said we’re going to build this and we're going to do that. He just looked at me like I had two heads, but he gave me the loan! He's a totally conservative guy, and I'm not conservative, but he called me in a week and said, “I'm going to give you the loan.” They weren’t going to give me all the money, though. They gave me like two-thirds of what I needed. So he believed in me, but he didn't believe in me that much! *Laughter*. Years later, I asked him what was it that convinced him to fund us. And he said, “I believed in you.”

So we built it. Four months after we got our loan, we pounded our first nail. That was in August of 1997. The Ranch itself opened in April of 1998, without screen doors on the buildings and without outside lights because we ran out of money. There was mud everywhere. I remember freaking out because we had our first class coming and there was mud everywhere. Then a local landscaper brought over a bunch of hay to spread over the mud. One of Jorma's old guitar players from Hot Tuna, Michael Falzarano, was here and he said, "Vanessa, so what if there's hay on the ground? Nobody's ever been here before, so they don't know what the place is supposed to look like!"

I had no money for advertising. I had spent the entire budget building the place, so we shelled out some of our own money. I took those renderings I had made, along with the story, and I made a hand bound book. I made 5,000 copies for my first run, and then I made another 5,000. Jorma was doing the Further Festival at the time, so I put the books out in the audiences and at the merchandise table. When a performance was over, if I saw books on the ground then I would grab them and re-use them at the next show. That's how I got my students the first year. Weird marketing, but I had no money left.

We were going to grow guitar players. I actually had the idea that we would use some of the wood from the trees here at the Ranch and have a guitar building class as one of our workshop offerings. But that never happened, because we couldn't sell that class.

Jorma: And that's the story of the Fur Peace Ranch. (*laughter).*

INT: How close was the reality to the original concept for the Ranch?

Jorma: You know, you can make plans, but that doesn’t mean you can determine the outcome. It's grown in such an amazing way that we could never have envisioned in a million years when we first started out.

Vanessa: The community that we wanted to have in any one given weekend is what we envisioned originally. How it would grow, from April 1998 until now–going into our 17th season–I'll use a term that business owners aren't allowed to use: it's just been magical. You've been here, you know what I'm talking about, so I don't have to try to explain what it's like. Yet something happens when somebody comes to the Ranch and they've never been here before. We have a 97% return rate among our attendees, which keeps our workshops full, but it still happens for new participants if they are able to get in. When they pull up that driveway and park their car, they're scared to death. But when they get out of their car and Jorma's there to greet them …

Jorma: It's one of those things that's really tough to verbalize, you know? People want to know what happens at the Fur Peace Ranch. We say, well, we have the instructors, and we have the radio show, and now we have the Psylodelic Gallery and all this stuff. We do have all of those things and we also have great food and everything. But the nature and depth of the community that becomes engendered over time, that's hard to quantify and when you try to talk about it, it sounds sappy. It doesn't print well. But it's true, that's what happens.

Vanessa: Our students get here on Friday afternoon and by Friday night and Saturday morning at breakfast, lifelong friends have been made. Bonds have been formed, and I really didn't see that. I couldn't write that in a business plan. So that's what I mean when I say that it's been beyond my wildest expectations. You know, we're really good at customer service. I don't think anybody does customer service better than we do. But the other stuff, you get all of these like-minded souls together and something magical happens. I still can't tell you the formula, but I think part of it is customer service. We kind of defuse all the tension, all the apprehension about, "I'm going to learn from Jorma!" It's like, "Come into our home."

Jorma: Yes, it's really interesting how it all happens. Earlier we were talking about the major labels and the star system and all of that kind of stuff. I won't say that I wasn't a bit starstruck by myself when we were young, because I'm sure we all were horribly obnoxious. *Laughter*. Yet, if you're lucky enough to stay in the business long enough, you realize what a blessing it is that you're actually able to do this. I think I would have done it anyway. But like I tell my son, if you're lucky enough to find something that sets you on fire, it doesn't get any better. If you can actually make a living at it, then it REALLY doesn't get any better. (*laughter)* Anyway, to make a long story short, it's just another gig. It's a lot more fun than digging ditches, unless you like to dig ditches. But it's just a job.

As a teacher, one of my things is to make the process of learning unintimidating. This presupposes that we knock down any of the barriers that might suggest that I – or any of the teachers or artists or anybody else - am doing something that the students couldn't do themselves if given the opportunity. Some people are better at it than others, of course, but I believe that anybody can do it. It's not like when I was learning to play! The generation that came before me, from the folk-blues world, the whole attitude of most of them was, "You can't learn to do this. You have to be really special to do this." That's just not true. The only thing that's special, that requires being special, is devoting a lot of time to doing it, loving it so much that you take the time to really learn how to do it. If you do that, you're going to learn it. What that did in my case, is that it presupposes that you don't go to class as much as you should. *Laughter*. So there's a trade-off here, which comes when your report card arrives. But all things considered, at the end of the day, things have worked out okay for me.

INT: So the Fur Peace Ranch guitar workshops are only one part of your portfolio, if you want to look at it that way. How do the workshops contribute to, and draw from, the other things that you are doing? Because in addition to the workshops, you've also got the performance hall, the Fur Peace Ranch general store, the Psylodelic Gallery, you still tour nationally and internationally, and you have many other activities you are involved with.

Jorma: I'm going to pass this one off to Vanessa, because she's really the brains behind the system. But before I do, if you think about the Psylodelic Gallery, or the performance area, or the teaching, or all of this kind of stuff that we're doing, in a way it's all the same thing because it's all culturally related. It really has to do with a profound love that I have for this music. Of course, not everybody plays the same stuff that I do, but I have this profound love for the large basket of musical categories that they have labeled as Americana, music that in many respects is timeless. The good stuff is timeless. I mean, it can be from 1930 or it can be from yesterday. That's part of the Psylodelic Gallery, that's part of the performance area, part of our workshops, or part of people just sitting around talking and playing music.

A lot of it also has to do with the relevance of the music. When I was coming up in the 60s, or even when I was a kid in the 50s, I was struck by the incredible relevance to the real world that so much of this music had. I mean, does anyone write protest songs today? Probably, but I'm not aware of very many of them. Billy Bragg, absolutely. But back then, when the music was coming out, you'd listen to the songs for the message they contained. Music from folks like Pete Seeger, a great, great man in my opinion, or a lot of the black blues guys that also got involved in writing topical songs, or Joan Baez, or the many other topical folk singers. Then, when the folk and rock bands started coming out in the 60s - I'm not talking about the "hits mill" guys but the guys that were actually writing songs that had relevance - when people, myself included, could hardly wait for the next album to come out to discover what they were saying, what was going on. Of course, we had an environment which nurtured that sort of thing. The issues were so much simpler then than they are today. You were either pro-Vietnam or you were anti-Vietnam. We weren't talking about a government shutdown or raising the debt limit or that kind of stuff. It was really much simpler. But everybody was into the issues of the day. You couldn't have a conversation with somebody without talking about current events in some way. Most of the audience at that time tended to be anti-establishment, so it was interesting. One wonders, for example, whether the Delmore Brothers or Jimmy Rogers or a lot of those guys were writing protest songs or whether they were just acting as some sort of gazette for what was happening at the time. Current events. Woody Guthrie and so forth, just telling stories about what was happening in the world. Whereas, for today, what rhymes with sequester? Sylvester? *Laughter*.

Vanessa: There's a thread that connects everything that Jorma does. For us, the thread is apparent in the most obvious way, but others may say that we've got so much going on. Yes, we acknowledge that we have a lot going on and sometimes it feels that we have too much going on. But right now we can't have the Psylodelic Gallery without the Ranch, and we can't have the shows without Jorma's involvement, and we can't get the word out unless Jorma tours. So we just have this constant flow of activities that fit well together.

INT: What are the roles of the two of you in this process?

Jorma: We're really great partners because Vanessa is an organizational maven. I can organize something if I am taking something apart and having to put it back together again. Thanks to YouTube, that's become a lot easier! *Laughter* I provide the creative energy that people see, and Vanessa provides the organized creative energy that makes things work. So when someone asks me whether I would like to do something, I say, "Look, I'll agree to anything, but if you really want it to happen, you'd better call Vanessa." She's the one that makes things happen. Really, what we do is complex, but the idea behind it all is very simple and Vanessa is the one with the vision to make it happen.

Vanessa: In some sense, I am your muse.

Jorma: No question about it.

Vanessa: Some of our marital "discussions," we don't call them fights, have created great songs. In the middle of a discussion, sometimes I'll say, "That's a really great line for a song!" Jorma's song Heart Temporary came from a discussion about Jorma being a better man and making things work better between us and his son Zach. We had a discussion and I had to make myself heard.

Jorma: I let her make herself heard. Then I went out to my studio and wrote the song.

Vanessa: And it's a great song! We complement each other in the finest way, I think. But Jorma is a realist. Not that I'm not, but …

Jorma: Well, a classic example is when we built the theater. She wanted to build a 400-seat theater. I tour for a living, you know, so sometimes it's a full house and sometimes it isn't. We don't promote for a living, so it's better to be turning people away than to have a half empty house. Four hundred people is a lot of people, and Fur Peace Ranch is in the middle of nowhere. Anyway, I did prevail, and I think the size for what we're doing is perfect.

Vanessa: Yes, the size is perfect.

The age difference between us is 21 years; it really is like this great puzzle. That's how we fit. We run our business like that. I have managed Jorma and Hot Tuna for 23 years now, and it just works. I'm not his wife when I'm managing him. He has chewed my ass out on more than one occasion, and I've had to suck it up. I have to admit I've made a bad decision or I've just assumed something, and I won't ever do that again! *Laughter*. It just works. I mean, our relationship with each other - and with our kids - works in pretty much the same way, in a really weird way, and in a beautiful way. I taught Jorma to be a father to his son, a son that I never had. So it works. When family works together, it's great, and when it stops working, it's not good. We haven't been presented with that yet.

Jorma: It's interesting, because I know a lot of people who work with families. It makes perfect sense, actually, if the family we are working with happens to be good at what they are doing. And Vanessa is good at what she does. There are these classic things, like I'm sure you guys have seen Spinal Tap like 1,000 times? You know, where the girlfriend gets involved and screws everything up completely? These things actually do happen. *Laughter*. But the thing is, if you can't trust a family member, who can you trust? When Vanessa and I first started working together, a lot of people didn't like it because they felt they couldn't get through to me anymore. But we've been doing it for so many years that it's not an issue anymore. In the beginning, it was like people didn't want to deal with Vanessa. I think it was because they couldn't get one over on me anymore, because nobody gets one over on her. So now I just say, "It's fine with me, but talk with my wife. I've got to go." *Laughter*.

Vanessa: We were lucky enough to go out on tour, before our daughter Izze came, when I was still free to travel. We worked with Columbia Artists management and they were an amazing management organization. Up to that point they had mostly dealt with classical music acts, high-level classical acts. They would do these big performing arts tours all around the world, and one of these partners came up with the idea to do guitar summits. The first guitar summit included Jorma, Kenny Burrell, Manuel Barrueco, Steve Morse, and Stanley Jordan. It was fantastic and the way they ran their organization was not how things were done in rock 'n roll.

Jorma: In fact, they don't even talk about their organization as being promoters, they talk about being presenters. It's a different headspace entirely, it really is. You might think that it's really just another name, just semantics, but it's not. It's a different headspace entirely.

Vanessa: I mean this in the most respectful way, but the rock 'n roll world had been like the crazy Democrats and Columbia Artists were like the uptight Republicans. But you know what? I liked their model. There was no room for financial disaster, everything was very well organized, and what they said would happen, happened. We said to each other, "Wow! Could we run Jorma's organization the same way they are running their organization?" Going out on the road with Hot Tuna, I'd been fighting tooth and nail to try to have things be a little different, but for so long it was still like crazy Jefferson Airplane days. So when we came back from that tour, we put the brakes on. Everything changed and nobody said anything. Everybody kind of responded to the changes with, "Wow, things are working pretty good!" So that's the way we work when we are out on the road now. The business end of it is great. Before, people were hired as managers because they had a credit card! *Laughter*. With Jefferson Airplane, early Hot Tuna, someone could be your manager as long as they could get you into a hotel. They didn't even have to be a respectable manager but more like a muscle head to go up against some of these promoters and beat the money out of them. These things were happening! Really! Things were crazy when I first started managing this.

So now there is no more mismanagement in our organization. It works. And, for what it's worth, we have a reputation to uphold, we have kids! When you have kids, you can't be crazy rock 'n rollers anymore. You have to tone it down.

INT: People talk about Fur Peace Ranch as a community. Can you describe how that works and how you've built it?

Jorma: It's one of those things that is very hard to quantify, because you can't really plan it. You can't go into it with a plan to build the kind of community that we have here and expect that it is just going to happen. You really can't do that. But I think that one of the things contributing to the sense of community at Fur Peace Ranch is the kind of music that collectively we all love, whether it's electric or folk or whatever. It's a very social kind of music and all of the people that come here share a love for this kind of music. There are certain aspects of rock 'n roll that are utterly asocial in terms of hanging out, sharing stuff, etc. But in the wooden (acoustic) music world, and in some of the electric music world too, it's very social. It's more of a, "Wow, that was cool, show me how to do that!" Music touches us on such a primordial level. Somebody you've never met before can play something, without even verbalizing it but just playing it, and somehow that communicates something in a very profound and deep way. I think these things get shared here, a like-minded spirit that people seem to bring with them here, and as a result of this sharing they find their new best friend. It's not just a bunch of guys who can afford to buy expensive guitars! *Laughter*. One of the things that Chris Smithers was joking about, was that if any of the wives of the guys who come here knew how much these instruments cost, there'd be trouble at home. Most wives probably have no idea how much some of these things cost! *Laughter*. But it goes way beyond that. People love the same thing. People talk about the wood in your guitar, "Gosh that's beautiful." Or somebody's got an old song, something you heard when you were 16 and that you are bringing back to the group, "Gosh that was before my time." But whatever the source, it's just that transference of information, of creative information and energy, and it works.

Vanessa: With Fur Peach Ranch, we created a type of resort that nobody had ever built before. There were - and there still are – other workshops that are presented during the summer months at various colleges, but that's a very different scene from what we offer. With the college programs, students stay in dorms and alcohol is permitted and you jump from one class to another. There is almost not enough time to be part of a community; it's a different kind of community.

Jorma: And Fur Peace is ***not*** a fantasy camp. That's not what we do. I have people say to me, “Oh, you've got a rock 'n roll fantasy camp?” No, there's no fantasy at all. Some fantastic things may happen, but this is reality.

Vanessa: Jorma’s name certainly helped, because he was our draw in the beginning. When we started the Ranch, we went to Jorma's fans first and they had been just dying for an opportunity to have someone like Jorma show them “that song.” And in terms of the live shows, once the Ranch got off the ground, we realized there was something special going on here and we use the live shows as a way to market and go beyond Jorma's fan base. The first camp I did without Jorma, I remember thinking, “If we can pull this off, then we're set.”

Jorma: I started out as the name draw and I'm here much of the time, but not all the time. Still, we have so many great people that it doesn’t depend on me always being present. We get a guy like David Lindley and people say, “Wow, David Lindley's teaching?” Not only that, but he's also going to perform a live show when he’s here.

Vanessa: When we first started the concerts, there was very little music within a 50-mile radius of here. You had the bars in Athens (Ohio) and you had Memorial Auditorium on the campus of Ohio University, but this was before Stuart's Opera House in Nelsonville started operations. Once the rest of the people that wanted music and that had it in them to be a presenter or a promoter or an owner, once they saw that we were really willing to take that risk, then they opened up their own little place too. All the sudden, within five years, there was music in all sorts of places. So I called a meeting, it was kind of like a meeting of the five families. I felt like Don Corleone! I said, “I want to talk.” They said, “What do you want to talk about?” And I said, “Bring your ideas, let's talk about this together.” So at that meeting, we started to share our schedules and plans and we all found a way to bring in and keep music in this community. We started to help co-promote activities, sharing our flyers and other promotions. And it was great! We took a leap of faith to start it off, and then everybody else just took a leap of faith too. That's what happened. We started it and it's continued to grow.

Jorma: Athens has always had a good music scene. There's always a lot going on there. There's something for everybody. For us, it is interesting because Fur Peace Ranch is a destination, not a waypoint. We don't serve alcohol, yet almost all of our shows are sold out. The performers that play here, I tell them that these people are here to see you play. They’re not here to party or talk to their friends or whatever, they are here to see you play.

Vanessa: The community that we have developed here – it's a “Field of Dreams” kind of thing. If you build it, they will come. If you offer someone something that jerks their chain, and they feel like you did it just for them, we thought maybe we can sell a season ticket for the live shows. Now I have to beat them off with a stick, I have to turn people away who want season tickets, otherwise I'd have every seat in the performance hall sold to season ticket holders. People want to be part of the scene here, because of what we’re offering. It's safe. If you want to have a wild time, there are other places you can go. For me, it's very different and I am never let down. After every single camp, after every single group of students leaves, I say, “Well that will be hard to top because that was a great group of students. I made like 20 new best friends!” But then the next week comes around and I'm like, “Well, that one's going to be hard to top.” And I've been doing this for 16 years. With the shows, we work like dogs, as it really is work. To successfully pull off the show, I'm constantly running. I never stop, I never stop. But when the music starts, and I get to stand in back and watch it all come together. I still pinch myself and say, “I can't believe this, it is so cool.” This really connects with me personally. My dad was a country western singer and music was my life when I was growing up. I was supposed to sing when I was a kid, but I was blessed with organizational skills instead. So I got the best of all possible scenarios for myself. It's like a huge treat for me to be able to put on these live shows.

INT: So where did the idea for the silo and the Psylodelic Gallery come from? And what do you hope to accomplish from that?

Vanessa: The silo came from my Type A thought processes, which never shut off. Like I said, I'm cursed with organizational skills. That’s great if I'm working for you, but I have to go to sleep with this head. I never give up thinking about another project. It's a character defect that 50% of the time turns out okay. But we were in the Catskill Mountains in upstate New York, doing a workshop at the Full Moon Resort. They had a silo near there, where they claimed to have the world's largest kaleidoscope. Instead of sitting around the resort while everyone was in class, we decided we’d go and check that out. So we headed out to Woodstock, got some coffee, and then went to see the world's largest kaleidoscope. We go in and they've got several small kaleidoscopes around there, and then they have the silo. They charge you $10 to go in to see the world's largest kaleidoscope. The kaleidoscope itself wasn't very big, and they had these weird sawhorse-like things covered with carpet that you are supposed to lean up against while looking up at the kaleidoscope, and it was awful. A father and son back in the 60s designed the kaleidoscope, big mirrored panels, this big crazy thing. Not just a digital one projected onto a ceiling. Then the lights go down, and a person sounding like a radio announcer starts talking about America, and you start seeing the Indians and Plymouth Rock and the first Thanksgiving and everything, all of it with bad animation. They go through all sorts of events in history. Then they got to the 60s and they're playing the Rolling Stones and they show a pot leaf. I'm watching this and thinking, "What? That's not the 60s! This is BS!" So I'm freaking out throughout the entire show and afterwards I said to my friends, "That was an outrage! I'm going to build the world's largest psychedelic scope." The folks who were with me were looking at each other saying, "She's really lost her mind on this one!" And I said, "No, I'm not done with this." I began looking for silos and two years later, I got this fellow to sell me a silo for a ridiculously low price of under $20,000. He said if I sent him the money in a month, he'd shave off an extra $5000 from the price. So I called up Jorma and I said, "I bought a silo!"

I went back to my banker and said that I had changed my business plan. You know, everything has a dual purpose for me at Fur Peace Ranch, but this was just going to be a museum. Then I thought, "What am I going to do with a silo that's just a light show? One person will go, and that'll be it and they won't come back, there won't be a reason to come back." So I'm going to build a gallery in the silo, a historical gallery devoted to the psychedelic era. I verbally laid it all out and I said I'm working on the business plan, and the banker said I don't need a business plan. "What a great idea," he said. "I believe you can make it work." I told him, "Great, so this is what I'm going to need." He said okay, so I got a local architect to help with the design, a couple of local farmers to put up the silo, and a construction friend who did everything on verbal spec. The woodwork inside is just awesome! It's like a boat. We changed things as we went along and structurally some aspects changed, but all of the inside was intended to all be an exhibit, even the stairs inside were intended to be part of the exhibit.

Thank God for Jorma, who never threw anything out! *Laughter*. When I first met him, his ex-girlfriend told me, "You know you've married a used car lot, don't you?" Jorma had like nine cars in the driveway and certainly not all were nice vehicles. Then he opened his garage, and it was filled with crate after crate of stuff from his whole life. Posters and clothes, his first wife's artwork, all sorts of things. It took me 15+ years to go through it all. I didn't even know at the time that I would do a museum. Then we moved it all here when we came to the Ranch, and I just started cataloging everything. My assistant Ally, a French history major from Ohio University who is more Type A than me, she said this will be her first show. I remember talking with her about the quote wall, saying, "Okay, I want to hear the voices, and I want them to each be in a different type font because everybody has a different voice. And I want politicians and writers and musicians!" I was like that crazy owner, the person that when they hire the contractor, the contractor rolls his eyes and goes, "Oh, my God." Well, I was that person. But the contractor was great. He's not a music person, he was completely not starstruck at all. He likes to build things, and he gave me this amazing gallery space to present the voices of the 60s, and there are no pot leaves and there are no Rolling Stones in there. And that's how it all started: a result of my outrage that somebody would actually suggest to tourists at a tourist destination that the 60s were pot leaves and the Rolling Stones. We just couldn't have that.

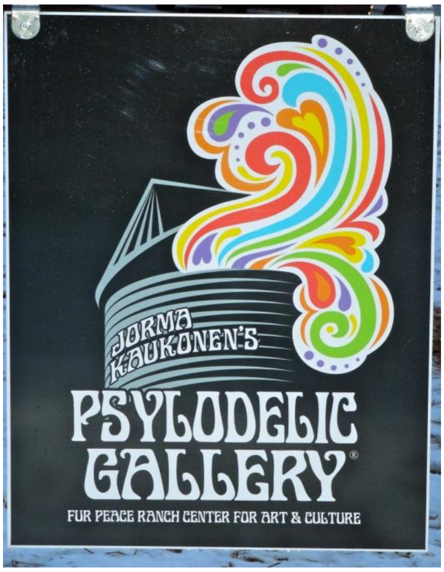


Figure 3. Psylodelic Gallery sign at Fur Peace Ranch

INT: What do you hope to accomplish with the Psylodelic Gallery?

Vanessa: I did it. What happened was that I created a gallery space that will educate this new generation about the 60s and that will also jerk the chain of the generation that remembers it and lived through it.

Jorma: And obviously, we hope to snag some people off the highway, and we do that sometimes. They're not beating a path to our door yet, but they do show up. I travel on the road all the time, and I'm a big fan of roadside America, so my metaphor for this is that it's a heck of a lot more interesting than the world's largest ball of twine! *Laughter*.

Vanessa: It's about an education, it's about telling a story. You know, the Rock 'n Roll Hall of Fame is wonderful, and their exhibits are amazing. But this is a different trip. It's busting out of the seams. I can't put everything in there that I want to.

Jorma: The Rock 'n Roll Hall of Fame is about rock 'n roll. But this is about more than just the music. I know it's hard to imagine, but not everybody was at Woodstock. *Laughter*.

Vanessa: It's about the voices of that very small window in time called the psychedelic era. It’s told in the clothes, in the war, in the music that we played, in the instruments that we collected, in the books that we read and the art that we loved. Every one of those voices is attached not merely to each of the quotes, but also to Margaret's artwork and to Wavy Gravy's amazing story about his sleeping bag. It’s attached to the jewelry that they wore, to the controversial jewelry. There’s a piece in there that happens to look like a swastika; there's a huge story attached to that. The Wes Wilson concert posters we have there, they have a story to tell. It was all a way for people to understand, it's their voice.

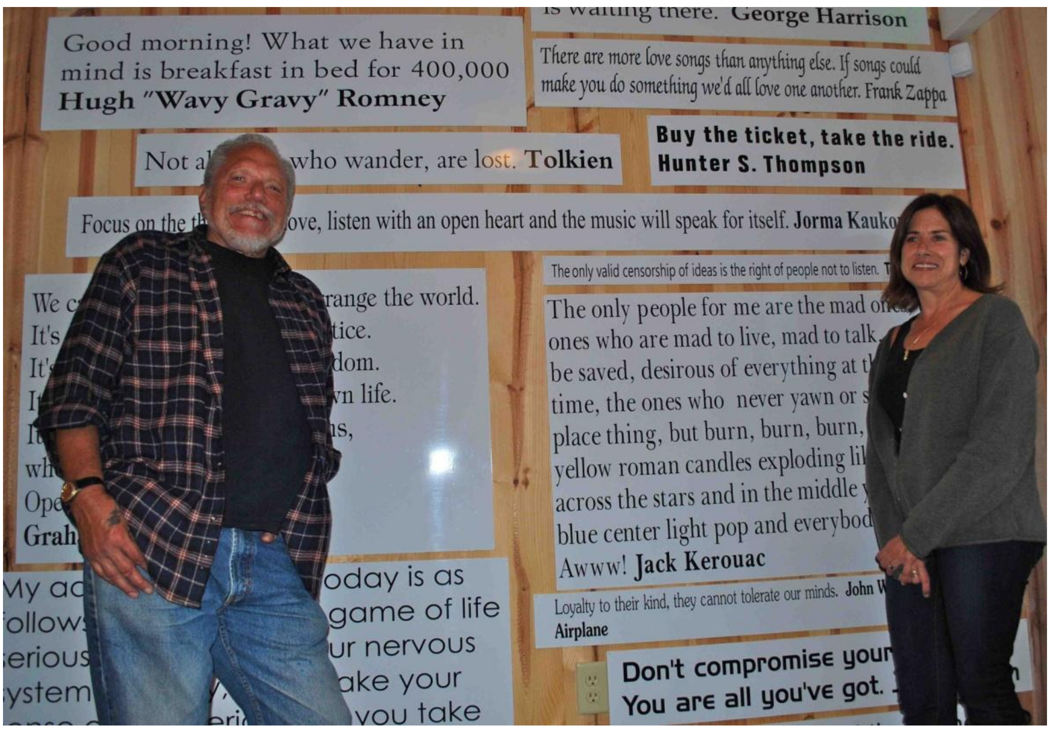


Figure 4. Jorma and Vanessa Kaukonen in front of the Quotations Wall in the Psylodelic Gallery

Figure 5. Jorma Kaukonen in front of an exhibit of musical artifacts in the Psylodelic Gallery

INT: What are your plans for the future of Fur Peace Ranch?

Jorma: That's a good question. At this point, we don't think we want to get any larger. I like the fact that you can actually remember everyone's name by the time the weekend is over. So I guess we're just kind of riding the wave right now. We want to continue bringing great talent for teaching, offer great concerts, keep the Psylodelic Gallery going with good exhibits, and we would like to be a place that people will say, "If you're driving through southeastern Ohio, you should stop by the Fur Peace Ranch and check it out."

Vanessa: We've been riding the wave since we opened the doors. But we don't want to get bigger. We really don't want to be any bigger. One of our students, years ago, offered me the opportunity to build another Fur Peace Ranch on the West Coast. I'm like, how am I going to be able to be there with a cup of coffee waiting for my students when I have to be here? That's when the idea first came up for doing workshops on the road. We can actually go to other regions and offer the workshops.

Jorma: You can't franchise the Ranch. You just can't franchise this thing. It wouldn't work. You have to come to Darwin, Ohio, if you want to experience this. *Laughter*.

Vanessa: The cool thing for us is that once I learned that I can run this without Jorma being here, without him physically being here all of the time, then I knew this could be a success. In the beginning we were asking people to come here to teach. We had no history, there was no reputation for Fur Peace Ranch. We were asking people to come and teach, and they did not even know if our checks would cash! I can imagine what it must have been like for the artists when we called them!

Jorma: Well, in the beginning, I had to shame my friends into coming. *Laughter*.

Vanessa: Now we don't even have to call. They call us. Now I can't fit in everybody who wants to teach. And everybody wants to teach! Big names draw, we still believe that. But not every name that draws is a good teacher. So, as disappointed as we were with a couple of teachers we have had – people who were not comfortable breaking down the teaching approach to their songs …

Jorma: You know, in the old days when we learned to play, the people I learned from did not break it down. They just played the music for you, and said, "Here's how it goes." Then we worked on it and we came back and said, "How's this?" And they'd say, "You suck!" *Laughter* That's exactly the way it was. My musical muse has been the Rev. Gary Davis and for the same reason that I like Eric Clapton more than Jimi Hendrix. Because it's more orderly and I can comprehend a little bit better what is going on. When I'm playing acoustic guitar, I know what I'm doing, I know exactly what I'm doing. I can show people what I am doing, I can explain what is going on. With some of these other guys, they're old school, they're brilliant, but they've never really thought about it so they can't really verbalize what they're doing.

Most of the people who come here as students are not prepared to learn the way we did, to just hang out with a musician, watch him, pester him, and learn how to play that way. They don't have the ability to do that. Not that you can't learn it, but they like to have things tabbed out, they don't have the ear training. Besides, they only have four days here in which to learn. I'm not critical of modern learning methods. There's so much good stuff on YouTube and gadgets that allow you to slow stuff down without changing riffs. Like our site, breakdownway.com. *Laughter*. You know, it’s all good, having stuff like that, because it's a different time now than when I learned to play. So what we need in teachers here are people who can fit into our view of how the workshops should run. We don't tell people how to teach. Everybody does it differently. For example, I'm very anecdotal about how I teach. A lot of other people write their stuff out, but I don't do that. But in any case, we need people that can actually communicate and help the students feel comfortable without feeling that they only have four days and they just don't have time to actually grasp what's going on. This way, they get to take notes home, they get to take recordings home, things have been explained in a way that can be replicated once they get home, and so forth. That's just the way it is here at the Ranch. You get to go through several songs in a weekend, at the very least. It's such a learning experience.

I have taught guitar since back in the very early 1960s, since the first years of the Airplane. I made more money teaching guitar than I did in the band. In fact, I made no money in the band, so it was easy to make more money than that! *Laughter*. When we first started doing workshops at the Ranch, we would do like 17 songs in a weekend. It was kind of the approach where we said, “Okay, we got that one down, let's do another one.” We don't do that anymore. We try not to do more than four songs, and we make them all accessible, and we know people go home with a song. So they have something to show for their time once they get home, when someone asks them, “What did you learn at the workshop?” Not just some stupid little lick that only means something to you. “Yeah, yeah, that's great, but can you play a song?” “Well, I didn't learn any songs, I just learned a lick.” Instead, they go home from our workshops with a couple of songs they can play. We don't do 17 songs in a weekend anymore.

INT: You two are a great team. There's going to come a time where, for one reason or another, you will remove yourself from this business. Will it continue on?

Jorma: That's a good question. I mean, nothing lasts forever. We all know that. People say to me, “are you ever going to retire?” And I say, “retire from what?” But you are right, at some point things will change. So I guess the answer is, we don't know.

Vanessa: We are really just living for the moment. Yes, I know what my schedule is next week. And I know which of my staff will be here in the next couple of weeks and what they will be doing, and I know what my workshop and music schedule is going to be for the coming season.

Jorma: From the point of view of creating some sort of enduring monument to oneself, you'd like to see it getting to 100 years. People saying, “Yeah, we’re going to Fur Peace Ranch, it's been around for 100 years.” That's probably not going to happen, but it might. Who knows?

Vanessa: We can really get anal about it, and say we’ll leave it in a trust and say it has to be run in this way or that, and that we’re cashing out and going to Tahiti! *Laughter*. But we’re not going to do that.

For some people, at the first sign of trouble with their business, they'll sell it. Not me. I almost lost my shirt the first year. I wasn't charging enough. I've made every mistake an owner can make. And I thought, “Oh my God, I just signed away my life. Why did I go to the bank for financing? Why didn't I use my own money?” And I just remember that I believed that this would work. It is working. But 2008 and 2009 were excruciatingly horrible years in the financial world. And my 97% return rate among attendees? Some of these people were losing their jobs at the time. We have a broad spectrum of backgrounds among the people who come here. We’ve got blue-collar workers and we've got white collar. 60% of them are lawyers, doctors, people working in finance, and many of the financial people were losing their jobs.

Jorma: When the stuff really hit the fan, we had guys coming in saying, “I just lost my job and I figured, screw it, I'm going to Fur Peace Ranch!” *Laughter*. But, over the next year or so, when the reality of all this set in, one of the things that happened to us was that we could no longer be as adventuresome with our teachers. We had been taking a lot of risks with really interesting teachers, but it didn't matter. We had maybe six teachers here, and it didn't matter if all the classes were full or not because at that time we could afford to run things that way. But with the financial realities of 2008 and 2009, we couldn’t really run things like that any more.

Vanessa: We bring in the teachers that we know will sell out, that are going to offer a great class. But 2011 and 2012 were great years for us. We weathered the financial crisis and its aftermath, though it was a little scary at times. I didn't fire anybody; everybody is still here, I still paid everybody. As a matter of fact, we put a store up in the shopping mall because I thought, “Well, we weathered that, so I'm going to build a new store, and a silo too!” *Laughter*. And that's saying that if you're going to lose, lose big. You have to take a risk if you want to be different. We're unique! You can't stop being unique or somebody else will come along and replace you. You can't stop taking risks. You just can't.

INT: What would be your advice to someone who wanted to go into the music field?

Vanessa: Don't quit your day job!

Jorma: Actually, I would not give that advice, unless it was a family member! *Laughter*.

Vanessa: You did! You did! Remember that kid, that young budding guitar player, one of the baggers at the grocery store? He was going to Nashville and you were trying to get through the grocery line. Remember that kid? And he said to Jorma, “I'm going to Nashville. Do you have any advice for me?” I thought, “Oh shoot, Jorma, don't say it. Don't say, ‘don't quit your day job, kid!’” But he did! He said it! *Laughter*.

Jorma: But I was joking because the real advice is that you have to love it. You have to be prepared to give up your day job. You have to be prepared to sleep on people's couches, to travel in vans and sleep in your van, to share hotel rooms and do all kinds of stuff. You need to love it and to have no expectations. You will never be disappointed then!

Vanessa: You also have to put legs on your prayers. If this is what you want, then you have to work for it. Yes, sometimes lucky breaks happen. A lucky break happened with the Jefferson Airplane!

Jorma: Exactly! Lucky breaks happen all the time. To be honest with you, that's really where the rubber meets the road. But if you're not out there doing it, you can't have a lucky break. You need to be out there doing it in order to give an opportunity for that lucky break to happen. At some point, somebody who will matter in your life needs to hear you and go, “Yeah.” You need to keep putting it out there.

Vanessa: If you want to succeed - well, look at a lot of the young artists who came up, back in the 50s and 60s. There were a lot of one hit wonders. We remember the song, but can't tell you who did it because we never heard from them again, for whatever reason. But if it's what you want, anyone can change a career. I don't think Jorma is going to change his career at this point, but we’re not getting rich with the Fur Peace Ranch. It's working, but we cannot retire. We put much more into this than we actually get back. So after 16 years, we’re still here. If I quit building things then maybe it would be different … *laughter* … but that's the way it is. It's like, okay, expenses are going up, and I don't ever really raise my fees enough to cover what's going on. But it pays for itself.

Jorma: And I need to tour, not just because that's how we support ourselves. I mean, that's my job, and I love to do it. I would not be happy if I wasn't touring.

INT: Knowing what you know now, if you could reverse course, would you have made a different decision 17 years ago and not created the Fur Peace Ranch?

Jorma: No, not at all. No. You've got to do something and what could be more fun than this? As long as when you put your elbows out you don't touch wood, it's good. *Laughter*.

References

Balkin, N. (2014, January 29). *Berklee Launches Institute for Creative Entrepreneurship*. Boston, MA: Berklee College of Music. Retrieved from http://www.berklee.edu/news/berklee-launches-institute-creative-entrepreneurship-panos-panay-named-founding-managing

Berklee College of Music. (2013). *Rethink Music: New Business Models in the Music Industry*. Boston, MA: Berklee College of Music. Retrieved from http://rethink-music.com/wp-content/uploads/2013/06/RMVFinalEdit.pdf

Covert, A. (2013, April 25). *A decade of iTunes singles killed the music industry*. CNN Money. Retrieved from http://money.cnn.com/2013/04/25/technology/itunes-music-decline/index.html

Pollstar. (2014, January 10). *Pollstar’s 2013 North American Numbers*. Retrieved from http://www.pollstar.com/news_article.aspx?ID=808976

The Economist. (2007, June 5). *The music industry: A change of tune*. Retrieved from http://www.economist.com/node/9443082/+DOI

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Determinants of Ownership Structure: A Comparison of Common and Civil Law Countries

Ben Said Hatem[1]

[1] Faculty of Law, Economics and Management of Jendouba, University of Jendouba, Jendouba, Tunisia

Correspondence: Faculty of Law, Economics and Management of Jendouba, University of Jendouba, Jendouba, Tunisia. E-mail: hatmbensaid@gmail.com

Received: May 11, 2014 Accepted: September 5, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p118 URL: http://dx.doi.org/10.5539/ibr.v7n10p118

Abstract

The aim of this paper is to identify factors that explain ownership structure. Our empirical study uses two sample firms of two countries: Germany, characterized by a concentrated ownership structure, and the United Kingdom, characterized by diffused ownership structure. Our results show differences in the determinants of ownership structure between the two countries. Differences relate to size and research and development variables. Furthermore, profitability has no effect on the ownership structure for the two countries.

Keywords: ownership structure, diffused, concentrated, factors, size

1. Introduction

In line with the work of La Porta et al. (1997) and La Porta, Lopez -de- Silanes, and Shleifer (1999) which suggest that shareholder's protection degree significantly affects ownership concentration, as well as the work of Roe (2003) and Franks, Mayer, and Rossi (2003), in this paper we compare factors explaining ownership structure between Germany and United Kingdom. In our study, we distinguish between firms in Common Law countries (United Kingdom) which are characterized by strong protection of minority shareholders and firms in Civil Law Countries (Germany) which are characterized by low investor protection (Franks & Mayer, 1995; La Porta, Shleifer & Vishny, 2002). Weimer and Pape (1999) and Shleifer and Vishny, 1997 suggest that Germany and United Kingdom are characterized, respectively, by concentrated and diffused ownership structure. The rest of the work is structured as follows. Section 2 reviews the literature. Section 3 discusses our empirical methodology. The results are presented in Section 4. We make a sensitivity analysis of our results in Section 5. The last section summarizes our empirical results.

2. Review of the Literature

Based on the work of Demsetz and Lehn (1985), as well as the work of Hermalin and Weisbach (1988), Mak and Yuan (2001) study the determinants of ownership structure of firms in Singapore. The emphasis is on the effect of the board characteristics. In their models, the authors analyse the determinants of management ownership and capital share held by outside shareholders. Using a sample of 147 listed firms, the authors reach a statistically significant effect of Board composition on ownership structure.

In a study in international context and based on the work of La Porta , Lopez -de- Silanes , Shleifer , and Vishny (1997), Van der Elst (2004) identifies factors explaining capital distribution of European firms. Using a sample of six European firms, Belgium, Italy, Spain, French, Germany and United KingDom, the empirical results show that ownership concentration is explained by sectors.

Referring to the work of La Porta et al. (1999), Bebchuk et al. (1999), and Wolfenzon (1999), Ungki and Chang Soo (2005) identify the determinants of ownership structure of Koreans firms. In their empirical validation, the authors use a sample of 6578 firms. Data on ownership structure are drawn from annual reports. The authors conclude that debt and size affect ownership structure.

However, the purpose of the article and Ansgar and Christian (2013) is similar to Van der Elst (2004). Indeed, the authors analyse the determinants of ownership concentration of public firms in an international context. With reference to the work of Faccio and Lang (2002), La Porta, Lopez de Silanes and Shleifer (1999), Thomsen and Pedersen (1996, 1997) suggest that shareholder's protection degree significantly affects ownership structure. Using a sample of 900 firms, the authors conclude that the factors explaining ownership concentration are significantly different between countries.

3. The Methodology

3.1 Sample Selection

In line with the work of Faccio and Lang (2002), Thomsen and Pedersen (1996, 1997), our sample consists of 100 firms from Germany (62 firms from service sector and 38 firms from manufacturing sector) and 100 firms from the UK (78 firms from service sector and 22 firms from manufacturing sector) for a period of nine years, from 2003 to 2011.

3.2 Variables

3.2.1 The Dependant Variables

Ownership structure: Jensen and Meckling (1976) and Singh and Harianto (1989) suggest that ownership structure can be described as an device of alignment of interests between managers and shareholders. We take as a measure of ownership structure, alternatively, capital shares held by the first, first two, first three, first four and top five controlling shareholders.

Herfindahl index: Based on the work of Demsetz and Lehn (1985), Jacelly, Maximiliano and Molina (2010), we measure ownership concentration by the Herfindahl index.

3.2.2 The Independent Variables

Debt ratio: Demsetz and Lehn (1985) support a significant relationship between debt and ownership structure. Debt ratio is calculated as Long term debt over Shareholder funds. Debt and ownership structure can be considered as substitutable tools to control managers' opportunistic behaviour. The expected influence of this variable is negative. ***Hypothesis 1***: debt negatively affects ownership structure.

Firm size: Based on the work of Demsetz and Lehn (1985), we try to measure the impact of firm size on ownership structure. Firm size ratio is calculated as natural log of sum of market value of equity and long term debt. Julio and Torre (2006) argue that the larger firm size is, the more costly it is for insiders and outsiders to increase their part in the capital of these firms. ***Hypothesis 2***: there is a negative interdependence between firm size and ownership structure.

Growth opportunities: In line with the work of La Porta, Shleifer and Vishny (2002), we measure the impact of growth opportunities on ownership concentration by Tobin's Q ratio (Tobin's Q ratio equal to the sum of market capitalisation and long term debt over total assets). Highest growth opportunities convey a signal on the firm's financial and economic health. In this case, managers, or external investors are stimulated to increase their ownership structure to take advantage. ***Hypothesis 3***: growth opportunities positively affect ownership structure.

Research and development: similar to the work of Thomsen and Pedersen (1998) and Bong Geul Chun (2009), we examine the effect of research and development expenditure on the capital distribution of European firms. The ratio is measured by research and development expenditures over total sales. A high value of research and development spending will limit the firm's debt ratio. In the case of a positive relationship between debt and ownership structure, we recorded a negative effect of research and development expenses on external shareholdings. ***Hypothesis 4***: there is a negative relationship between research and development spending and ownership structure.

Return on equity: similar to the work of Victoria Krivogorsky (2006), we measure firm performance by return on equity ratio calculated as net income to shareholders funds. A high value of this ratio indicates that the firm is more profitable. Investors always try to benefit by increasing their holdings. ***Hypothesis 5***: there is a positive interdependence between return on equity and ownership structure.

Firm age: according to the work of Mak and Yuan (2001), we consider in our article the role of firm age in explaining ownership structure of European firms. Older firms are more recognized than younger firms. Therefore, investors will be encouraged to hold a high proportion of capital. ***Hypothesis 6***: there is a positive interdependence between firm age and ownership structure.

Activity sectors: according to the work of Denis and Sarin (1999), Thomsen and Pedersen (1998), Van der Elst (2004), we look into the role of activity sectors in explaining ownership structure determinants.

3.3 The Models

To analyze differences in determinants of ownership structure between the U.K and Germany, and following the methodology developed by Themistokles, Evaggelos and Koufopoulos (2009), we test the following models:

$$OWN1_{it} = \beta_0 + \beta_1 DebtRatio_{it} + \beta_2 SIZE_{it} + \beta_3 Growth_{it} + \beta_4 RD_{it} + \beta_5 ROE_{it} + \beta_6 Age_{it} + \varepsilon_{it}$$
$$SUM2_{it} = \beta_0 + \beta_1 DebtRatio_{it} + \beta_2 SIZE_{it} + \beta_3 Growth_{it} + \beta_4 RD_{it} + \beta_5 ROE_{it} + \beta_6 Age_{it} + \varepsilon_{it}$$
$$SUM3_{it} = \beta_0 + \beta_1 DebtRatio_{it} + \beta_2 SIZE_{it} + \beta_3 Growth_{it} + \beta_4 RD_{it} + \beta_5 ROE_{it} + \beta_6 Age_{it} + \varepsilon_{it}$$
$$SUM4_{it} = \beta_0 + \beta_1 DebtRatio_{it} + \beta_2 SIZE_{it} + \beta_3 Growth_{it} + \beta_4 RD_{it} + \beta_5 ROE_{it} + \beta_6 Age_{it} + \varepsilon_{it}$$
$$SUM5_{it} = \beta_0 + \beta_1 DebtRatio_{it} + \beta_2 SIZE_{it} + \beta_3 Growth_{it} + \beta_4 RD_{it} + \beta_5 ROE_{it} + \beta_6 Age_{it} + \varepsilon_{it}$$
$$H_{it} = \beta_0 + \beta_1 DebtRatio_{it} + \beta_2 SIZE_{it} + \beta_3 Growth_{it} + \beta_4 RD_{it} + \beta_5 ROE_{it} + \beta_6 Age_{it} + \varepsilon_{it}$$

4. Discussion of the Results

4.1 Descriptive Statistics

The results are presented in Table 1. According to the work of Van der Elst (2004), the results indicate a low ownership concentration structure as measured by the Herfindahl index in the UK unlike Germany. Similar to Franks et al. (2008), ownership concentration equal to 5,76% for the UK and 35,7% for the Germany. This result implies that minority shareholders in the UK are protected by law, which will lead to a low degree of ownership concentration. This result holds for different measures of ownership structure, especially from the first until the first five controlling shareholders. The United King Dom firms are more indebted and younger than firms in Germany (an average debt of 0.678 and an average age of 33.922). Mak and Yuan (2001) find an average age of 12,83 for Singapore firms. Descriptive statistics show, too, that the firms in the UK have higher size and higher growth opportunities. We find an average value of Tobin's Q of 1,235 for the UK (this value is very close to that found by Basil and Taylor, 2008: an average value of Market To Book ratio equal to 1,1405). Similarly, the UK firms are more profitable than the German firms. Low-profitable firms do not prevent German managers to spend significant amounts of cash in research and development activities (about 0.0423 to 0.0221 compared to UK firms).

4.2 Presentation of the Results

The results are presented in Table 2. Our models are statistically significant and explain between 8,37% and 52,42% of ownership structure.

Debt ratio: As suggested by Bae et al. (2002), Joh (2003), Baek et al. (2006), the empirical results indicate that debt positively and significantly affects ownership structure variables measured by the first five controlling shareholders for the UK and the first four controlling shareholders and the Herfindhal Index for Germany. This result means that, in these two countries, debt and ownership structure is two complementary tools to control managers' opportunistic behaviour. This result reject hypothesis 1.

Firm size: Similar to the results of Thomsen and Pedersen (1996), the impact of firm size in the UK is negative but statistically non-significant. However, in Germany, we find the same sign, but at the 10% significance level for "H" and "OWN1". This result confirms our second hypothesis and indicates that with the increase in firm size, it becomes very difficult for investors to increase their holdings.

Table 1. Descriptive statistics

	United Kingdom					**Germany**				
	OBS	MEAN	STD DEV	MIN	MAX	OBS	MEAN	STD DEV	MIN	MAX
OWN1	506	0,168	0,161	0,0004	0,8326	513	0,569	0,225	0,0011	0,995
SUM2	591	0,210	0,186	0,0004	0,924	551	0,626	0,269	0,00400	0,999
SUM3	641	0,238	0,196	0,0004	0,935	561	0,600	0,290	0,00400	0,999
SUM4	669	0,268	0,203	0,0015	0,967	564	0,594	0,304	0,00390	0,999
SUM5	684	0,292	0,216	0,0021	0,994	550	0,592	0,305	0,002	0,999
H	684	0,0576	0,0971	4,41E-6	0,693	664	0,357	0,264	4E-6	0,991
Debt ratio	800	0,678	2,190	5,75E-6	34,213	842	0,465	1,251	0,0000620	24,545
size	820	22,457	1,507	16,441	26,016	821	21,808	1,526	18,957	25,652
Tobin Q	820	1,235	0,829	0,183	11,370	820	0,9815	1,503	0,0682	19,865
R&D	324	0,0221	0,0696	0,0000379	0,606	324	0,0423	0,0385	0,000602	0,190
ROE	839	0,0967	0,160	-0,865	0,931	851	0,0674	0,100	-0,903	0,945
Age	835	33,922	35,112	1	125	827	56,154	47,962	1	171

Table 2. Determinants of ownership structure

	United King Dom						Germany					
	OWN1	SUM2	SUM3	SUM4	SUM5	H	OWN1	SUM2	SUM3	SUM4	SUM5	H
C	0,106	-0,207	-0,779	-1,0198*	-1,0389*	0,0985	2,230**	-1,876	-1,211	0,975	0,599	2.,226
Debt ratio	-0,00735	-0,000117	0,0196	0,0191	0,0400*	0,0127	-0,0122	-0,0580	0,0414	0,295*	0,195	0,287**
size	-0,0104	-0,0323	-0,0279	-0,0252	-0,0399	-0,0201	-0,0851*	0,0524	0,000261	-0,147	-0,126	-0,173*
Tobin Q	0,00623	0,0142	0,0274	0,0333	0,0528*	0,0175	0,0623**	0,0646	0,0563	0,108*	0,0945	0,152***
R&D	-0,00475	0,106	0,253	0,417	0,635	0,186	-5,442***	0,237	3,232	1,758	1,573	0,646
ROE	-0,00819	0,0209	0,0136	0,00303	-0,0203	0,0248	-0,219	-0,0675	-0,175	-0,0800	-0,283	-0,111
Age	0,00757***	0,0279***	0,0393***	0,0450***	0,0540***	0,0986***	0,00690	0,0232*	0,0294**	0,0480***	0,0479***	0,0321***
R Squared (%)	11,69	27,31	39,82	46,58	52,42	13,58	8,37	10,71	12,28	14,41	15,66	9,46
Chix Deux	3,07	10,33	19,85	27,03	35,07	5	2,18	2,98	3,45	4,26	4,58	3,05

*, **, ***: significance at 10%, 5% and 1% levels respectively.

Growth opportunities: Differently to Mak and Yuan (2001), we record a positive and statistically significant effect of growth opportunities in the UK on the "SUM 5" variable only. Similarly, we find this same effect in Germany for the "OWN 1", "SUM 4" and "H" variables. This result indicates that high growth opportunities convey a good signal on the future perspective of firms. External Investors seek a profitable investment of their funds, and will increase, consequently, their shareholdings in these companies. This result validates our hypothesis 3.

Research and development: Similar to Zeckhouser and Pound (1990) and Thomsen and Pedersen (1998), the test of the model shows that the variable research and development negatively and significantly affects capital share owned by the controlling shareholder, only, for Germany. This result means that a high ratio of R&D decreases the amount of cash in the hands of managers, and moderates their power. It is not therefore necessary to increase ownership structure of outsiders to control managers' opportunistic behaviour. This result validates our hypothesis 4.

Return on equity: The empirical results show that profitability does not significantly affect ownership structure in the two countries: United Kingdom and Germany. This result indicates that investors do not take into account firms profitability to decide to increase their holdings. This result rejects our hypothesis 5.

Firm age: The age variable has a positive and statistically significant in both countries for all alternative measures of ownership structure, except for the "OWN1" variable in Germany. This result suggests that investors always try to increase their holdings in the most recognized firms. Indeed, older firms can transmit a signal on the security of their funds placement. This result confirms our Hypothesis 6.

5. The Sensitivity Analysis

The results are presented in Table 3. Similar to Demsetz and Lehn (1985), Bergstrom and Rydqvist (1990), Van der Elst (2004), we analyze the effect of activity sectors on ownership structure determinants. To this effect, we compare between Common Law and Civil Law countries. Sensitivity analysis is maked using two measures of ownership structure: the first four and top five controlling shareholders. For the UK, the empirical results indicate that debt and ownership structure are two substitutable tools for controlling managers' opportunistic behaviours in the industrial sector (unlike industrial firms in Germany). Moreover, for the service sector, we find a positive and statistically significant effect of debt on the capital share held by the top five controlling shareholders. Contrary to previous results, we find a positive effect of firm size for the service sector in Germany. Similarly, we find a negative and statistically significant effect of growth opportunities for manufacturing firms in the UK. The results for research and development expenditure do not confirm our research hypothesis for the service sector in the UK and industrial sector in Germany. However, a positive and statistically significant effect of profitability is found only in the industrial sector in Germany. The results of the age variable remain unchanged.

Table 3. Role of activity sectors in determinants of ownership structure

	United King Dom				Germany			
	SUM4 Service	SUM5 Service	SUM4 manufacturing	SUM5 manufacturing	SUM4 Service	SUM5 Service	SUM4 manufacturing	SUM5 manufacturing
C	0,517	0,640	-0,496	-3,345***	-1,677	-1,906*	2,226	3,0291
Debt ratio	0,0248	0,0436*	-0,202*	-0,230*	-1,149	-0,260	0,447*	0,367*
size	-0,0844***	-0,103***	0,0405	0,0773	0,115*	0,128**	-0,285*	-0,347*
Tobin Q	0,103***	0,129***	-0,0843*	-0,105	0,0330	0,0130	0,0827	0,0981
R&D	0,653*	0,868*	-2,0750	-0,499	-2,587	-2,685*	7,168*	8,579**
ROE	0,0500	0,0278	-0,374	-0,195	-1,585***	-1,538***	0,672*	0,530
Age	0,0587***	0,0688***	0,00121	0,0369***	-0,00158	-0,00188	0,0630***	0,0724***
R Squared (%)	63,04	66,26	4,51	42,06	43,78	44,89	21,97	25,07
Chix Deux	30,14	35,35	10,01	9,32	14,17	16,03	3,94	4,57

***, **, ***:** significance at 10%, 5% and 1% levels respectivel.

6. Conclusion

Laporta, Shleifer and Vishny (2002) emphasize that most countries have different degrees of legal shareholders protection. Moreover, these different protection degrees will result in two types of ownership structure: concentrated and diffused ownership structures (La Porta and al, 1998, 1999, Claessens, Djankov, and Lang, 2002). Therefore, we are led to study the differences in the determinants of ownership structure between Germany and the United King Dom. The empirical results show differences in firm size and research and development spending. However, the effect of the variable "ROE" is not significant for the two countries.

References

Al-Najjar, B., & Peter, T. (2008). The relationship between capital structure and ownership structure. *Managerial Finance, 34*(12), 919–933. http://dx.doi.org/10.1108/03074350810915851

Ansgar, R., & Christian, W. (2013). Determinants of ownership concentration in public firms: The importance of firm, industry and country-level factors. *International Review of Law and Economics*, *33*, 1–14. http://dx.doi.org/10.1016/j.irle.2012.08.003

Bae, K., Kang, J., & Kim, J. (2002). Tunneling or value added? Evidence from mergers by Korean business groups. *Journal of Finance, 57,* 2695–2740. http://dx.doi.org/10.1111/1540-6261.00510

Baek, J., Kang, J., & Lee, I. (2006). Business groups and tunneling: evidence from private securities offerings by Korean chaebols. *Journal of Finance, 61*, 2415–2449. http://dx.doi.org/10.1111/j.1540-6261.2006.01062.x

Bebchuk, L., Kraakman, R., & Triantis, G. (1999). *Stock pyramids, cross-ownership, and dual class equity: The creation and agency costs of separating control from cash flow rights*. Discussion Paper #249, Harvard LawSchool.

Bergstrom, C., & Rydqvist, K. (1990). The determinants of corporate ownership: An empirical study on Swedish data. *Journal of Banking and Finance*, *14*(2/3), 237–253. http://dx.doi.org/10.1016/0378-4266(90)90048-7

Bong, G. C. (2009). Firm's choice of ownership structure: An empirical test with Korean multinationals. *Japan and the World Economy, 21*(2009), 26–38. http://dx.doi.org/10.1016/j.japwor.2007.08.001

Claessens, S., Simeon, D., Joseph, F., & Larry, L. (2002). Expropriation of minority shareholders in East Asia. *Journal of Finance*, 57.

Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: causes and consequences. *Journal of Political Economy, 93*, 1155–1177. http://dx.doi.org/10.1086/261354

Denis, D. J., & Sarin, A. (1999). Ownership and board structures in publicly traded corporations. *Journal of Financial Economics*, *52*(2), 187–223. http://dx.doi.org/10.1016/S0304-405X(99)00008-2

Faccio, M., & Lang, L. H. P. (2002). The ultimate ownership of Western European corporations. *Journal of Financial Economics*, *65*(3), 365–395. http://dx.doi.org/10.1016/S0304-405X(02)00146-0

Franks, J. R., Mayer, C., Volpin, P. F., & Wagner, H. F. (2008). *Evolution of Family Capitalism: A Comparative Study of France, Germany, Italy and the UK*. AFA 2009 San Francisco Meetings Paper. Retrieved from http://ssrn.com/abstract=1102475

Franks, J., & Mayer, C. (1995). Ownership and Control. In Siebert (Ed.), *Trends in Business Organization: Do Participation and Co-operation Increase Competitiveness?* JCB Mohr: Tubingen.

Franks, J., Mayer, C., & Rossi, S. (2003). *The origination and evolution of ownership and control*. ECGI Finance Working Paper no. 09/2003.

Hermalin, B. E., & Weisbach, M. S. (1988). The determinants of board composition. *Rand Journal of Economics, 19*, 589–605. http://dx.doi.org/10.2307/2555459

Jacelly, C., Maximiliano, G., & Carlos, A. M. (2010). Ownership and capital structure in Latin America. *Journal of Business Research, 63*(2010), 248–254. http://dx.doi.org/10.1016/j.jbusres.2009.03.010

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. http://dx.doi.org/10.1016/0304-405X(76)90026-X

Joh, S. W. (2003). Corporate governance and firm profitability: evidence from Korea before the economic crisis. *Journal of Financial Economics, 68*, 287–322. http://dx.doi.org/10.1016/S0304-405X(03)00068-0

Julio, P., & Chabela, De La T. (2006). The Role of Investment, Financing and Dividend Decisions in Explaining Corporate Ownership Structure: Empirical Evidence from Spain. *European Financial Management, 12*(5), 661–687. http://dx.doi.org/10.1111/j.1468-036X.2006.00272.x

La Porta, R., Lopez-de-Silanes, F., Andrei, S., & Robert, W. V. (1998). Law and finance. *Journal of Political Economy, 106*, 1113–1155. http://dx.doi.org/10.1086/250042

La porta, R., Lopez-de-silanes, F., Andrei, S., & Vishny investor, R. (2002). Protection and corporate valuation. *Journal of Finance*, (3).

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1997). Legal determinants of external finance. *Journal of Finance, 52*, 1131–1150. http://dx.doi.org/10.1111/j.1540-6261.1997.tb02727.x

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). Corporate ownership around the world. *Journal of Finance, 54*, 471–517. http://dx.doi.org/10.1111/0022-1082.00115

Mak. Y. T., & Yuan, L. (2001). Determinants of corporate ownership and board structure: evidence from Singapore. *Journal of Corporate Finance, 7*, 235–256.

Roe, M. (2003). *Political determinants of corporate governance*. Oxford: Oxford University Press.

Shleifer, A., & Vishny, R. (1997). A survey of corporate governance. *Journal of Finance, 52*, 737–783. http://dx.doi.org/10.1111/j.1540-6261.1997.tb04820.x

Singh, H., & Harianto, F. (1989a). Top management tenure, corporate ownership structure and the mangnitude of golden parachuts. *Strategic Management Journal, 10*, 143–156.

Singh, H., & Harianto, F. (1989b). Management–board relationships, takeover risk and adoption of golden para-chutes. *Academy of Management Journal, 32*, 7–24. http://dx.doi.org/10.2307/256417

Themistokles, L., Evaggelos, D., & Koufopoulos, D. (2009). Ownership Structure in Greece: Impact of Corporate Governance. *Journal of Corporate Governance, 8*(3/4), 75–90.

Thomsen, S., & Pedersen, T. (1996). Nationality and ownership structures: The 100 largest companies in six European nations. *Management International Review, 36*(2), 149–166.

Thomsen, S., & Pedersen, T. (1997). European patterns of corporate owner-ship: A twelve country study. *Journal of International Business Studies, 28*(4), 759–778. http://dx.doi.org/10.1057/palgrave.jibs.8490118

Thomsen, S., & Pedersen, T. (1998). Industry and ownership structure. *International Review of Law & Economics, 18*(4), 386–404. http://dx.doi.org/10.1016/S0144-8188(98)00022-2

Ungki, L., & Chang-Soo, K. (2005). Determinants of ownership structure: An empirical study of the Korean conglomerates. *Pacific-Basin Finance Journal, 13*(2005), 1–28. http://dx.doi.org/10.1016/j.pacfin.2003.11.001

Van der Elst, C. (2004). Industry-specificities and size of corporations: Determinants of ownership structures. *International Review of Law and Economics, 24*(4), 425–446. http://dx.doi.org/10.1016/j.irle.2005.01.003

Victoria, K. (2006). Ownership, board structure, and performance in continental Europe. *The International Journal of Accounting, 41*, 176–197. http://dx.doi.org/10.1016/j.intacc.2006.04.002

Weimer, J., & Pape, J. (1999). A Taxonomy of Systems of Corporate Governance. *Corporate Governance: An International Review, 7*(2), 152–166. http://dx.doi.org/10.1111/1467-8683.00143

Wolfenzon, D. (1999). *A theory of pyramidal ownership.* Mimeo, Harvard University.

Zeckhouser, R., & Pound, J. (1990). Are large shareholders effective monitors? An investigation of share ownership and corporate performance. In G. R. Hub-bard (Ed.), *Asymmetric information, corporate finance and investment.* Chicago: University of Chicago Press.

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Effect of the Type of Ownership in the Financial Performance: The Case of Firms in Latin America

José Satsumi López-Morales[1] & José G. Vargas-Hernández[2]

[1] Economic-Administrative Sciences Department, Instituto Tecnológico de Veracruz, México

[2] Centro Universitario de Ciencias Económico Administrativas (CUCEA), Universidad de Guadalajara, México

Correspondence: José Satsumi López-Morales, M.A. de Quevedo 2339, Col. Formando Hogar, Veracruz, Veracruz, México. E-mail: jsatsumi@gmail.com

Received: July 28, 2014 Accepted: August 8, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p125 URL: http://dx.doi.org/10.5539/ibr.v7n10p125

Abstract

The aim of this paper is test if the type of ownership (Foreign Private, Local Private and State) affects the financial performance of firms in Latin America in the period from 2005 to 2011. In order to reach this aim, a sample of 29 firms that operates in different countries from Latin America was selected (mainly from Brazil, Mexico, Chile, Argentina and Colombia). Likewise in order to measure the type of ownership, the firms of the sample were categorized in three kinds of ownership such as: foreign private, local private and state ownership. Likewise the Return on Equity (ROE) was used to measure the financial performance. Finally in order to reach the main aim of this paper, we test the hypothesis using a regression analysis with SPSS. The results shed that the type of ownership is not relevant to the financial performance in Latin American context.

Keywords: financial performance**,** Latin American firms, type of ownership

1. Introduction

Nowadays the firms around the world face new challenges. The relevance that has taken the international markets have made that the firms have had to develop new internal and external capabilities. In addition, the environment has played an important role too, for example the political and economic reforms carried out during the 90´s in some developing countries have impacted in different ways the development and strategies of the firms.

Inside these political and economic reforms are the selling of state-owned firms to private agents, this is known as privatization (Yarrow, 1986). However, even though the privatizations were a common practice during the 90´s (Rodrik, 2006), the governments currently have maintained the ownership of some firms mainly from strategic sectors as: oil, mining and energy (Cuervo-Cazurra, Inkpen, Mussachio & Ramaswamy, 2014). The main aim of these firms is support to the local governments to fulfill social goals instead of pursuit the searching of financial benefits (Knutsen, Rygh & Hveem, 2011).

In the case of Latin America the trend has not been different. Many governments held the ownership of important firms as: Petrobras in Brasil, Pemex in Mexico, Ecopetrol in Colombia and so on. This issue has generated that the "state firms" increase their power in order to maintain the control of internal market and compete abroad.

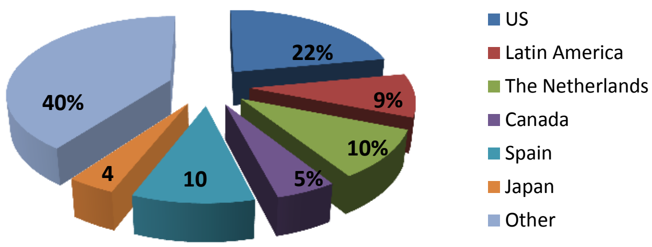


Figure 1. Latin America and the Caribbean: origin of foreign direct investment, 2007–2011

Source: ECLAC, 2012.

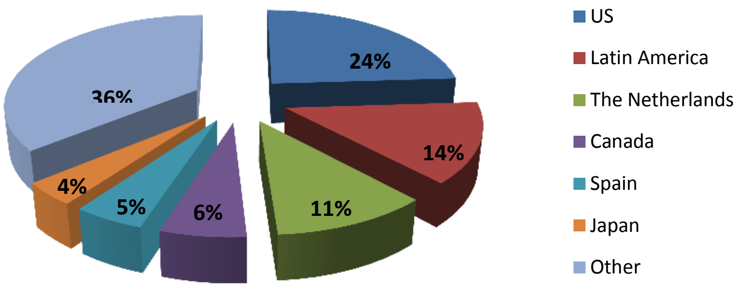


Figure 2. Latin America and the Caribbean: Origin of foreign direct investment, 2012

Source: ECLAC, 2012.

In addition, according with Figures 1 and Figure 2 the commercial openness has prompted to the firms from developed countries to carry out important investments in different Latin America countries. According with ECLAC (2012) the flows of Foreign Direct Investment (FDI) from developed countries toward Latin America have had an important impact in the last years. Around the 50% of the FDI that have received Latin America had its origins from USA, The Netherlands, Canada, Spain and Japan. In addition to the privatized firms some firms have maintain their private origins. Hence some of these firms not only have been important in the internal markets, but also have been major players worldwide in some sectors. For example: Cemex from Mexico, Techint from Argentine and Vale from Brazil. These firms have competed against the big firms from developed countries.

Therefore the purpose of this paper is to address the effect of the type of ownership in the financial performance of firms that operates in Latin American countries. In the literature is accepted that the private firms reach a better financial performance that the state firms (Megginson & Netter, 2001). Hence was selected a sample of firms with different types of ownership in order to test the hypothesis of this paper.

2. Theoretical Background

2.1 Type of Ownership

The type of ownership is an important topic in corporate governance literature. In this regard several studies about the type of ownership have been carried out the last years (Cuervo-Cazurra, 2014; Inkpen, Mussachio & Arocena & Oliveros, 2012; Le & Chizema, 2011; Eskil & Goldeng, 2008). These studies have increased the literature about the influence of the type of ownership in the firms. Moreover these studies have focused in two main topics: first in compare the private firms and the state firms (Reeves & Ryan, 1998; Dewenter & Malatesta, 2001) and second compare the performance of the firms before and after a process of privatization (D'souza & Megginson, 1999). In both cases the studies presents inconclusive results due to the differences of goals of the firms studied (Bozec, Breton & Cote, 2002).

Likewise these studies have not paid attention in the relationship between the type of ownership and financial performance specifically in emerging regions as Latin America. Nevertheless the type of ownership has begun an important issue in this region since during the last 20 years due to the change of ownership (mainly state to private ownership), in Latin America has been a common practice as from 90 ́s. In this regard a great number of state firms were sold to private agents (Rodrik, 2006). In addition most of the studies related to the type of ownership have been conducted in developed economies.

On the other hand there are evidences that indicate significant increases in the financial performance of companies that changed their type of ownership (Djankov & Murrell, 2002; Megginson & Netter, 2001; Wright, Buck, T. & Filatotchev, 2002). These empirical findings suggest that the performance of the firms have different behaviors regardless of their type of ownership.

Peng, Tan & Tong (2004) have identified five types of ownership:

1). State firms ownership, these firms have the characteristic that are large and complex, and generally suffer a lack of resources. These companies have in the States their main source of financing, supplier and distributor.

2). Private firms are the opposite of state firms. These companies are generally owned by family groups, have few resources to research and development (R & D), but they are very market-oriented.

3). Collectively owned firms, state-owned but operate as private. The organizational model is a hybrid between state-owned and public companies. For example, they have close relationships with governments and are market driven.

4). Foreign investment enterprises (FIEs), are a category that includes strategic alliances and subsidiaries of multinational companies (MNC's). This typology does not necessarily include the public owned firms, which are very important in the context of this research.

5). Public owned firms are those that are listed in the stock exchange and capture shareholders from private investors and have some rights related to ownership, governance and decision making of firms. It is important to notice that the public owned companies are different that the state-owned enterprises in terms of ownership, governance and decision making.

The above classification shows that in addition of the more common types of ownership (state firms and private firms), and in some cases given to the various environmental and internal changes that companies have faced in the last 20 years, have emerged new types of ownership. This fact has generated a difficulty in order to categorize firms according to their type of ownership. Therefore it is important to note that within the two main types of ownership (public and private) exist subdivisions.

2.2 Financial Performance

Firms have to be careful in the development of strategies, selection of targets, monitoring the results and the impact of these factors on their performance. These facts are why the interest in the study about the firm performance has increased in the last 20 years (Taticchi, Balachandran & Tonelli, 2012), resulting in a large body of academic literature about this topic. Generally the primary goal of firms is to reach an adequate performance that makes them increase their profits. However, the literature on the subject provides evidence that there is not an appropriate measure of performance of a firm (González-Benito & Suarez-González, 2010; Vij, Harpreet & Bedi, 2012). The result is an extended number of indicators of different types of firm performance.

Performance is measured for the results of the firm. The results are often measured by the goals previously established. These make possible evaluate the progress of the firm´s objectives. The above approach is associated with financial performance (Barnes & Hinton, 2012; Kariv, Menzies, Brenner & Fillion, 2009). It has been mentioned characteristics, advantages and limitations of performance. The key question is what performance means? The definition of performance is not an easy task (Barnes & Hinton, 2012; Kariv et al, 2009; Schiuma & Marr, 2003). The term can be used at various levels of the company, for example, individual performance, team performance and organizational performance (Brudan, 2010). Hence, there is complexity for defining it correctly.

The definitions of performance are diverse. Sandvik and Sandvik (2003) define it as goal levels achieved by the firm. Moreover, the performance can be oriented toward future results, appropriate to the needs of each company and based on a causal model of inputs and outputs results (Lebas, 1995). Performance is a term in which each person is placing the concepts that best fit to their interests and to the same environment (Barnes & Hinton, 2011). Neely, Adams & Kennerley (2002) conceptualize performance measurement as the process of quantifying the efficiency and effectiveness of past action. The above definition states that the performance is a tool that helps managers in choosing courses of action.

With the above, for the purpose of this research, the definition of performance measures made by Neely et al. (2002) will be used as a basis of the definition of firm performance. Since the data to which there is access are historical data of the company, this is also the best to fit the objectives of this research. Likewise in this study measure the financial performance with Return on Equity (ROE). It is an accounting-based measure of performance that is commonly used in international business literature (Hitt, Hoskinsson & Kim, 1997; Harr, 1989; Grant, 1987; Vernon, 1971). ROE focuses on the relative efficiency with which the resources available have been utilized by a firm to earn profit on behalf of its shareholders (Contractor, Kumar & Kundu, 2007).

Furthermore an additional reason for using this measure is that is easily available. In addition it is a measure of financial performance in the short term (Thomas & Eden, 2004). Likewise an important limitation of ROE is that only capture the profitability of the last year. Finally ROE is an indicator that contributes to understand the financial successful or unsuccessful of the firm, in this regard contribute to reach the main objective of this paper.

3. Hypothesis

During the 90's of the last century, several governments in Latin America carried out the implementation of trade liberalization policies (Cuervo-Cazurra & Dau, 2009). These reforms were proposed by the "Washington Consensus," which consisted of 10 recommendations about public policy (Correa, 2002; Rodrik, 2006). These recommendations were proposed by the International Monetary Fund, World Bank and the U.S. government (called "Washington institutions").

Within these recommendations were privatization of firms, which is the act of selling state-owned enterprises to private (Cuervo-Cazurra, Inkpen, Mussachio & Ramaswamy, 2014; Megginson, Nash & Van Randenborgh, 1994). These processes were very common practices in different Latin American countries during the 90's. The governments sold large firms to private investors, such as: Imevision in Mexico (now TVAzteca), Embraer in Brazil and Ypf in Argentina. Moreover some companies continued their private origin from the early 90's to the present t, for example, Cemex and Bimbo (Cuervo- Cazurra, 2010). Besides, other companies despite the opportunity in those days remained still state-owned as the big oil firms: Pemex and Pdvsa. (Casanova, 2010). Many of them, regardless of their ownership structure are called "multilatinas".

In addition, from trade liberalization in the 90's, Latin America has been an important region where MNCs from developed countries like U.S.A., Japan and Europe have carried out important investments. These investments are why since several years ago have begun to notice the important role of companies like Sony, Samsung, Shell, among others. This has generated significant business competition for Latin American firms. This suggests that some firms in Latin America have had significant financial performance. The reforms implemented in the 90's have influenced the type of ownership and these in turn may generated a better financial performance for local private , state companies and foreign private companies operating in Latin American countries.

In regard of these assumptions the next hypothesis was developed:

H1: The type of ownership (If the firm is foreign private, local private and state ownership) is related with the financial performance in the firms that operate in Latin America.

4. Research Design

4.1 Source and Sample Data

The hypothesis is tested of using data of the ranking "Las 500 mayores empresas de America Latina" for the period 2005–2011. The ranking is the most important data source of firms from Latin America (Lopez-Morales, Wise-Lozano & Vargas-Hernandez, 2014; Cuervo- Cazurra, 2010).The information of this ranking is collected for the Chilean magazine "America Economia". This ranking is elaborated since the 80´s. Besides Latin America is an ideal laboratory to test this kind of assumption (Dau, 2011) because many Latin America governments have implemented different policies that has affected the firms ́ownership. Additionally the study of Latin America firms is an important gap in the literature (Chang, 2011; Thomas & Eden, 2004).

The sampling was done by convenience, 29 firms that operate in Latin America were included. The selection was made due to that can be obtained the complete data of this number of firms in the period of study (2005–2011). It is important to point out that the number of firms selected (29) and the period of study (2005–2011) were selected due to the possibility to collect complete data for the statistical procedure using SPSS.

4.2 Variables and Analytic Method

It is included one measure for each variable. For the independent variable "Type of Ownership" (TPROP), it was designed a scale where classified the firms in accordance with their specific "type of ownership". First, it was assigned the number 1 to the firms that are "foreign private". These firms are the subsidiaries of firms that are not from Latin America origin (e.g. General Motor from USA, Arcelor Mittal from India). Second, it was assigned the number 2 to the firms that are "local private", these firms are origins from Latin America countries and are owned by private agents de (E.g. Cemex from Mexico, Vale from Brazil and so on). Finally, it was assigned the number 3 to the firms that are "local state". These firms have their origins from Latin America countries and are owned by the state (e.g. Pemex from Mexico, Pdvsa from Venezuela.

In addition for the dependent variable "financial performance" it is selected the Return on Equity (ROE) as measure. ROE for the firms included in the sample were captured from rankings of America Economia "Las 500 mayores empresas de América Economia", in the period 2005–2011. ROE is a financial indicator of performance that shows the return for the shareholders of the firms and is commonly used in the literature (Dau, 2011). ROE is the amount of net income returned as a percentage of shareholders equity, it measures a corporation ́s profitability by revealing how much profit a company generates with the money shareholders have invested

(Blaine, 1993; Glaum & Oesterle, 2007). This indicator is expressed as a percentage and calculated as:

ROE= Net Income/ Shareholder ́s Equity

The analytic method applied to understand the relationship between variables was Linear Regression Analysis. The analyses were conducted using the SPSS 19 software.

5. Results

Table 1 shows reports the result of the descriptive statistics:

Table 1. Descriptive statistics

	N	Minimum	Maximum	Media	Tip. Dev.
TPROP	29	1.00	3.00	2.0345	.49877
ROE2005	29	3.15	79.45	26.4976	16.86832
ROE2006	29	-79.80	158.30	27.8966	38.13404
ROE2007	29	-51.40	105.10	26.0517	28.04237
ROE2008	29	-134.20	78.50	16.5414	41.77931
ROE2009	29	.70	78.30	23.1621	19.20349
ROE2010	29	-8.50	57.00	22.1241	15.72745
ROE2011	29	-11.00	77.10	22.2621	21.50062
N valid	29				

The media of ROE between 2005 and 2011 was 23. 35. These results show that the firms included in the study returns an average of 23.35 of revenues to their shareholders. It is important to point out that the standard deviation is unstable during the period. For instance, the standard deviation in 2010 is 15.72 and in 2008 is 41.77. It means 2010 the differences between the ROE ́s is bigger than the ROE ́s in 2008.

The table 2 below reports the result of the regression analysis for the sample:

Table 2. Regression model

	TPROP Vs. ROE 2005	TPROP Vs. ROE 2006	TPROP Vs. ROE 2007	TPROP Vs. ROE 2008	TPROP Vs. ROE 2009	TPROP Vs. ROE 2010	TPROP Vs. ROE 2011
R	.213[a]	.234[a]	.149[a]	.274[a]	.348[a]	.042[a]	.138[a]
R2	.045	.055	.022	.075	.121	.002	.019
F	1.278	1.558	.613	2.194	3.723	.047	.527
Sig.	.268	.223	.440	.150	.064	.831	.474

The results shown in Table 3 do not support the hypothesis. First, the results in all the period of study does not provide consistent support for the notion that “type of ownership” is related with the “financial performance” of firms that operates in Latin America. Second, the results of the regression analysis also show that practically the “type of ownership” is not factor that affects the financial performance. The results shows below are not according with other studies that reflect a positive influence of the “type of ownership” in the financial performance (Bozec, Breton & Cote, 2002; Mazzolini, 1980). In addition it is important to point out that this study is one of the first carried out using a sample of Latin America firms.

Besides, the analyses of the F values do no support the main hypothesis. However, the major significance is on 2009. It means that in this year the “type of ownership” affects more than in other years the financial performance but even so it does not relevant.

Finally, the results reflects that the political and economic policies carried out for the governments in Latin America mainly during 90 ́s that unchained changes in the ownership of the firms did not significant in the financial performance. It suggests that the national and international expansion of some Latin America firms was occasioned by other factors, but not for the changes related with the ownership.

6. Conclusions and Future Research

The aim of this paper is test if the type of ownership (Foreign Private, Local Private and State) affects the financial performance of firms in Latin America. The results suggest that the type of ownership is not a relevant factor in the financial performance. It supposes that the economic and political reforms during 90's were an important engine of development in all factors, however in the case of the firm's ownership it was not a relevant issue.

This paper contributes to the literature in three aspects. First, the study of the ownership in emerging regions is an important gap in the international business literature (Hitt, Tiyani, Miller & Conelly, 2006; Pan & Chao, 2010). Furthermore, the understanding of the effects of the ownership is useful in order to gain comprehensive knowledge about the ways in that the firms improve their general performance. Second, Latin America firms have been understudied in relation with firms from other regions around the world (Chang, 2010; Cuervo-Cazurra, 2010). Third, contributes to the debate of the benefits of the process of globalization around the world (Cuervo-Cazurra & Dau, 2009; Rodrik, 2006) in concrete to move the discussion about the influence of the owners in the outcomes of the firms.

Besides the future direction of the research about the relationship type of ownership- financial performance will be to address another emerging market as Central Europa and Asia. Besides it is necessary analyze the influence of the public firms (that operates in stock market) in order to understand if this factor incise in the financial performance. Likewise an important topic is understand the role of the firms that operates in the stock exchanges (commonly known as public firms). Furthermore it is important to know the burden of family business in Latina America. In addition, it is valuable to study the type of ownership in separated way, it means by sector, country and size of the firm.

Moreover another important scope is including the "mixed firms" that are controlled for private and state owners at same time. Finally in order to verify results is important to carry out studies with a larger sample and in a larger period too. And study with these characteristics will be an important input to the literature about emerging markets.

References

Arocena, P., & Oliveros, D. (2012). The efficiency of state-owned and privatized firms: Does ownership make a difference? *International Journal of Production Economics*, *140*(1), 457–465. http://dx.doi.org/10.1016/j.ijpe.2012.06.029

Barnes, D., & Hinton, C. M. (2012). Reconceptualising e-business performance measurement using an innovation adoption framework. *International Journal of Productivity and Performance Management, 61*(5), 502–517. http://dx.doi.org/10.1108/17410401211232948

Blaine, M. (1993). *Profitability and competitiveness: lessons from Japanese and American firms in the 1980´s*. AJBS 1993 Best Papers Proceedings, Association of Japanese Business Studies, 1993.

Bozec, R., Breton, G., & Cote, L. (2002). The performance of state owned enterprises revisited. *Financial Accountability & Management, 18*(4), 383–407. http://dx.doi.org/10.1111/1468-0408.00158

Brudan, A. (2010). Rediscovering performance management: systems, learning and integration. *Measuring Business Excellence, 14*(1), 109–123. http://dx.doi.org/10.1108/13683041011027490

Casanova, L. (2010). Las multinacionales latinoamericanas en los albores de una oportunidad. *Revista de Administración de Empresas, Fundación Getulio Vargas, Brasil, 50*(4), 439–445. http://dx.doi.org/10.1590/S0034-75902010000400008

Chang, J. (2011). The early and rapid internationalization of Asian emerging MNEs. *Competitiveness Review: An International Business Journal Incorporating Journal of Global Competitiveness, 21*(2), 171–187. http://dx.doi.org/10.1108/10595421111117452

Contractor, F. J., Kumar, V., & Kundu, S. K. (2007). Nature of the relationship between international expansion and performance: The case of emerging market firms. *Journal of World Business, 42*(4), 401–417. http://dx.doi.org/10.1016/j.jwb.2007.06.003

Correa, R. (2002). Reformas estructurales y crecimiento en América Latina: un análisis de sensibilidad. *Revista de la CEPAL. 76*, 89–107. Retrieved from http://www.eclac.cl/publicaciones/xml/5/19335/lcg2175e_Correa.pdf

Cuervo-Cazurra, A. (2010). Multilatinas. *Universia Business Review, 25,* 14–33. Retrieved from http://ubr.universia.net/pdfs_web/25010-01.pdf

Cuervo-Cazurra, A., Inkpen, A., Mussachio, A., & Ramaswamy, K. (2014). Goverments as owners: State-owned multinationals companies. *Journal of International Business Studies,* 1–24. Retrieved from http://www.palgrave-journals.com/jibs/cfp_global_state_own_si.html

Cuervo-Cazurra, A., & Dau, L. A. (2009). Promarket reforms and firm profitability in developing countries. *Academy of Management Journal*, *52*(6), 1348–1368. http://dx.doi.org/10.5465/AMJ.2009.47085192

D'souza, J., & Megginson, W. L. (1999). The financial and operating performance of privatized firms during the 1990s'. *Journal of Finance, LIV*(4), 1397–438. http://dx.doi.org/10.1111/0022-1082.00150

Dau, L. A. (2011). *Reforms, multinationalization, and profitability*. Academy of Management Annual Meeting Proceedings (pp. 1–6). http://dx.doi.org/10.5465/AMBPP.2011.65870646

Dewenter, K. L., & Malatesta, P. H. (2001). State-owned and privately-owned firms: An empirical analysis of profitability, leverage, and labor intensity. *American Economic Review, 91*(1), 320–34. http://dx.doi.org/10.1257/aer.91.1.320

Djankov, S., & Murrell, P. (2002). Enterprise restructuring in transition: A quantitative survey. *Journal of Economic Literature, 40*, 739–792. http://dx.doi.org/10.1257/jel.40.3.739

Economic Comission for Latin America and Caribbean. (2012). *Foreign Direct Investment in Latin America and and Caribbean.*

Eskil, G., Grunfeld, L. A., & Benito, G. R. G. (2008). The performance differential between private and state owned enterprises: The roles of ownership, management and market structure. *Journal of Management Studies, 45*(7), 0022–2380.

Filatotchev, I., Wright, M., Buck, T., & Zhukov, V. (1999). Corporate entrepreneurs and privatized firms in Russia, Ukraine, and Belarus. *Journal of Comparative Economics, 14*, 475–492.

Glaum, M., & Oesterle, M. J. (2007). 40 years of research on internationalization and firm performance: More questions than answers? *Journal Management International Review, 47*(3), 307–317.

González-Benito, J., & Suarez-González, I. (2010). A study of the role played by manufacturing strategic objectives and capabilities in understanding the relationship between Porter´s generic strategies and business performance. *British Journal of Management, 21*, 1027–1043. http://dx.doi.org/10.1111/j.1467-8551.2008.00626.x

Grant, R. M. (1987). Multinationality and performance among British manufacturing companies. *Journal of International Business Studies, 18*(1), 79–89. http://dx.doi.org/10.1057/palgrave.jibs.8490413

Haar, J. (1989). A comparative analysis of the profitability performance of the largest US, European and Japanese multinationals enterprises. *Management International Review, 29*(3), 5–19. Retrieved from http://www.jstor.org/discover/10.2307/40227933?uid=2134&uid=2&uid=70&uid=4&sid=21104567880393

Hitt, M. A., Hoskisson, R. E., & Kim, H. (1997). International diversification: effects on innovation and firm performance in product-diversified firms. *Academy of Management Journal*, *40*(4), 767–798. http://dx.doi.org/10.2307/256948

Hitt, M. A., Tihanyi, L., Miller, T., & Conelly, B. (2006). International diversification: antecedents, outcomes, and moderators. *Journal of Management, 32*, 831–867. http://dx.doi.org/10.1177/0149206306293575

Kariv, D., Menzies, T. V., Brenner, G. A., & Fillion, L. J. (2009). Transnational networking and business performance: Ethnic entrepreneurs in Canada. *Entrepreneurship & Regional Development*, *21*(3), 239–264. http://dx.doi.org/10.1080/08985620802261641

Knutsen, C. H., Rygh, A., & Hyeem, H. (2011). Does state ownership matter? Institutions´effect on foreign direct investment revisited. *Business and Politics*, *13*(1), 1–31. http://dx.doi.org/10.2202/1469-3569.1314

Le, T., & Chizema, A. (2011). State ownership and firm performance: Evidence from the Chinese listed firms. *Organizations and Markets in Emerging Economies, 2*(4), 72–90.

Lebas, M. J. (1995). Performance measurement and performance management, *International Journal of Production Economics*, *41*(1–3), 23–35. http://dx.doi.org/10.1016/0925-5273(95)00081-X

López-Morales, J. S., Wise-Lozano, J. A., & Vargas-Hernandez, J. G. (2014). Emerging multinationals: Multilatinas. *International Journal of Business and Social Research, 4*(4), 150‒159. Retrieved from http://thejournalofbusiness.org/index.php/site/article/view/351/381

Marr, B., & Schiuma, G. (2003). Business performance measurement – past, present & future. *Management Decision, 41*(8), 680–687. http://dx.doi.org/10.1108/00251740310496198

Mazzolini, R. (1980). Are state owned enterprises unfair competition? *California Management Review.* 20–28. http://dx.doi.org/10.2307/41164913

Megginson, W. L., & Netter, J. F. (2001). From state to market: a survey of empirical studies on privatization. *Journal of Economic Literature*, *39*(2), 321–389. http://dx.doi.org/10.1257/jel.39.2.321

Megginson, W. L., Nash, R. C., & Van Randenborgh, M. (1994). The financial and operating performance of newly privatized firms: An international empirical analysis. *The Journal of Finance, 49*, 403–452. http://dx.doi.org/10.1111/j.1540-6261.1994.tb05147.x

Neely, A., Adams, C., & Kennerley, M. (2002). *The performance prism: the scorecard for measuring and managing business success*. Hemel Hempstead: Financial Times-Prentice Hall.

Pan, W. H., & Chao, Y. S. (2010). The joint effects of geographical diversification to MNE ́s performance through performance through China Investment. *The Journal of Global Business, 6*(1). Retrieved from http://www.jgbm.org/page/7%20Yuang-Shiang%20Chao%20.pdf

Peng, M. W., Tan, J., & Tong, T. W. (2004). Ownership Types and Strategic Groups in an Emerging Economy. *Journal of Management Sciences*, 1105–1129.

Reeves, E., & Ryan, J. (1998). A benchmark analysis of the performance of state- owned enterprises in Ireland. *International Journal of Public Administration, 21*, 1577–602. http://dx.doi.org/10.1080/01900699808525361

Rodrik, D. (2006). Goodbye Washington Consensus, Hello Washington Confusion? A Review of the World Bank ́s Economic Growth in the 1990s: Learning from a Decade of Reform. *Journal of Economic Literature,* XLIV(December 2006), 973–987. http://dx.doi.org/10.1257/jel.44.4.973

Sandvik, I. L., & Sandvik, K. (2003). The impact of market orientation on product innovativeness and business performance. *International Journal of Research in Marketing, 20*(4), 255–376. http://dx.doi.org/10.1016/j.ijresmar.2003.02.002

Taticchi, P., Balachandran, K., & Tonelli, F. (2012). Performance measurement and management systems: state of the art, guidelines for design and challenges. *Measuring Business Excellence, 16*(2), 41–54. http://dx.doi.org/10.1108/13683041211230311

Thomas, D. E., & Eden, L. (2004). What is the shape of the multinationality-performance relationship? *The Multinational Business Review, 12*(1), 89–110. Retrieved from http://www.voxprof.com/eden/Publications/eden-thomas-shape-mne-peformance-rel.pdf

Vernon, R. (1971). *Sovereignty at Bay: The Multinational Spread of US Enterprises*. Basic Books: New York.

Vij, S., & Bedi, H. S. (2012). Relationship between Entrepreneurial Orientation and Business Performance: A review and Business Performance: A Review of Literature. *The IUP Journal of Business Strategy, IX*(3), 17–31. Retrieved from http://www.lib.yuntech.edu.tw/~exam/exam_new/102/dmb.pdf

Wright, M., Buck, T., & Filatotchev, I. (2002). Post-privatization effects of management and employee buyouts. *Annals of Public and Cooperative Economics, 73*, 303–52. http://dx.doi.org/10.1111/1467-8292.00195

Yarrow, G. (1986). Privatization in theory and practice. *Economic Policy, 1*(2), 323–377. http://dx.doi.org/10.2307/1344560

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Segmentation and Evidence of Relationship-Building Activities in Life Insurance Companies' Websites

Khalid Suidan Said Al Badi[1]

[1] Head of Internal Auditing Department, Al Buraimi College, Sultanate of Oman

Correspondence: Khalid Suidan Said Al Badi, Head of Internal Auditing Department, Al Buraimi College, Sultanate of Oman. E-mail: k.vip.10@hotmail.com

Received: August 6, 2014 Accepted: August 26, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p133 URL: http://dx.doi.org/10.5539/ibr.v7n10p133

Abstract

Companies that offer online insurance services have their work cut out for them. Not only must they search for loyal customers, but also for free advocates who can influence their friends to purchase an insurance policy online from them. In terms of time, cost and effort, attempting to attract the whole market is just a waste. As the best customer services with all insurance coverage for too much insurance policies is just vain. This is where the concept of target marketing comes in, as the most important factor influencing market share of an online insurance company is targeting an accurate market segment. Market segmentation is defined as a marketing strategy that involves dividing a broad target market into subsets of consumers who have common needs and priorities, and then designing and implementing strategies to target them. Market segmentation strategies may be used to identify the target customers, and provide supporting data for positioning to achieve a marketing plan objective. Businesses may develop product differentiation strategies, or an undifferentiated approach, involving specific products or product lines depending on the specific demand and attributes of the target segment (Kotler, 2003). Then again, it's not enough for a company to market its product to its customers. It has to keep and maintain that customer's loyalty through the provision of excellent services and other relationship-building activities. Our project aims to study these two aspects of online marketing by analysing the websites of three well-known insurance companies (www.metlife.com (US) www.standardlife.co.uk (UK), www.william-russell.com (UK). This paper will study the websites of the three selected insurance companies, which use similar E-Business models but different market segmentation, and examine how they intend to meet the needs of the different customer segments, and the extent to which they have managed to build customer relationship activities to maintain customer satisfaction through their website designs. Thus the study deals with these issues, not only from a customer perspective, but also from a business perspective. The findings present the effectiveness of the MetLife site which has offered various features to woo the retirement sector, whereas Standard Life has concentrated on the corporate client with regard to healthcare. William Russell is particularly focused on the expatriate client and is equally savvy for policy holders as it is with new customers.

Keywords: life insurance, E-business, marketing, segmentation, relation-building

1. Literature of E-Business

As the internet continues to transform the business world, businesses, along with their conventional systems of trading, try to reach out in order to cater for the needs of a large customer base in the comfort of their own homes. Electronic commerce companies have replaced one of the traditional marketing 4Ps - "*place*"- with "*perception*" that depends on the design of the company website. Several researchers have noted that adoption of internet-based business has become imperative for today's organisations in order to create value by cutting costs, attracting visitors and satisfying customers' needs by providing just-in time outcomes (Barsauskas *et al.,* 2008; Soliman & Youssef, 2003). The insurance business is no different. Gone are the days of long waiting hours in an office, a barrage of insurance jargon, and traps in the form of hidden costs, as all that the customer requires now is only a mouse-click away. Hence, the design of the company website plays a major role in creating customer loyalty and determining visitors' decision to stay, change to another electronic commerce site or return to their traditional market (Merwe & Bekker, 2003).

Obviously, well-designed, effective and efficient website content attracts visitors to the company website, and convinces them to become a customer of the online business (Aladwani, 2006).

According to E-business models presented by Chaffy (2007), insurance companies can be fitted into one of two models - the "*revenue*" and the "*commercial*" models.

- A "*revenue model"* centres on value appropriation. Revenues can be realized through a combination of subscription fees, advertising fees and transactions.
- The *"commercial model"* can be seen as brokerage and negotiator deals which can also be seen on these websites.

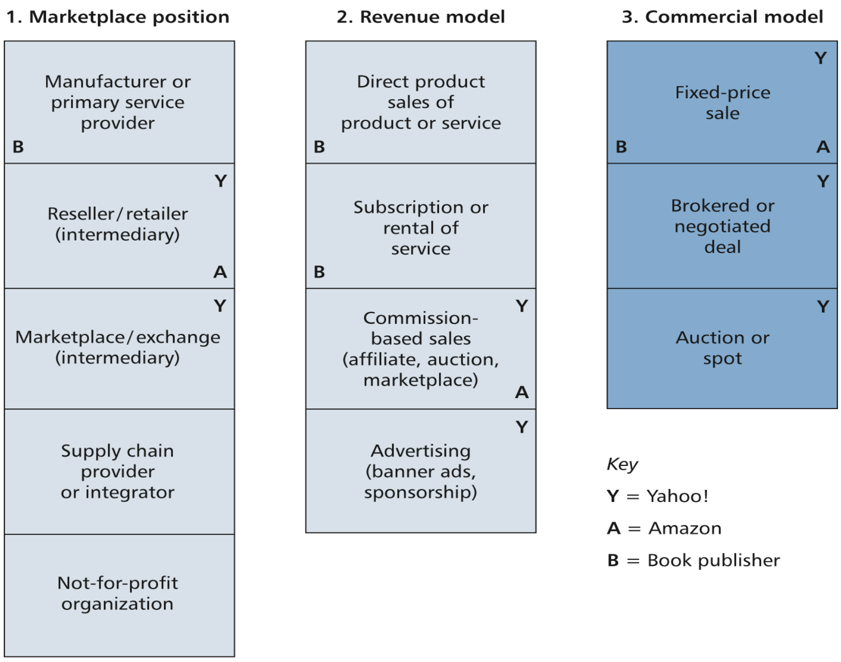


Figure 1. Alternative perspectives on business models (Chaffy, 2007, p. 63)

This can be applicable for insurance companies. Models 2&3.

As far as dealing with target segmentation is concerned, one must understand that directing time, cost and effort at wrong target market is just a waste. Companies classify users into categories by use of free insurance quotes – into either price conscious, quality conscious or status conscious persons for online insurance policies. Target segments are chosen demographically, geographically and psycho-graphically or behaviourally for online insurance companies whether in the USA, the UK or elsewhere.

2. Methodology

This paper prepared evaluation criteria for the three websites (www.metlife.com, www.standardlife.co.uk and www.william-russell.com) based on the literature. It shall discusses how these companies focus on their target segments demographically, geographically and psychographic, customer-wise and product-wise. The findings have also studied the features present in each site to encourage relationship-building activities to attract and maintain customer loyalty. For this analysis, the paper has approached the websites as an ordinary user.

3. Who Are the Websites Targeting?

The companies are well known for their services. They are multinational in nature. Two are based in the UK, and one in the USA. Each one has made it clear that it is targeting one segment rather than any other segment. Target segments range from individuals, to corporate clients, to brokers, to intermediaries and to expatriates. The segments also vary in terms of the type of services and products offered. For example, MetLife targets retirement customers, Standard Life targets corporate business, and William Russell targets expatriates living outside their native countries.

4. Evaluation Criteria

Before start the website analysis we shall discuss some of the basic evaluation criteria to be used in the form of a checklist. Since our evaluation will be solely concentrating on the extent of segmentation to attract different customer groups, and specific features in site for relationship-building activities. We shall modify Knox's (2007) list to include these features. The checklist is very focused on first impressions from a business point of view. If users do not like a site, for whatever reason, they just leave. If they do stay, we have to consider what webpage features can help and encourage them to complete an insurance transaction.

1) Is the company name and logo on every page? Does it suggest brand and status?
2) Does the site's free insurance quotes allow price conscious users to compare them with others online, and does the user understand the aim is to categorise him into the proper user list?
3) Is segmentation done customer-wise, product-wise, demographically, geographically, psycho-graphically and is it based on benefits?
4) Are headlines and page titles clear?
5) Do links work and clearly describe the page they will lead to?
6) Are there benefits for switching or bringing in others, creating behaviour segments?
7) Can you leave feedback or extend the relationship, e.g. through a newsletter.

5. Website Analysis Site No-1–Metlife (www.metlife.com)

At first sight, the home page is very pleasant, with a vibrant feel, and a nice warm picture. The page is not crowded, and allows easy navigation. There is the company logo on every page so that the user will be aware if he clicks away from the site. The homepage consists of clear headlines and titles, making it easy to choose from as the browser wishes.

5.1 Segmentation Focus of MetLife

a). Product-wise retirement schemes

MetLife has made it clear that it targets baby boomers of the 1960s in the *Retirement**,** and health**,** accident* and *life insurance* section for customers from some countries in America, Asia and Europe. They have put in a lot of effort to present this information in a very simple and understandable manner, even for novices. They have explained all the stages in the cycle in a stepwise manner that can educate users and allow them to simply follow the steps.

There are also several linkages to schemes and IRA benefits. For example, in the investment link, three pages deal with deferred and income annuities, IRA's and Immediate annuities, and explain how to enrol in the retirement scheme. One can also access the income annuity guide to understand its benefits in retirement.

There are various tools to calculate how much you need to save, premiums, interest compounding, etc., including how this is actually calculated, and which type of insurance would actually suit one. Alternatively, one can also get a quote according to one's financial position.

b) Customer-wise

Individuals, businesses, brokers and consultants.

c) Geographically

It has operated for a long time in the City of New York, gathering clients from a variety of businesses with different types of insurance - auto, estate, health, etc.

d) Demographically

Americas (6-countries) – Asia (7-countries) – Europe (3-countries) with three languages used on the web interface.

e) Behaviourally

Customers are invited to ask for a quote and to receive information through the site as a result of trust built up over years of business.

f) Psychographic

Matching needs to lifestyles in the way they provide a service.

5.2 Relationship Building Activities of Metlife

Website has shown a close relationship according to events such as National events, New Year's Eve to keep personal contact with clients. One can also follow events at MetLife posted on the Press Releases link. Feedback options are available from customer on line enquiries to comment cards that evaluate customer satisfaction with services .You have options for a representative to contact us and also to find offices close to us for details and enquiry. Also ease of procedure to change address/ contact numbers online itself.

6. Website No-2-Standard Life (www.standardlife.com)

The company is based in the UK and provides a multitude of services.

This website is a no-frills one which gets down directly to business. The Standard Life logo is on every page. However the pages are white and the fonts is too small and the pages have no borders.

6.1 Segmentation Focus of Standard Life

a) Product wise

Insurance Healthcare for corporate clients. Ease of procedure and explanations aim to woo corporate clients to the site. The plan covers not only health but dental and travel insurance, with preventive modules also available.

The site also provides a step-by-step guide for making a business health plan which is easy to follow. Companies also have the option to contact the Standard Life health adviser.

The website provides example plans and tailor-made plans according to one's budget.

Standard Life has an aggressive strategy to woo clients by providing discount options once employee cover has been selected, reducing premium levels without affecting total cover. For corporate clients who wish to switch to Standard Life there is the option to continue with the same benefits or the same underwriting agreement and different benefits.

Corporate healthcare with extra benefits is given when 100+employees are covered.

b) Geographically

It has operated for a long time in the UK, gathering clients from a variety of businesses.

c) Demographically

Corporate clients.

d) Benefits

Discounts and switching benefits provided.

6.2 Relationship-Building Activities of Standard Life

The company takes its customer relationships very seriously. There are direct linked sites for complaints and feedback which only clients with secured id's can use. Contact numbers are also available. The site also sends clients an Ethical Funds Newsletter in which results of various surveys and the comments of clients, are published. Surveys are also done on an annual basis.

7. Website No-3-William RusseLL (www.william-russell.com)

The company provides award-winning insurance services to its clients who are expatriates. These include corporate clients, individuals and families, and intermediaries. The home page reeks of ambience made out in cool white and blue. Below the page, one can find a site map that makes navigation through this site very easy. The home page basically divides clients into corporate clients, individuals and families, and intermediaries, providing Global Life, Global Health and Global Income options in each category. The William Russell logo is on every page. The logo appears to be a status brand.

7.1 Segment Focus of William Russell

a) Product wise

It provides Global Health, Global Life and Global Income protection.

Each category is simply and easily explained. There are contact numbers for its offices in Dubai, Malaysia and the UK. Call back options are available at the client's convenience.

Tailor-made solutions are available for individuals and corporate clients, Existing policy holders are linked to every page on the site to make complaints, renewals, claims, etc.

Quote options are available on every page for individuals and for groups, along with testimonials that add credibility to the site

Complementary-like discounts are available for recommending the company to a friend, platinum plans, etc. All these market strategies are aggressively and effectively brought out in the site.

b) Geographically

It is based in the UK, with offices in Dubai, Indonesia and London

c) Demographically

Service are catered to all nationalities globally (expatriates)

d) Customer wise

Individuals, corporate, and intermediaries

e) Behaviourally

Platinum schemes available and brand name are strong psychological pullers.

7.2 Relationship-Building Activities of William Russell

The company appreciates feedback and publishes this on the site in the form of testimonials and case studies. Dissatisfied customers have the option to call the relevant Director and not just a simple customer service line.

8. Website Analysis

Table 1. General website analysis

Characteristics observed	**Company name and website address**		
	Met Life **www.metLife.com**	**Standard Life** **www.standardlife.co.uk**	**William Russell** **www.william-russell.com**
Direct sales of services. Commercial brokerage and negotiated dealers	Revenue and commercial* - Uses agents also	Revenue	Revenue and commercial -encourages use of intermediaries
Business strategy	Targeting retirement, heath, life and accident insurance sector (Americas (6 countries) – Europe (3 countries) , Asia (7 countries)	Targeting corporate sector in UK + some other countries	Targeting expatriate sector outside UK.
Websites comment notes	Good presentation, easy navigation. Comprehensive. Three different languages.	Font is too small, colours too drab to capture attention of user	Good presentation but too little information at the forefront + more pictures that delay access
Comments for affective E Business webpage	More testimonials to add credibility	More attention to homepage to make it warm and interesting	Allow customers to register on-line
General Observation	Very good	Could use better presentation	Good

Table 2. Web site analysis, online target segmentation (Criteria 1)

Target Segmentation	**Company name and website address**		
	Met Life **www.metLife.com**	**Met Life** **www.metLife.com**	**Met Life** **www.metLife.com**
Geographic	USA	UK	Global
Demographic	Retirement sector	Healthcare	Health, Income, Life
Product Focus	Retirement Schemes	Business and corporate healthcare	Global health, income, life schemes
Customer wise	Individuals, businesses, brokers and consultants.	Corporate	Individuals, corporate and intermediaries
Psychographic	Matching needs to lifestyle	Tailor-made healthcare schemes	Matching needs to lifestyle
Benefits	Not known	Reduction in switching cost and discounts	Discounts+ free travel with Platinum Plan

Table 3. Website analysis, online target segmentation (Criteria 2) (Brand name, Price and Status Criteria)

Rank: 1= Dire	**10 = Excellent**		
Target Segmentation	**Met Life**	**Standard Life**	**William Russell**
Brand Conscious	8	8	8
Price Conscious	8	7	5
Status Conscious	7	5	8
Total	**23**	**20**	**21**

Different customers think in different ways about their insurance requirements. However their main concerns are:

- Brand name of insurance company
- Price (Premium)
- Status

The analysis of the target segmentation is based on the type of customer orientation. This can be shown in Table 4.

If we give Rank 1 = Dire and Rank 10 = Excellent, the MetLife ranks highest while the other two have almost the same ranking.

Table 4. Analysis of website based on relationship activities

	Met Life	**Standard Life**	**William Russell**
Type of relationship activities	Individual, Business, Focused Groups	Comment cards, Press releases on site feedback	Ethical funds surveys, newsletter, feedback

9. Recommendations

9.1 Met Life

Relationship-building activities need to be improved. It comes across as being too occasional and impersonal. Perhaps Testimonials from satisfied customers and annual newsletters would help in building relationships.

9.2 Standard Life

1) Although it targets the corporate sector, the range of online comprehensive insurance services is too narrow (only healthcare). If a client wants travel insurance, s/he has to subscribe to the whole package. Though this may be economical, it is not always convenient.
2) Although their relationship-building activities are adequate, it is strongly recommended that the include testimonials since proper testimonials can be of prime importance in establishing the credibility of any website.
3) Use of colors and larger fonts may also help in relationship-building by giving the website a more personal and friendly feel.

9.3 William Russell

1) They are targeting expatriates (anyone outside the UK) which is too broad a segment. Giving equal importance to all the online services provided by them may not be competitive. It would be wiser to stress one type of online insurance scheme.
2) Although they use testimonials for relationship-building activities, they could improve their relationship-building activities through the use of newsletters and online surveys.
3) Make provision for accepting customer complaints online.

10. Conclusion

Our analysis of these websites was done in the manner of a novice rather than an expert. As we evaluated these websites as visitors, over a very short period and with only access to the general content as users of the internet, our judgment lacked concrete analysis. Therefore, all the characteristics that we have analysed are those that can easily be accessed, rather than those that can be found from hours of browsing or being a real customer attempting to form a judgement. The websites were also assessed on their ease of use. On the basis of our findings, we have formed a table comparing and contrasting the three insurance companies. In the target segment category, we have graded Met Life better than the others since its targeting of the retirement sector is aggressive and clear through various linkages, advertisements and animated presentations. All of this is enough to make even a casual browser curious about their scheme's benefits. This, coupled with ease of use and a three language interface, make it undoubtedly the best site in this category. In the relationship-building category, Standard Life has the upper hand with expert handling of customer complaints and protection of customer interests. Surveys and annual newsletters further strengthens its lead position in this category.

References

Aladwani, A. M. (2006). An empirical test of the link between web site quality and forward enterprise integration with web consumers. *Business Process Management Journal*, *12*(2), 178–190. http://dx.doi.org/10.1108/14637150610657521

Barsauskas, P., Sarapovas, T., & Cvilikas, A. (2008). The evaluation of e-commerce impact on business efficiency. *Baltic Journal of Management, 3*(1), 71–91. http://dx.doi.org/10.1108/17465260810844275

Chaffey, D. (2007). *E-Business and E-Commerce Management* (3rd ed.). England: Prentice Hall.

Donio, J., Massari, P., & Passiante, G. (2006). Customer satisfaction and loyalty in a digital environment: an empirical test. *Journal of Consumer Marketing*, *23*(7), 445–457. http://dx.doi.org/10.1108/07363760610712993

Http://hbswk.hbs.edu/archive/2381.html

Http://knowledge.wharton.upenn.edu/article.cfm?articleid=254

Http://www.Metlife.com.

Http://www.Standardlife.com

Http://www.william-russell.com

Knox, I. (2007). Retrieved on 28th March 2009 from http://www.scribd.com/doc/20505/Web-page-review-tips

Merwe, R., & Bekker, J. (2003). Framework and methodology for evaluating ecommerce website a framework and methodology for evaluating ecommerce website. Internet. *Research: Electronic networking Application and policy, 13*(5), 330–341. http://dx.doi.org/10.1108/10662240310501612

Philp, K. (2011). *Marketing Management* (7th ed.). International Prentice Hall

Stephen, W. S. (1997). Save the Time of Surfer: Evaluating websites for Users. *Library High Tech*, *15*(3/4), 155–158. http://dx.doi.org/10.1108/07378839710308501

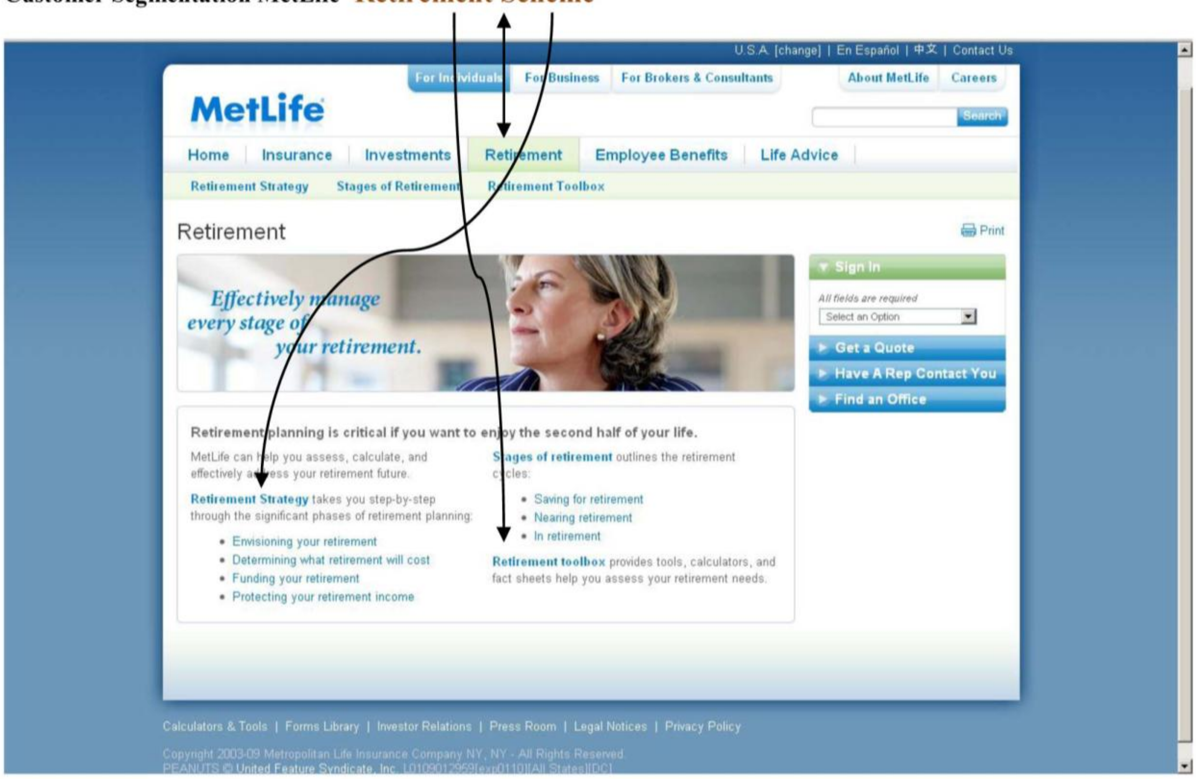
Soliman, F., & Youssef, M. A. (2003). Internet based e-commerce and its impact on manufacturing and business operations. *Industrial Management & Data System, 108*(3), 446–552.

Appendix

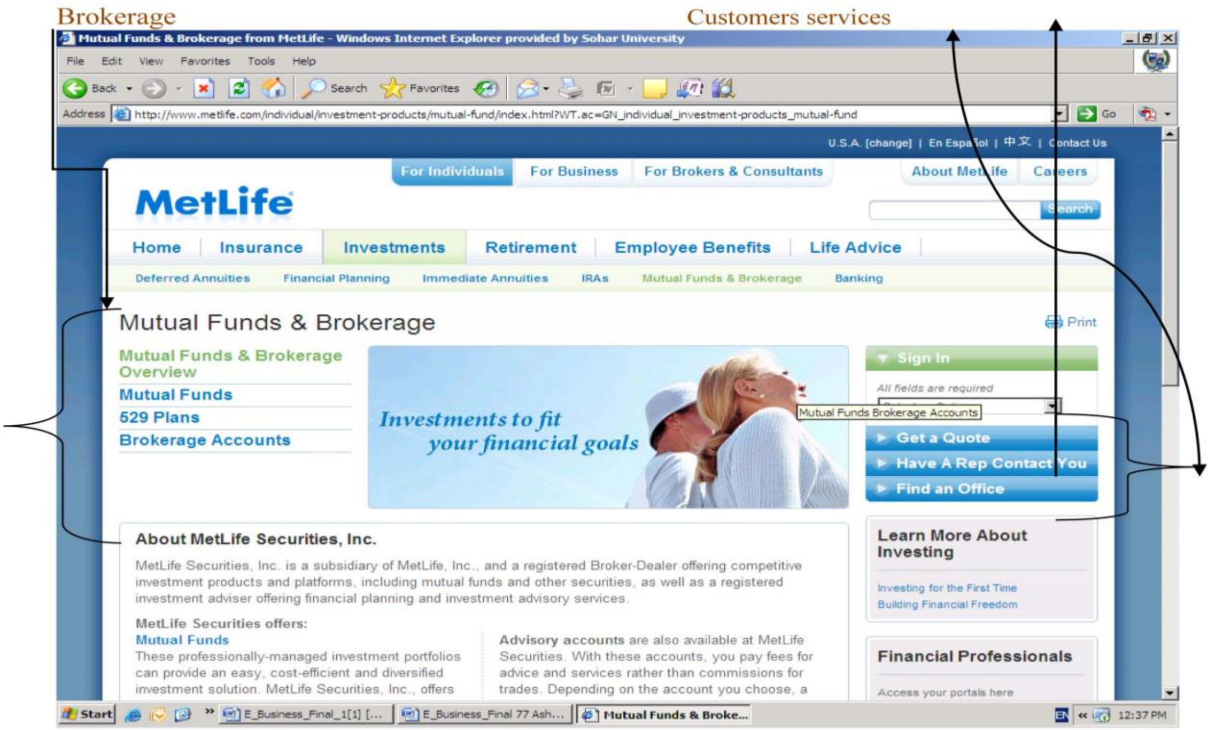
Appendix 1

Appendix 2

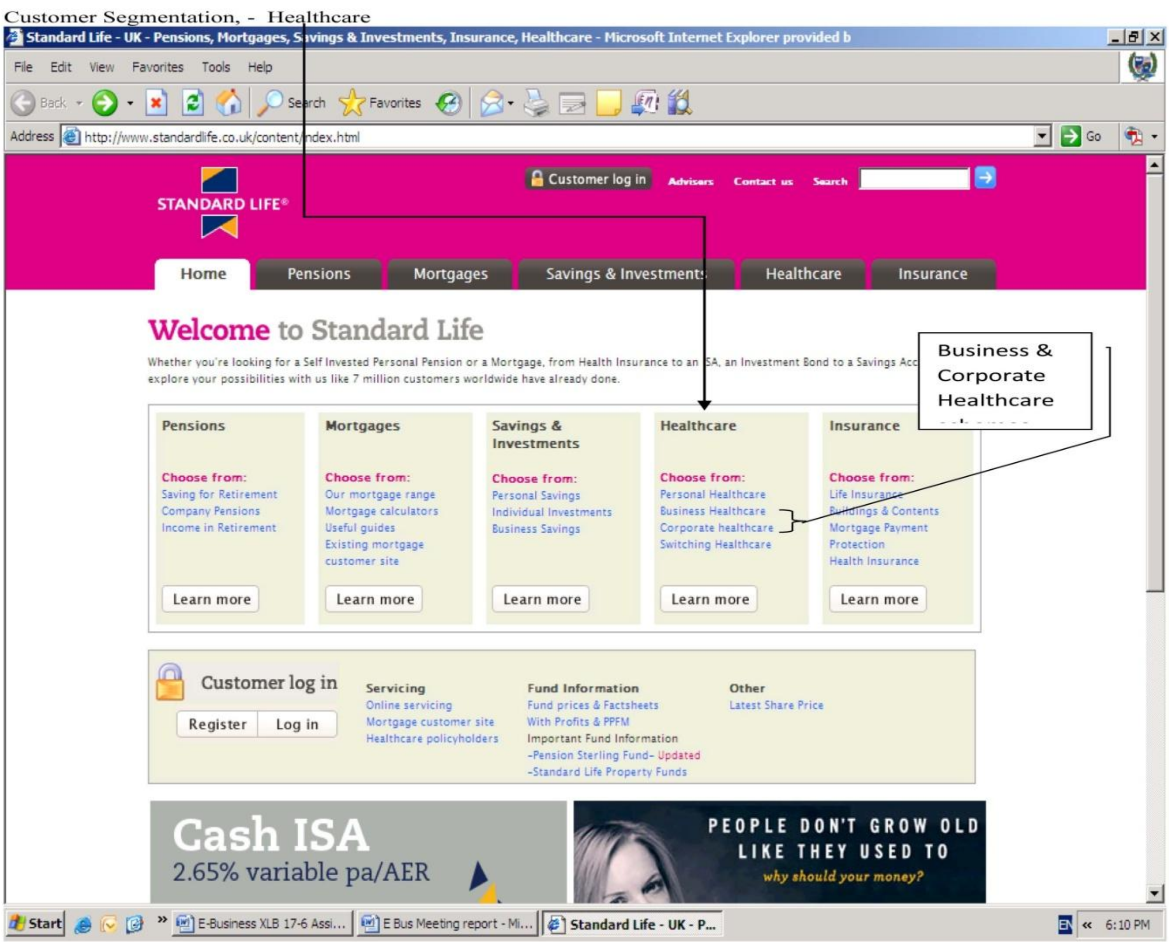
Customer Segmentation MetLife- Retirement Scheme



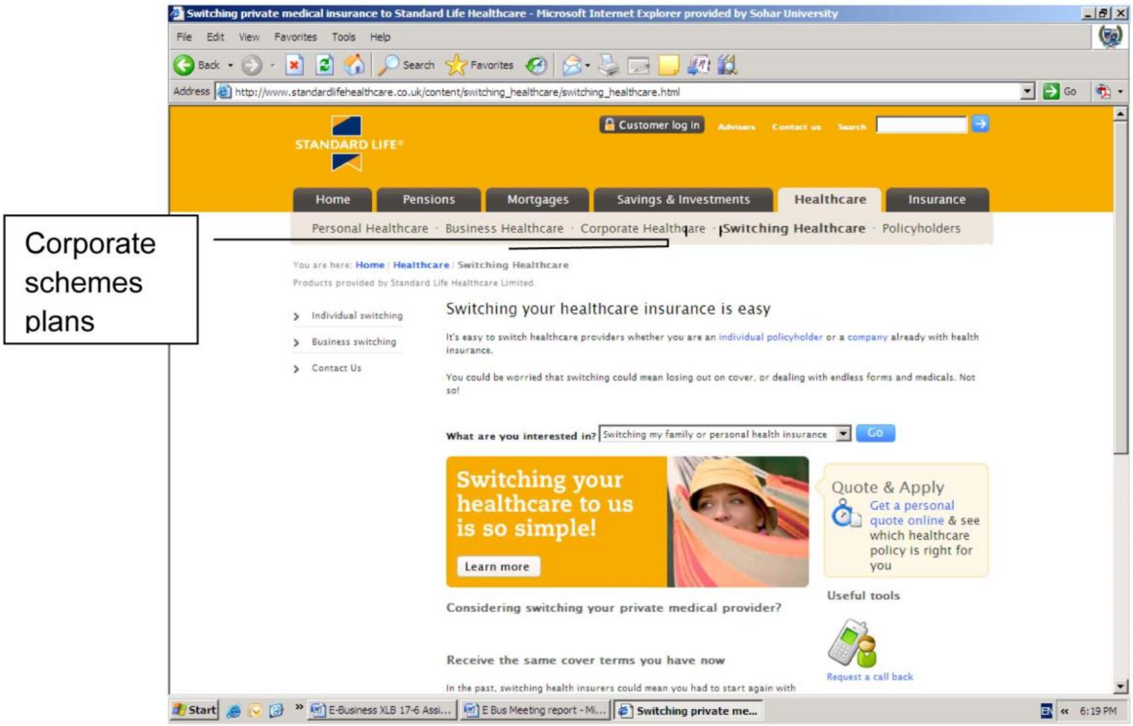
Appendix 3.

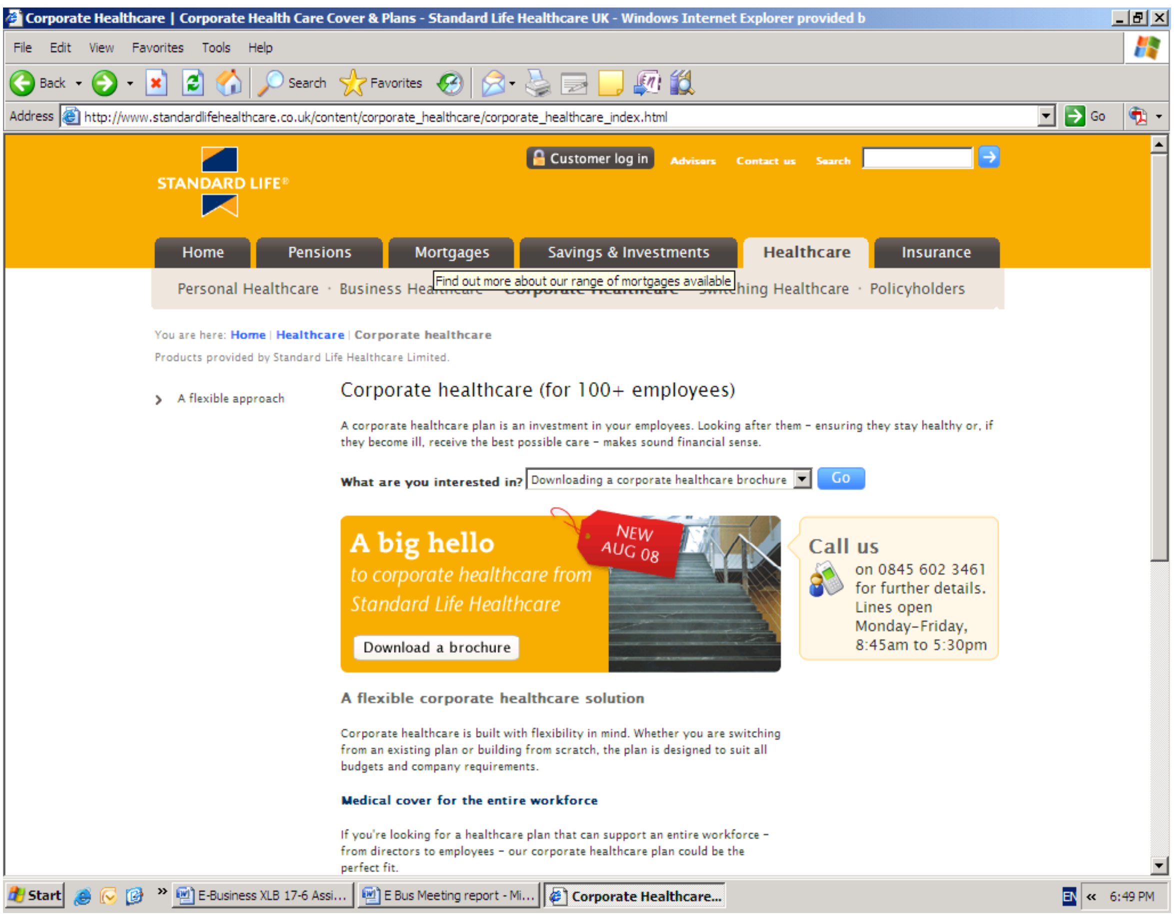


Appendix 4. Standard Life Home Page of UK

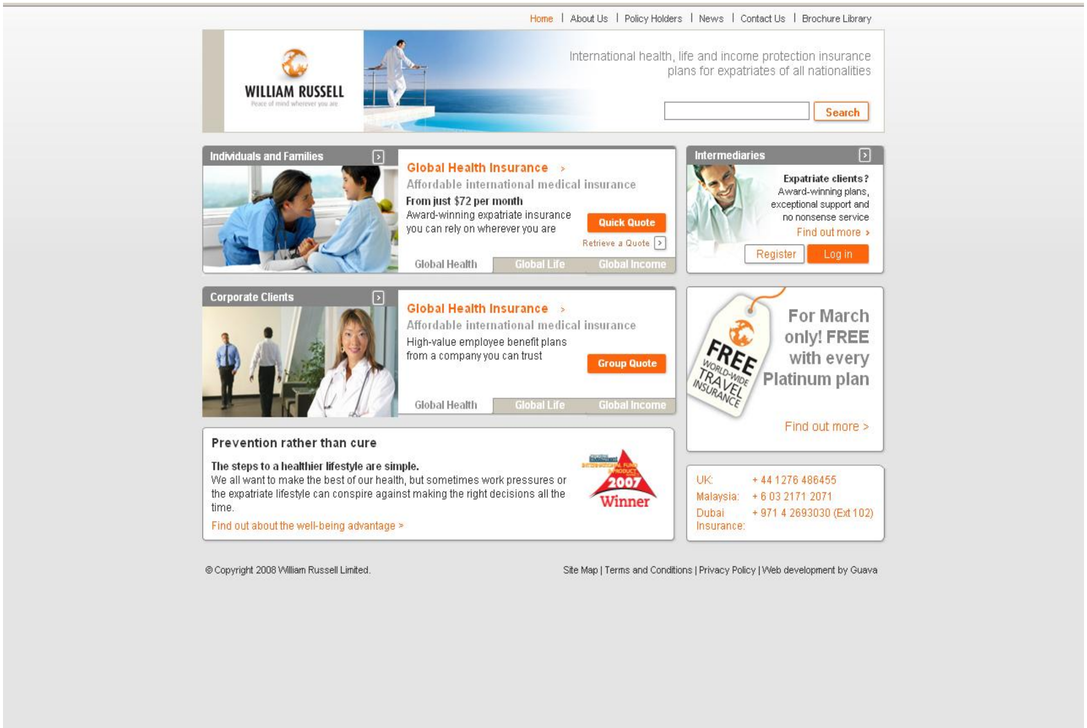


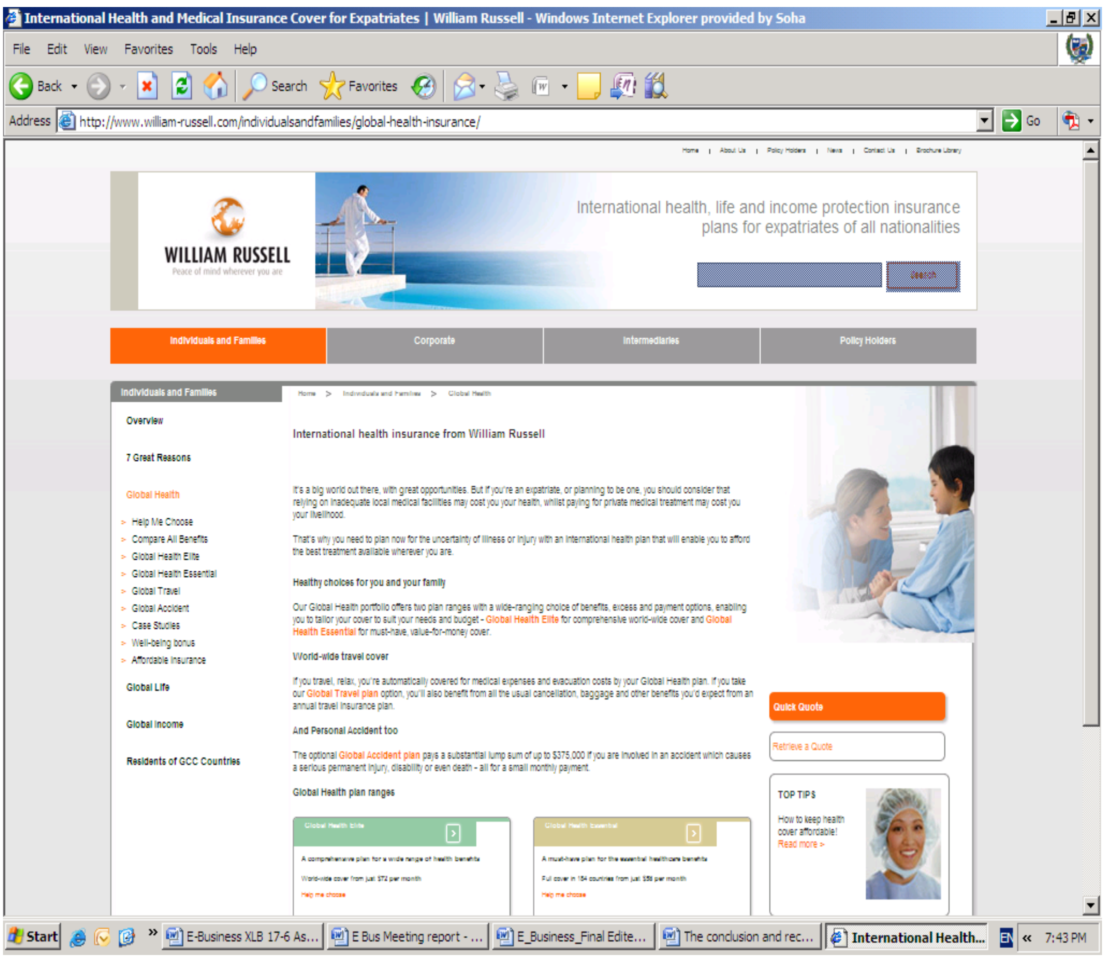
Appendix 5.


Corporate schemes plans
Switching private medical insurance to Standard Life Healthcare - Microsoft Internet Explorer provided by Sohar University
http://www.standardlifehealthcare.co.uk/content/switching_healthcare/switching_healthcare.html
STANDARD LIFE
Customer log in
Home
Pensions
Mortgages
Savings & Investments
Healthcare
Insurance
Personal Healthcare · Business Healthcare · Corporate Healthcare · Switching Healthcare · Policyholders
Switching your healthcare insurance is easy
It's easy to switch healthcare providers whether you are an individual policyholder or a company already with health insurance.
You could be worried that switching could mean losing out on cover, or dealing with endless forms and medicals. Not so!
What are you interested in? Switching my family or personal health insurance
Go
Switching your healthcare to us is so simple!
Learn more
Quote & Apply
Get a personal quote online & see which healthcare policy is right for you
Useful tools
Considering switching your private medical provider?
Receive the same cover terms you have now
Request a call back

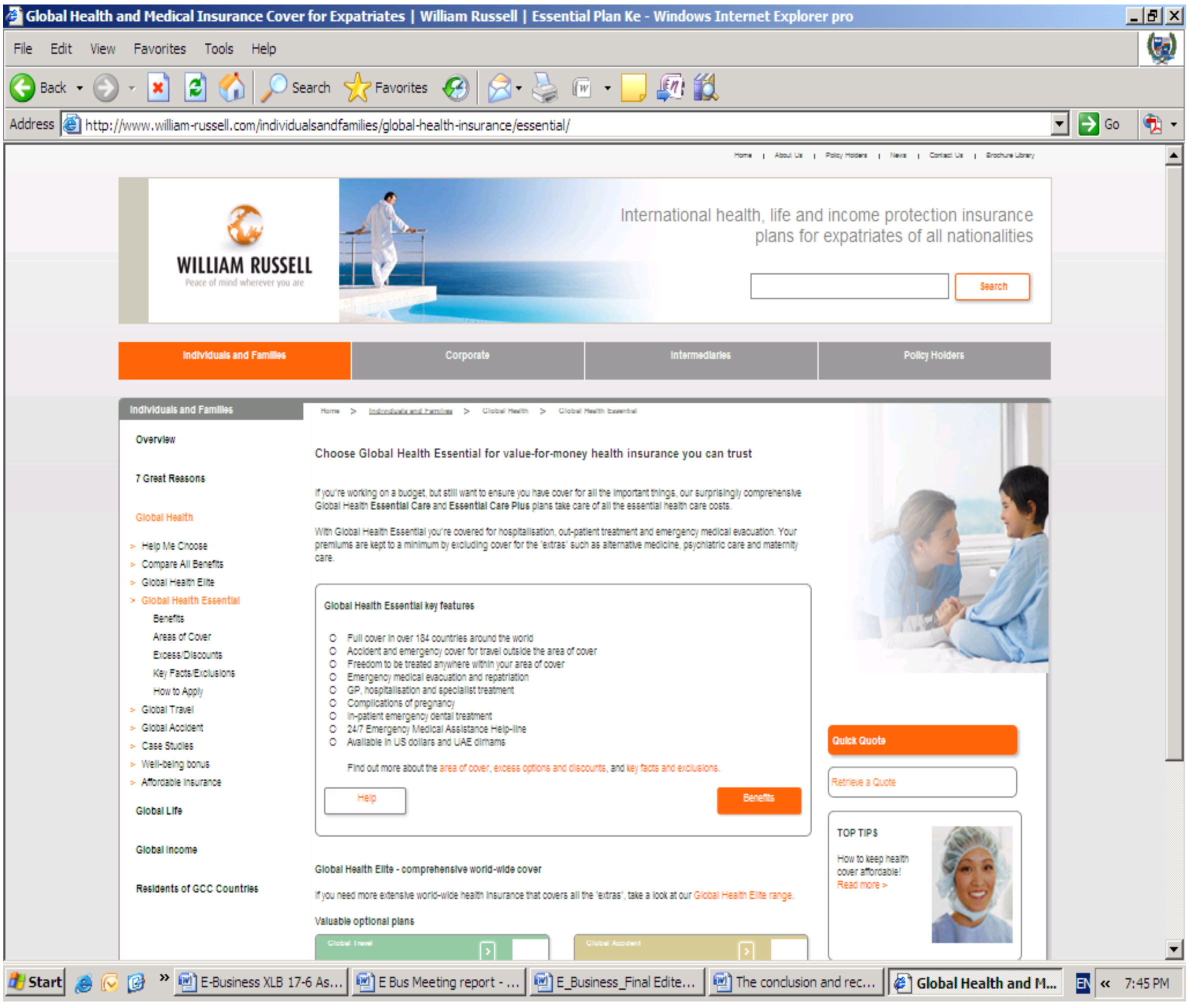

Corporate Healthcare | Corporate Health Care Cover & Plans - Standard Life Healthcare UK - Windows Internet Explorer provided b
http://www.standardlifehealthcare.co.uk/content/corporate_healthcare/corporate_healthcare_index.html
STANDARD LIFE
Customer log in
Home
Pensions
Mortgages
Savings & Investments
Healthcare
Insurance
Find out more about our range of mortgages available
Personal Healthcare · Policyholders
You are here: Home | Healthcare | Corporate healthcare
Products provided by Standard Life Healthcare Limited.
A flexible approach
Corporate healthcare (for 100+ employees)
A corporate healthcare plan is an investment in your employees. Looking after them – ensuring they stay healthy or, if they become ill, receive the best possible care – makes sound financial sense.
What are you interested in? Downloading a corporate healthcare brochure
Go
A big hello
to corporate healthcare from Standard Life Healthcare
NEW AUG 08
Download a brochure
Call us
on 0845 602 3461 for further details.
Lines open Monday–Friday, 8:45am to 5:30pm
A flexible corporate healthcare solution
Corporate healthcare is built with flexibility in mind. Whether you are switching from an existing plan or building from scratch, the plan is designed to suit all budgets and company requirements.
Medical cover for the entire workforce
If you're looking for a healthcare plan that can support an entire workforce – from directors to employees – our corporate healthcare plan could be the perfect fit.

Appendix 6. Home Page – William Russell





Appendix 7.



Copyrights

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

The Impact of Mobile Banking on Enhancing Customers' E-Satisfaction: An Empirical Study on Commercial Banks in Jordan

Heba Khalil Asfour[1] & Shafig I. Haddad[2]

[1] MSC Student, Applied Science University, Jordan

[2] Vice President and Dean of Scientific Research & Graduate studies, Applied Science University, Jordan

Correspondence: Shafig I. Haddad, Vice President and Dean of Scientific Research & Graduate studies, Applied Science University, Jordan. E-mail: beroboshtoto@gmail.com

Received: August 5, 2014 Accepted: September 17, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p145 URL: http://dx.doi.org/10.5539/ibr.v7n10p145

Abstract

Recently, banking services begin via mobile appear on a large scale as has become one of the latest services offered by commercial banks in Jordan. So to make banking transactions via mobile, the researcher links banking service via mobile to effect on customer E-satisfaction, therefore, the customers are getting banking service on their own without the need for assistance by the bank employee. The Importance of the subject of mobile banking service and the importance of focusing on the service provided by the banks adopted, this study use seven dimensions that are very important to provide this service and they are: reliability, flexibility, privacy, accessibility, ease of navigation, efficiency, safety, where the aim of this study is to measure the impact of using banking services via mobile to effect on customer e-satisfaction.

The study sample consisted of 360 customers from 400 who use banking services via mobile in the following banks: Jordan Ahli Bank, Union Bank, HSBC Bank, Capital Bank and has been tested hypotheses through simple regression, the results indicated that there is an effect of use mobile banking services to reach customer e-satisfaction. The results showed that there is a statically significant impact of the overall dimensions of mobile banking service on customer E-satisfaction and after performing a simple regression that Privacy and accessibility are more influential comparing of the rest of the mobile banking dimensions. The researcher recommended that the bank should give more time and effort to activate and develop mobile banking services to do many different banking transactions in order to reach a customer E-satisfaction.

Keywords: mobile, banking service, e-satisfaction, Jordan

1. Introduction

Recently Banks have radically converted from the traditional use of banking to branchless positions of banking. The latest adoption of using technology has helped banks to extend their customer base, while electronic banking has proved to be the main advancement. Mobile banking categorized as the latest development in electronic bank services, while the bank customers can review: Balance inquiry, credit transfer, check account, SMS, payment transaction and other businesses according to banks instruction that send to them through mobile phones (Saleem & Rashid, 2011).

From customers' perspective the benefits of mobile banking service in terms of convenience to perform banking transactions in anytime, anywhere and easy way to use. Therefore, Security is ensured, as banking transactions are encrypted and password-protected. In a meanwhile the rapidly growth of using technology by phones helped banks to achieve their goals.

Internet banking and mobile banking are often referred to electronic banking; internet banking and mobile banking are two alternative channels for banks to deliver their services for customers in order to acquire services. That is, the reason of using customers Internet banking are through computers connected to Internet, while customers using mobile banking are through wireless devices. Using Mobile banking through wireless shows the difference between online banking and mobile banking contexts while customers considered mobility as the most valued properties of mobile banking that also time-critical consumers considered always-on functionality as the most important feature of mobile banking. In addition, banking users considered that Internet banking took the importance advantage in Usefulness While online banking was considered as the cheapest delivery channel.

Millions of people access to the Internet through mobile phones. Moreover, transactions use increased by new technological services such as: Wireless application protocol (WAP), Bluetooth, 3G standard (Khraim et al., 2011).

Mobile banking may help to increase satisfaction by innovation services that have no limitation on time and place in order to add more value to the customer. Costumer's satisfaction with the bank is expected to increase their willingness to make more online transactions. Therefore this will increase their confidence with the bank which will directly put positive effect on bank's customer relationship.

1.1 Study Problem

Commercial Banks in Jordan want to achieve a competitive position in the domestic and global market, through build a strong relationship with customers by provision a new services with good quality and high secure, so banks should invest and reload their information technology to present a services to get confidence and satisfaction that customer aspires through Mobile banking services. In developed nations show that smartphone penetration is higher and there are already more than 1.08 billion Smartphone users in the world, Statistics showed that the proportion of using smart phones in Jordan amounted to 42% of the domestic market, while 61% of Smartphone owners use mobile application (arabadvisors, 2013) this confirms that Jordan consumer still feels unsecure to use services through mobile maybe because they think that they have to deal direct with employees or visit bank to do the transactions.

The power of mobile banking show the utilization of multiple mobile banking channels to understand what mobile tools will need to become the premium choice for all banking activities.

This study is concerned on understanding the usage of mobile banking services by Jordanian consumers especially on the field of services through focusing on customers' E- satisfaction to let customer feel secure and privacy from browsing their information.

This Study is trying to answer the following question:

What is the impact of Mobile Banking services (security, privacy, reliability, easy to navigation, efficiency, accessibility, flexibility) on enhancing customers' E-satisfaction?

1.2 Study Importance

Globally, Electronic service evolved in recent years dramatically increased the number of banks in the world to offer electronic banking services from 1200 banks in 1998 and it increased to 15485 in 2004 in contrast, it increased the number of dealers in electronic bank to 18% in 1999 to 51.3% in 2004 of the total bank customers (Kaddoumi, 2008).

Banking sector in the Jordanian economy is a key element in advancing development in all sectors and a factor of stability in the environment of Jordan, and in response to environmental changes accelerated locally and globally worked banks to use the great technology in the provision of banking services and access to a high level of maintain customer satisfaction in the banking services through using the internet that help to present a service in a high quality.

As mentioned in the introduction; Banks are looking for better ways to serve customers and reduce the overhead cost In line with the changes in the evolution of service through using technology that will help to get what customer expect from banking service, while The usage of electronic banking services are increasing in Jordanian banks such as: Mobile banking, ATM, SMS, Internet banking).

At the same time understanding the adoption process of customers for such new technology will help banks direct its efforts in the right path so as to get the benefit for both parties.

Through understanding the major factors of banking services that effect on E-satisfaction will help to modify the banks services to match the actual perception of customers by using technology.

The numbers of Commercial banks in Jordan are 21 and 4 banks just provision mobile banking services which are: (Jordan Ahli Bank, Union Bank, Capital Bank, HSBC Bank) related to the association banks of Jordan (Abj, 2013).

The main point of this study is mobile banking facilities to their customer through:

1) The importance of communication service through mobile in Jordan, there are more than 5,000 shop selling and trading Mobiles and accessories while average number of devices cellular 3 per house or one and family (trc, 2013).

2) The importance of the expansion in the use of technology in the banking which helped departments of

banks to access guarantees in maintaining high customer satisfaction and confidence of customers.

3) The importance of this study is to identify the dimensions of Mobile Banking service (efficiency, flexibility, privacy, security, accessibility, ease to navigation, reliability) that effect on customer E-satisfaction which had not previously addressed in the Jordanian business environment, particularly with regard in dealing with bank customers.

4) The ability to rise up customer awareness in mobile banking service to increase customer's trust with banking sector.

1.3 Study Objectives

1) To find out the impact of Mobile Banking services (security, privacy, reliability, easy to navigation, efficiency, accessibility, flexibility) on enhancing customers' E-satisfaction.

2) To give recommendations and suggestions to the upper management of Jordanian banks to concern on mobile services in order to enhance the customers e-satisfaction.

1.4 Study Model

The systematic study of the research problem in addition to their theoretical framework and its implications requires designing a study model (Figure 1) for the dependent, independent variables where the Mobile banking services are Independent and customers' E-Satisfaction is dependent.

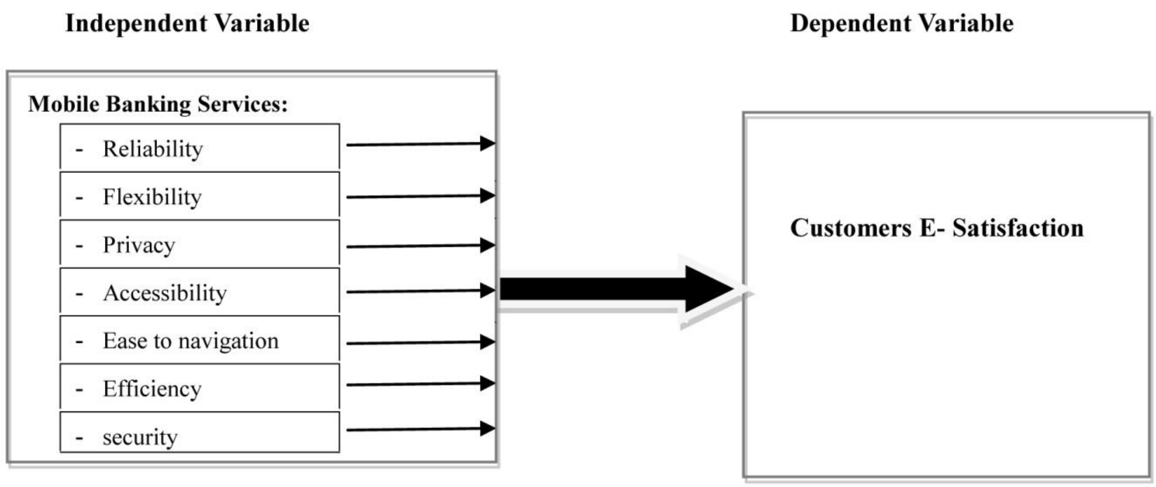


Figure 1. Study model

Done by the researcher based on (Khraim et al., 2011; Saleem & Rashid, 2011; Khrais, 2011; Ma & Zhao, 2012).

1.5 Hypotheses

Based on the research model and literature review the following hypotheses were formed:

H0.1: There is no significant impact of mobile banking services on customer's E-satisfaction at (α ≤0.05) significance level.

Ho1.1 There is no significant impact of reliability on customer's E–satisfaction at (α ≤0.05) significance level.

Ho1.2 There is no significant impact of flexibility on customer's E –satisfaction at (α ≤0.05) significance level.

Ho1.3 There is no significant impact of Privacy on customer's E -satisfaction at (α ≤0.05) significance level.

Ho1.4 There is no significant impact of accessibility on customer's E –satisfaction at (α ≤0.05) significance level.

Ho1.5 There is no significant impact of ease to navigation on customer's E –satisfaction at (α ≤0.05) significance level.

Ho1.6 There is no significant impact of efficiency on customer's E –satisfaction at (α ≤0.05) significance level.

Ho1.7 There is no significant impact of security on customer's E –satisfaction at (α ≤0.05) significance level.

1.6 Operational Definitions

1.6.1 E-Banking Service

E-banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels such as: ATM, online banking, mobile banking.

1.6.2 Mobile Banking

A service provided by the bank that enables the user to receive information, make payment and transfer to third parties based on orders sent via mobile phone.

1.6.3 Customer E-Satisfaction

Customers' evaluation of a product and service in term of whether has met their needs or expectations better than competitors in online environment

2. Literature Review

2.1 Overview on Jordanian Banking System

Data from the Central Bank of Jordan shows that the first bank established in Jordan was in 1927. This bank was firstly named as the Ottoman Bank named then Bank National and Crandall's in 1969, Bank ENZ in 1989, then Bank Standard Chartered Crandall's in 2000 until October 2003. The subsequent establishment of a group of private banks and the seventies of the last century according to the latest official statistics of increasing numbers licensed banks operating in Jordan to (25) banks after entry of new banks into the Jordanian domestic banking market during the year 2010 are the National Bank of Abu Dhabi and Dubai Bank of Jordan Islamic bringing the number of Islamic banks (3) and (9) branches of foreign banks operating in the banking market Jordanian domestic as well as (13) commercial banks as practiced banks themselves activities banking in all regions of the Kingdom through (641) branches and about (66) representative office distributed within the Kingdom while the number of branches operating outside the Jordanian Kingdom about (141) branch until 2010. The number of licensed banks operating in Jordan from 21 banks in 2000 to 25 banks at the end of October 2010, and has a rising star in a number of banks for an increase of foreign banks operating in Jordan from five bank in 2000 to eight banks in 2004, where granting CBJ license for three foreign banks to operate in Jordan in 2004, and these banks are: Jordan Dubai Islamic Bank and Bank of Abu Dhabi (NBAD) and at the beginning of 2010 received Rajhi Bank a license to practice banking activities in Jordan.

Banking system of Jordan in recent years is able to attract more investment foreign in the form of contributions to local banks through the stock exchange and the opening of new branches of non-Jordanian banks, while the collapsed banks giant in developed countries. Where it was in the last ten years granted six licenses to Arabic banks to work in the local market, bringing the number of banks operating in Jordan 26 banks- including sixteen Jordanian banks and ten foreign banks, operating in a competitive healthy market ,results in the interest of the depositor and borrower and the investor and the national economy, in addition; Jordanian banking system extensive network of branches within the Kingdom, numbering more than 660 branches and foreign branches, numbering more than 155 branches, while the number of ATMs to the 1130 machine combined cover all governorates of the Kingdom while providing several electronic banking service like: ATM, Internet banking, Phone banking, Mobile banking(Central bank of Jordan, 2010)

2.1.1 Mobile Sector in Jordan

The use of mobile technologies is increasingly widespread through Asian countries such as Jordan, Lebanon, and Dubai…etc. Many applications can be observed among the users, by using Simple text message (SMS), telephone conversation, Internet access and multimedia services (MMS), depending on the capability of each mobile phone technology and service rendered. Many applications have been made through using many development in the mobile technology such as: GPRS, WAP and the 3G standard In Jordan mobile communications market have three operators: Zain Jordan, Orange Mobile, Umniah. Official statistics show that the number of using cellular subscription in Jordan increased the number of population by the end of 2009. By 2010, the number of subscribers of mobile phone services in Jordan has more than six million subscribers and penetration rate of 101 % (Khraim et al., 2011).

Statistics showed great interest for Jordanians using communications technology that are reaching text messages(SMS) in 2010 to 1.9 billion text messages this use has fallen in 2011 to 1.6 billion a text message, decline of 16%. While using technology is limited not only connect to the communications short but found that the Jordanians are talking 80 million minutes a day and has been reached using mobile phones to 29 million (Trc, 2012).

Research gathered by Nielsen Mobile further reveals that 15-6 percent of U.S mobile subscribers use the mobile Internet, followed by 12.9 percent of United Kingdom and 11.9 percent of Italian subscribers.

2.1.2 E- Banking Service in Jordan

Banks and financial institutions continuously seek to attract more customers and admitted within the networks of its business has banks began to search for mechanisms and new styles can which provide banking services more attractive with technical developments are still banking limited in Jordan compared to America and Europe.

In Jordan since 1992, commercial banks began provide electronic services to its customers, especially ATM and issued by the Jordanian company and payment services, which is considered one of the most electronic banking tools prevalent in the kingdom for example :Arab Bank and Jordanian Kuwait Bank use Internet banking in 2000 that can check account ,apply for loans, pay bill. At the end of 2005, the growth rate in the number of Visa card holders in Jordan15% compared to the Visa card in Jordan in 2005, more than $ 176 million, and this indicates the presence Jordanians awareness in electronic bank (Kaddoumi, 2008).

There are many examples in electronic bank services in commercial banks in Jordan like: (ATM, internet bank, online banking, home banking, Phone banking, call center, electronic payment service, money exchange machines. But this study will review all about Mobile Banking service (ABJ, 2013).

2.1.3 History of Mobile Banking

Historically, the uptake of mobile banking has been relatively low. This is beginning to change. Much of the change is being driven by the world economic crises; bank and financial service customers are utilizing their smart phones and cell phones to obtain up-to-the minute financial information and to perform up-to-the minute transaction. Banks enable their customers to use their mobile devices to check balance, monitor transaction obtain other account information, transfer funds, locate branches or ATMs, and sometimes playbills (Turban, 2004, pp. 304–305).

Mobile communication devices revolutionizing banking transaction by using wireless networks and internet to attract customers, banks in general need to extend their full range of services across a wide range of mobile, wireless devices without having any impact on their infrastructure and delivery channels .and the most important role in bringing mobile banking strategy to the market are wireless network and mobile (Malarvizhi and Rajeswari, 2012)

Most banks deploy these mobile services through a variety of channels, although the Internet and SMS are the most widely used that provides links to a number of banking Web sites throughout the world that offer these services. On the one hand, customers can access their accounts at via the browser on their Smartphone in much the same way they would access their accounts from their desktop or laptop computers. On the other hand, customers can send Chase Mobile shorthand SMS text messages to inquire about their balances, payment due dates, or transaction histories (Turban, 2004, p. 241).

Several factors have shown affect consumer acceptance of online and mobile banking for example: demographic, consumer behavior, attitude, motivation, and experience with computer, moreover showed the previous experience by using computers and technology as well as people’s attitudes toward computer influences where people are willing to use online banking Researches suggest that attitude factors such as: Internet experience and the advantage of online banking ,perceived risk, perceived behavioral control factors that predict to adopt Internet banking services (Khrais, 2012).

“Mobile banking services can be classified based on the originator of a service session, either push or pull” (Cbj, 2010). Push it means when the bank sends out the information based on agreed set out of rules such as: the banks send out an alert when the account balances goes below a threshold level. In a meanwhile pull means when customer explicitly requests a service or information from the bank requesting the last five transactions (Masrek et al, 2012).

In mobile banking customers’ level of trust is dynamic rather than static, it changes from time to time because the service with no contact face –to-face, while building trust in mobile banking service can be not easy for this view point customers who use mobile banking services is a significant factor that influences their attitude toward mobile banking in order to repeat use in the future (Thulaniet al., 2011).

2.1.4 Mobile Banking Definition

The Federal Reserve survey defines mobile banking as “using a mobile phone to access your bank account, credit card account, or other financial account. Mobile banking can be done either by accessing your bank’s web page through the web browser on your mobile phone by text messaging or by using an application on downloaded to your mobile phone".

The customers are required to follow a pre-determined process and procedure to get the services offered by the bank such as: depositing, withdrawals, checking of statement, balance inquiry as well as transfers within and outside the country requires verification, authentication and finally transaction (Jepleting et al., 2013).

Mobile banking can help to make full access to the details and transactions of personal bank accounts, as well as making credit installment and utility bill payments and transferring funds. customers who use mobile banking must register for all service through bank website and download the mobile banking application to their phones, once the application are install you can use this service free of charge the only cost you have to pay is the normal communication by the mobile operators (Al-Jabri & Sohail, 2012).

Mobile users require value-added services that can be feasible or non-feasible according to existing technologies and M-Commerce such as reliability, ease of navigation, security (Wang, 2003):

These characteristics summarized as follows:

1) Easy and timely to information.
2) Immediate purchase opportunity.
3) Provision wireless coupons based on user profiles.
4) Bank transaction through mobile terminals
5) Location management.

2.1.5 Mobile Banking Services

Today, most banks offer basic mobile banking services for their customers, the most common services available today are (Anand, 2007):

- Account alert, security alerts and reminders.
- Account balances updates and history.
- Customer service via mobile.
- Branch or ATM location information.
- Bill pay; deliver online payments by secure agents and mobile application.
- Funds transfers.
- Transaction verification.

2.1.6 Importance of Mobile Banking

Mobile banking has lot of advantages for both providers .it has a multi beneficial, banks do not require much investment and they do not even have to modify their existing infrastructure. Banks can send the message in fewer efforts to huge number of people.

Mobile banking also helps Banks to form good relations with their customers; banks get valuable data about the customers which help them in effective customer's relationship management practices. It facilities quick feedback and helps in customer retention and customer loyalty (Saleem & Rashid, 2011).

When banks have customer database, they can use SMS advertising to give information about their service to their existing customers. Customers enjoy anytime anywhere banking with the help of their mobile phones, they don't need to stand in the queues or face the employees whom do not. Mobile banking is cost-effective for bankers and customers' .also the information can be stored automatically in mobile as a proof in the form of SMS whether sent or received (Angelovay & Sankar, 2012).

2.1.7 Advantages for Mobile Banking Services

1) **Access to a broader base of customers**: one of the most important features is to access to a broad base of customers across the world without being bound by a particular place or time.
2) **Provide full banking services and new**: there are new banking operations should provide the service in fast performance and accuracy.
3) **The highest quality of banking services:** the higher quality of the transactions that are completed electronically be the likelihood of errors in which a few, because of the non-interference of the human factor in their submission to customers, and therefore, the possibility of providing services free of errors be

high.

4) **Increase the profitability of the customer:** This is the point of the most important benefits of e-banking services, where the use of technology in the completion of banking operations became requires a shorter time and fewer visits by the client to the bank's branches, which means dealing more and higher profitability for the customer and the company. (Shahen, Bahaa', 2000, p. 20) (ALjubehi, Munir, 2005, p.15).

2.1.8 Disadvantages for Mobile Banking Services (Federal Reserve Survey, 2013)

1) Does not offer a secure environment that customer always prefer interface interaction through making transaction.
2) Lack of confidentiality by not use receipt or signature in any transaction they do.
3) No offline (out of the coverage) capability because mobile services need internet connection to use the application.
4) Absence of bank's marketing role because no interface face –face meeting.

2.1.9 Mobile Banking Dimensions

Researcher depends on many dimensions based on many oldies and new previous studies that will be shown in the following table 1.

Table 1. Some of the prior studies for mobile banking dimensions

Dimensions / Year	Authors
Reliability	(Behjati et al, 2012) (El-kiki & Lawrence, 2007)
	(Fang et al, 2013).
Flexibility	(Anderou et al, 2000) (Saleem & Rashid, 2011)
Security	(Ma&Zhao, 2012) (Anand, 2007) (El-Kiki & Lawrence, 2007)
	(Bilal & snaker, 2011) (Khraim et al, 2011)
Ease navigation	(Van Riel et al, 2001)
Privacy	(El-kiki & Lawrence, 2007) (Kim et al, 2006) (Khraim et al, 2011)
Efficiency	(Anand, 2007) (Ma & Zhao, 2012)
Accessibility	(Behjati et al, 2012) (Khrais, 2012) (Zeithaml st al, 2002)
	(Migdadi, 2012)

Source: Developed by the researchers.

2.1.10 The Dimensions of the Most Consensuses by Previous Studies Are

Related to the previous studies in mobile banking service the dimensions that are selected in the following:

1) Reliability:

Is an important indicator of the measurement in quality, which is often applied in the manufacturing industry and service sector? For bank customer system in the process of service, each service will likely cause failure and lead to customer complaints.

Reliability is on time consideration, in the setting of the use of environmental conditions or time conditions, and product or service can reach the required functional standard. In short reliability is a product or survives whether in life or cycle process is normal, will be influenced by the reliability of the level of satisfaction on the quality of good or service (Fang et al., 2013).

- **How to save reliability in banking service (Wing & Lin, 2011):**

1. Understand the flow of bank counter service system.

2. Investigate all possible failure of the project on the system's degree of influence over the counter service system.

3. Proposed recommendation to optimize the bank counter service reliability according to the finding.

- **The importance of reliability:**

Internet information search elements reveal a perceptual dichotomy between consumer's "reliability of the information content and reliability n control and use of technology". Information reliability is related with diversity, depth and actuality of information contents, the capacity of internet use and effects consumer's satisfaction (Alba et al., 1997).

Reliability means the stability of performance and delivery service properly and better than the first time and meets the bank of what has been promised to the client, and this includes:

- The accuracy of the accounts, files and errors do not occur.
- Providing banking service properly.
- To provide service in a timely manner and in time her designer.
- The stability of the performance level of service (fang et al., 2013).

2) Flexibility:

Users of mobile devices should be able to engage in activates such as: receiving information and conducting transaction with ease (Andreou et al., 2000).

Flexibility is a critical component to decide to sue a new information technology application that show the degree to which a person believes that using a particular system would be free of effort, the easier it is for the customer to achieve customers' aim in higher chances that will use the application in the future(Behjati et al, 2012). Mobile technology leads to great flexibility in working - for example, enabling home working, or working while travelling. The growth of cloud computing has also impacted positively on the use of mobile devices, supporting more flexible working practices by providing services over the internet.

You can enable customers to pay for services or goods without having to write a check or swipe a credit or use cash. More powerful solutions can link you directly into the office network while working off-site to access such resources as your database or accounting systems (Saleem & Rashid, 2011).

3) Privacy:

Is an E-service interaction between customers and companies gives opportunities for companies to get information about customers, such as purchasing habits, needs and details and information on their account and the size of transactions and movements of the calculation, and many of these data that reflect customer privacy bank should keep this Privacy Policy in some cases (Khraim et al., 2011). mean Privacy provide services to specific customers but not others in the context of privacy as services lending and cover the account in the event exposed the client, making it possible to provide personal service to customers, can improve customer satisfaction by providing personalized services to them, and customers will be reluctant to change to other companies if banks were able to verify that. And maintain information on participants in the banking services that the electronic banking service does not allow the use of personal information to clients and customers as well as banks do not allow the use of personal information must be characterized by secure electronic banking service in the authorized banking operations (El Kiki et al., 2012).

4) Accessibility:

The international trend was toward decreasing the number of branches as a result of investing in alternative delivery service channels as automatic teller machines (ATM), which reduced operating cost for example the Bank of America closed one third of their overall branch network while increasing automatic machines by declined over 9% from 6,480 in 1983 down to 5,876 in 1993 (Migdadi, 2012).

Service accessibility as reflected in the number of banking offices per unit of market are, represents an important component of the overall level of service provided to financial consumers, the technology of internet has produced the internet banking that serves Bank's customers to do banking transaction anywhere as long as they can access to the internet (Gunther,1997) .

Consumers may access the websites or application based on how easy they are to use and how effective they are in helping them accomplish their tasks (Zeithaml et al., 2002).

- **The importance of accessibility in banking sector is:**

Service accessibility as reflected in the number of banking offices per unit of market area that represents an important component of service provided to financial consumers where banking offices are relatively spares (Gunther, 1997).

5) Ease of navigation:

The ability to navigate a web site and its value for example entertainment, convenience that will influence both usage level and satisfaction by using consumer benefit in using self-service technologies that help to save money, time and avoiding interpersonal interaction and being in control, this implies that the drivers of Web satisfaction may include web site characteristics for the specific website's value and useful information (Van Riel et al., 2001).

- **Ease navigation has various labels for examples**:

1. Site design.
2. Web store functionality.
3. Ease of understanding.

In addition ease navigation has many different ways to measure by easy to use, easy to locate information, user friendly site. Many studies reflects privacy with ease navigation regarding its security polices (Anand, 2007).

Attractive web pages presentation should contain sounds, video and entertainment contents like advertisement .However some consumers react negatively to web banners because they interrupt and slow down a web pages (Szymanski & Hise, 2000).

- **Application design depends on functional and attractive elements:** (Jarvenpaa &Todd, 1997).

- Standard language
- Pages actualization.
- Clear information contents
- The largest number of clickable items.
- Information search engine in virtual stores

6) Efficiency:

Most of the customers using mobile banking found it quiet efficient. They are able to access to a huge number of mobile banking services, they can check their account information as a mini statement and account transaction history. Customers had to visit branches to check their transactions but by using mobile banking services they can check the status of their fixed deposits or checking account information (Saoji & Goel, 2013).

The process of using mobile banking services are very easy that people do not need any extra skills to use the application just need to install the application in their mobile and enter the PIN ;moreover, they can also pay electricity bills and credit bills through this (Sharma & Singh, 2012).

Mobile commerce may help increase the productivity of the work force by increasing the efficiency of their daily routine. Time-pressured consumers (employees) can use "dead spot "for example: checking account or current transaction (Dmoor, Hani, 2005, P. 444).

7) Security:

Security and trustworthiness of usage of service was mentioned to be the most important factor within target segments when deciding to choose mobile banking

An issue involves the introduction of trust as a main factor in the analyst of m-banking /m-payment use. Nowadays evidence and intuition alike suggest that "trust" plays a main role in use for example; users feel more comfortable to deal face-to-face contact while using m-banking/m-payments system.

A modified technology acceptance model that included a trust available-perceived credibility -to predict m-banking, there modification also included another variables like: self-efficacy, and a form of trusting one's self. Trust is multi faced concept, which must be handled carefully in any analysis of m-banking / m-payment (Jepleting and Oscar, 2013).

Studies recently showed that all the banks offering SMS banking were relying on the password system and also SIM card registration where transaction can only be carried out with registered.

Out with registered SIM cards. However no bank had employed one-time passwords where the customers are given once-off passwords which expire once they are used on one transaction (Thulani et al., 2011).

- **The importance of Security:**

This transaction need not be face-face, researchers have used social-capital/special network lenses to explore how the information technologies generate and reinforce social/economic relationships in ways that provide "returns" to actors (Huysman, 2004)

There are other ways financial institutions can enhance security in each mobile channel (MMA, 2009):

1. SMS security is particularly important whenever a device is lost or stolen, since SMS can be accessed without authorization.

2. Secure banking on the mobile web is similar to PC-centric banking services that use http, the mobile web limits storage risk and can use secure communication.

3. Mobile client application is more secure channel for transmission of data because the combination of a client application and server allow authentication of sensitive data

2.1.11 Satisfaction and E-satisfaction

Customer satisfaction is the key factor for companies to retain their customers, build customer loyalty and gain more profits (Reichheld, 1996).

The researcher reviewed several definitions for the meaning of customers' satisfaction in the table 2:

Table 2. Definitions of customers' satisfaction

Definition	Author/Year
Customers' post purchase comparison between pre-purchase expectation and performance received"	(Oliver,1997)
Its balance between customer satisfaction and customer expectation in products and services by lift company customers' experience to level that exceed customer's expectation, then that customer will be.	(Zeithaml et al, 2002).
Something difficult to measure it that leads to have confused with perceived quality.	(Chiou, 2004)

Source: Developed by the researcher.

The common point concluded from these definitions is the fact that, at least, companies should meet e-customer expectation in one way or another for customer satisfaction.

Business and marketing activities are affected by internet technologies and the internet is revolutionizing commerce, marketing retailing, shopping and advertising activities of products and services. There are several attractive attributes of internet to not e-customer but also companies on:

Times, money saving, communicate, convince, easy accessibility, selection from a wide range of alternatives and availability of information for making decision and all marketing activities can be performed via the internet efficiently(Lai et al., 2005).

By using internet customers will be able to (Kolesar & Galbraith, 2000):

1) Fairly easily access information about product and service.

2) Easily locate a low price for a specific product and service.

There entrances key in measuring customer E-satisfaction and two entrance behavioral (Behavioral Approach) and (Attitudinal Approach), which marks the entrance of behavior on the behavior and actions of the customer with the organization, which depends on the number of times the purchase and the number of visits the procurement volume and frequency of purchase in a week or a month, while the directional marks the entrance to the attitudes and trends of the customer towards the organization through the adoption of a customer reference for other customers, after achieving customer satisfaction and retention(Egan, 2004, p. 40).

Current researchers mostly discussed for a design considering the dual e-satisfaction as:

The result of two parallel processes for customers' E-satisfaction (Litifi & Gharbi, 2012):

1. **Cognitive**: which is based on a single standard of comparison (initial expectations) is far from sufficient to identify the process of formation of satisfaction.

2. **Emotional**: that raising from the non-confirmation of positive or negative initial expectations for the

experience of possession or consumption, as emotional satisfaction has been studied in research on the browsing experience but less evident in research on electronic commerce

2.1.12 The Advantages of Customers' E-satisfaction (Ma & Zhao, 2012)

1) To know the strengths of your services and products from the viewpoint of customers.
2) Earn customer's loyalty by focusing on their needs and desires.
3) Reduce the rate of losing employees.
4) The Bank seeks to maintain the quality of services to focus on the additional benefits
5) Assess the level of service that provided to customers by using a list of predefined measurement include service standards

2.1.13 How Can Banks Evaluate Customers' E-satisfaction?

For example china financial certification authority (CFCA) was established by 12 national banks in China .it is the authority agency to monitor online banking services in china they use percentage of increase in the number of users and the frequency of use (Abj, 2013).

1) The scope of the service provided.
2) Precision.
3) The timing of sending notices.
4) Easily subscribe to the service.

2.1.14 E-Satisfaction Relationship with E-Service Quality

Delivering quality service is considered to be essential strategy for success in today's competitive environment according to Berry and Zeithmal (2002).

Service quality and e-satisfaction implicitly includes issue such as price perception, which is usually felt rather than objectively measurable. The argument supporting service quality as an antecedent of satisfaction is that customers do not necessarily demand the highest quality service. While e-service quality considered to be causing e-loyalty directly. Furth more, satisfaction is conceptualized as a mediator of the relationship quality and loyalty (Yan & Fengjie, 2009).

Market research has indicated that service quality has a significant impact on customers' satisfaction, loyalty, retention and many other decisions and even for company's performance. Thus, to build customer trust and loyalty, so banks should shift to focus on e-service quality before, during and after the transactions (Wang, 2003).

2.1.15 Factors that Effect on Customer's E-Satisfaction through Service Quality (Wang, 2003)

1) Customer support
2) General feedback on the mobile application.
3) On-time delivery.
4) Following –up with customers' to last transaction

2.2 Previous Studies

2.2.1 Local Studies

1) (Khraim et al, 2011) Factors Affecting Jordanian Consumers Adoption of Mobile Banking Services: The Case Study of Jordanian Consumer.

The study aimed to identify the underlying factors that affect mobile banking adoption in Jordan while data have been collected for this study using a questionnaire containing 22 questions, out of 450 questionnaires that have been distributed, 301 are returned (66.0%) were the study population was in Hashemite Kingdom of Jordan.

According to the chosen methodological research approach the quantitative data was analyzed using statistical methods by SPSS statistical descriptive was used to find out the respondents demographics and general characteristics to provide a descriptive of the respondents.

This study results find that all the six factors: self efficacy, trial ability, compatibility, complexity, risk and relative advantage were statistically significant in influencing mobile banking that the potential factors that may influence the intention of mobile users to adopt mobile banking services.

2). (Zamil, 2011) the Implementation of Mobile Bank Usage from Marketing Point of View in Jordan.

The study aimed to determine the effect of the implementation of Mobile Bank usage from marketing point of view in Jordan. The data collected and processed through the use of SPSS, moreover analysis of variance (ANOVA) therefor the study population was in Hashemite Kingdom of Jordan.

The study results find that there is strong statistical evidence that difference exist between the implementation of Mobile Bank usage from marketing point of view of bank managers in Jordan due to the following factors: gender of bank managers, age of bank managers, qualification of bank managers, bank branch location.

3). (Khrais, 2011) the Adoption of Online Banking: a Jordanian Perspective.

The study aimed to investigate the adoption of online banking in Jordan, the study was conducted to examine the factors that influence the adoption of online banking among customers, this can be applied through determine the satisfaction of customer using online banking in Jordan that service quality has significant impact to their expectation. This research is approached by using survey method to examine the relationship between independent and dependent variables were the study population was in Hashemite Kingdom of Jordan.

The study results find will depend on the fully utilization of statistical data collected and analyzed using SPSS, the sample contains 80 respondents among 100 customers who deal with two banks in Jordan which were filled and returned completely distributed randomly and 20 were dropped due to incomplete answers.

The study results that this research show the functions of online bank site in term of features and other service quality is one of the crucial determinates of success of online banking online bank is must be always adaptability of rapid changes in technology to present a good service for customer in term of quality, availability, accessibility, interactivity, and friendliness to meet customer needs and focus always on increase level of customer satisfaction

4). (Al-Kasasbeh et al., 2011) Factors affecting E-Service satisfaction

The study aimed to explore the impact of website design navigation and personalization on e-service satisfaction, the study shows how the website design, navigation and personalization can effect on satisfaction the study suffers from two main limitations first, the sample employed student subjects second, the sample was collected in Jordan, generalizability to other countries might be limited due to cultural differences in website quality and e-satisfaction.

To examine factors affecting user satisfaction with e-services, a questionnaire was distributed to a random sample of (615) students out of (5918) at a Petra University in Jordan to explore their perceptions.

The study results revealed that higher the perceived quality of university's website design, navigation and personalization, more than satisfaction in e- service occurs. Therefore universities should focus on distinguishes design characteristics such as: creativity, consistency, organization of titles and subtitles and the balanced distribution of the diverse website content.

2.2.2 Foreign Studies

1). (Tiwari et al, 2006) Mobile Banking as Business Strategy: Impact of Mobile Technologies on Customer Behavior and its Implications for Banks.

The study aimed to examine the opportunities for banks to generate revenues by offering value-added; innovation mobile financial services while retaining and even their base of technology –savvy customers. The study population was surveyed in the German of Hamburg, Frankfurt, Munich a total of 488 persons in the age-group of 18-65 years a questionnaire giving information on their.

Perceived preferences and willingness to pay for 17 different financial services offered in mobile banking. The study results find that mobile banking seems to possess the potential to become one of the widely spread and accepted application in the field of mobile commerce, particularly in the backdrop of its high acceptance across commercially important sections of the society.

2). (Suleyman, 2010) E-Customer Satisfaction in the E-Tailing Industry: An Empirical Survey for Turkish E-Customer.

The study aimed to provide theoretical and empirical framework for determine drivers of e-customer satisfaction from e-trailers and highlight what is needed to increase e –customer satisfaction in Turkish ,the researcher use 552 questionnaires were analyzed with using SPSS program.

The study results find that e-customer satisfaction analyzed and tested by six drivers of e customer satisfaction: e-shopping cost-store design, e-customer service, information quality, shipping policy, all of these influence e-customer satisfaction positively, moreover e-customer satisfaction level are measured. Furthermore researcher could be conducted with different drivers of e-customer satisfaction to determine their satisfaction levels in larger samples and different countries and to analyze similarities and differences.

3). (Masrek et al., 2012) Mobile Banking Utilizations, Satisfaction and loyalty: The Case Study of Malaysian Consumer.

The study aimed to show mobile banking utilization predicts user satisfaction and does satisfaction in mobile banking predicts loyalty. Were the study population was in Malaysia.

A survey methodology involving 312 respondents, the finding showed that mobile banking use is positively related to satisfaction not loyalty also it is found that satisfaction significantly predicts loyalty. The collected data were analyzed using statically computer programs known as IBM, SPSS version 20 and analysis of moment structure (AMOS) that used for structural equation modeling. The study results find that have empirically shown the importance of mobile banking services and its influence towards customer satisfaction in Malaysia not all banks have implemented mobile banking this finding should alert banking practioners that in line with the advancement of the ICT they have no other choice but to embrace and implement mobile banking or otherwise they would risk of losing their customers.

4). (Litifi & Gharbi, 2012) Journal of Internet Banking and Commerce the Case Study: E-Satisfaction and E-loyalty of Consumers Shopping Online.

The study aimed to impact of emotional state and perceived risk of remote purchase on e-purchase on e-satisfaction during the internet shopping in addition, the influence of e-satisfaction on e-loyalty.

The data gathering was carried out by a laboratory experiment followed by a questionnaire measuring the emotional state experienced during navigation, the perceived risk of by a remote, satisfaction and loyalty of shoppers. Were the study population was in Tunisia.

The study results find that three dimensions of the emotional state during Internet shopping) the pleasure, stimulation and dominance) have a significant positive impact on e-satisfaction and influences positively and significantly the e-loyalty of the cyber consumers.

5). (Ma & Zhao, 2012) Evidence on E-Banking Customer Satisfaction in the China Commercial Bank Sector.

The study aimed is to analyze factors of website quality that could influence e-banking customer satisfaction in the Chinese commercial banking industry, Moreover the paper also tries to explain the relation between website quality and customer satisfaction, and find some variables for keeping e-banking customer satisfaction, a model for analyzing empirically the link between website quality and e-banking customer satisfaction in Chinese.

The study results show that online –banking customer satisfaction cannot be described as one fact construct instead, it represents a multi factor that composed of website quality judgments while the resulting modified and exploratory factor analysis using SPSS.Were the study population in China .

6). (Ranjbarian et al., 2012) Factors Influencing on Customers' E-Satisfaction: A Case Study from Iran.

This study aimed to understand what creates a satisfying customer experience becomes crucial for on-line stores success in attracting more customers to purchase through online.

The study is empirical investigation which purpose and tests an e-satisfaction model were they used SPSS 17 and AMOS. A questionnaire was designed and pre-tested on 40 participants according to the standard approach .Were the study population was in Iran.

The study results to reveal four factors are: convenience, merchandising, security, serviceability have influence on customer e-satisfaction but the influence of website design on e-satisfaction effect on security and survivability.

7). (Hanudin Amin et al., 2012) Journal of Internet Banking and Commerce. The Case Study: Receptiveness of Mobile Banking By Malaysian Local Customers in Sabah, an Empirical Investigation.

The study aimed to investigate the factors that determine the local people of Sabah bank customers' intention to use mobile banking.This study extends the applicability of the technology acceptance model (TAM) to mobile banking and includes "perceived usefulness" and "perceived ease of use". The study population contains sample of local people of Sabah, in Eastern Malaysia and a limited number of measures in the model that provided 200 questionnaires.

The study indicate that perceived credibility ,perceived enjoyment and perceived self-efficacy are important determinates to predicting the intentions of Malaysia's customers' to use mobile banking, and also provide general guidelines to banking institutions to better planning of mobile banking services as their future gadget of banking channels.

The study results to demonstrates the perceived usefulness and perceived ease of use have low impact on mobile banking use on the other hand perceived credibility, perceived enjoyment and perceived self efficiency were found to be very important patronage factors for mobile banking use.

8). (Malarvizhi & Rajeswari, 2012) User's Criteria for Selecting Mobile Banking Services in Coimbatore: Empirical Evidence.

The study aimed through lights on the following objectives to study awareness and usage of mobile banking services and to estimate the criteria for selecting the mobile banking services in Coimbatore cite. the primary data were collected from 100 samples and were selected by adoptive purposive sampling technique during the period January 2010-feburay 2010, the quantitative technique were applied simple percentage and Garrett ranking technique, were the study population was in India.

The study results finds that mobile banking users are all educated belongs to business group and middle income group, the study concludes that customers are likely to find mobile banking more useful and their expectation would also increase .In addition, the banks must be ready to meet expectations and provide them a hassle-free mobile banking experience.

9). (Al Jabri & Sohail, 2012) Mobile Banking Adoption: Application of Diffusion of Innovation Theory.

The study aimed is to fills the gap and examines a number of factors affecting the mobile banking adoption. Using diffusion of innovation as a baseline theory, data are obtained from 330 actual mobile banking users while the sampling technique for data collection was connivance and the findings can't be generalized because the majority of the sample size is young respondents between 18-25 years old. And it is found that relative advantage, computability, and observe ability have positive impact on adoption. The study population was in Saudi Arabia.

The study results that it will have practical implications for banking industry in Saudi Arabia that should offer mobile banking services that are compatible with various current user requirements, past experiences, lifestyle and beliefs in order to fulfill customer expectations.

10). (Saoji & Goel, 2013) Understanding Customer Response and Customer Satisfaction of Mobile Banking.

This study aimed to analyze the customer response and customer satisfaction of mobile banking through these factors-Were the study population was in India.

In addition, there are several factors that determine the customer satisfaction of mobile banking in India and they are efficiency, security, cost effectiveness, fulfillment Problem handling and accuracy in results that help to increase a number of advantages of mobile banking customers.

The study results find there have been a number of advantages of mobile banking and these advantages led to the increase in the number of mobile banking customers today. Almost all the private and public sector banks provide mobile banking facility to their customers for free of cost. Customers are highly satisfied with mobile banking system due to several reasons.

2.3 The Contribution of the Study

This study is one of the first local studies that shed a light on the impact of Mobile banking services on enhancing Customers' E-satisfaction in Jordan commercial banks.

This study covers all the dimensions of mobile banking services, which includes: reliability, flexibility, privacy, accessibility, eases to navigation, efficiency, security, and measures its impact on customers' E-satisfaction.

Furthermore, the researcher tries to focus on the importance and the advantages that customer will get such as facing no limitation in time or place through using the service . Mobile banking service helps customers to perform many transactions for example: check account, credit transfer, payment transaction and SMS.

The study focus on the advantages that will attract customer to use mobile banking, and to aware clients to make banking transaction through mobile, finally, the finding of this study is able to measure the customers' E satisfaction through using Mobile service that will directly enhance the relationship between bank and customer.

3. Methodology

3.1 Study Population

The population of the study is represented to the customers that use mobile banking service in commercial banks in

Jordan which are: Jordan Ahli Bank, Union Bank, Capital Bank, HSBC Bank. This service let customers able to do many transactions such as: SMS, account balance, payment transaction, credit transfer. In addition the service is also compatible with Smartphone, Android and BlackBerry operating phones. Banks use this service are: Jordan Ahli Bank, Union Bank and Capital Bank, HSBC Bank by the Association of Banks in Jordan and will be obtained a description of the new banking through their websites (Abj, 2013)

3.2 Study Sample

The sample of this study is convenience sample that include banks customers in the city of Amman and it is selected from commercial banks customers' that use mobile banking service, according to (Uma Sekaran, 2009) if the population size is bigger than 222640, the sample size will be 384.The researcher use Alexia website for general statistical to organize commercial banks in using mobile banking service in Jordan and how the researcher distributed the questionnaires. The responses number was (400) responses (360) questionnaire were accepted.

The researcher distributed the questionnaire that based on the rank of using mobile banking service that whenever the rank was lower the number of usage mobile banking service is high so the result shows that Ahli Jordanian bank got 832 rank second Capital bank got 1116 rank while Union bank got 3040 rank and finally HSBC bank got 3821, that's mean Ahli Jordanian bank got the higher rank based on the number of times in repeating usage mobile banking service (Alexia, 2013) and the results summarized in the table 3 below:

Table 3. Description of the study sample

Bank name	No. of distributed questionnaires	Frequency Percentage	No. of accepted questionnaires
Ahli Bank	145	36.7	132
Capital Bank	105	27.2	98
Union Bank	80	20.3	73
HSBC Bank	70	15.8	57
Total	400	100.0	360

Source: this table was developed based on SPSS analysis.

3.3 Study Instruments

The questionnaire was developed to collect data from the sample of the study after reviewing some of the previous literature addressing each of the variables by using likert five, it contains three domains of questions, the first group is about demographic questions (the name of bank, gender, age and education) about the study population, the second is about mobile banking service which includes seven sub domains and was covered by (28–questions): reliability (4-questions), flexibility (4-questions), privacy (4-questions) accessibility (4-questions) ease navigation (4-questions) efficiency (4-questions) security (4-questions) the third group is about customer E-satisfaction that covered by (7- questions) related to the table 1.

3.4 Study Validity

Validity for the questionnaire was obtained from four members of the marketing department from Applied Science Private University and other universities that some of the questions were modified or deleted.

3.5 Study Reliability

Study reliability were calculated by using test pre-test, in which the researcher applies the study tool on a sample of (50) customers of the same sample, after month the same sample was tested again, the consistency percentage was (94%); and to make sure of the results the researcher computed Cronbach's alpha for all the domains and the whole tool, the value was (0.983) as shown in table 4.

Table 4. Reliability analysis for the study domains

No. of Items	Chrobach's alpha
35	.983

Table 4 indicates that the Cronbach's alpha f or the study main items were above (60%); therefore it is suitable for the purpose of this study. (Sekaran & Bougie, 2009)

3.6 Data Collection Method

Primary Data: were collected by using the questionnaire.

Secondary Data: were collected from previous studies, data from government department, websites, reports, books related to the subject of the study.

3.7 Measurement Tools

Likert five scale will be applied in asking the questionnaire question and measuring the study variables which is organized as strongly disagree to strongly agree and which takes the weight of (1-5) the measurement tool matches the study population and is tested in precedent studies.

3.8 Statistical Analysis

For the purpose of the study convenience statistics were computing using SPSS software statistical package in analyzing the data obtained from the sample and the below analysis were computed:

A) The tools of describing and diagnosing the study variables:

Frequency: used to review the study samples answers.

Percentages: show the proportion of answers for a particular variant of the total answers.

Mean: Display the average answers to a particular variable.

Standard Deviation: Shows the degree of dispersion of answers from its mean.

Cronbach Alfa: To measure the stability study tool.

B) The tools of selecting the study model:

- **Simple regression:** was used to find the influential relationship between two variables of the study variables.
- **F test:** was used to verify the significance of the relationship between the variables of the study.
- **T test:** was used to find significant differences between the mathematical means for the study variables.

4. Study Results

4.1 Study Sample Characteristics

Table 5. Characteristics for the study sample

Name of Bank	**No.**	**%**
Ahli Jordanian Bank	132	36.7%
HSBC Bank	98	15.8%
Union Bank	73	20.3%
Capital Bank	57	27.2%
Total	360	100%
Gender	**No.**	**%**
Male	176	48.9%
Female	184	51.1%
Total	360	100%
Age	**No.**	**%**
18-<26	64	17.8%
26-<35	143	39.7%
35-<44	79	21.9%
44-<53	55	15.3%
53 and more	19	5.3%
Total	360	100%

Education	No.	%
High school and below	49	13.6%
Diploma	136	28.6%
Bachelor	170	47.2%
Master	29	8.1%
PHD	9	2.5%
Total	360	100%
No. of respondents: (360)		

Source: This table was developed based on the SPSS analysis.

This study sample characteristics analysis in table 5 showed that the male and female respondents are almost equal, and also showed that the most of the respondents are between 26 to 35 years old, and in the education section the bachelor degree got the highest number of respondents.

4.2 Description of Study Variables

Descriptive statistics, the researcher computed the means and standard deviations for all the study domains as shown in table 6 below:

Table 6. Mean and standard deviation for the study main domains

Item	Mean	Std Deviation	Degree of Agreement
Mobile banking service	3.6883	.93349	High
Customer E-satisfaction	3.7234	1.06418	High
High:3.67-5.00	Moderate:2.33 -	3.66	Low:1.00 – 2.32

Source: This table was developed based on the SPSS analysis.

Table 6 showed that the means for the study main domains were form (3.68) to (3.72).

The customer E-satisfaction got the highest mean (3.72) and SD (1.06418), and mobile banking service were (3.6883) and SD (.93349).

The Formula shows that 3.6≤5 is high, 2.3≤3.6 is Moderate, and 2.3≤1.00 is Low. Also the researcher computed he means for all domains as shown in table 7 below:

Table 7. Mean and standard deviations for the study variables

Item	Mean	Std. Deviation	Degree of Agreement
Reliability	3.6979	0.96070	High
Flexibility	3.6438	1.01880	Moderate
Privacy	3.8576	0.93190	High
Accessibility	3.7125	1.01262	High
Ease of navigation	3.6646	1.14989	Moderate
Efficiency	3.6472	1.08702	Moderate
Security	3.5944	1.17724	Moderate

Source: This table was developed based on the SPSS analysis.

From the previous table 7 the mean for the domains were from (3.5) to (3.8) referring to a high degree, which the privacy got the highest mean (3.8) and SD (0.93), then the domain reliability with mean (3.69) and SD (0.96) at the third rank, also the table showed that the domain security got the lowest mean (3.59) with SD (1.177).

1). Mobile banking service

The analysis showed that the means for the mobile banking service domain items were from (3.68),with all high degree ,the item "privacy" got the highest mean with (3.85) and SD (0.93),the item "Security" with mean (3.59) and SD(1.177).

2). Customer E-satisfaction

The analysis that the mean for customer E-satisfaction were from (3.72) and the SD were from (1.06).

4.3 Testing the Study Hypotheses

The researcher will test the study hypothesis and answer their questions in light of the previously mentioned ones.

4.3.1 Testing the First Main Hypothesis

Ho1: There is no significant impact of mobile banking services on customer's E-satisfaction.

To test this hypothesis the researcher computed the simple linear regression, as shown in the following table:

Simple regression was performed and the results in table 8 showed that the strength of the relation between the dimensions of mobile banking service and the customer E-customer satisfaction in the researched of commercial banks in Jordan was (R=88.3%) and the coefficient of determination (R^2) showed that the explained difference percentage in the customer E-satisfaction because of the impact of mobile banking service of the commercial banks in Jordan is (R^2=0.780), which is acceptable percentage, meaning that (78.0%) of the total differences in customer E-satisfaction for the mobile service is determined through the mobile banking service .

This indicates that the regression is good explaining the relation between overall mobile banking service and customer E-satisfaction.

Table 8. The impact of mobile banking service on customer E-satisfaction

Independent variable	B	T	Sig
Mobile banking service	0.883	35.672	0.000*

(R=0.883; R^2 = 0.780; F= 1272.864); * significant level at $P \leq 0.05$.

Source: This table was developed based on the SPSS analysis.

The results of the simple regression analysis showed that there is positive impact of the mobile banking service on the customer E-satisfaction (β=0.883) at level of Significance (0.000). Accordingly the researcher rejects the null hypothesis and accepts the alternative hypothesis.

Ho1.1 There is no significant impact of reliability on customer's E -satisfaction.

To test this hypothesis, the researcher computed the simple linear regression, as shown in the following table:

Simple regression was performed and the results in table 9 showed that the strength of the relation between the reliability of mobile banking service and the customer E-customer satisfaction in the researched of commercial banks in Jordan was (R=73.7%) and the coefficient of determination (R^2) showed that the explained difference percentage in the customer E-satisfaction because of the impact of reliability of commercial banks in Jordan is not less than (R^2=0.543), which is acceptable percentage, meaning that (54.3%) of the total differences in customer E-satisfaction for the mobile service is determined through the reliability of mobile banking service .

This indicates that the regression is good explaining the relation between reliability and customer E-satisfaction

Table 9. The impact of reliability on customer E-satisfaction

Independent variables	β	T	Sig
Reliability	0.737	20.631	0.000*

(R=0.737; R^2= 0.543; F= 425.618); significant level at $P \leq 0.05$.

Source: This table was developed based on SPSS analysis.

The result of the simple regression analysis showed that there is positive impact of reliability on customer E-satisfaction (β=0.737) at level of significance (.000). Accordingly the researcher rejects the null hypothesis and accepts the alternative hypothesis.

Ho1.2 There is no significant impact of flexibility on customer's E -satisfaction.

To test this hypothesis, the researcher computed the simple linear regression, as shown in the following table:

Simple regression was performed and the results in table 10 showed that the strength of the relation between the flexibility of mobile banking service and the customer E-customer satisfaction in the researched of commercial banks in Jordan was (R=62.3%) and the coefficient of determination (R^2) showed that the explained difference percentage in the customer E-satisfaction because of the impact of flexibility of commercial banks in Jordan is not less than (R^2=0.388), which is acceptable percentage, meaning that (38.8%) of the total differences in customer E-satisfaction for the mobile service is determined through the flexibility of mobile banking service .

This indicates that the regression is good explaining the relation between flexibility and customer E-satisfaction.

Table 10. The impact of flexibility on customer E-satisfaction

Independent variables	β	T	Sig
flexibility	0.623	15.056	0.000*

(R=0.623; R^2= 0.388; F= 226.672); significant level at $P \leq 0.05$.

Source: This table was developed based on SPSS analysis.

The result of the simple regression analysis showed that there is positive impact of flexibility on customer E-satisfaction (β=0.623) at level of significance (.000). Accordingly the researcher rejects the null hypothesis and accepts the alternative hypothesis.

Ho1.3 There is no significant impact of Privacy on customer's E -satisfaction.

To test this hypothesis, the researcher computed the simple linear regression, as shown in the following table:

Simple regression was performed and the results in table 11 showed that the strength of the relation between the privacy of mobile banking service and the customer E-customer satisfaction in the researched of commercial banks in Jordan was (R=77.6%) and the coefficient of determination (R^2) showed that the explained difference percentage in the customer E-satisfaction because of the impact of privacy of commercial banks in Jordan is not less than (R^2=0.602), which is acceptable percentage, meaning that (60.2%) of the total differences in customer E-satisfaction for the mobile service is determined through the flexibility of mobile banking service .

This indicates that the regression is good explaining the relation between privacy and customer E-satisfaction.

Table 11. The impact of privacy on customer E-satisfaction

Independent variables	β	T	Sig
privacy	0.776	23.267	0.000*

(R=0.776; R^2= 0.602; F= 541.34); significant level at $P \leq 0.05$.

Source: This table was developed based on SPSS analysis.

The result of the simple regression analysis showed that there is positive impact of privacy on customer E-satisfaction (β=0.776) at level of significance (.000). Accordingly the researcher rejects the null hypothesis and accepts the alternative hypothesis.

Ho1.4 There is no significant impact of accessibility on customer's E -satisfaction.

To test this hypothesis, the researcher computed the simple linear regression, as shown in the following table:

Simple regression was performed and the results in table 12 showed that the strength of the relation between the accessibility of mobile banking service and the customer E-customer satisfaction in the researched of commercial banks in Jordan was (R=78.1%) and the coefficient of determination (R^2) showed that the explained difference percentage in the customer E-satisfaction because of the impact of accessibility of commercial banks in Jordan is not less than (R^2=0.610), which is acceptable percentage, meaning that (61.0%) of the total differences in customer E-satisfaction for the mobile service is determined through the accessibility of mobile banking service .

This indicates that the regression is good explaining the relation between accessibility and customer E-satisfaction

Table 12. The impact of accessibility on customer E-satisfaction

Independent variables	B	T	Sig
accessibility	0.781	23.679	0.000*

($R=0.781$; $R^2= 0.610$; $F= 560.716$); significant level at $P \leq 0.05$.

Source: This table was developed based on SPSS analysis.

The result of the simple regression analysis showed that there is positive impact of accessibility on customer E-satisfaction ($\beta=0.821$) at level of significance (.000). Accordingly the researcher rejects the null hypothesis and accepts the alternative hypothesis.

Ho1.5 there is no significant impact of ease to navigation on customer's E-satisfaction.

To test this hypothesis, the researcher computed the simple linear regression, as shown in the following table:

Simple regression was performed and the results in table 13 showed that the strength of the relation between the ease navigation of mobile banking service and the customer E-customer satisfaction in the researched of commercial banks in Jordan was (R=87.4%) and the coefficient of determination (R^2) showed that the explained difference percentage in the customer E-satisfaction because of the impact of ease to navigation of commercial banks in Jordan is not less than ($R^2=0.764$), which is acceptable percentage, meaning that (76.4%) of the total differences in customer E-satisfaction for the mobile service is determined through the ease navigation of mobile banking service .

This indicates that the regression is good explaining the relation between ease navigation and customer E-satisfaction.

Table 13. The impact of ease navigation on customer E-satisfaction

Independent variables	β	T	Sig
Ease navigation	0.874	34.061	0.000*

($R=0.874$; $R^2= 0.764$; $F= 1160.142$); significant level at $P \leq 0.05$.

Source: This table was developed based on SPSS analysis.

The result of the simple regression analysis showed that there is positive impact of ease navigation on customer E-satisfaction ($\beta=0.874$) at level of significance (.000). Accordingly the researcher rejects the null hypothesis and accepts the alternative hypothesis.

Ho1.6 There is no significant impact of efficiency on customer's E -satisfaction.

To test this hypothesis, the researcher computed the simple linear regression, as shown in the following table:

Simple regression was performed and the results in table 14 showed that the strength of the relation between the efficiency of mobile banking service and the customer E-customer satisfaction in the researched of commercial banks in Jordan was (R=86.1%) and the coefficient of determination (R^2) showed that the explained difference percentage in the customer E-satisfaction because of the impact of efficiency of commercial banks in Jordan is not less than ($R^2=0.742$), which is acceptable percentage, meaning that (74.2%) of the total differences in customer E-satisfaction for the mobile service is determined through the efficiency of mobile banking service .

This indicates that the regression is good explaining the relation between efficiency and customer E-satisfaction.

Table 14. The impact of efficiency on customer E-satisfaction

Independent variables	B	T	Sig
Efficiency	0.861	32.064	0.000*

($R=0.861$; $R^2= 0.742$; $F= 1028.131$); significant level at $P \leq 0.05$

Source: This table was developed based on SPSS analysis.

The result of the simple regression analysis showed that there is positive impact of efficiency on customer E-satisfaction (β=0.861) at level of significance (.000). Accordingly the researcher rejects the null hypothesis and accepts the alternative hypothesis.

Ho1.7 There is no significant impact of security on customer's E -satisfaction.

To test this hypothesis, the researcher computed the simple linear regression, as shown in the following table:

Simple regression was performed and the results in table 15 showed that the strength of the relation between the security of mobile banking service and the customer E- satisfaction in the researched of commercial banks in Jordan was (R=82.8%) and the coefficient of determination (R^2) showed that the explained difference percentage in the customer E-satisfaction because of the impact of security of commercial banks in Jordan is not less than (R^2=0.686), which is acceptable percentage, meaning that (68.6%) of the total differences in customer E-satisfaction for the mobile service is determined through the security of mobile banking service.

This indicates that the regression is good explaining the relation between security and customer E-satisfaction.

Table 15. The impact of security on customer E-satisfaction

Independent variables	B	T	Sig
Security	0.828	27.958	0.000*

(R=0.828; R^2= 0.686; F= 781.654); significant level at P≤0.05.

Source: This table was developed based on SPSS analysis.

The result of the simple regression analysis showed that there is positive impact of security on customer E-satisfaction (β=0.828) at level of significance (.000). Accordingly the researcher rejects the null hypothesis and accepts the alternative hypothesis.

5. Study Results and Recommendation

5.1 Results Discussion

This chapter includes the discussion of the results and recommendations, depending on the study results, from the researcher point of view and based on the study results that show a strong relationship between mobile banking service and customer E-satisfaction. Mobile banking service can be categorized as the latest advancement in electronic banking, which has widened customers' access to bank accounts through wireless channels .Mobile banking is a financial service where the bank customers perform balance inquiry, credit transfer, account balance so what mobile banking service present is very important to effect on customer's E-satisfaction.

The support for the results is the information that the researcher use in many chapters in this thesis the researcher choose four commercial banks in Jordan who activate this service to customers' and Ahli Jordanian bank got the highest rank in bank transactions with customers 36.7%, this result gives us who is bank update his service in technology, according to the mobile banking dimensions privacy then accessibility were ranked high, these positive results from the researcher point of view could focus on what the users' concern and the increase customer awareness of using mobile banking service.in addition the results showed that the security got the lowest rank comparing with other dimensions.

This study contains demographic question by asking the name of bank, gender, education, age .As the researcher mentioned before that Ahli Jordanian Bank got 36.7, Capital Bank27.2, Union Bank 20.3, HSBC Bank 15.8 that's mean Ahli Bank is the most bank uses mobile banking service, then the researcher focus on gender which male got 48.9 and female 51.1 .the age got the highest rank 26≤35 39.7% and the lowest rank to 53 and more 5.3%

The education also has a portion in this study which is for the highest rank got to bachelor 28.6% and the lowest rank for PHD is 2.5%.

Related to the study mobile banking service has seven dimensions which are: reliability, flexibility, privacy, accessibility, eases navigation, efficiency, and security.

Privacy item got the high rank with mean (3.8576) because customers concern to keep their information in safety way and should have more confidential relation between bank and customer. Then accessibility is the second item with mean (3.7125) because to do many different transactions through your account, customer should access easily anytime and anywhere. Then reliability with mean (3.6979) means customer concern how bank develop his performance from time to time and how bank can treat in emergency case and develop his services. Ease navigation item with mean (3.6646) also got the fourth rank because customer always link ease browse in mobile application. The fifth item is efficiency with mean (3.6472) to show how banks achieve customer's goals. Latest security item got the lowest rank with mean (3.5944) because customer knows very well that each one has customer ID and password and all the information needs will be on the web application.

5.2 Discussing the Study Hypotheses

The study results showed that there is a statistical significant impact of the overall dimensions of mobile banking services (reliability, flexibility, privacy, accessibility, ease navigation, efficiency, security) on the customer E-satisfaction. These are similar to the study of (Khrais, 2012). While the study results showed that there is a statistically significant impact between security dimension on enhancing customer E–satisfaction in using mobile banking, from the researcher point of view showed that customer concern in security though using mobile banking service in order to feel more secure (Saleem & Rahid, 2011) also the study result showed that there is a statistically significant impact between accessibility dimension on enhancing customer E-satisfaction in using mobile banking, from the researcher point of view showed that customer concern to use technology to do many banking transaction anywhere and access to the mobile application anytime(Ma & Zhao, 2012) .

As the researcher showed from the above results all the dimensions of mobile banking service which are: reliability, accessibility, privacy, security, flexibility, ease navigation, security effect on customer E-satisfaction in simple regression test and the result lead us to know how is important these dimension. From the researcher point of view the privacy is the most important dimension because customer as we mentioned before concern to do their banking transactions and using mobile banking application in personal atmosphere.

5.3 Recommendations

1) The researcher suggests encouraging the widespread use of mobile banking; campaigns should be launched to disseminate the usefulness of the technology.
2) The researcher highly recommends improving the quality of the services to increase the customer E-satisfaction which means reliability dimension is important to support service quality.
3) The researcher suggests broadening the knowledge of mobile banking to be able to access to the services, so they do not hesitate to use the services.
4) The researcher suggests measuring the effectiveness and the efficiency of the services of the mobile banking for users.
5) The researcher recommends Telecoms and banks should work hand-in-hand to offer a high quality service and can reach to customer satisfaction in security way.
6) The researcher suggests banks to examine the navigational functions and compatibility of mobile banking application in order to increase the speed of online system responses to customer.
7) The researcher highly recommends commercial banks to let them need more time in order to activate, develop and innovate new techniques to encourage their customers being more flexible in using mobile banking service.
8) The researcher suggests highlighting for banks to focus on the value that the customer generates, rather than the value that banks can offer to their customers to have more privacy.

5.4 Recommendations for the Future Researchers

Based on the findings, the following recommendations are made in order to improve mobile banking service in Jordanian bank, banks may wish to examine the navigational functions and compatibility of mobile banking application these points will let banks to be able to increase the speed response of mobile banking users.

Suggests that the problem could be handled by increase customer awareness and education in this service by understanding the impact of familiarity with the technology and user experience and competence would be of value in this context.

These are the points to make several extensions of this study. first, how mobile banking service create customer E-satisfaction .second, have the ability to measure the infrastructure of technology and see how the infrastructure can contribute in banks service to be successfully in term of, service quality to present good service for customer.in order ,to increase customer E-satisfaction and the impact in mobile banking service .

References

Al Kasasbeh, M., Dasgupta, S., & Al Faouri, A. (2011). Factors Affecting E-Service Satisfaction. *Communication of the IBIMA*, 1-12. http://dx.doi.org/10.5171/2011.547937

Alba, J., Lynch, J., Weitz, B., & Janiszewski, C. (1997). Interactive Home Shopping Consumer, Retailer and Manufacturer Incentives to Participate in Electronic Marketplace. *Journal of Marketing, 61*(3), 38–53. http://dx.doi.org/10.2307/1251788

Alexia for Statistical. Retrieved on Nov, 1, 2013 from http://www.Alexia.com

Al-Jabri, I., & Sohail, M. (2012). Mobile Banking Adoption: Application of Diffusion of Innovation Theory. *Journal of Electronic Commerce Research, 13*(4), 379–391.

Amin, H., Supinah, R., Aris, M., & Baba, R. (2012). Receptiveness of Mobile Banking. *Journal of Internet Banking and Commerce, 17*(1), 1–12.

Anand, A. (2007). E-Satisfaction–A Comprehensive Framework International Marketing Conference. *Marketing and Society Journal, 6*(3), 440–490.

Andreou, A., Chrysostomou, C., & Schizas, C. (2009). *Mobile Commerce Applications and Services*. Unpublished PhD Thesis, University of Cyprus, Cyprus.

Arab Advisors report of smart phones users. Retrieved on July 7, 2013 from http://www.arabadvisors.com

Behjati, S., Nahich, M., & Haman, S. (2012). International Between E-service Quality and E-satisfaction and Loyalty. *European Journal of Business and Management, 4*(9), 75–85.

Bilal, M., & Sankar, G. (2011). *Trust and Security Issue in Mobile Banking and its Effect on Customers*. Un-Published PhD Thesis, Blekinge Institute of Technology, Sweden.

Central Bank of Jordan. Retrieved on October 1, 2013 from http://www.cbj.gov.jo

Chiou, J. S. (2004). The Incidents of Consumers Loyalty Toward Internet Service Providers. *Information and Management Journal, 4*(2), 416–485.

Dmoor, H. (2005). *Service Marketing* (4th ed.). Dar Wael, Amman.

Egan, J. (2004). *Relationship Marketing–Exploring relational strategies in marketing* (pp. 22–24). Pearson Education- Prentice Hall.

EL-Kiki, T., & Lawrence, E. (2007). *Mobile User Satisfaction and Usage Analysis Model of M-Government Services*. Unpublished PhD Thesis, University of Technology Sydney, Australia.

Fang, L., & Yang, K. (2013). *A Study of Optimization on Bank Counter Service Reliability*. Unpublished PhD Thesis, Chung Yang Christian University, China.

Gunther, J. (1997). *Geographic Liberalization and the Accessibility of Banking Service in Rural Areas*. UnPublished PhD Thesis, University of Texas, Texas.

Huysman, M. (2004). *Social Capital and Information Technology*. Unpublished PhD Thesis, University of Cambridge, United Kingdom.

Jepleting, A., Oscar, S., & Bureti, P. (2013). Effects of Mobile Banking on Customer. *International Journal of Innovation Research in Management, 3*(2), 29–40.

Jervona, J., & Todd, M. (1998). The Hierarchical Influence of Personal Values on Mall Shopping Attitude and Behavior. *Journal of Retailing, 47*(1), 52–139.

Kaddomi, T. (2008). Factors Affecting the Spread of E-Exchange. *Jordan Journal of Applied Science, 11*(2), 293–311.

Kee-Hung, L., Nagi, E., & Cheng, T. (2005). Information Technology Adoption in Hong Kong's Logistics Industry. *Transportation Journal, 44*(4), 1–10.

Kharis, L. (2012). The Adoption of Online Banking :a Jordanian Perspective. *European Journal of Business and Management, 4*(16), 163–177.

Khraim, H., Al-Shoubaki, Y., & Kharaim, A. (2011). Factors Affecting Jordanian Consumers' Adoption of Mobile Banking Services. *International Journal of Business and Social Science, 2*(20), 96–105.

Kolesar, M., & Galbraith, R. (2000). A Service marketing Perspective on E-retailing. *Internet Research–Electronic Networking Journal, 10*(5), 424–438. http://dx.doi.org/10.1108/10662240010349444

Litfi, M., & Gharbi, J. (2012). E-Satisfaction and E-Loyalty of Consumers Shopping Online. *Journal of Internet Banking and Commerce*, *17*(1), 1–21.

Ma, Z., & Zhao, J. (2012). Evidence on E-banking Customer Satisfaction in the China Commercial Bank Sector. *Journal of Software, 7*(4), 927–933. http://dx.doi.org/10.4304/jsw.7.4.927-933

Malarvizhi, V., & Rajeswari, A. (2012). Users' Criteria for Selecting Mobile Banking Services in Coimbatore. *Asian Journal of Research in Marketing, 1*(1), 1–10.

Malaysia Local Customers in Sabah. *Journal of Internet Banking and Commerce*, *17*(1), 1–13.

Masrek, M., Omar, U., & Khairuddin, I. (2012). Mobile Banking Utilization, Satisfaction and loyalt. *Science Series Data Report Journal, 4*(12), 20.

Migdadi, Y. (2012). The Developing Economies' Banks Branches Operational Strategy in the Era of E-Banking. *Journal of Emerging Technology in Web Intellegence, 4*(2), 189–197.

Oliver, D. (1997). Customer Satisfaction do Matter. *Journal of Database Marketing, 5*(4), 392–393.

Ranjbarian, B., & Fath, S. (2012). Factors Influencing on Customers'-Satisfaction. *Interdisciplinary Journal of Contemporary Research in Business, 3*(9), 1–17.

Research of the Federal Bank of St. Louis. (2010). *E-Satisfaction in the E-Tailing Industry*. Research Report, Turkey.

Richheld, F. (1996). *The Hidden Force Behind Growth Profits and Lasting Value*. Unpublished PhD Thesis, Harvard Business School Publication, Boston.

Saleem, Z., & Rashid, K. (2011). Relationship between Customer Satisfaction and Mobile Banking Adoption in Pakistan. *International Journal of Trade, Economics and Finance, 2*(6), 537–544. http://dx.doi.org/10.7763/IJTEF.2011.V2.162

Saoji, S., & Goel, P. (2013). Understanding Customer Response and Customer Satisfaction of Mobile Banking in India. *International Journal of Advanced System and Social Engineering Research, 3*(1), 1–5.

Sekaran, U., & Bougie, R. (2009). *Research Methods for Business: A Skill Building Approach*. Unpublished PhD Thesis, John Wiley and Sons University, United States.

Shammot, M., & Al-Sheikh, M. (2008). Adoption of Mobile Banking Services in Jordan. *Scientific Journal of King Faisal University, 9*(2), 253–266.

Sharma, P., & Singh, P. (2013). Barriers in Adoption and Service Preferences. *Journal of Management, 5*(1), 7.

Szymanski, D., & Hise, R. (2000). E-Satisfaction Initial Examination. *Journal of Retailing, 76*(3), 309–322. http://dx.doi.org/10.1016/S0022-4359(00)00035-X

Telecommunication regularity Commission report of using mobile in Jordan. Retrieved on April 2, 2013 from http://www.trc.org.jo

The Association Banks of Jordan report of banks in Jordan. Retrieved on April 9, 2013 from http://www.abj.org.jo

Thulani, D., Kosmas, N., Collins, M., & Lloyd, C. (2011). Adoption and Use of SMS/Mobile Banking Services. *Journal of Internet Banking and Commerce, 16*(2), 1–5.

Tiwari, R., Buse, S., & Herstatt, C. (2006). *Impact of Mobile Technologies on Customer Behavior and its Implications for Banks*. Portland International Conference on Management of Engineering and Technology Istanbul University.

Turban, E., & Lee, J. (2004). *Electronic Commerce: A managerial perspective*. Upper Saddle River, New Jersey: Pearson Education, Inc.

Van-Riel, A., Liljandaer, V., & Jurrriens, P. (2001). Exploring Consumer Evaluation of E-services. *International Journal of Service Industry Management, 12*(4), 359–377. http://dx.doi.org/10.1108/09564230110405280

Wang, M. (2003). Assessment of E-service Quality via E-Satisfaction in E-Commerce Globalization. *EJISDC Journal*, *11*(10), 1–4.

Wang, Y., & Lin, M. (2011). Determinants of User Acceptance of Internet Banking. *International Journal of Service Industry Mangment*, *14*(5), 501–519. http://dx.doi.org/10.1108/09564230310500192

Yan, Y., & Fengjie, J. (2009). *The Empirical Study on the Influencing Factors of Customers E-loyalty*. Un

Published PhD Thesis, Harvard Business School Publication, Boston.

Zamil, A. (2011). The Implantation of Mobile Bank Usage from Marketing Point of View in Jordan. *Panjana Journal, 14*(1), 1–22.

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Services Quality Delivery Through Website. *Journal of Academy of Marketing Science, 52*(4), 2–22.

Zhengwei, M., & Zhao, J. (2012). Evidence on E-Banking Customer Satisfaction in the China Commercial Bank Sector. *Journal of SoftWare*, *7*(4), 927–933.

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Evaluation of Performance Appraisal Methods through Appraisal Errors by Using Fuzzy VIKOR Method

Hakan Turgut[1] & Ibrahim Sani Mert[2]

[1] Tourism Management, Baskent University, Ankara, Turkey

[2] Turkish General Staff, Ankara, Turkey

Correspondence: Hakan Turgut, Tourism of Management, Baskent University, Ankara, Turkey. Tel: 90-532-287-2802. E-mail: hakanturgut66@gmail.com

Received: August 23, 2014 Accepted: September 15, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p170 URL: http://dx.doi.org/10.5539/ibr.v7n10p170

Abstract

Performance appraisal has a vital importance both for employees' motivation and organizations' effectiveness. However, unless using a true and equitable performance appraisal method, which is debugged from appraisal errors, an effective performance appraisal can not be attained. The aim of this study is to evaluate the performance appraisal methods with regard to the appraisal errors in an attempt to rank them according to their level of clarity from the errors. To this end, the evaluation results of 29 Human Resources managers evaluated for 11 performance appraisal techniques against 8 potential appraisal errors are dealt within this study. These evaluations were analyzed by fuzzy VIKOR method and a consequent list of a performance appraisal methods by rank was achieved. According to the findings of the study, the most accurate alternative was determined as the Graphic Rating Scales Method while the least one was the Comparison Method. It is suggested that human resources managers should choose the most appropriate appraisal method for their organizations by following the steps that presented in this study.

Keywords: performance appraisal, performance appraisal techniques, appraisal errors, fuzzy VIKOR method

1. Introduction

Although there exists a degree of hesitation on the usefulness of performance appraisal (Deming, 1986), it has an outstanding importance in management (Judge & Ferris, 1993; Murphy & Cleveland, 1995) owing to the feedback they provide, needed to guide managerial practices effectively and fairly as well.

In addition to their inherent nature as a tool of awareness both for employers and employees, performance appraisal can also enhance management effectiveness by incorporating the aims and efforts of the employees, employers, and the organization as a whole as they help in the precise establishment of communication linkages among them as to achieve a synergetic outcome.

However, achievement of an effective performance appraisal is hardly observed in actual business life since the effectiveness mostly depends on its degree in providing equity. As such, unless the equity perception of the performance appraisal is not high, their results tend to be meaningless and unusable as well for the employees as they cause undesired results instead of effectiveness. Applying a Performance Appraisal Method (PAM) that is perceived as accurate and fair enhances their effectiveness acceptance as well. That is why the ratee and rater reactions to performance appraisal processes including specificly designed rating formats has seen a dramatic increase in the literature (e.g. Levy & Williams, 2004; Murphy & Cleveland, 1995; Hedge & Teachout, 2000; Jelley & Goffin, 2001; Nathan & Alexander, 1988; Wagner & Goffin, 1997).

Besides, due to the fact that fairness of performance appraisal is closely related to the evaluator, it is necessary to decrease the evaluators' errors whether they are the result of intentional or unintentional attitudes and behaviors. A way of doing this is to choose the most appropriate PAM that bears minimum level of errors with its structure and/or methodology. In this study, it is accepted that by evaluating PAMs with regard to their degree in decreasing the rater's errors, a helpful and useful method can be obtained.

Nevertheless, as there are some studies that aimed to select and/or to rank the PAMs (e.g., Jafari et al., 2009), none of them was found useful to has evaluated PAMs with a special focus to the appraisal errors and/or used the fuzzy VIKOR method as applied in this study. Also, instead of making a detailed comparison by taking each PAM separately as aimed in the present study, the previous studies that compared PAMs have categorized them into two main categories, absolute vs relative performance rating methods (Roch et al., 2007; Goffin et al., 1996; Jelley & Goffin, 2001; Nathan & Alexander, 1988; Wagner & Goffin, 1997; Heneman, 1986) or one category alone (Blume, et al., 2009). In spite of the dominance of two-category group in researches, there has been no consensus among researchers whether which one is more effective while some of the researchers stated that relative performance rating methods may be more effective (e.g. Heneman, 1986; Nathan & Alexander, 1988; Wagner & Goffin, 1997; Landy & Farr, 1980). Also, none of them have compared absolute vs relative performance rating methods regarding to appraisal errors.

Although different reasons can be discussed concerning the decrease of performance appraisal's effectiveness, the present study focused on the appraisal errors, made by evaluators, and aimed to rank PAMs by their perceived decreasing effect on appraisal errors.

In this study, firstly the importance of the perception of fairness by the employees on the PAMs and errors were explained in literature review. Afterwards the procedure of the study including a brief explanation of fuzzy VIKOR method was provided, which is followed by the presentation of findings where the managerial and academic implications were discussed.

2. Performance Appraisal

The results of performance appraisal are used both for administrative as well as for developmental issues of employees. Being an administrative tool, performance appraisal used for;

(i) Determining pay adjustments (e.g., bonus-pay);

(ii) Employee feedback and development;

(iii) Making job placement decisions on promotion, career development, transfer, and demotions;

(iv) Employee disciplinary actions;

(v) Identification of training need;

(vi) Job redesignings and other organizational interventions.

Also as a development tool, a performance appraisal is a primary and most accurate way of obtaining information and feedback that often play key role on employees' development and career decisions.

To this end, the insufficiency and/or inaccuracy in performance appraisal cause(s) problem in two overarching goals of performance appraisals; (Fisher et al., 1996);

(i) To encourage high levels of employee motivation;

(ii) To provide accurate information to be used in managerial decision making.

Especially for employee motivation, an accurate and fair performance appraisal plays a vital role as stated in some theories on motivation-expectancy theory, equity theory, procedural justice theory and, goal-setting theory (George & Jones, 2012, p. 217). The following is a brief review of these motivation theories in terms of the importance of fairness perception of appraisal results by employees.

According to the expectancy theory, expectancy (the perceived connection between effort and performance) and instrumentality (the perceived connection between performance and outcomes) are two main determinants of motivation. And if evaluators (managers) appraise employees' performance accurately, employees are likely to adopt higher levels of expectancy, instrumentality and of performance.

In terms of equity theory, if employees perceive that they are receiving a proper outcome as compared to their contribution to the job, they will be better motivated. This theory implies that if they believe their performance is accurately evaluated, employees will be motivated as to perform more highly.

According to procedural justice theory, if the employees believe that the evaluators' appraisals are biased to evaluate performance, their motivation to perform is likely to decrease. Procedural justice theory suggests that procedures that used to appraise performance must be perceived as fair and accurate in order to increase the employees' motivation.

Performance appraisal is closely related to the goals of employees and organization. As such the goal-setting theory suggests that the goals of the employees have a major impact on their levels of motivation and performance, where the importance of accurate performance appraisal against the determined goals is emphasized.

In sum, all motivational theories mentioned above imply that, having a performance appraisal system that is perceived as fair and accurate by the employees plays an ultimate role in increasing the levels of employees' performance. Thus, as Roch et al. (2007, p. 303) stated "it is in the best interest of the organization to do everything possible to maximize employees' justice perceptions." Otherwise, the ultimate effectiveness of a performance appraisal system that is not accepted and supported by employees will be limited (Cawley et al., 1998, p. 616).

2.1 Performance Appraisal Methods

Many appraisal methods can be used to evaluate employee's performance. Because of many existing appraisal methods, some different categorizations of them were made by researchers (e.g., Decenzo & Robbins, 1998). In literature, most common and popular categorizations are firstly two-group one (Cascio, 1991):

(i) Absolute appraisals;

(ii) Relative appraisals;

And secondly three-group one (Fisher et al., 1999);

(i) Comparative appraisals;

(ii) Behavioral appraisals;

(iii) Output-based appraisals.

Although there were some studies that used two-group categorization (e.g., Roch et al., 2007; Goffin et al., 1996; Jelley & Goffin, 2001; Nathan & Alexander, 1988; Wagner & Goffin, 1997; Heneman, 1986), it is not easy to directly put every PAM into one category. Even if they may be forced to be in one category, the methods in the same category may have different features in terms of appraisal errors, which are chosen as an evaluation criterion of PAM, in this study. Then, instead of evaluating the performance appraisals' categories, it was preferred to evaluate PAMs individually.

By reviewing the literature, PAMs are determined as shown in Table 1.

Table 1. Performance appraisal methods

Performance Appraisal Methods	**Explanations**
1. Comparison (Sorting)	In this method; the rater ranks his/her subordinates on their working performance. Working performance of employees is compared and then sorted from the best to the worst. By putting a subordinate in a rank order, the relative position of each subordinate is tested in terms of his/her numerical rank. Paired comparison of subordinates, that involves comparing the working performance of each subordinate with every other subordinate, is also a version of this method.
2. Forced Distribution	This is an appraisal method that requires assignment of the subordinates to a limited number of categories. In this method; employees (subordinates) are inevitably evaluated according to the normal distribution. For example; 10 % of employees are at the very top of scale, 20 % of employees are at the top of scale, 40 % of employees are at the middle of scale, 20 % of employees are at the bottom of scale, 10 % of employees are at the very bottom of scale.
3. Graphic Rating Scales	Managers evaluate the employee according to defined factors, as the attributes printed on an evaluation form. Form has performance levels regarding attributes. There are numbers or scales (very good, good or weak) across the attributes on the form. Manager chooses one of them. Being an oldest and most widely used method, the graphic rating scales are forms on which the evaluator simply checks off the subordinate's working performance.
4. Checklist	In this method; a checklist that presented work related descriptive statements, is used for every work position. Manager chooses "Yes" or "No" option that represents the effective or ineffective behavior on job that rater familiar with these work related descriptive statements.
5. Forced Choice	Manager is given some pre-defined expressions (a series of statements) to evaluate the performance of worker for each item. Managers indicate which items are most descriptive of the employee. Manager does not know the score equivalent of the expressions.
6. Composition (Essay)	Manager simply writes a narrative describing the performance of employee. This is a composition about the worker to define the worker and designates successful, unsuccessful, weaker or powerful sides of worker. This method is a non-quantitative method and rather than focusing day-to-day performance of employee it focuses on generally observed work behaviors of an employee to present a holistic view.

7. Critical Incidents	Manager writes down the extreme performances both negative and positive. These performances are named as critical incidents/events. These critical events should affect directly the success or failure of worker. This method requires the written records to be kept as highly effective and highly ineffective work behaviors. The manager maintains the logs of each employee to record the critical incidents to use them to evaluate the employee's performance at the end of the rating period.
8. 360-Degree Feedback	Data from all sides, from multiple levels within the organization and from external sources, is collected in this method. Employees are assessed by his superior, inferior, work friends, clients and by themselves. By the way, this method provides an enhanced self-awareness for an employee about his/her work performance.
9. Management By Objectives	This is a method necessitating the attainment of the pre-defined objectives. According to this method, managers and employees determine collectively the objectives for employees to meet during a specific period. Attainment of an objective is more important than "how it was attained". Employees are then evaluated with a view to how they have achieved their determined goals.
10. Assessment Centers	Evaluation process is performed objectively by specialists or Human Resources (HR) professionals in the center. In this center the job of worker is simulated and worker is observed. Additionally, some tests, social and unofficial events and exercises are used to support assessment. This method is preferred by some organization due to difficulty faced with appraisal process and tends to use an assessment center as an adjunct to their appraisal system.
11. Team Based Performance Appraisal	As today's work life values the team work, rather than the individual performance, it is better to evaluate an individual performance as a team member. Then, employees are assessed not as individuals but as a team.

As there are many performance appraisal techniques/methods that have different features and evaluation procedures as presented Table 1, it cannot be stated that only one method can be used in a definite situation, sector or organization. We can easily see that even if some organizations that act in the same sector, have equal number of employees, similar structures, resembling visions and missions, these organizations may use different appraisal methods depending on their choice rather than the features they have. At this point, choosing the most effective appraisal method arises as a problem that (HR) practitioners' face.

Though, whichever method is chosen, it is more important to reach a precise evaluation at the end of the performance appraisal process. One of the most important factors helping to realize this, is to decrease appraisal errors being made by evaluators or at least minimize it by applying the most appropriate method(s) that prevent(s) appraisal errors.

2.2 Performance Appraisal Errors

The accuracy of the results of performance appraisal depends mostly upon the degree of error freeness achieved by the evaluators. Even if appraisal errors are partly as a result of evaluators' attitudes, regardless of which appraisal method is used, it should be accepted that the features of appraisal method affects the appraisal errors. Every PAM has its unique structure and procedure that cause performance appraisal errors to be effective to a certain extent.

Although it is hard to determine the level of this extent for each PAMs, the evaluation of the expert practitioners can give most precise results as accepted in this study.

Since the aim of this study is to evaluate PAMs with a focus on the errors, first appraisal errors that will be used as evaluation criteria must be determined. By a literature review, performance appraisal errors are determined as presented in Table 2, for the present study.

Table 2. Performance appraisal errors

Performance Appraisal Errors	Explanations
1. Perceived meanings of performance standards	This error emerges from misunderstanding of performance appraisal standards stated in the appraisal forms. Using a standard appraisal form consisting of the same criteria aiming to measure specific qualities does not always lead to standard appraisals due to different perceptions among the appraisers. This error results from lack of common understanding of the performance standards.
2. Perceived meanings of performance standards	This error emerges from misunderstanding of performance appraisal standards stated in appraisal forms. Using a standard appraisal form consisting of the same criteria aiming to measure specific qualities does not always lead to standard appraisals due to different perceptions of the appraisers. This error results from lack of common understanding of performance standards.
3. Halo/Horn effect	Evaluator's general perceptions of an employee influence his/her perception on specific dimension. This error has two opposite sides. One is the general evaluation of the employee according to his/her strengths (halo effect) and overseeing the other possible weaknesses. The other, the horn effect, is the opposite of the halo effect, where the employee is generally evaluated according to his weaknesses and his/her strengths is overseen.
4.Central tendency error	This error is ignoring the strengths and weaknesses of an employee and mainly tending to appraise the personnel in an average score. Some raters, rather than giving extreme poor or good grades, to evaluate all ratees tend to an average scoring even if the performance actually varies.
5. Positive or negative leniency error	Positive leniency is the tendency to give high evaluation points in general, usually above the deserved level. Negative leniency is visa versa, that gives generally low evaluation points, regardless of the deserved level. It can be said that positive leniency is more frequent than negative leniency, since, some raters are concerned about damaging a good working relationship by giving poor or negative rating.
6. First impression and /or recency error	This error results from putting too much emphasis of the evaluator's on his/her first impression of the employee or more commonly from focusing on recent interactions with the employee. Since the recent events or employee behaviors are more noticeable than the former ones, recent events are weighted more heavily than they should be, in the performance appraisals. As a result of this, some raters only tend to regard the latest events and/or behavior of the employee regardless of employee's actual performance.
7. Similar-to-me error	This error results from situations where the evaluator sees his employee's background, education, attitudes, characteristics very similar to himself/herself, therefore grading higher in performance appraisals. Due to this error, evaluators may tend to perceive others similar to themselves more positively than they perceive those who are dissimilar.
8. Contrast error	Contrast error is observed where the evaluator compares one employee with the other instead of the criteria dictated in the appraisal form. This often results in the under evaluation of some employees due to comparing him/her with an employee who is seen very successful by the evaluator.
9. Insufficient Observation	In some cases, employees are evaluated with lack of sufficient information or observation on how they really perform on their work. Here the evaluator gives his/her evaluation point or comments on his/her general perception without detailed idea about the employee over a specific criterion.

3. Method and Results

A Likert-7 (1-absolutely false, 7-absolutely true) questionnaire was prepared as an evaluation tool, in which each of the PAMs presented in Table 1 was evaluated by each of the performance appraisal errors presented in Table 2. The items read as follows: "By using 360 degree PAM the effect of central tendency error in performance appraisal can be decreased." In this context, .11 (number of the PAMs) X 8 (number of the performance appraisal errors), 88 items were inserted in the questionnaire in a matrix structure.

The questionnaire was applied to 29 HR managers who attended a 3-day performance appraisal course in which both PAMs and errors were discussed in detail. It is to say that, the sample of the present study can be accepted as being expert by having a sufficient capability to evaluate the PAMs due to their profession as well as their latest information on performance appraisal in three-day course. The samples' average age is 42 ranging 29 to 61. They are from 25 different companies in both public and private sector that serve in major cities in Turkey.

VIKOR (Vise Kriterijumska Optimizacija I Kompromisno Resenje) which means “Multi-Criteria Optimization and Compromise Solution”, was used as a multi-criteria decision making technique in this study due to its appropriateness to the aim of the study. This method ranks the alternatives that are chosen for the evaluation through selected criteria to their proximity to the ideal solution (Opricovic & Tzeng, 2007).

The fuzzy VIKOR method is a result of application of Fuzzy Set Approach (theory) to the VIKOR method. In Fuzzy Set Approach introduced by Zadeh (1965) to deal with ambiguity of human thought. The most important contribution of Fuzzy Set Theory is its capability of presenting ambigious data.

It is suggested in fuzzy VIKOR method that the decision makers use linguistic variables to evaluate the ratings of alternatives (performance appraisal techniques in this study) with respect to the defined criteria (appraisal errors techniques in this study).

The steps of fuzzy VIKOR method were as follows (Opricovic & Tzeng, 2004):

Step 1: 29 HR managers as mentioned above were chosen as evaluators to evaluate the PAMs presented in Table 1, assuming they had familiarity and expertise in performance appraisal process.

Step 2: By a literature review, 8 appraisal errors were determined as evaluation criteria as shown in Table 2.

Step 3: The evaluators were given a questionnaire to evaluate one by one each PAM in terms of the appraisal errors included.

Step 4: The evaluators' appraisals stated in linguistic terms in the questionnaire were transformed to fuzzy numbers as presented in Table 3.

Step 5: Then aggregated weight of each criteria and aggregated fuzzy rating of alternatives were calculated to construct the fuzzy decision matrix.

Step 6: The best and the worst values of all criterion ratings were determined as follows:

Step 7: The values of S, R and Q were calculated for all alternatives as in Table 4.

Step 8: The ranking of the alternatives by in decreasing order is shown in Table 5.

Step 9: By testing two acceptability conditions (named acceptable advantage and acceptable stability respectively) were satisfied (0.13-0.00=0.13>0.1 (1 /Number of Alternatives-1), the best alternative is determined as A3 (Graphic Rating Scales) and worst alternative is determined as A1 (Comparison) as shown in Table 5. The others are not fulfilled the acceptability conditions.

Table 3. Linguistic terms and corresponding fuzzy numbers

Linguistic Terms	**Very poor**	**Poor**	**M.Power**	**Fair**	**M.Good**	**Good**	**Very Good**
Fuzzy Numbers	0.0, 0.0, 0.1, 0.2	0.1, 0.2, 0.2, 0.3	0.2, 0.3, 0.4, 0.5	0.4, 0.5, 0.5, 0.6	0.5, 0.6, 0.7, 0.8	0.7, 0.8, 0.8, 0.9	0.8, 0.9, 1,1

Table 4. Indexes of R_1, S_1, Q_1 and the ranks of alternatives

Appraisal Methods	**S_1**		**R_1**		**Q_1**	
	Distance	Ranking	Distance	Ranking	Distance	Ranking
A1: Comparison (Sorting)	.22	3	.08	3	.00	3
A2: Forced Distribution	.52	5	.12	5	.13	5
A3: Graphic Rating Scales	.78	8	.14	10	.23	10
A4: Checklist	.81	10	.18	8	.27	8
A5: Forced Choice	.93	4	.19	9	.35	9
A6: Composition (Essay)	1.03	9	.19	6	.41	6
A7: Critical Incidents	1.25	2	.20	2	.42	2
A8: 360-Degree Feedback	1.25	6	.24	11	.47	4
A9: Management By Objectives	1.27	11	.25	7	.48	11
A10: Assessment Centers	1.30	7	.30	4	.50	7
A11: Team Based Performance Appraisal	2.23	1	.46	1	1.00	1

Table 5. The rank of performance appraisal methods

Q_1	A3>A5>A10>A8>A9>A6>A2>A4>A11>A7>A1
S_1	A3>A5>A8>A10>A4>A9>A2>A6>A11>A7>A1
R_1	A3>A5>A10>A8>A9>A6>A2>A11>A7>A4>A1

4. Discussion

With a professional and equitable perspective, it can be suggested that, almost every decision in managerial applications is somewhat a result of performance evaluation- or at least should be so. In this context, it is of at most importance to use a PAM that provides the most accurate and just results. However such results may be hindered by the performance appraisal errors made by the appraiser.

Since it is difficult to remove the performance appraisal errors completely, it is at least necessary to determine the most appropriate PAM(s) that is minimally affected by these errors. This study aimed to evaluate existing PAMs in the literature to rank them according to their degree in decreasing the appraisal errors.

According to the findings of the study the best alternative is determined as Graphic Rating Scales method while the worst one is Comparison method. There are possible different explanations for this result. The most obvious one is related to structure of the methods in terms of having a concrete process. That is, if the method is definitely structured and forces the rater to follow a step by step evaluation in an exact determined competency. It is accepted to be more suitable for preventing appraisal errors. On the other hand, if the method provides more flexibility and is relatively less structured, then it is likely to be accepted less appropriate for the prevention of appraisal errors.

Another explanation can be provided in terms of the degree of comparison made by the evaluators during the evaluation process. That is, if the method depends on the evaluation of employee individually, without comparing him/her with other employees, it is likely to be accepted as more appropriate while the comparison method tend to be evaluated as less appropriate in terms of decreasing appraisal errors.

However it should be stated that these above mentioned two major reasons are closely related to the cultural factors, where consequently the results of this study should also be discussed in terms of cultural dimensions. To this end, it is firstly proper to express the cultural features of this study’s sample and then secondly to discuss the best and the worst determined methods depending on these cultural dimensions.

This study was conducted in Turkey which is a country with high power distance, stronger uncertainty avoidance tendency, more feminine and “short term” oriented (Hofstede, 1984, p. 123). In this connection, due to the high power distance, employees tend to accept the authority of the supervisors in performance evaluation, that is, they may not be so willing to be assessed by multi-source raters such as 360-Degree Feedback instead of by their supervisors. Also due the collectivist culture, they may be unwilling for being assessed by a comparison among their colleagues. As a result, they may prefer Graphic Rating Scales, which is a method that is more relevant to high power distance. This lack of willingness for comparison is deemed to be another result of collectivist mindset on the other hand. In addition to this, Graphic Rating Scales method is the least initiative - driven method preferred by the rater as compared to the other methods which decrease the rater’s appraisal errors.

4.1 Constraints of the Study and Suggestion for Future Researches

Although the sample of this study presents 25 different companies serving in 15 different sectors, which can be regarded sufficient for such an initial study, to obtain more general findings on the national applications, it is further necessary to increase the size of the sample as well as the sectors contained On the other hand, the study was conducted in Turkey where the above – mentioned cultural features have prevalence. Hence, repeating the study in different countries is necessary for increasing the acceptability of the findings.

Although the minimization of the appraisal errors is essential for an organization, the sensitivity of organizations toward the appraisal errors may vary. If the sensitivity is high in an organization, it becomes important to conduct a selection process for determining the accurate PAM by following the methodology of this study. Because the sensitivity of employees toward performance appraisal systems have an effect on their thoughts of their own appraisals (Mert, 2011). On the other hand, if the sensitivity is low, conducting such a selection method may not be so obligatory.

Although the results of the study’s findings presented as such, it can not be stated that the best appraisal method is Graphic Rating Scales method and the worst is Comparison method since the methods were evaluated only in terms of their degree of decreasing appraisal errors. If different factors are taken to consideration as evaluation criteria, different results may be obtained.

In this study HR managers from different organizations were selected as evaluators to reach a more generic conclusion. The future studies may use the methodology of this study at the organizational level. Thus, organizational culture can be considered and comparable results among organizations can be obtained.

Since the performance appraisal process has an ultimate importance on the effectiveness of the organizations and appraisal method, being the core of this process, searching for the most appropriate appraisal method deserves considerable attention by the academic researches. As such, the studies that highlight the available methods for such a searching can contribute to the literature.

4.2 Managerial Application

The ultimate purpose of managerial application is to accomplish the organizational objectives effectively by having dedicated employees. Even if many factors can be suggested to improve the employee dedication towards their jobs, it still depends on their trust to the PAM used in the organization. Therefore, if they perceive that they are accurately and fairly evaluated by the raters, they will more likely be highly dedicated. Although the rater's personal fairness plays a dominant role in performance appraisal process, also the perception of employees toward the applied appraisal method has an important effect. Between these two factors (rater's fairness and appraisal method), it is easier for HR managers to handle appraisal method. In this connection, HR managers should be aware that because existing different kinds of appraisal methods, choosing the most appropriate one emerge as an important necessity. Also this necessity consists the questioning of the current applied appraisal method in the organization. In this manner, the following items can be recommended to implement by the HR managers and/or people dealing with performance appraisal process as relevant to the present study's methodology:

- Determining the list of applicable PAMs for the organization by examining the organization's vision, mission and objectives.
- Searching and determining the appraisal errors being made by raters in the organization during the appraisal process.
- Evaluating the determined appraisal methods in terms of appraisal errors and selecting the most organization-fit method to apply by whether using the methodology of this study or by different methods.
- Beginning to use of the most appropriate one to obtain more effective results.
- Periodically reexamining the appraisal process by following the above items to test the appropriateness of the current appraisal method.

References

Blume, B. D., Baldwin, T. T., & Rubin, R. S. (2009). Reactions to different types of forced distribution performance evaluation systems. *Journal of Business P*sychology, *24*, 77–91. http://dx.doi.org/10.1007/s10869-009-9093-5

Cascio, W. F. (1991). *Applied Psychology in Personnel Management* (4th ed.). Englewood Cliffs: Prentice Hall.

Cawley, B. D., Keeping, L. M., & Levy, P. E. (1998). Participation in the performance appraisal process and employee reactions: A meta-analtic review of field investigations. *The Journal of Applied Psychology, 83*, 615–633. http://dx.doi.org/10.1037/0021-9010.83.4.615

Decenzo, D. A., & Robbins, S. P. (1998). *Human Resource Management.* South-Western, Cincinnati, OH.

Deming, W. E. (1986). *Out of the crisis.* Cambridge, MA: MIT Center for advanced Engineering Study.

Fisher, C. D., Schoenfeldt, L. F., & Show, J. B. (1999). *Human Resource Management.* Boston: Houghton Mifflin Company Proud.

George, J. M., & Jones, G. R. (2012). *Understanding and managing organizational behavior.* New Jersey: Prentice Hall.

Goffin, R. D., Gellaty, I. R., Paunonen, S. V., Jackson, D. N., & Meyer, J. P. (1996). Criterion validation of two approaches to performance appraisal: The behavior observation scale and the relative percentile method. *Journal of business and Psychology*, *11*, 23–33.

Hedge, J. W., & Teachout, M. S. (2000). Exploring the concept of acceptability as a criterion for evaluating performance measures. *Group and Organization Management, 25*, 22–44. http://dx.doi.org/10.1177/1059601100251003

Heneman, R. L. (1986). The relationship between supervisory ratings and results-oriented measures of performance: A meta-analysis. *Personnel Psychology, 39*, 811–826. http://dx.doi.org/10.1111/j.1744-6570.1986.tb00596.x

Hofstede, G. (1984). *Culture's consequences: International differences in work related values* (Abridged Edition). Newburg Park: Sage Publications.

Jafari, M., Bourouni, A., & Amiri, R. M. (2009). A new framework for selection of the best performance appraisal method. *European Journal of Social Science, 7*(3), 92–100.

Jelley, R. B., & Goffin, R. D. (2001). Can performance-feedback accuracy be improved? Effects of rater priming and rating scale format on rating accuracy. *Journal of Applied Psychology, 86*. http://dx.doi.org/10.1037/0021-9010.86.1.134

Judge, T. A., & Ferris, G. R. (1993). Social context of performance evaluation decisions. *Academy of Management Journal, 36*, 80–105. http://dx.doi.org/10.2307/256513

Landy, F. J., & Farr, J. L. (1980). Performance Rating. *Psychology Bulletin, 87*, 72–107.

Levy, P. E., & Williams, J. R. (2004). The social context of performance appraisal: A review and framework for the future. *Journal of Management*, *30*, 881–905. http://dx.doi.org/10.1016/j.jm.2004.06.005

Mert, I. S. (2011). The perception of the employees toward the outcomes and determinants of performance appraisal system. *Business & Economics Research Journal, 2*(3), 87–108.

Murphy, K. R., & Cleveland, J. N. (1995). *Understanding performance appraisal: Social, organizational, and goal-based perspectives.* Thousand Oaks, CA: Sage Publications.

Nathan, B. R., & Alexander, R. A. (1988). A comparison of criteria for test validation: A meta- analytic investigation. *Personnel Psychology, 41*, 517–535. http://dx.doi.org/10.1111/j.1744-6570.1988.tb00642.x

Opricovic, S., & Tzeng, G. H. (2004). Compromise solution by MCDM methods: A comparative analysis of VIKOR and TOPSIS. *European Journal of Operational Research, 156*(2), 445–455. http://dx.doi.org/10.1016/S0377-2217(03)00020-1

Opricovic, S., & Tzeng, G. H. (2007). Extended VIKOR Method in comparison with other outranking methods. *European Journal of Operational Research, 178*(2), 514–529. http://dx.doi.org/10.1016/j.ejor.2006.01.020

Roch, S. G., Stemburgh, A. M., & Caputo, P. M. (2007). Absolute vs relative performance rating formats: Implications for fairness and organizational justice. *International Journal of Selection and Assessment, 15*(3), 302–316. http://dx.doi.org/10.1111/j.1468-2389.2007.00390.x

Wagner, S. H., & Goffin, R. D. (1997). Differences in accuracy of absolute and comparative performance appraisal methods. *Organizational Behavior and human Decision Processes, 70*, 95–103. http://dx.doi.org/10.1006/obhd.1997.2698

Zadeh, L. A. (1965). Fuzzy sets. *Information and Control*, *8*, 338–353. http://dx.doi.org/10.1016/S0019-9958(65)90241-X

Copyrights

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Market Orientation, Organisational Learning Capabilities and Strategic Competitiveness: An Inquiry into the Causes of Sustain Competitive Success

Amue Gonewa John[1]

[1] Department of Marketing, University of Port Harcourt, Nigeria

Correspondence: Amue Gonewa John, Department of Marketing, University of Port Harcourt, Nigeria. E-mail: amuejohgonewa@yahoo.com

Received: November 25, 2013 Accepted: September 15, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p179 URL: http://dx.doi.org/10.5539/ibr.v7n10p179

Abstract

The nature of effective strategic marketing decision making is rooted in the dynamic processes by which firms develop their learning capabilities to acquire knowledge of their markets, reflect on that knowledge and develop the organization capabilities to respond to the strategic challenges faced. It is the organizational learning processes that provide the dynamics within firm, to manage effectively the interplay between the strategies of the firm and the global market environment. This article explores the link between strategic competitiveness and organization learning capabilities. In particular, the authors develop a conceptual model arguing that the effect of learning capabilities on strategic competitiveness is moderated by market orientations. Proposed to guide future research, the authors discuss the Implications for strategic marketing decision making at both the corporate levels and the public policy domains.

Keywords: market orientation, capabilities, strategic competitiveness, organizational learning, competitive success

1. Introduction

Successful companies maintain their competitive positions in a global marketing environment that is constantly changing and developing, by maintaining a strong marketing oriented perspective towards the market in which they operate. This position marketing orientation to have a significant influence on the ability of companies to compete effectively on global market. It is from this orientation that companies develop a customer focused strategy and build distinctive advantages to their products through a process of adding value either through product innovation or the incorporation of the services into their offering. This allows them to target specific customer and differentiate themselves from competitors in global market. Martins and Bultez (2009), position that superior performance is the result of a customer value based organizational culture, characterized by managers who are, skilled at learning about customer and their changing needs and at managing the innovation process (Stater, 1997). Thus attitude and mind sets are important starting point for the strategic marketing decision process. It is this attitude and mind sets that articulate the marketing orientation of a company, Gilligan and Wilson (2003), posited that the three key elements of a customer value –based philosophy are: a market orientation that gives the highest priority to the profitable creation and maintenance of superior customer value and the use of market information, continuous learning about customer through the development of formal and informal dialogue, and a commitment to innovation that is customer value focused in order to sustain competitive advantage. This innovation may involve the creation of new business within the existing framework or the rejuvenation of existing business that have stagnated. Not minding whether any or all of these is pursued, it is essential that the organization development and reflects a market orientated culture and reinforces this with a commitment to learning. Marketing orientation can be seen from two different perspectives, the cultural end and the information processing perspective (Narver & Slater, 1991; Slater & Narver, 1996; Ttult et al., 2002) priorities the behavioral component within a firm and views marketing oriented firms as having; a strong customer competitor orientation and a high level of inter-functional co-operation within the firm Slater and Narver (1996) articulate marketing orientation as the organizational culture that most effectively and effectively creates the necessary behavior to the creation of superior value for buyers and thus continuous superior performance for the business. Such firms focus on customers and competitor based activities and emphasize the acquisition, sharing and acting on marketing, intelligence acquired. It is a firms marketing orientation that steers the management of its market information gathering activities such firms endeavour to have highly refined market sensing capabilities, and so are well placed to anticipate changes and friends in the market and thus respond to them by the development of new customer valued capabilities and innovation products and services (Hult et al., 2002). Jaworski and Kohli (1996) view marketing orientation as the organization wide generation of market intelligence pertaining to current and future customer need, dissemination of intelligence across department and organization wide responsiveness to it. In their view, therefore, marketing orientation firms priorities the organization wide generation of market intelligence pertaining to current and future customer needs, disseminate the intelligence across departments (R and D management finance) and organize wide responsiveness to it selected markets, products that cater for current and anticipated customer needs, Jaworski and Kohli therefore focus on the activities that underpin the generation and dissemination of market intelligence. They also maintain that marketing orientation appears to be facilitated by the amount of emphasis top managers place on it, through continual reminders to employees that it is critical for them to sensitive to market developments. Morgan et al. (1998) likewise take an information system view of marketing orientation. They suggest marketing orientation is the mechanism for the information processing activities of the firm. This is similar to the view of day (1994), who defines marketing orientation as the complex bundles of skills and collective learning exercised through organizational processes, that ensure superior co-ordination of functional activities, like morgan et al. (1998) day argued that market orientation was an outcome of learning, and proposed that organization became more market oriented by identifying and building the special capabilities that set market –driven organizations apart (day, 1994). In their view, therefore, the scope of market orientation goes beyond customers and incorporates competitors. It involves the understanding of customer needs in a manager that allows superior value to be provided; and integrating the effort of the organization resource towards creating superior value of customers.

Firms with positive marketing orientated value have the capacity to understand the need of customer in a manner that allows superior value to be provided, because the firm is geared towards the market it is aware of both existing and potential competitor activities and so is able to identify potential opportunities and threats. As they are organized with the emphasis on achieving competitive advantage, they are able to marshal the firms resources towards creating superior value for customer. Thus marketing oriented firms are seen to be innovative, to have a strong customer focus, to make decision with reference to competitor activities, to have an integrated marketing approach and most of all to be able to deliver a high level of share holder\owner value.

In the next section, we assess the place of market orientation in the marketing literature. Then, we explore market orientation as a platform for organizational learning capabilities we also shed light on how this learning capabilities in the organization resulted in sustainable competitive success. Finally, on the basis of the argument set forth we develop responses to some marketing orientations perennial critics. The study contributes to marketing knowledge in two main ways; first, drawing on organizational learning capabilities and strategic competitiveness, it develops theoretical argument linking marketing orientation and sustain competitive success. Second, the study provides a basis for addressing critics of marketing orientation. Hence, the purpose of the study is to explore the extent of the relationship between organizational learning capability and competitiveness and also to assess the moderating effects of market orientation on the influence of organizational learning capability and strategic competitiveness of the firms.

2. Theoretical Foundation

Organizational learning is the ability of organization to share experience and lessons across departments and its outside partners (suppliers, distributors, customers) to enable the learning to be stored in the organizational memory of the entire firms (Doole & Lowe, 2005). Organizational learning can be defined by studying the concrete structural and procedural arrangements through which actions by member’s arrangement through which actions by members that are understood to entail learning are followed by observable changes in the organization’s pattern of activities (Cook & Yanow, 1993 cited in Patterson, 2008). It is this mechanism that become the foundation to understand what organizational learning is, that is the structure, strategies and procedures that allow the organization and its members to learn (Popper and Lipshitz, 1998 cited in Sameulson, 2007). Lambert and Celilgn (2009) posit that, organization do pass through the processes of learning like the individuals but that organization learn when they purposefully adopt structures and strategies to encourage learning. Goh and Ryan (2002) summarized by saying that, the concrete observable organizational system or institutionalized structural and procedural arrangements that describe the concept of a learning organization.

Studies conducted by previous scholars (Goh & Ryan, 2002; Basil & Katoz, 2005; Alexander, 2008; Chukwu & Tygris, 2009). Collaborated that the structures, strategies and procedures adopted that form the basis for a learning organization. We therefore need to identify what these mechanisms are that organizations use to enhance learning. Goh and Ryan (2002) suggest that, it is these mechanisms (procedure, structure and strategies) that support learning. It is the present of these mechanism that we define as organizational learning capability. Doole and Lowe (2005) argued that only firms that build these organizational learning capabilities that are able to sustain their competitiveness in the market place. It is the firms that develop the learning capability that are able to reshape themselves and so sustain their competitiveness. Morgan et al. (1998) cited in Davidson (2006) suggest that organizational learning capabilities help firm sustain a competitive advantage over the long term in two ways: by minimizing the incidence and potential impact of serious environmental disturbance, through advance acquisition of knowledge and by the flexibility built through organizational learning which enables the firm to develop rapid company responses in order to exploit emerging opportunities or extinguish threats.

2.1 Propositions from the Strategic Capabilities of a Learning Organization

Literature suggests commonalities among the various descriptions in previous studies (Goh, 1998; Goh & Richards, 1997), we conceptualized five dimensions of capabilities of a learning organization.

2.1.1 Shared Vision

Goh and Ryan (2002), posit that organization as a whole, and each unit within it need to have a clearly articulated purpose. The organization members are to be motivated to learn the need to share in the foundation for proactive learning. It provides direction and a focus for learning that fosters energy, commitment and purpose among organizational members (Doole & Lowe, 2005). Slater and Narver (1996) cited in Ogolish (2006) view the motivating vision as grounded in a sound understanding of the market guiding the business competitive advantage efforts been communicated continuously throughout the organization. Hamel and Prahalad (1994) cited in Kojoh (2007) prefer the term foresight, which they consider to be based on deep insights into the trends in technology, demographics, regulations and lifestyles that can be harnessed to rewrite industry rule and create new competitive space.

Karahanna and Davidson (2009), argued that a clear foresight shared by the staff and management of the firm is fundamental basis for effective strategic decisions and this gives the firms the strategic direction to superior competitive position in global markets which moves beyond the short term view of the firm' current market and is an outcome of the marketing oriented values of the firm. The clear strategic direction gives evidence to employees of the commitment from top management to growth and development. It therefore gives focus to the efforts to build a knowledge capability within the organization (Doole & Lowe, 2005). We make the following proposition:

P1: Employees and other stakeholders sharing in the common direction, the organization is taking will significantly influence the strategic competitiveness of the firm.

2.1.2 Leadership Commitment and Empowerment

Organization leaders need to be committed, the formulation of a core ideology for a company has implications for the role of the executive team responsible for making strategic decisions in terms of the leadership it offers (Doole & Lowe, 2005). Grant (2002) cited in Amos and Tigris (2010) has argued that if a strong core ideology is to be developed which unifies and motivates the members of the organization, the responsibilities of the executives are to clarify the shared vision and core values of the organization. They further argued that, the leaders should develop alignment between the different business functional areas and promote the understanding and interpretation of information within the context of the organizations' shared vision. Grant then goes on to suggest that organizations leaders need emotional intelligence if they are to have the skills that such a role requires. Bartex (2011), posit that leaders should push responsibility and autonomy from decision making down the line to product managers and venture teams. Peters (2003) suggests companies need to be quick and daring and even a little weird and mad in their innovative thinking. Again, Pius and Anderson (2009) argued that leaders through personal example and involvement, indoctrinate their organizations to accept and adhere to these core values that are essential to the organization's identity and success. They suggest that it is the responsibility of the leadership to retain and sustain the entrepreneurial spirit throughout the company. Thus, Doyle (2000) cited in Pius and Anderson (2009) conclude that strategic decision needs to foster an environment where the strategy making is an evolutionary development that is responsive to market challenges, through a proactive/reactive strategic orientation and a core purpose that is balanced with market orientation. Doole and Lowe (2005) summarized that the strategy constant evaluation and re-evaluation and customer focused strategies are developed which are highly differentiated from those of competitors through innovation and value added mechanisms. We therefore proposed as follows.

P2: The type of leadership the executive team in the organization offer to their employees and other stakeholders will significantly influence strategic competitiveness of the firm.

2.1.3 Experimenting and Reward Culture

Alegre and Chiva (2009), posit that experimentation is one of the essential facilitating factors of organizational learning and that it can be defined as the degree to which new ideas and suggestions are attended to and dealt with sympathetically. Experimentation is the most heavily supported dimension in the organizational learning literature (Hedberg, 1981; Nevis et al., 1995; Tannemhaum, 1997 cited in Wilcoxson, 2007). Nevis et al. (1995) cited in Mannson (2006) considered that experimentation involves trying out new ideas, being curious about how things work, or carrying out changes in work processes. Goh and Ryan (2002) argued that problems faced by the organization present opportunities for experimentation. The organization's structure and systems needs to support this initiative. Budgeting systems, for example, can be designed to challenge the need for doing things because "we have always done them" and compensation systems can be designed to reward innovation and risk taking.

Risk taking can be understood as the tolerance of ambiguity, uncertainty and errors. Sitkin (1996) cited in Bannadus (2005) goes as far as to state that failure is an essential requirement for effective organizational learning, and to this end, examines the advantages and disadvantages of success and errors. Amosi and Pythason (2010) conclude that experimentation is by far the most consistent managerial practice that is observed in learning organizations. The freedom to experiment with new work methods and innovative processes are encourage and supported (Senge, 1990; Garum, 1993; McGgill, Slocum & Lei, 1993). We can make the following proposition.

P3: Experimenting and rewarding culture in the organization will significantly influence competitive positioning of firm.

2.1.4 Ability to Transfer Knowledge

Doole and Lowe (2005), argues that intra-organizational knowledge sharing is a very important measure of organizational learning capability. Knowledge sharing refers to the sharing or transfer of collective knowledge and routine related to the spread of learning amongst the different departments in the organization and their extended partners. Macus and Jelly (2009), posit that organizational learning cannot really occur unless the company has an effective and efficient system for sharing and transferring information. The information needs to be clear, fast and focused (Goh & Ryan, 2002). Information should cut across-functional and sub-unit boundaries within the organization. McGill and Mayer (2006) posit that the type of information's acquired and distributed should relate to organizational problems and opportunities. This is also supported by majority of previous writers, especially the ability of the organization to transfer knowledge from the external environment for example suppliers distributors, customers and even from benchmarking of competitors (Garvin, 1993; Shaw & Perkins, 1991).

A good example is Marybest company they once specialized on wine bar for its customers and later the customer asked the company to also serve food delicacies to its line of business. Marybest developed complete hotel system that offered its customers more superior value. This add to the fact that customers needed to be involved in the design process, other stakeholders should also be brought in. intra-organizational knowledge sharing is not simply the ability of an organization to obtain its information from various departments and partners but its ability to share experience and lessons across departments and partners, so enabling the learning to be stored in the organizational memory of the entire organization (Doole & lowe, 2005).

In today's complex world, individuals need to help each other accomplish organizational objectives. Teams need to have the ability to work cross-functionally. By working together, knowledge can be shared among organizational members and there is also a better understanding of other individuals, their needs and how they work in different parts of the organizations, encouraging knowledge transfer as well (Seng, 1990; 1992; Garvin, 1993). We therefore propose as follows:

P4: Intra-organizational knowledge sharing will significantly influence the strategic competitiveness of the organization.

2.1.5 Market Orientation – Platform for Leveraging Organizational Learning

Doole and Lowe (2005), posit that successful companies maintain their competitive position is a global marketing environment that is constantly changing and developing by maintaining a strong marketing orientated culture serve as a platform for leveraging organizational learning, therefore market orientation has a significant influence on organizational learning capability and competitive positioning of the firm. Several studies has argued that market orientation develop a customer focused strategy and build distinctive advantages to their products through innovation or the incorporation of key services into their offering (Narver & Slater, 1991; 1996; Hult et al., 2002). Slater and Narver (1996) cited in Tenebonnet and Stavink (2006) articulated market orientation as the organizational culture that most effectively and efficiently creates the necessary behavior to the creation of superior value for customers and business. Such firms focus on customer and competitor based activities and emphasizes the acquisition, sharing and acting on the marketing intelligence acquired. It is the marketing orientation that serve as a platform that steers the management of its market information gathering activities. Such firms are example of learning organization that has a high refined market sensing capabilities and so are well placed in anticipated changes and trends in the market and thus respond to them by the development of new customer valued capabilities and innovative products and services (Hult et al., 2002). Lambin (2000) cited in Benitta (2007) posit that market oriented firms are seen to be innovative, to have a strong customer focus, to make decisions with reference to competitor activities, to have an integrated marketing approach and most of all to be able to deliver a high level of owner value.

Market oriented firms are able to build the following internal capabilities – organizational management with customer oriented value and belief, inter-departmental dynamics and connectedness, well organized structures and processes for the gathering and dissemination of information and departmentalization as well as cross-functional communication (Lambin, 2000; Benitta, 2007; Mbanas, 2009). We therefore advance the following proposition:

P5: Proactive market orientation moderates the effects of organizational learning capability on strategic competitiveness of the firm.

P6: Responsive market orientation moderates the influence of organizational learning capability on strategic competitiveness.

In this work, we respond to a need for linking the concept of organizational learning capability to strategic competitive position of the firm. We also examine whether other organizational factors such as market orientation can moderate the influence of organizational learning capability on strategic competitiveness. The basic conceptual model showing the relationship is shown in figure 1.

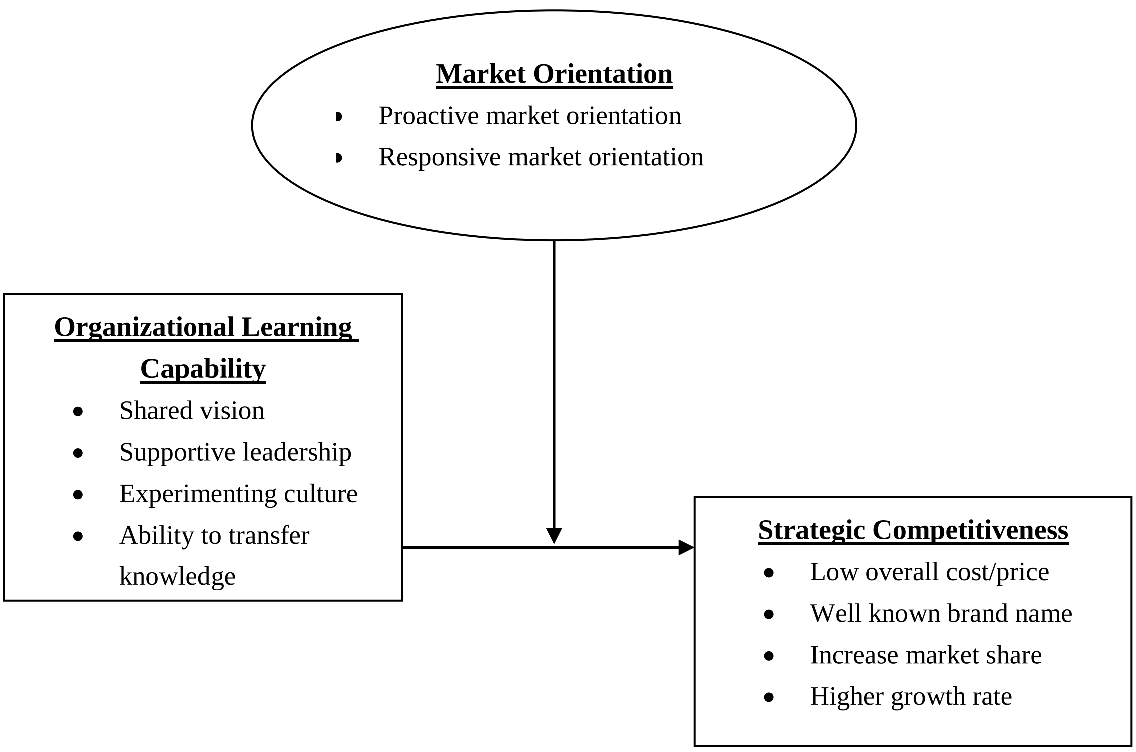


Figure 1. Conceptual model of organizational learning capability, market orientation and strategic competitiveness

Source: Conceptualized from review of related literature, 2013.

3. Discussion and Conclusions

Organizational managers around the globe are recognizing the increasing necessity for their companies to develop the skills, aptitudes and knowledge to compete effectively in global markets. The emergence of a more open world economy, the technological and globalized consumer tastes and the unabated construction of global electronic highways all increase the inter-dependency and interconnections of nation economics across the globe. The marketplace is becoming increasingly complex, as mature economics become more saturated and fragmented the competitive pressure increase and survival and growth become more difficult to sustain. The need for managers to develop the skills to respond to these pressures affects companies of all sizes. It is only a learning organization that can survive this turbulent period.

Several proposed theoretical frameworks underpin organizational learning capabilities that will sustain our competitive position in the marketplace. However, only few of them offer a thorough explanatory and predictive constructs that influence learning capabilities it was proposed that shared vision significantly influence strategic competitiveness of the firm. By competitiveness we refer to those activities that enables the company to remain in business not minding the activities of other competitors in the market for example the establishment of a well known brand name, wider geographic market coverage, low overall costs etc. the question is that, are there any relationship between shared vision as a measure of organizational learning capability and establishment of well known brand, wider market coverage, low overall cost, wider product line and market share leadership? The higher management needs to communicate a well crafted vision for the organization and personally motivate and instill a learning orientation. Without a shared vision employees may be motivated to learn but they may not know what to learn (Johnbull, 2008). Vision co-ordinates the focus of the various departments and encourage employees to overcome cross functional communication barriers and ensure the free flow of information between them, this will reduce cost of running the organization which will in turn lower the overall cost. From this argument, we can deduce that learning capability significantly influence a firm competitive position, in terms of cost reduction.

We also proposed that, the type of leadership the top management offer to their employees and other stakeholders will significantly influence strategic competitiveness. The tentative conclusions suggest that the relationship between learning capability measure as leadership commitment and reward has a significant influence on some measures of strategic competitiveness such as employee morale. When we build leadership supports to our employees this will have a significant influence on their performance if it reduces turn over and absenteeism in organization. Again, hands-on value-driven, refers to the way that leaders serves by example by their personal involvement and retaining the entrepreneurial spirit throughout the organization. By doing this, they have established aa well known identity for the firm.

This behavior will metamorphors into its brand name. Therefore, the type of leadership support has a significant influence on strategic competitive position of the firm. However, leadership support may not be evident in some measure of strategic competitiveness (Micah, 2007). We are aware that competitiveness can be measured in financial and also in marketing terms. When an organization has a supportive leadership as a measure of learning capability this will enhance higher growth rate (sales, revenue) than competitors and the market as a whole.

Again, ability to transfer knowledge within and outside stakeholders will reduce cost of operations which will enhance a higher market share measured in either value or volume terms. Slater and Narver (1996) cited in Adazeh (2007) argued that market orientation moderate the impact of organizational learning capability on competitiveness. As a matter of fact, we expect that organization learning capability affect strategic competitiveness. A major venue for understanding the impact of learning capabilities has been the conditions or situations in the firm. Examination of the alignment of firm structure, strategies and capability for competitive position has provided important theoretical insights (Vorhies & Morgan, 2003 cited in Amosen, 2006). Because firm conditions provide a platform for the use of learning capability, we suggest that the market orientation provides a critical backdrop for organizational learning capability to come into play.

We proposed that proactive market orientation moderating the effect of organizational learning capability on competitive position of the firm. Proactive market orientation focuses on understanding, anticipating and satisfying customers' latent needs. Organizations often meet latent needs by offering technological advances that enables them to lead the customer to new and better value propositions and satisfaction. This situation enhances the development of learning capability that will enable the firm to be probing into the latent needs of the customers. It is this orientation that moderate the effect of organizational learning on firm competitive position. We therefore argue that firms with proactive market orientations tend to draw heavily on organization learning capabilities to implement strategies that are focused on anticipating and meeting latent needs.

We argue that firms with responsive market orientation listen to their customers, monitor their competitor, and devise strategies to meet customer needs better than competitors do (Narver et al., 2000, cited in Nwachukwu 2009). Responsive market orientated firms heavily access and extensively rely on their organizational learning capabilities. Because, it is this capabilities that provide the tools and techniques to bring in on customers and to collect timely information that can be used to implement strategies effectively. The role of organizational learning capabilities and their influence on competitive positioning are greater in firms that have responsive market orientation than in those that do not.

From the above, market orientation is very good platform for leveraging organizational learning capabilities.

4. Implications

The contributions of this paper attract both conceptual and operational implications to our growing expectation in marketing domain. This paper provides decision makers in organizations with broader bases for making better lasting decisions in the global market place. We are aware that firm competes by building superior values through clearly differentiating their products from competitors or by focusing on one particular market segment and competing by adding value to the product through customer support. Organizations that have a continuous learning capability about customer value that can sustain competitive advantage stand to be a winning organization.

We believe that our work makes the following contributions to the growing literature on both organizational learning capabilities and competitive position of the firm. Figure 1 shows the constructs of learning capability which in this present study we conceptualize as four dimensions of learning capabilities we used the review of related literatures and interactions to contribute new theoretical insights. Again our notion of investigating strategic competitiveness from organization learning capabilities perspectives brings forth the theoretical insight of the resource base view of the firm, our conceptual model, thus explicitly links organizational learning capability to competitiveness. Finally, we replaced the popular moderating variable of organizational factors (age, size, structure) with market orientation as a platform for leveraging learning in organizations.

Future studies are stimulated to improve on the above constructs of the model suggested by this paper. Organizations should be willing to critically evaluate its practices and processes and should be open to new ideas and knowledge. This paper encourage other researchers to proactively question long held routines, assumptions and beliefs, to engage in the first phase of learning which is at the heart of ensuring the firm is aligned to a changing market environment (Doole & Lowe, 2005) and above all firms are only able to sustain their competitiveness by understanding customer needs in a manner that allows superior value to be provided and it is only by being aware of both existing and potential competitor activities that firms are in a position to take appropriate action to respond to identified opportunities and threats.

References

Adaezeh, S. T. (2007). Developing Learning Organization: The Behavioral Perspectives. *Academy of Management Sciences*, 280–290.

Alegre, M. C., & Chiva, B. S. (2009). The Factory as Learning Store. *Academy of Management Review*, 28–36.

Alexander, P. P. (2008). Market Orientation and Organization and Organizational Performance: is Innovation a Missing link? *Journal of Industrial Marketing, 63*(5), 30–42.

Amosi, K. T., & Pythason, C. O. (2010). Graping the Learning. *Organizational Culture: Training and Development, 48*(6), 40–46.

Anderson, A. B. (2009). Organizational Learning Capability-Strategy for Competitive Advantage. *International Journal of Business and Management, 46*(2), 26–39.

Bartex, C. K. (2011). *Value Based Learning: Strategy for Corporate Growth and Shareholder Valu*e. Chichester Willey.

Benitta, T. S. (2007). The Impact of Market Orientation, Product Advantage, and Launch Proficiency on New Product Performance. *Journal of Product Innovation Management, 21*(2), 79–95.

Cook, Y. S., & Yanow, B. D. (1993). The New Strategic Learning Capability in the Twenty-first Century. *The Academy of Management Sciences Review, 25*(3), 8–23.

Day, G. S. (1994). The Capabilities of Market-Driven Organizations. *Journal of Marketing, 58*(Oct.), 37–52. http://dx.doi.org/10.2307/1251915

Doole, I., & Lowe, R. (2005). *Strategic Marketing Decisions in Global Markets*. London: Thomson Learning.

Goh, S. C., & Ryan. (2002). Organizational Learning Capabilities. *European Management Journal*, *15*(5), 575–583. http://dx.doi.org/10.1016/S0263-2373(97)00036-4

Hult, G. T., & Ketchem, D. J. (2002). A Test of the Relationship between Positional Advantage and Performance. *Strategic Management Journal, 26,* 889–906.

Karahanna, B. T., & Davidson, A. O. (2009). Competitiveness in the Organization: The Possible way out. *European Journal of Marketing Science*, *21*(3), 46–59.

Lambert, P. S., & Celign, D. E. (2009). The Implementation of Marketing Oriented Culture in Organization. *European Journal of Marketing, 42*(11), 1265–1295.

Morgan, R. E., & Strong, C. A. (1998). Market Orientation and Dimensions of Strategic Orientation. *European Journal of Marketing, 32*(11/12), 1051–1073. http://dx.doi.org/10.1108/03090569810243712

Narver, J. C., & Slater, B. R. (1991). The effect of a Market Orientation on Business Profitability. *Journal of Marketing, 54*(4), 20–35. http://dx.doi.org/10.2307/1251757

Patterson, K. K. (2008). Competitiveness: Strategy for Winning Firms. *Journal of Management and Behavioral Sciences, 20*(4), 58–68.

Pius, S. T., & Anderson, G. H. (2009). A Learning Organization is a Winning Organization. *International Journal of Business and Behavioral Sciences, 24*(6), 88–102.

Slater, S. F., & Narver, J. C. (1996). Market Orientation and the Learning Organization. *Journal of Marketing, 59*(3), 63–74. http://dx.doi.org/10.2307/1252120

Wilconxson, B. Y. (2007). does market orientation moderate organizational learning capabilities on strategic competiveness? *Journal of Behavior Science Research, 56*(5), 21–33.

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

The Effects of Brand Image and Brand Identification on Brand Love and Purchase Decision Making: The Role of WOM

Methaq Ahmed Sallam[1]

[1] College of Administrative Sciences, Najran University, Najran, Saudi Arabia

Correspondence: Methaq Ahmed Sallam, College of Administrative Sciences, Najran University, P.O. box 1988, 11001 Najran, Saudi Arabia. Tel: 966-556-573-2028. E-mail: methaq68@hotmail.com or methaq68@yahoo.com

Received: July 2, 2014 Accepted: August 8, 2014 Online Published: September 25, 2014

doi:10.5539/ibr.v7n10p187 URL: http://dx.doi.org/10.5539/ibr.v7n10p187

Abstract

When the customers focus on the positive aspects of a company, and they love its brand, they usually express about that by using the positive words of mouth communication, and this lead them to make purchase decision toward the products and services of the company. Brand love is a recent marketing construct, which has been shown to influence important marketing variables such as word-of-mouth and purchase decision making. This study aims to explore the variables effects, for example, (brand image and brand identification) on brand love and to illustrate the impact of brand love on purchase decision making when word of mouth is mediating. This is a theoretical study tries to develop a conceptual framework. Furthermore, this framework shows that brand image and brand identification are the antecedents of the study, brand love is the independent variable, WOM is the mediating variable and purchase decision making is the dependent variable of this study.

Keywords: brand image, brand identification, WOM and purchase decision making

1. Introduction

Lo Chung (2012) Mentioned that word of mouth deals with the process of transferring of information from one person to the other through oral communication. The concept of word of mouth has become an important term in the marketing activities conducted by various organizations. Interpersonal communication or the word of mouth has gained importance in the decision making of the consumers. Word of mouth is gaining importance among the societal changes observed in the environment and has become one of the most important and effective communication channel. Carroll and Ahuvia (2006) mentioned that there are few antecedent of brand love e.g. (self-expressive Brands, hedonic product category and brand identification). Brand image and brand identification play an important role in building the costumer's brand love, which is lead to form his/her positive word of mouth and lead the costumer to make purchase decision. Many previous studies used brand image and brand identification as antecedents of brand love, e.g. studies of (Bergkvist et al., 2009; Ismail et al., 2012). Costumer often makes his/her purchase decision according to positive or negative word of mouth and the level of brand love. Brand love is a recent marketing construct that, so far, has been the object of limited attention but seems to attract a steadily growing interest among academics as well as practitioners (Bergkvist et al., 2009). The study try to explore the effect of an antecedents e.g. (brand image and brand identification) on independent variable which is called brand love, in addition, the study will try to illustrate the impact of brand love on dependent variable which is namely purchase decision making when the word of mouth is mediator.

2. Problem Statement

Although many studies have been conducted on this issue, but there are still gaps which are needed to be filled in the literature. Studies conducted by previous researchers only focused on certain aspects of purchase decision making process, and the variables used in those studies were segmented in nature. In other words, the model proposed in this study is an integrative one came from three separate models found in the related area of literature, For example, study of (Lo Chung, 2012) explored the relationship between word of mouth and consumer's purchase decision making, study of (Ismail et al., 2012) illustrated the effect of brand love on consumer's word of mouth, and study of (Bergkvist et al., 2009) explored the relationship between brand image and brand love, while the study of (Ismail et al., 2012) explored the effect of brand identification on brand love. This means, that three main models of this study were segmented in three different studies, and each one was separated alone, and this study tries to integrate them in one conceptual framework, and this is the contribution of this study.

3. Literature Review

For businesses that are offering products and services to the public, the customers are considered as one of the most important factors to be attended very carefully, since their wants and desires would have significant impacts on the way the businesses are run. Brand image, brand identification, brand love, as consequence of consumer's word of mouth and his/her purchase decision making are the main issues in this study which have a strong relation with the retention of customer as a key success factor in today’s business world. These issues are discussed in details to allay concepts of these concerns here.

3.1 Brand Image

Brand image has been recognized as an important concept in marketing and consumer behavior research (Hee, 2009). The customer deals every day with different types of products and services, so, brand image that is primarily responsible for brand differentiation (Morgan, 2004). The companies compete to give good idea about their products and services to build a positive image about their brand in costumer's mind. So, good perception of product and service quality would drive the costumer to form a positive brand image, (Tan et al., 2012).

There is stream of literature that regards brand image as being directly related to the product category within which the brand is marketed (Martinez et al., 2004). Brand management scholars (e.g. Aaker, 1996; Kapferer, 1997) have argued that brand image is an essential part of powerful brands which enable brands to differentiate their products from their competitors. Brand image is made up of brand association, it is a set of perceptions about a brand as reflected by the brand associations held in the consumers’ memory (Koubaa, 2008). Aaker (1991) defines brand associations as “the category of brand’s assets and liabilities that include anything ‘linked’ in memory to a brand.” Associations are informational nodes linked to the brand node in memory that contains the meaning of the brand for consumers (Keller et al., 1998, cited in Koubaa, 2008, p. 141). Keller (1993) goes on to explain that there are three important aspects of image: favorability, strength and uniqueness of brand associations. Moreover, the associations may be formed in one of the following categories: attributes of the product, benefits achieved from the product or attitudes towards the brand. The aim of every firm is to create favorable and positive associations about the brand which results in a positive image of the brand (Keller, 1993). Brand image is defined by Keller (1993, p. 3) as “the perceptions about a brand as reflected by the brand associations held in consumer memory”. In other words brand image is what comes to the mind of the consumer when a brand name is mentioned. Basically, brand image describes the consumer’s thoughts and feelings towards the brand (Roy & Banerjee, 2007). Dobni and Zinkhan (1990) argued that the product image is the result of the interaction between the receiver and the product stimuli. Factors contributing to the development of brand image are: product attributes, the firm, the marketing mix, the individual perceptions of the brand, personal values, experience, type of brand users and context variables. Sources of image formation could be either through direct experience with the brand or brand communication (Dobni & Zinkhan, 1990).

3.2 Brand Identification

Kuenzel et al., (2010) mentioned that the concept of brand identification is built on social identity theory, which has been employed widely in other disciplines. Identification based on social identity theory is in essence a perception of oneness with a group of persons. Brands possess deep meaning (Albert et al., 2013) and serve to build consumers’ self-concept or identities. Brewer (1991) Informed that brand identification has been emphasized that identification fulfils the need for social identity and self - identification. Using the identification concept in a brand-customer context can be justified in terms of the social identity theory itself, where identification with an organization can also happen without a need to interact or have formal ties with an organization. Consumers with stronger brand identification are more prone to engage in pro-brand activities, such as supporting the company goals, protecting its reputation, supporting its products and brand loyalty (Bhattacharya & Sen, 2003).

Brand identification is defined as ‘the extent to which the consumer sees his or her own self-image as overlapping the brand’s image (e.g. Sternberg et al., 1987; Bagozzi et al., 2006). Brand identification is also known as self-image congruence Sirgy M. J. et al., (1997) and self-connection. Although a number of previous studies (e.g. Algesheimer et al., 2005; Brown et al., 2005) have investigated the role of brand identification, none has investigated the relationship between brand identification and brand love. Bergkvist et al., (2009) informed that brand identification influences consumer's brand love, and they considered that brand identification as antecedents of brand love. Bergkvist et al., (2009) cited from (Ahuvia et al., 2006) that loved objects are central to people’s identity. The informants in his study use objects they love to boost their identity and reconcile conflicting identities. Although Ahuvia does not explicitly discuss causality or causal order, his study suggests that a consumer is more likely to love a brand, the stronger, he or she identifies with. For example, Ahuvia reports how one of his informants requires a ‘deep connection with what she sees as her desired identity as a culturally sophisticated bohemian' for her to love a product.

3.3 Brand Love

Since it was introduced by Shimp and Madden (1988), brand love has been a topic of great interest for brand managers. Customers can view a brand as an individual, so they can love a brand as they love a person (Ranjbarian et al., 2013). On the basis of Sternberg's (1986) tripartite conceptualization of interpersonal love, Shimp and Madden (1988) conceptualized consumer–brand relationship along three dimensions: liking, yearning and decision/commitment, which correspond to Sternberg's (1986) intimacy, passion and decision/commitment components of inter-personal love. Liking and yearning represent the feelings of intimacy with and passion for a brand, respectively. Similarly, on a cognitive level, decision refers to the individuals recognition of the liking and yearning for the brand in the short-term; whereas commitment is reflected in purchasing the same brand repeatedly over time.

Today companies have recognized that feeling of love toward a brand is a vital factor in establishing a good relationship with a customer, those brands which can make customers love their brands are more successful in gaining sustainable advantage and beating their competitors (Roberts, 2006). Marketing researchers have investigated the concept of brand love (Ahuvia, 2005; Fournier, 1998). Fournier (1998) answers the question of whether consumers can experience a feeling of love toward a brand, she established that such a feeling may exist and consumers may develop strong relationships with brands. Carroll and Ahuvia (2006) have stated that brand love is a blend of emotion and passion of an individual for a brand, in addition, they defined love for a brand as "the degree of passionate emotional attachment that a person has for a particular trade name." Consumers' love includes the following characteristics: "(1) passion for a brand, (2) brand attachment, (3) positive evaluation of the brand, (4) positive emotions in response to the brand, and (5) declarations of love toward the brand" (Albert et al., 2008).

Ahuvia et al. (2005) defined brand love as the degree of passionate emotional attachment a satisfied consumer has for a particular trade name. Bergkvist et al. (2009) mentioned that brand love and interpersonal love differ in that brand love is unidirectional, whereas interpersonal love is bi-directional 2 and that consumers are not expected to yearn for sexual intimacy with brands, a feeling generally associated with passionate interpersonal love. Moreover, love is generally regarded as qualitatively different from liking, that is, love is not extreme liking but rather a construct that is different from, but related to, liking (Sternberg, 1987).

Bergkvist et al. (2009) informed that brand love is important in a marketing context because it is positively related to brand loyalty and WOM.

3.4 Word of Mouth

Word-of-mouth means the measure of consumers' major informal communication. In early times, word- of-mouth meant at least two consumers, without commercial intention, communicating face-to-face regarding brands, products, or services. Communication is critical in customers' consumption and the process is called word-of-mouth (Ting & Chen, 2005). Word-of-mouth (WOM) communication usually invites thoughts on others. Some people engage in WOM communication to seek other people's opinions on products or companies. Other people first consider the characteristics of potential WOM message receivers and then deliver WOM messages to the relevant receiver (Allsop, Bassett & Hoskins, 2007)

Word of mouth is gaining importance among the societal changes observed in the environment and has become one of the most important and effective communication channel. Harrison-Walker (2001) defined WOM as "informal, person-to-person communication between a perceived non-commercial communicator and a receiver regarding a brand, a product, an organization or a service. The basic idea behind WOM is that information about products, services, stores, companies and so on can spread from one consumer to another. In its broadest sense, WOM communication includes any information about a target object (e.g. company, brand) transferred from one individual to another either in person or via some communication medium (Brown et al., 2005). WOM is described as the process that allows consumers to share information and opinions that direct buyers toward and away from specific products, brands and services (Hawkins et al., 2004). There is recent focus on WOM in the literature on relationship marketing as a potential response that can emerge from efforts directed at forming relationships with consumers (e.g. Verhoef et al., 2002).

Lo (2012) mentioned that word of mouth has been an age old concept where a person shares his view with another person. The views of the person can be related to a product or the service he have received. The studies in consumer behavior suggest that words of mouth have a strong influence on the psychology of the person. The influence of word of mouth can have both positive and negative aspects. Relating word of mouth to the consumer behavior, it can be interpreted that the positive word of mouth increases the likelihood of the consumers in opting for the product, whereas the negative word of mouth does the reverse. The overall effect of the word of mouth is dependent on two factors. The total number of people being exposed to positive word of mouth or negative word of mouth helps in judging the final influence.

3.5 Purchase Decision Making

Decision making is painful (Pfister, 2003). It requires effortful processing of available information to reach a suitable judgment. Thus, consumers may rely on inferences to make a choice. Huber and McCann (1982) have shown that inferences can affect how people evaluate products. Family members play an important role in the purchase decision process, and this process is taken collectively or individually. The importance of the family as a unit of analysis in consumer purchase decision-making is well established (Xia et al., 2006). The family as a critical purchase and consumption decision-making unit has attracted the attention of several authors (Commuri & Gentry, 2000; Levy & Lee, 2004; Ndubisi & Koo, 2006). There are many previous studies that illustrated the purchase decision making from the viewpoint of the family e.g. (Xia et al., 2006), while the others focused on the subject from the viewpoint of the couple (Frikha, 2010). But the issue of purchase decision-making remains renewed because it happens on daily, in all the time and everywhere. Although children will have an influence in certain unique product categories (e.g. breakfast cereals), their impact on day-to-day family decision making is limited (Spiro, 1983). Therefore, the fundamental question of who makes what purchase decisions in the family generally resides with the husband and the wife (Howard, 1989). Who makes the decision to buy it in the family is a matter of difference depends on the consumer culture and this is different from the country to another (Tony et al., 1997). So, we can define purchase decision making as process by which (1) consumers identify their needs, (2) collect information, (3) evaluate alternatives, and (4) make the purchase decision. These actions are determined by psychological and economical factors, and are influenced by environmental factors such as cultural, group, and social values (Xia et al., 2006).

3.6 The Relationship between Brand Image, Brand Identification and Brand Love

Previous studies considered brand image and brand identification as antecedents to brand love e.g. (Bergkvist et al., 2009; Ismail et al., 2012). In terms of brand image and brand love, there is strong relationship between brand image and brand love, for example, (Aaker, 1997; Fournier, 1998; Ismail et al., 2012) found positive and significant effect of brand image on brand love. In terms of brand identification and brand love, also, previous studies found there is strong relationship between brand identification and brand love, for example, (Bergkvist et al., 2009; Kressman et al., 2006; Albert et al., 2013) found that brand identification had positive effect on brand love.

According to what mentioned above, the study hypothesizes that both brand image and brand identification have positive effect on brand love.

3.7 The Relationship between Brand Love and WOM

If consumers feel they love the brand that in turn may translate into a desire of the recommend it to friends and relatives. So, many people use their word of mouth to inform others about products or services positively or negatively. With respect to this topic, many previous studies found there is strong relationship between brand love and costumer's word of mouth, e.g. (Ahuvia et al., 2006; Elaine et al., 2014; Ismail et al., 2012; Mark et al., 2014) found that brand love is positively related to consumer's word of mouth. According to what mentioned above, the study hypothesizes that brand love has strong positive effect on consumer's word of mouth.

3.8 The Relationship between WOM and Purchase Decision Making

It has been accepted in the present market scenario that word of mouth has become a powerful strategy for the marketing professionals. It has been found that the word of mouth has a significant role to play in influencing the customers to purchase a product; it has been found that often organizations induce their views in the word of mouth, (Villanueva et al., 2008). Lo (2012) found that word of mouth has a huge significance in influencing the purchase making decision of a consumer. Wang, X., (2011) informed that word of mouth has strong effect on consumer purchase decision making. In addition, (Trusov et al., 2009) referred that word of mouth has positive effect on consumer's purchase decision making, in addition, Dongsuk, (2007) found that word of mouth had positive effect on consumer's purchase decision. Even studies that have looked at the impact of e-WOM on customer purchase decision making and which is consider very closed to our study e.g. (Christodoulides et al., 2010; Huang et al., 2009; O'Reilly et al., 2011) explored that e-WOM has positive effect on costumer purchase decision making. According to what mentioned above, the study hypothesizes that: costumer' word of mouth has positive impact on his/her purchase decision making.

4. The Proposed Conceptual Framework

The conceptual framework below is proposed to ensure that brand image and brand identification are as antecedents of the independent variable which is namely brand love e.g. (Bergkvist, et al., 2009; Ismail, et al., 2012). Brand love impacts on dependent variable which is called consumer's purchase decision making when WOM is mediating.

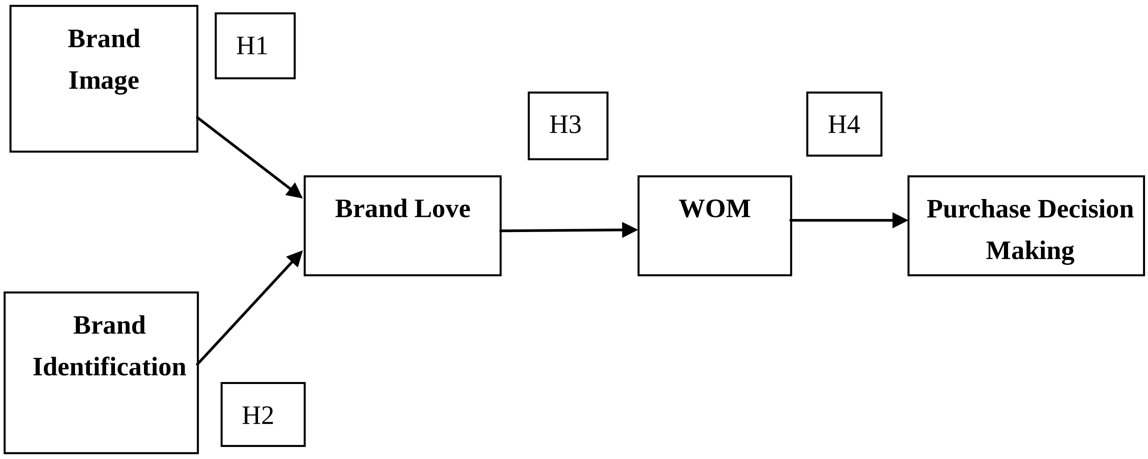


Figure 1. Conceptual framework of the study

5. Conclusion

This study aims to determine a conceptual framework, create consumer's purchase decision making by build consumer's brand love and to illustrate the role of mediating variable which is namely consumer's word of mouth. If the study were applied in practice in the future by one of the researchers, the results will inform the company mangers how to use the antecedents variables e.g. (brand image and brand identification) well, to explore their effects on brand love, and to illustrate which one has the strong effect on brand love. In addition, the study will give the researchers idea about the mediating role of WOM between brand love and consumer's purchase decision making whether partial or full mediating.

References

Aaker, D. A. (1991). *Managing Brand Equity: Capitalizing on the Value of a Brand Name*. New York, NY: The Free Press.

Aaker, D. A. (1996). *Building Strong Brands*. New York, NY: The Free Press.

Aaker, J. L. (1997). Dimensions of brand personality. *Journal of Marketing, 34*(3), 47–56.

Albert, N., & Merunka, D. (2013). The role of brand love in consumer-brand relationships. *Journal of Consumer Marketing, 30*(3), 258–266. http://dx.doi.org/10.1108/07363761311328928

Albert, N., Merunka, D., & Vallette-Florence, P. (2008). When consumers love their brands: exploring the concept and its dimensions. *Journal of Business Research, 61*(10), 1062–75. http://dx.doi.org/10.1016/j.jbusres.2007.09.014

Allsop, D. T., Bassett, B. R., & Hoskins, J. A. (2007). Word-of-mouth re-search: Principles and applications. *Journal of Advertising Research*, 398-411. http://dx.doi.org/10.2501/S0021849907070419

Bergkvist, L., & Larsen, T. B. (2010). Two studies of consequences and actionable antecedents of brand love. *Journal of Brand Management, 17*(7), 504–518. http://dx.doi.org/10.1057/bm.2010.6

Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin, 17*, 475–482. http://dx.doi.org/10.1177/0146167291175001

Brown, T. J., Barry, T. E., Dacin, P. A., & Gunst, R. F. (2005). Spreading the word: antecedents of consumers' positive word-of-mouth intentions and behaviours in a retailing context. *Journal of Academy of Marketing Science, 33*(2), 123-38. http://dx.doi.org/10.1177/0092070304268417

Carroll, B. A., & Ahuvia, A. C. (2006). Some antecedents and outcomes of brand love. *Marketing Letters, 17*(2), 79–89. http://dx.doi.org/10.1007/s11002-006-4219-2

Christodoulides, G., & Argyriou, E. (2010). Cross-national differences in e-WOM influence. *European Journal of*

*Marketing, 4*6(11/12), 2012.

Commuri, S., & Gentry, J. W. (2000). Opportunities for family research in marketing. *Academy of Marketing Science*. Retrieved from http://www.amsreview.org/articles/commuri08-2000.pdf

Dongsuk, J. (2007). Effects of word-of-mouth communication on purchasing decisions in restaurants: A path analytic study. *ProQuest Dissertations and Theses*, 2007, ProQuest.

Elaine, W., Isable, B., & Leslie D. (2014). Consumer engagement with self-expressive brands: brand love and WOM outcomes. *The Journal of Product and Brand Management, 23*(1), 33–42. http://dx.doi.org/10.1108/JPBM-06-2013-0326

Fournier, S. (1998). Consumers and their brands: developing relationship theory in consumer research. *Journal of Consumer Research, 24*(4), 343–73. http://dx.doi.org/10.1086/209515

Frikha, A. (2010). Conflict in purchase decision making within couples. *Journal of Islamic Marketing, 1*(3). http://dx.doi.org/10.1108/17590831011082419

Harrison-Walker, L. J. (2001). E-complaining: a content analysis of an internet complaint forums. *Journal of Service Marketing, 15*(5), 397–412. http://dx.doi.org/10.1108/EUM0000000005657

Hawkins, D. I., Best, R., & Coney, K. A. (2004). *Consumer Behavior: Building Marketing Strategy* (9th ed.). Boston, MA: McGraw-Hill.

Hee, P. S. (2009). *The antecedents and consequences of brand image: Based on Keller's customer-based brand equity*. The Ohio State University, ProQuest, UMI Dissertations Publishing.

Howard, J. A. (1989). Consumer Behavior in Marketing Strategy. Englewood Cliffs, NJ: Prentice-Hall.

Huang, M., Cai, F., Tsang, A., & Zhou, N. (2009). Making your online voice loud: the critical role of WOM information. *European Journal of Marketing, 45*(7/8), 201.

Huber, J., & McCann, J. (1982). The impact of inferential beliefs on product evaluations. *Journal of Marketing Research, 19*, 324-33. http://dx.doi.org/10.2307/3151566

Ismail, A. R., & Spinelli, G. (2012). Effects of brand love, personality and image on word of mouth: The case of fashion brands among young consumers. *Management, 16*(4).

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing, 57*(1), 1-22. http://dx.doi.org/10.2307/1252054

Koubaa, Y. (2008). Country of origin, brand image perception, and brand image structure. COO and brand image. *Asia Pacific Journal of Marketing and Logistics, 20*(2). http://dx.doi.org/10.1108/13555850810864524

Kressman, F., Sirgy, M. J., Herrman, A., Huber, F., Huber, S., & Lee, D. J. (2006). Direct and indirect effects of self-image congruence on brand loyalty. *Journal of Business Research, 59*(9), 955–964. http://dx.doi.org/10.1016/j.jbusres.2006.06.001

Kuenzel, S., & Halliday, S. S. (2010). The chain of effects from reputation and brand personality congruence to brand loyalty: The role of brand identification. *Journal of Targeting, Measurement and Analysis for Marketing, 18*(3/4), 167–176. http://dx.doi.org/10.1057/jt.2010.15

Levy, D. S., & Lee, K. C. (2004). The influence of family members on housing purchase and decisions. *Journal of Property Investment & Finance, 22*(4/5), 320–338. http://dx.doi.org/10.1108/14635780410550885

Lo, S. C. (2012). Consumer decision: The Effect of Word of Mouth. *The International Journal of Organizational Innovation, 4*(3).

Mark, F., Michele, B., Filho, C., & Souki, G. C. (2014). The effect of product category on consumer brand relationships. *Journal of Product and Brand Management, 23*(2), 78–89. http://dx.doi.org/10.1108/JPBM-05-2013-0310

Martinez, E., & Chernaton, L. (2004). The effect of brand extension strategies upon brand image. *The Journal of Consumer Marketing, 21*(1), 39. http://dx.doi.org/10.1108/07363760410513950

Morgan, F. N. (2004). *Brand Image Formation and Updating Across Multiple-Episode Experiences Within Service Networks*. A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy, Arizona State University.

Ndubisi, N. O., & Koo, J. (2006). Family structure and joint purchase decisions: two products analysis. *Management Research News, 29*(1/2), 53–64. http://dx.doi.org/10.1108/01409170610645448

O'Reilly, K., & Marx, S. (2011). How young, technical consumers assess online WOM credibility. *Qualitative Market Research: An International Journal*, *14*(4), 330–359. http://dx.doi.org/10.1108/13522751111163191

Pfister, R. H. (2003). Decision making is painful- we knew it all along. *Journal of Behavioral Decision Making, 16*(1), 73. http://dx.doi.org/10.1002/bdm.424

Ranjbarian, B., Kazemi, A., & Borandeg, F. (2013). Analyzing the Antecedents and Consequences of Brand Love with a Case Study on Apple Cell phone Users. *International Journal of Academic Research in Business and Social Sciences November, 3*(11). http://dx.doi.org/10.6007/IJARBSS/v3-i11/341

Roberts, K. (2006). *Love marks: The Future Beyond Brands*. New York: Power House Books.

Roy, D., & Banerjee, S. (2007). CARE-ing strategy for integration of brand identity with brand image. *International Journal of Commerce and Management, 17*(1/2), 140–8. http://dx.doi.org/10.1108/10569210710776512

Sen, S., Bhattacharya, C. B., & Korschun, D. (2006). The Role of Corporate Social Responsibility in Strength-ening Multiple Stakeholder Relationships: A Field Experiment. *Journal of the Academy of Marketing Science, 34*(2), 158–166. http://dx.doi.org/10.1177/0092070305284978

Shimp, T. A., & Madden, T. J. (1988). Consumer-object relations: a conceptual framework based analogously on Sternberg's triangular theory of love. *Advances in Consumer Research*, *15*(1), 163–168.

Spiro, R. L. (1983). Persuasion in family decision making. *Journal of Consumer Research, 9*, 393–402. http://dx.doi.org/10.1086/208933

Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review, 93*(2), 119–135. http://dx.doi.org/10.1037/0033-295X.93.2.119

Sternberg, R. J. (1987). Liking versus loving: Acomparative evaluation of theories. *Psychological Bulletin, 102*(3), 331–345. http://dx.doi.org/10.1037/0033-2909.102.3.331

Tan, T. M., Liew, T. W., William, L. S., Michelle, O. B., & Tan, S. M. (2012). Consumer-based Brand Equity in the Service Shop. *International Journal of Marketing Studies, 4*(4).

Ting, I. H., & Chen, M. Y. (2005). *Data Mining*. Taichung City, Cang Hai Books.

Tony, H., Micheal, L., & Tim, H. (1997). Japanese couples' marital roles in stages of product purchase decision making. *International Marketing Review, 14*(1), 39–58. http://dx.doi.org/10.1108/02651339710159206

Trusov, M., Bucklin, R. E., & Pawls, K. (2009). Effects of Word-of-Mouth versus Traditional Marketing: Findings from an Internet Social Networking Site. *Journal of Marketing, 73*, 90–102. http://dx.doi.org/10.1509/jmkg.73.5.90

Verhoef, P. C., Franses, P., & Hoekstra, J. C. (2002). The effect of relational constructs on customer referrals and number of services purchased from a multiservice provider: does age of relationship matter? *Journal of Academy of Marketing Science, 30*(3), 202–12. http://dx.doi.org/10.1177/0092070302303002

Villanueva, J., Yoo, S., & Hanssens, D. M. (2008). The Impact of Marketing-Induced Versus Word-of-Mouth Customer Acquisition on Customer Equity Growth. *Journal of Marketing Research*, *45*(1), 48–59. http://dx.doi.org/10.1509/jmkr.45.1.48

Wang, X. (2011). The effect of inconsistent word of mouth during service encounter. *Journal of Services Marketing, 25*(4), 252-259. http://dx.doi.org/10.1108/08876041111143087

Xia, Y., Ahmed, U., & Ghingold, M. (2006). Spousal influence in Singaporean family purchase decision-making process A cross-cultural comparison. *Asia Pacific Journal of Marketing and Logistics, 18*(3), 201–222. http://dx.doi.org/10.1108/13555850610675661

International Business Research; Vol. 7, No. 10; 2014
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Reviewer Acknowledgements

International Business Research wishes to acknowledge the following individuals for their assistance with peer review of manuscripts for this issue. Their help and contributions in maintaining the quality of the journal is greatly appreciated.

International Business Research is recruiting reviewers for the journal. If you are interested in becoming a reviewer, we welcome you to join us. Please find the application form and details at http://www.ccsenet.org/reviewer and e-mail the completed application form to ibr@ccsenet.org.

Reviewers for Volume 7, Number 10

Amran Awang, Head of Entrepreneurship Center, Malaysia

Anant Deshpande, SUNY Empire State College, USA

Antônio André Cunha Callado, Universidade Federal Rural de Pernmabuco, Brazil

Badar Aalm Iqbal, Aligarh Muslim University, Switzerland

Behrooz Gharleghi, Asia Pacific University of Technology and Innovation, Malaysia

Benjamin J. Inyang, University of Calabar, Nigeria

David Lynch, Universal Studios, USA

Eva M. Bolfíková, Univerzity of P. J. Šafárik in Košice, Slovak Republic

Florin Ionita, The Bucharest Academy of Economic Studies, Romania

Francesco Ciampi, Florence University, Italy

Gengeswari Krishnapillai, Universiti Tunku Abdul Rahman, Malaysia

Janusz Wielki, University of Business in Wroclaw, Poland

Mansour Esmaeil Zaei, Panjab University, India

Monika Wieczorek-Kosmala, University of Economics in Katowice, Poland

Niccolò Gordini, University of Milano-Bicocca, Italy

Radoslav Jankal, University of Zilina, Slovakia

Sorinel Capusneanu, Artifex University, Romania

Valeria Stefanelli, Università degli Studi Niccolò Cusano, Italy

Yuen Yee Yen, Multimedia University, Malaysia

Call for Manuscripts

International Business Research (*IBR*) is an international, double-blind peer-reviewed, open-access journal published by the Canadian Center of Science and Education. The journal focuses on the following topics: business, marketing, management, finance, economics, accounting and relevant subjects. It provides an academic platform for professionals and researchers to contribute innovative work in the field. *IBR* carries original and full-length articles that reflect the latest research and developments in both theoretical and practical aspects of international business. This journal is published monthly in both print and online versions, and the online version is free to access and download.

We are seeking submissions for forthcoming issues. All manuscripts should be written in English. Manuscripts from 3000–8000 words in length are preferred. All manuscripts should be prepared in MS-Word format, and submitted online, or sent to: ibr@ccsenet.org

Paper Selection and Publishing Process

a) Upon receipt of a submission, the editor sends an e-mail of confirmation to the submission's author within one to three working days. If you fail to receive this confirmation, your submission e-mail may have been missed.

b) Peer review. We use a double-blind system for peer review; both reviewers' and authors' identities remain anonymous. The paper will be reviewed by at least two experts: one editorial staff member and at least one external reviewer. The review process may take two to three weeks.

c) Notification of the result of review by e-mail.

d) If the submission is accepted, the authors revise paper and pay the publication fee.

e) After publication, the corresponding author will receive two hard copies of the journal, free of charge. If you want to keep more copies, please contact the editor before making an order.

f) A PDF version of the journal is available for download on the journal's website, free of charge.

Requirements and Copyrights

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the authorities responsible where the work was carried out, and that, if accepted, the article will not be published elsewhere in the same form, in English or in any other language, without the written consent of the publisher. The editors reserve the right to edit or otherwise alter all contributions, but authors will receive proofs for approval before publication.

Copyrights for articles are retained by the authors, with first publication rights granted to the journal. The journal/publisher is not responsible for subsequent uses of the work. It is the author's responsibility to bring an infringement action if so desired by the author.

More Information

E-mail: ibr@ccsenet.org

Website: www.ccsenet.org/ibr

Paper Submission Guide: www.ccsenet.org/submission

Recruitment for Reviewers: www.ccsenet.org/reviewer

The journal is peer-reviewed

The journal is open-access to the full text

The journal is included in:

- Cabell's
- DOAJ
- EBSCOhost
- EconLit
- ERA
- Google Scholar
- JEL
- Lockss
- NewJour
- Open J-Gate
- PKP Open Archives Harvester
- ProQuest
- SHERPA/RoMEO
- Standard Periodical Directory
- Ulrich's
- Universe Digital Library

International Business Research

Monthly

Publisher Canadian Center of Science and Education

Address 1120 Finch Avenue West, Suite 701-309, Toronto, ON., M3J 3H7, Canada

Telephone 1-416-642-2606

Fax 1-416-642-2608

E-mail ibr@ccsenet.org

Website www.ccsenet.org/ibr

9 771913 900008 10 >