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Latent Growth Curve Analysis Across Group Gender: A Case Study on Student Motivation

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Presentation Flow

- Introduction
- Objectives
- Hypothesis Development
- Measures
- Structural Model
- Conclusion

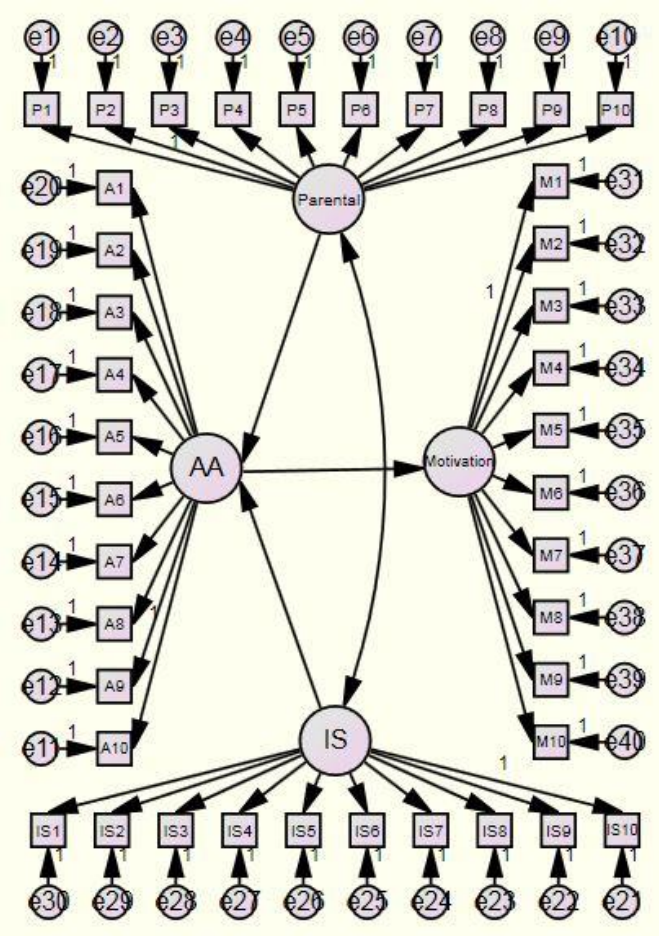
Introduction

- Student Motivation construct is not new in academic field, yet, this construct is always considered as an research outcome.
- For instance, many western region research on students' motivation that is seem central in psychological and educational research (Pintrich, 2003).
- Basically, students' motivation is more focusing on primary and secondary school level and thus the learning and teaching context is always prioritized (Murphy & Alexander, 2000).
- True nature of students' motivation is very complex and need a depth investigation to be comprehended. Currently, four theories are prominent in educational pyschological such as self-efficacy theory, attribution theory, self-worth theory and achievement goal theory (Seifert, 2004).

Research Objectives

- To identify the best fitting unconditional latent growth curve model for students' motivation across gender.
- To determine the significance of each path of the structural model.
- To study the students' behavioral change on motivation according to year of study.

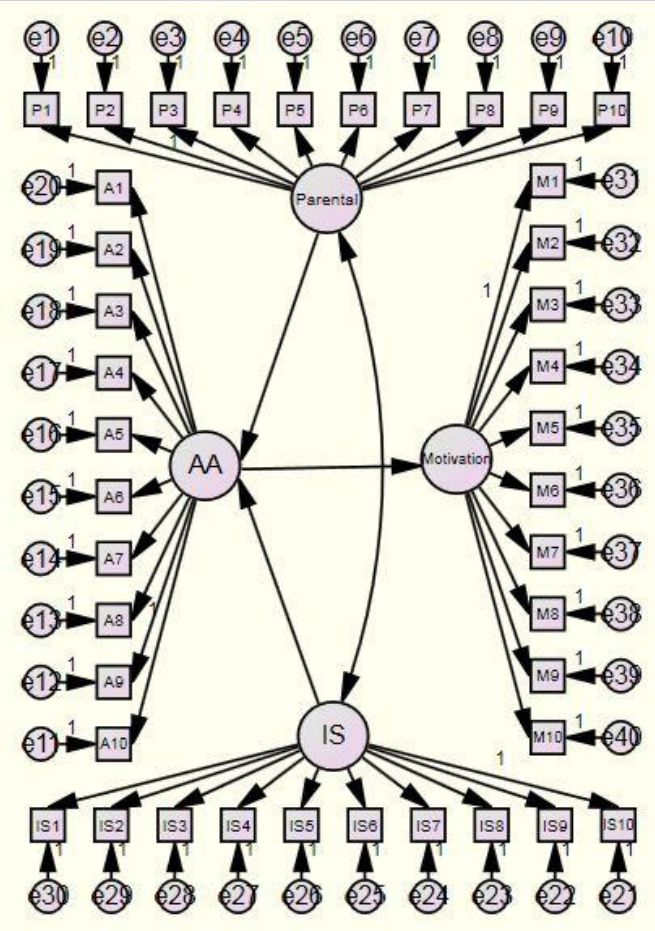
Measures



- Likert scale items were used.
- Sample size = 400 samples (as recommended by Hair et. al., 2006); sample size must be ranged (5 to 10) times variables.

  (in this study; no.of items x 10)
- Short forms:
  i. AA = Academic Achievement
  ii. IS = Institution Support

Hypothesis Development



i. Hypothesis 1: Institutional Support has a positive effect on Academic Achievement.

ii. Hypothesis 2: Parental Involvement has a positive effect on Academic Achievement.

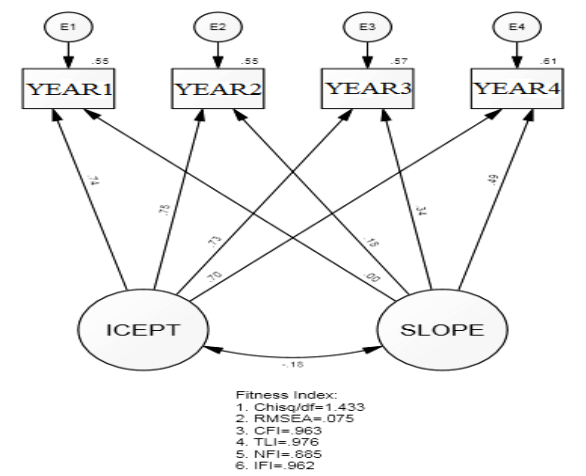
iii. Hypothesis 3: Academic Achievement has a positive effect on Intercept of Student Motivation.

iv. Hypothesis 4: Academic Achievement has a positive effect on Slope of Student Motivation.

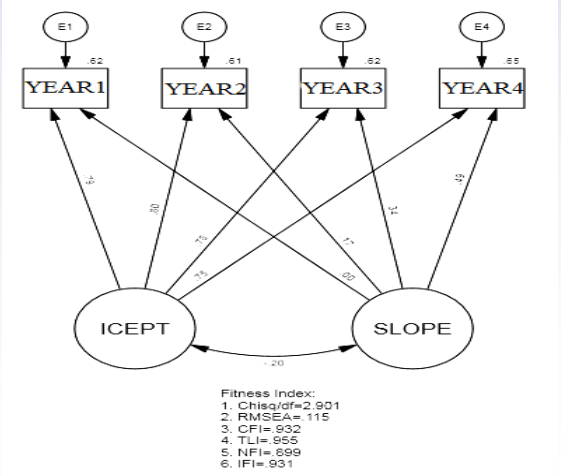
Result

Unconditional Model

Male



Female

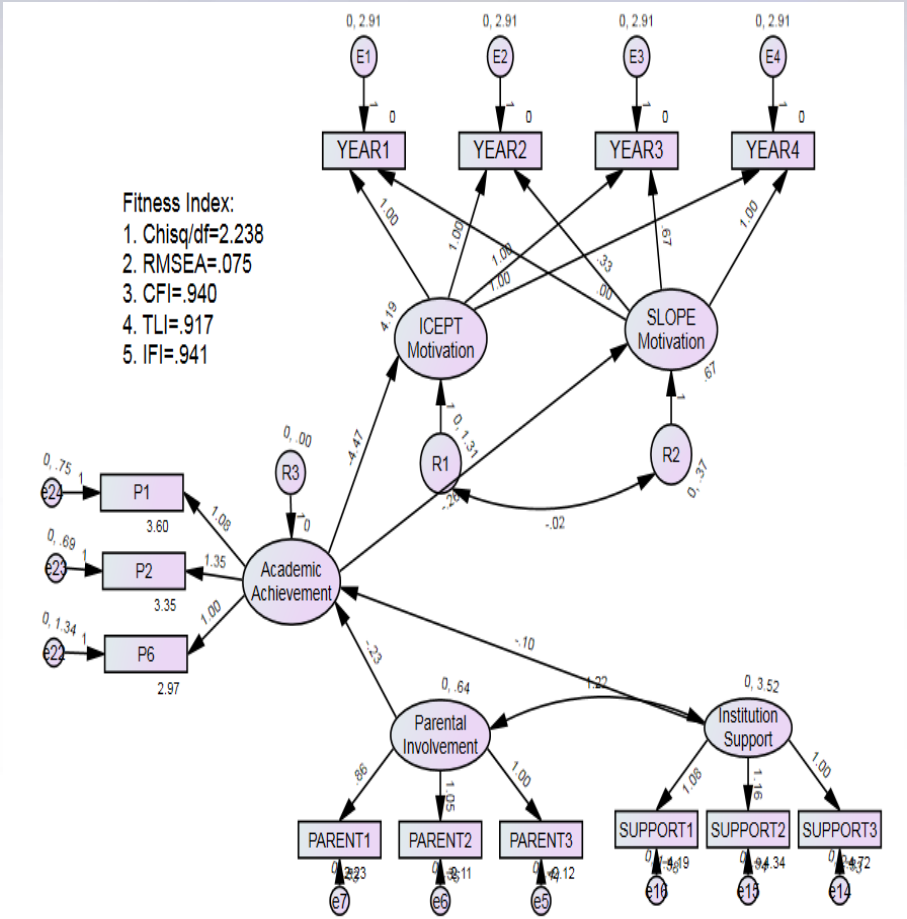


Using a well-known theory of Maximum Likelihood Estimator (MLE), we found that the fitness indexes for unconditional model; Chisquare of normalized by degree of freedom (< 3.0); CFI, TLI, IFI (rangging from 0.931 to 0.976) and RMSEA (rangging from 0.075 to 0.115) which are acceptable across gender.

To bolster the explanation of fitness, Zainudin (2015) and Holmes-Smith et al., (2006) contend that the researchers can choose any index to assess the measurement model.

Result

Conditional Model (Unstandardized)

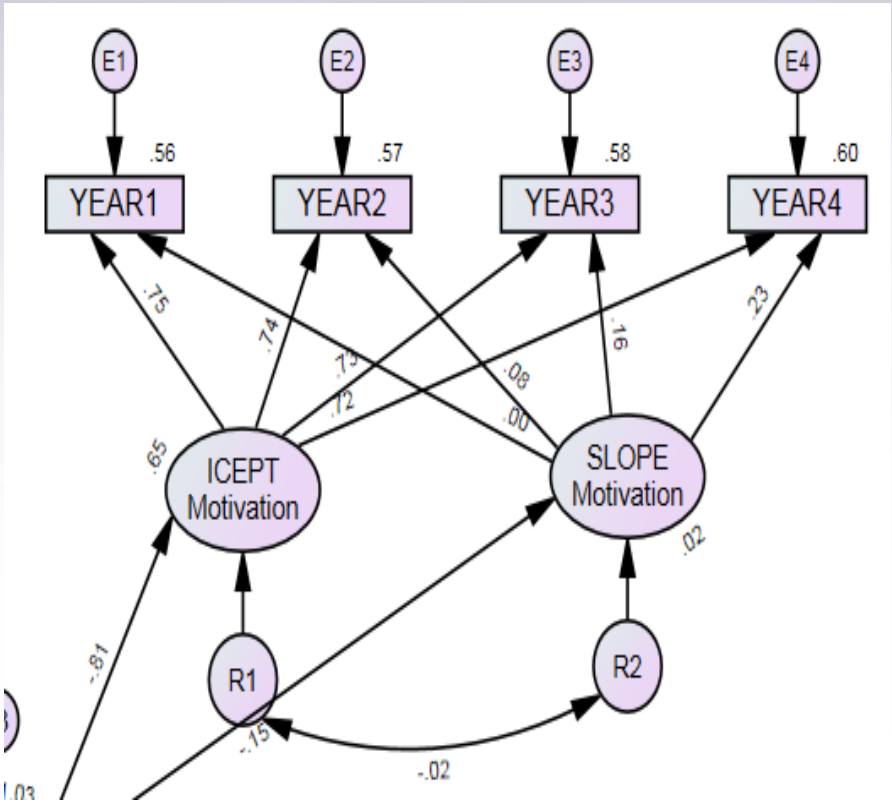


After the best fitting unconditional latent growth curve model for student motivation is identified, we developed a conditional model to test the potential relationship between Academic Achievement, Parental Involvement and Institutional Support on Student Motivation.

The best fitting of unconditional model is necessary to ensure the fitness level of student motivation is achieved and thus has a potential to approximate the accurate estimate for decision making.

Result

Conditional Model (Standardized)



We find out that there are three significant of causal effect such as:

a) Parental Involvement has a positive impact on Academic Achievement(β= 0.226, CR= 2.328, P= 0.020),

b) Institution Support has a positive impact on Academic Achievement (β= 0.102, CR= 2.406, P= 0.016),

c) Academic Achievement has a positive impact on Intercept of Motivation (β= 4.467, CR= 2.859, P= 0.004).

Meanwhile, one of non-significant effect occur in the relationship between Academic Achievement and Slope of Motivation (β= 0.264, CR= 0.554, P= 0.580).

The mean slope value is 0.02, it means that the average rate of change is increase at 0.02 unit each year.

Conclusion and Discussion

i. **Latent Growth model is a structural model which can be used to analyze the rate of change of a model for a period of times. However, it has not been widely used by researcher specifically in Malaysia.**

ii. **By using Latent Growth model, researchers are able to determine the rate of change for factor of interest. It also may help researchers in obtaining a better finding for decision making purposes.**

iii. **More research should be done on this method, and it may also be extended for a more complex model.**