MEASUREMENT MODEL OF MULTIPLE INTELLIGENCE FOR
EMPLOYABILITY AMONG MANAGEMENT GRADUATES IN
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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Specially dedicated to my beloved family

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ABSTRACT

In this study, developing a fit measurement model and identifying the best fitting items to represent Howard Gardner's nine intelligences namely, musical intelligence, bodily-kinaesthetic intelligence, mathematical/logical intelligence, visual/spatial intelligence, linguistic intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence and spiritual intelligence are the main interest in order to enhance the opportunities of the management graduates for employability. In order to develop a fit measurement model, Structural Equation Modeling (SEM) was applied where it consisted of several stages such as (1) Model specification, (2) Model identification, (3) Model estimation, (4) Model evaluation, (5) Model modification using Confirmatory Factor Analysis (CFA). A psychometric test which is the Ability Test in Employment (ATIEm) was used as the instrument to measure the existence of nine types of intelligence of UTeM management graduates for job placement purposes. This study was conducted at the Faculty of Technology Management and Technopreneurship (FPTT), Universiti Teknikal Malaysia Melaka (UTeM). The respondents of this study consisted of 137 graduates. The initial measurement model contains nine unobserved variables and each unobserved variable is measured by ten observed variables. Hence, the model contains 90 observed variables. However, 59 observed variables have low factor loadings where some modifications had been done by removing those items and they were excluded from further analysis. As such, the modified measurement model deemed to improve the Goodness-of-Fit [GFI (Goodness of Fit Index) = 0.814; RMR (Root Mean Square Residuals) = 0.063; TLI (Tucker-Lewis Fit Index) = 0.928; IFI (Incremental Fit Index) = 0.940; CFI (Comparative Fit Index) = 0.938; RMSEA (Root Mean Square of Approximation) = 0.049]. The modification procedures significantly improved the overall model fit as the fit indices show adequate model fit to the data. Furthermore, ATIEm underwent the process of CFA to validate the items and constructs related with the items. The Composite Reliability (CR) values ranged from 0.743 to 0.930 which were above the suggested benchmark value of 0.70 whereas the Average Variance Extracted (AVE) of each factor exceeded 0.50, representing good convergent validity, causing the measurement model is acceptable. The final modified measurement model contains 31 observed variables which have factor loadings more than 0.60 with those 31 items as considered as the best fitting items to represent Gardner's nine intelligences. The finding showed that the UTeM management graduates possessed all nine intelligences either it is high or low. Musical intelligence, mathematical/logical intelligence, naturalist intelligence and spiritual intelligence contributed highest loadings on certain items. But, most of the intelligences such as bodily-kinaesthetic intelligence, visual/spatial intelligence, verbal/linguistic intelligence, interpersonal intelligence and intrapersonal intelligence possessed by UTeM management graduates are just at the borderline.

ABSTRAK

Kajian ini dijalankan untuk membangunkan satu model pengukuran yang sepadan untuk mengenalpasti item-item yang paling sesuai bagi mewakili sembilan kecerdasan Howard Gardner iaitu muzik, ruang, lisan, matematik/logik, kinestetik, interpersonal, intrapersonal, naturalis dan rohani bagi meningkatkan peluang graduan pengurusan untuk mendapatkan pekerjaan. Pemodelan Persamaan Struktural *(Structural Equation Modeling)* digunakan untuk membangunkan model pengukuran. Penggunaan analisis Pemodelan Persamaan Struktural melalui beberapa tahap bagi membentuk model pengukuran iaitu (1) Spesifikasi model, (2) Identifikasi model, (3) Penganggaran model, (4) Ukuran kesesuaian model, (5) Modifikasi model dengan menggunakan Analisis Faktor Pengesahan (Confirmatory Factor Analysis). Ujian psikometrik iaitu Ujian Keupayaan dalam Pekerjaan (ATIEm) digunakan sebagai instrumen untuk mengukur sembilan jenis kecerdasan graduan pengurusan bagi tujuan penempatan pekerjaan. Kajian ini dijalankan di Fakulti Pengurusan Teknologi and Teknousahawanan (FPTT), Universiti Teknikal Malaysia Melaka (UTeM). Kajian ini merangkumi sebanyak 137 responden. Model pengukuran asal mengandungi sembilan variabel indikator dimana setiap variabel tersebut diukur oleh 10 variabel pendam. Oleh itu, model tersebut mengandungi 90 variabel indikator. Walaubagaimanapun, 59 variabel indikator tersebut mempunyai nilai *factor loading* yang rendah dimana beberapa modifikasi telah dilakukan dengan mengeluarkan item-item tersebut dan dikecualikan daripada analisis seterusnya. Oleh itu, model pengukuran yang telah dimodifikasi dianggap dapat meningkatkan nilai indeks kesepadanan [GFI (Goodness of Fit Index) = 0.814; RMR (Root Mean Square Residuals) = 0.063; TLI (Tucker-Lewis Fit Index) = 0.928; IFI (Incremental Fit Index) = 0.940; CFI (Comparative Fit Index) = 0.938; RMSEA (Root Mean Square of Approximation) = 0.049]. Proses modifikasi ini telah dapat memperbaiki kesepadanan model dengan data secara signifikan. Seterusnya, ATIEm telah melalui Analisis Faktor Pegesahan *(Confirmatory Factor Analysis)* bagi mengesahkan item dan konstruk yang berkaitan dengan item tersebut. Nilai *Composite Reliability (CR)* adalah melebihi nilai yang disarankan iaitu 0.70 (dari 0.743 hingga 0.930) sementara nilai *Average Variance Extracted (AVE)* bagi setiap factor melebihi 0.50, menunjukkan nilai *Convergent Validity* yang baik dan model pengukuran yang dimodifikasikan adalah sepadan dengan data kajian. Model pengukuran modifikasi yang terakhir mengandungi 31 variabel indikator yang mempunyai nilai *factor loading* melebihi 0.60 dan di mana item-item tersebut dianggap paling sepadan bagi mewakili sembilan kecerdasan Howard Gardner. Hasil kajian membuktikan bahawa graduan pengurusan UTeM mempunyai kesemua sembilan kecerdasan Howard Gardner sama ada ia adalah tinggi atau rendah. Kecerdasan muzik, matematik/logik, naturalis dan rohani menyumbang *factor loadings* yang paling tinggi pada item-item tertentu. Tetapi, kebanyakan kecerdasan yang dimiliki oleh graduan pengurusan UTeM seperti kinestetik, ruang, lisan, interpersonal dan intrapersonal hanya pada peringkat *borderline*.

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LIST OF ACRONYMS

AMOS	Analysis of Moment Structures
ATIE$^{©}$	Ability Test in Epilepsy
ATIEm	Ability Test in Employment
BITM	Bachelor of Technology Management (Innovation Technology)
BTMM	Bachelor of Technology Management (High Technology Marketing)
BTEC	Bachelor of Technopreneurship
FPTT	Faculty of Technology Management and Technopreneurship
CFI	Comparative Fit Index
CR	Composite Reliability
GE	Graduate Employability
GFI	Goodness-of-Fit Index
GOF	Goodness-of-Fit
HEI	Higher Education Institutions
HR	Human Resource
HRM	Human Resource Management
IFI	Incremental Fit Index
M	Mean
MI	Multiple Intelligences
ML	Maximum Likelihood
MOHE	Ministry of Higher Education
PGFI	Parsimony Goodness-of-Fit Index
PNFI	Parsimony Normed-of-Fit Index
RMR	Root Mean Square Residuals
RMSEA	Root Mean Square of Approximation
SD	Standard Deviation

SPSS	Statistical Package for Social Science
SEM	Structural Equation Modeling
TLI	Tucker-Lewis Index
UTeM	Universiti Teknikal Malaysia Melaka

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CHAPTER 1

INTRODUCTION

This chapter discusses on the background of study, problem statement, research questions and objectives, scope of study, significance of study, research limitations, conceptual and operational definitions, research framework and finally the summarization of this chapter.

1.1   Background of Study

Graduates unemployment is an important issue facing in many developing countries including Malaysia. This issue needs immediate attention as high unemployment implies that the country's labour resource is not fully exploited. A country cannot achieve its maximum productivity if the county's resources are not fully utilized (Razak, Yusof, Syazana, Jaafar and Talib, 2014). According to Malaysian Labour Force Statistic (2015), unemployed rate in Malaysia came in at 3.30% in December 2015 from 3.20% in November 2015 which is a little beyond market expectations. It is the highest level since January 2014, as the unemployed persons rose to 478.1 million in December from 453.3 million in a month earlier. There were 13 896.6 million employed persons, relatively flat from 13 899.2 million in November

2015. Unemployment rate in Malaysia is reported by the Department of Statistic Malaysia.

In May 2015, Minister in the Prime Minister's Department Abdul Wahid Omar said that graduates who have completed their studies in six months are among the current 400 000 unemployed individuals in the country. Furthermore, he stated that according to the statistics, 161 000 graduates or 8.8% of youths, aged between 20 and 24 years, had yet to find a job (theSundaily, 2015). In May 2015, Malaysia Prime Minister, Datuk Seri Najib Razak also said that there is almost nonexistent unemployment rate following the implementation of the National Transformation Policy. He added that since the National Transformation Policy was implemented, the government has managed to provide 1.5 million employment opportunities, until Malaysia's unemployment rate is very low, almost full employment (Lin, 2015). Even though overall Malaysian unemployment rate has declined, the number of unemployed university graduates continues to increase because of low pay and intense competition for jobs.

According to Hanapi and Nordin (2014), insufficient job opportunities is not the cause of unemployment issue occurred in Malaysia but it happens because of low quality of graduates. It is obvious based on availability of job vacancies and job placement in Peninsular Malaysia in 2012 and it is understood that are rising from year to year (Hanapi and Nordin, 2014). Yet, these job opportunities are occupied by only a part of the workforces. According to Ismail, Yussof, and Sieng, (2011), employers are not satisfied as many graduates do not meet their requirements. Among the deficiencies possessed by fresh graduates are lack of soft skills and incapable to perform well at workplace. Downe *et al.* (2012) stated that employers want a more versatile workforce with well-developed generic skills such as creative thinking, problem solving and analytical thinking in order to compute in global arena.

Employers are putting extra consideration in the process of hiring graduates compared to standard recruitment because according to them graduate recruitment is more complicated. Employers are also looking for the very best candidates in graduates with the expectations that the right candidate will not only have strong degree results but also will have outstanding interpersonal skills. According to Ministry of Higher Education's Report in 2015, there are three main skills competencies that employers look for at recruitment stage are effective communication, numeracy and team player. Furthermore, in recent years Malaysian industries are focusing on two sets of skills which are hard skills and soft skills. Hard skills are about a person's skill set and ability to accomplish a particular type of assignment while soft skills are interpersonal or people skills that enhance an individual's communications, job accomplishment and career potentials. Hard skills include ability to use software programs, measuring and calculating, analysing data and speaking a foreign language. On the other hand, soft skills are work ethic, positive attitude, good communication skills, time management skills, problem solving skills, ability to work in team, adaptability, leadership and creative thinking (Ministry of Higher Education Malaysia, 2012).

Employability consists of the words employment and ability and thus emphasize about the ability to be employed (Yorke, 2001). In the context of this study, employability refers to graduates' ability to get a job based on Gardner's Multiple Intelligences (MI) which are musical intelligence, bodily-kinaesthetic intelligence, logical/mathematical intelligence, visual/spatial intelligence, verbal/linguistic intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence and spiritual intelligence and the individual's capabilities to successfully perform the task of a job and hence accomplish the employer's demand. Gardner's MI consists of both hard skills and soft skills which are highly valued in today's workforce. Howard Gardner introduced MI theory in his book Frames of Mind in 1983 (Gardner, 1983). Gardner defines intelligence as the ability to solve problems, or to create products that are valued within one or more cultural settings (Gardner, 2004). Initially Gardner identified seven intelligences however, later nine with the addition of two intelligences (Gardner, 1983; 1999). These intelligences include musical intelligence, bodily-

kinaesthetic intelligence, mathematical/logical intelligence, visual/spatial intelligence, verbal/linguistic intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence and spiritual intelligence.

According to Gardner (1983), these intelligences are inherited as well as culturally derived. Besides that, Gardner (1983) stated that intelligence is not a single capacity. All humans possess these intelligences in varying degree where each individual have personal intelligence profiles which consists of combinations of nine different intelligences types. MI assists organizations to use human capital more effectively in a working environment (Gardner, 2006). This is because understanding the theory of MI helps the Human Resource (HR) personnel to recruit the right candidates for each position which is critical to the success and failure of any organization. On the other hand, mastery in MI gives graduates the confidence and opportunity to develop career that fit their intelligences. Hence, it is essential for current educational system and academic practices to focus on the application of MI while industries need to emphasize on employment based on Gardner's nine intelligences in order to hire the right candidate for the position.

In this study, MI application concentrates on intelligence profile of management graduates for job placement purposes based on Gardner's nine intelligences. Knowing one's intelligence profile can help for example, management graduates to recognize their ability and to increase the likelihood of being employed. Mostly, different jobs need different intellectual strengths and also different intellectual profiles. Therefore, it is important for graduates to know their own strengths and weaknesses as it is vital in almost any job and definitely in having successful career overtime.

In order to identify the MI of graduates, Structural Equation Modeling (SEM) is applied. SEM with unobserved variables is a leading research paradigm in the management community today (Davčik, 2013). Goal of SEM is to explain the pattern among a set of unobserved variables that are each measured by observable indicators (Ullman, 2006). In this study, SEM is used to develop a measurement model for MI

profiles of Universiti Teknikal Malaysia Melaka (UTeM) management graduates and explain the relationships between the constructs. On the basis of this study, a psychometric test which is the Ability Test in Employment (ATIEm) is used as the instrument to measure the nine intelligence types of management graduates. ATIEm is an expansion of the Ability Test in Epilepsy (ATIE$^{©}$ 2008). ATIE$^{©}$ is a psychometric test developed based on Gardner's MI theory to measure eight intelligence types of people with epilepsy (PWE) which are musical, bodily-kinaesthetic, mathematical/logical, visual/spatial, verbal/linguistic, interpersonal, intrapersonal and naturalist (Awang, 2008).

1.2   Problem Statement

Unemployment is a serious issue in developing economies. High unemployment means that labour resources are not being used efficiently (Meidani and Zabihi, 2011). In Malaysia, unemployment rate is secure but youth unemployment rate is worrying. According to Malaysia Labour Force Statistic (2013), youth unemployment in Malaysia was 11.1%. At the same time, youth unemployment in Singapore was 10.3% and in Thailand it was 3.1%. Hence, this shows that youth unemployment rate in Malaysia is high compared to its neighbouring countries. Youth unemployment refers to the labour force ages 15-24 without work but available and seeking employment. According to the definition of the Malaysia Labour Force Survey, unemployed refers to those who do not have a job but are interested to work (Labour Force Statistics, Malaysia, 2013).

To keep pace with global competition and changes in technology, employers are aiming for employees with multiple skill-sets. The nature of the jobs is changing thus having technical skills alone is not sufficient. In general, the industry needs graduates who have both the technical skills and also soft skills (Juhdi, Yunus, and Samah, 2006). The major issue to be discussed in this study pertains to the role of MI in employment among management graduates. The issue is discussed from the perspective of both the

management graduate and employer. Based on researches which have been executed nationwide and worldwide, it was discovered that many graduates today are deficient in employability skills. According to Mustapha and Greenan (2002), graduates in Malaysia excel in technical skill but they are lacking in motivational skills, communication skills, interpersonal skills, critical thinking, problem solving and entrepreneurship skills. Studies have shown that in order for Malaysian graduates to be employed, they must be expertise in English language and other soft skills such as ability to solve problem quickly, self-determination, good management skills, good communication skills and computer skills (Ismail, 2011).

Graduate employability is very vital for Malaysia's goal to develop into a developed nation by 2020 because the major aspects required as a developed country is grounded on the high gross domestic product (GDP). The growth in investment from industrial areas has caused in greater need for skilled workers (Nasir *et al.,* 2011). According to Tang (2009), inflation and unemployment play significant roles as indicators of criminal activities in Malaysia. This is because, when individual is unemployed, they lost their source of income or earnings and hence increased the tendency to involve in criminal activities. Furthermore, unemployed graduates become a waste of the nation's precious assets and also involve a poor return on vast investment by the government on public universities (Lim, 2011).

The mission of The Ministry of Higher Education of Malaysia (MOHE) is to generate skilled graduates in order to fulfil domestic and global manpower demands with 75% of the graduates working in their related fields within six months of their graduation (Ministry of Higher Education, 2012). Thereby, the use of MI theory can assist in graduates' employability. Awareness about one's MI strengths and weaknesses is beneficial for one to get a job. Moreover, graduates who have clearer sense of their skills and abilities can identify potential career that fits their intelligences and also to expand their career possibilities. Furthermore, individuals who discover their MI profiles will no longer focus on one job but they can explore multiple aspects to the process of career choice. In addition, recognizing ones' MI profiles can enhance self-esteem. They

trust their own abilities, have confident in their lives, and they can identify jobs that match their strengths. Every job need different kinds of intelligence thus each graduate need to know their MI profiles and they can apply it for a job that fit them. The mismatch between workforces' skills and Malaysian employers' expectation seem to be critical but without knowing one's intelligence profile it will limit the graduates' ability to satisfy employers' demands. In order to recruit the right graduates for the organization, the employer need to know the applicants' MI profile.

Psychometric test have been used for many years to measure intelligence. A psychometric test is a tool mainly used to measure the mind. Therefore, it is frequently used by managers as measure of their selection process. Furthermore, psychometric tests assist employers in providing a precise judgement of whether an individual is competent to do the obliged job and whether the person's personality is matched to the job. For example, it measures problem solving abilities and determine whether the candidates have the potential to supervise others (Carter, 2010).

This study developed a measurement model for MI of management students in Universiti Teknikal Malaysia Melaka (UTeM), analysed the Goodness-of-Fit (GOF) indices for the specified measurement model and determined the validity and reliability using Confirmatory Factor Analysis (CFA). This measurement model specified how the unobserved variables (nine types of intelligences) are measured in term of observed variables (items in ATIEm). The latent constructs (Gardner's nine MI) is empirically defined in term of the common variance among the indicators (ATIEm). In this study, the measurement model is compared to the empirical data. This assessment leads to so-called fit statistics evaluating the matching of model and data.

This study is an extension of previous work by Mohamed (2014). Mohamed (2014) used Two Step Cluster analysis as the study method to form cluster groups of similar intelligences based on specific demographic and MI characteristics. However, the researcher only used Cronbach's alpha test to determine the instrument's reliability. Therefore, this study fills the gap where Composite Reliability (CR) and Convergent

Validity were used to measure the validity and reliability of each item in the instrument (ATIEm). Furthermore, an examination of factor loadings of the observable items of the measurement model was conducted to explore the convergent validity of the scales used in this study. The study at the end will form a measurement model which consists of the best fitting items to represent each intelligence. Moreover, Chan (2006) examined the structure of perceived MI of Chinese gifted students using the students' MI profile. However the study only consists of eight intelligences where spiritual intelligence was excluded from the study. Hence, this study gives better results than the previous studies by presenting robust validity and reliability assessment of perceived MI using the complete nine intelligences of Gardner's Theory.

1.3 Research Questions

1.3.1 What are the Goodness of Fit (GOF) indices for the measurement model of UTeM Multiple Intelligences (MI) profiles?

1.3.2 What are the constructs validity and reliability of the specified measurement model?

1.3.3 What is the suitable model for the Multiple Intelligences (MI) of the management graduates in Universiti Teknikal Malaysia Melaka (UTeM)?

1.3.4 What are the best fitting items to represent each intelligence?

1.4   Research Objectives

1.4.1   To examine the Goodness of Fit (GOF) indices for the measurement model of UTeM MI profiles.

1.4.3   To evaluate the constructs validity and reliability of the specified measurement model.

1.4.3   To develop a fit measurement model for the Multiple Intelligences (MI) of the management graduates in Universiti Teknikal Malaysia Melaka (UTeM).

1.4.4   To determine best fitting items to represent each intelligence.

1.5   Scope of the Study

The main purpose of this study is to develop a fit measurement model and to identify the MI of management graduates based on MI theory by Howard Gardner. This study is a continuation of previous study by Mohamed (2014), thus the data used in this study is secondary data obtained from the previous work. This study was conducted at the Faculty of Technology Management and Technopreneurship (FPTT), Universiti Teknikal Malaysia Melaka (UTeM). FPTT offers three undergraduate programs namely Bachelor of Technology Management (Innovation Technology), Bachelor of Technology Management (High Technology Marketing) and Bachelor of Technopreneurship with interdisciplinary in social sciences field (Mohamed 2014). The primary method used in this study is Structural Equation Modeling (SEM) and the main instrument in this study is known as Ability Test in Employment (ATIEm), has been employed to measure the existence of nine types of intelligence of UTeM management graduates (Mohamed, 2014).

1.6   Significance of the Study

1.6.1   Knowledge

The study attempted to fill some of the gap in the research of MI. This study contributed to the body of knowledge related to MI and employability as this study determines MI profile in a selected sample of management graduates at the FPTT, UTeM and possible career that is related to their MI profiles. The knowledge gained from this study has the potential to change the way people address the importance of MI in job placement.

1.6.2   Management Graduates

Through this study management graduates are able to identify their MI and they can discover possible careers that suit them. Besides that, this study will educate the graduates that a degree is no longer enough to guarantee a satisfying future career but also the soft skills that they possess. From this study the graduate may know the skills, knowledge and characteristics which help graduates to be employable. Generally, graduates are not concerned of the present circumstance whereby they sometimes do not see the link on what they do in class with the actual job world that they will endeavour later. Moreover, through this study the graduates get the opportunity to identify demanding different working pattern that they may encounter and the graduates also get the idea about the employability skills that employers prefer them to possess. In addition, discovering their own intelligences profile and integrate them into their career also affect the graduates' self-efficacy.

1.6.3 Higher Education Institutions (HEI)

Higher learning institutions (HEI) are places where people go to reinforce their employability skills and to enhance their competitiveness. Thus, HEI carry a big role of preparing students for workforce. However, recently many graduates from both developed and developing countries have experienced a great deal of difficulties in finding jobs. Thus, this study will be beneficial for HEI to create graduates who encounter the requirements of organizations based on their MI profiles. Besides that, this study will educate HEI about the importance of soft skills and the role of MI in employment. Thus, HEI may initiate further action to certify that these students are well-equipped with employability skills in order to further prosper in their job field later upon their graduation.

1.6.4 Human Resource Management (HRM)

This study will be useful to those who are in charge of HRM where they can discover an applicant's character, personality, intelligence and interest to best fit a position. Hence, it is vital for the employers to have deep understanding of MI in order to produce a more productive and creative workforce which results in greater profitability for the company. Getting the right people for the job is important where it can reduce turnover and generate committed employees.

1.7 Limitations

Limitations are the circumstances over the control of the researcher that may lay constraints on the conclusions of the study and their application to other situations (Bennett, 2006). The data used in this study are obtained from previous research by Mohamed (2014) which were collected from FPTT, UTeM. The respondents of this study consist of 137 graduates. Thus, this study only analysed the available data. Besides that, conclusions drawn from this study are limited to the scope and breadth of the research sources examined and contained in the research base of the proposed study. Inherent limitations may exist in the study in that there may be other research and data that may have a strong influence upon the research findings but are unknown to the researcher at the onset of the investigation.

1.8 Research Framework

As shown in Figure 1.1, the research framework for this study consists of three stages. The first stage consists of two chapters which are the Chapter 1 and Chapter 2. Chapter 1 presents a description of the study which includes problem statement, research questions, research objectives and definitions of specific terms used within the current study. Chapter 2 provides a literature review which focuses on history of intelligence, Gardner's MI theory, and applications of MI in employability, career preferences based on Gardner's MI components and previous research of MI in local and overseas. The second stage consists of Chapter 3 and Chapter 4. Chapter 3 provides a description of the design of the research, the method of subject selection, data collection procedures, instrument selection and administration and method of data analysis are explained. Chapter 4 reports the results from the analysis of the data collected. The third stage consists of Chapter 5 which include summary of the study, discuss the findings and recommendations for future study.

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STAGE 1: DATA

Multiple Intelligences
- Musical, Kinaesthetic, Verbal, Mathematical, Spatial, Interpersonal, Intrapersonal, Naturalist and Spiritual

Ability Test in Employment (**ATIEm**)

Data

Structural Equation Modeling (**SEM**)

STAGE 2: ANALYSIS AND RESULT

| Model Specification | Model Identification | Model Estimation | Model Evaluation | Model Modification |

Confirmatory Factor Analysis
- Goodness-of-Fit Indices, Factor Loadings, Composite Reliability, Convergent Validity, Discriminant Validity

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STAGE 3: CONCLUSION

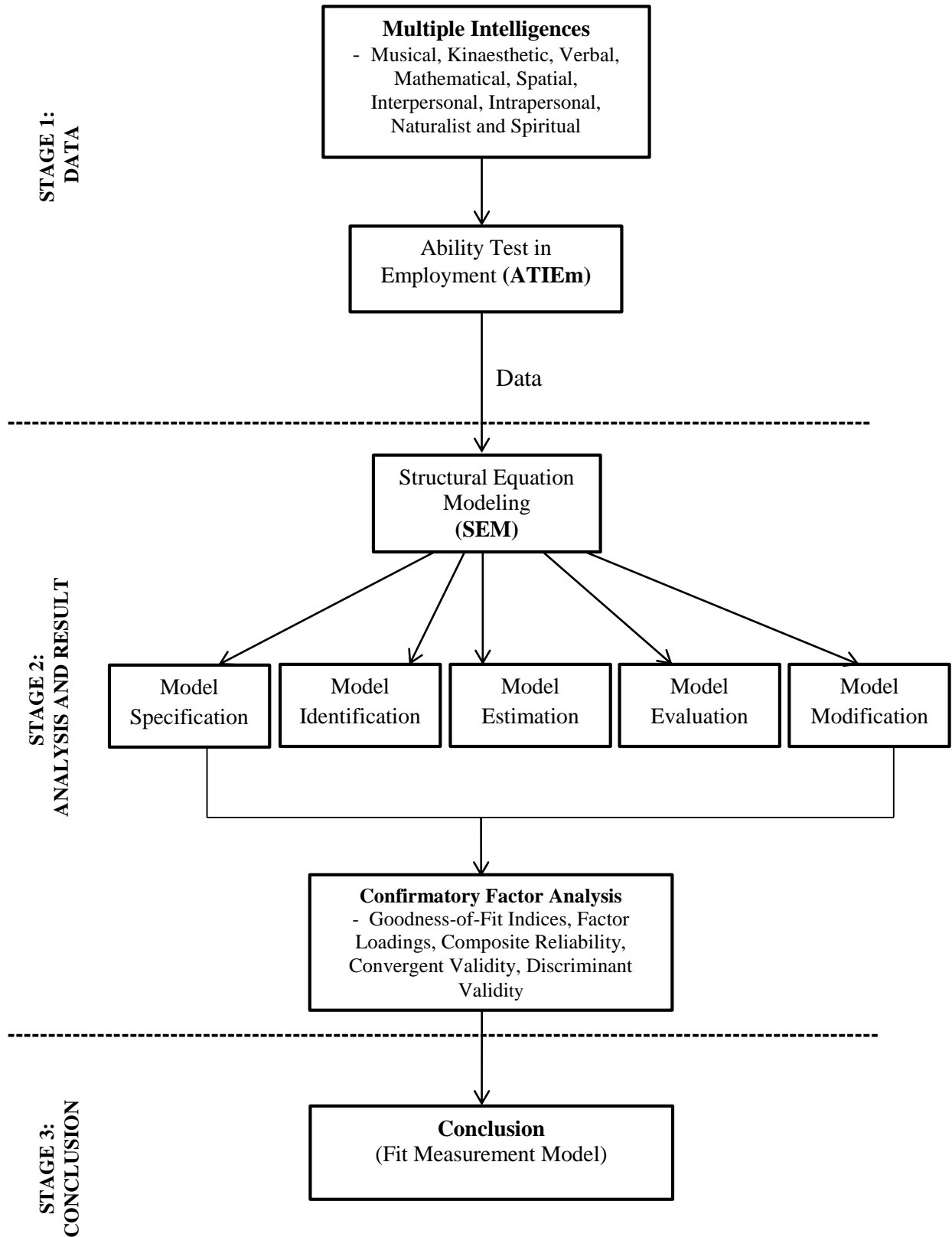**Conclusion**
(Fit Measurement Model)

Figure 1.1: Research Framework

1.9   Conceptual and Operational Definition

1.9.1   Conceptual Definition

1.9.1 [a] Multiple Intelligences

In 1983, Howard Gardner published the manual of the MI theory, Frames of Mind. In this book, Gardner proposed that there were seven different types of intelligences, each originating from a separate part of the brain (Gardner, 1983). Later he added another two types of intelligences (Gardner, 1999). Those nine intelligences are musical, bodily-kinaesthetic, logical/mathematical, visual/spatial, verbal/linguistic, interpersonal, intrapersonal, naturalist and spiritual. One of the most significant characteristics of MI theory is that people do not have just one particular intelligence; instead they possess a set of intelligences at different levels. The main intelligence of one person may not be the dominant intelligence of another and the combination of intelligences differs from person to person (Gardner, 1983).

1.9.1 [b] Employability

The notion of employability is complicated and depends on different and changing conceptual interpretations, making it not cooperative to a exact definition (Morrison, 2014). According to Yorke (2005) employability is a set of accomplishments, skills, abilities and personal qualities that make graduates more prone to get hire and be successful in their chosen professions which benefits them, the labour force, the public and the economy. According to Wickramasinghe and Perera (2010), fresh graduate consider emploability as the competence of a person to get a job according to his or her educational level.

1.9.1 [c] Structural Equation Modelling

Structural Equation Modelling (SEM) is a statistical approach to examine hypotheses about relations among observed and unobserved variables (Hoyle, 2011). Two aims of SEM are to identify the forms of correlation between a set of variables and to interpret as much of their variance as achievable with the model specified (Kline, 2010). SEM is mostly used in social sciences, especially in testing hypotheses of causal influences. Compared with multivariate procedures, SEM is a more powerful alternative that takes into account the correlated independences, measurement error and multiple unobserved independences (Cao, 2012).

1.9.2 Operational Definition

1.9.2 [a] Multiple Intelligences

In this study, the definition of MI is concentrated on the intelligence profile of management graduates based on Gardner's nine intelligences namely, musical intelligence, bodily-kinaesthetic intelligence, logical/mathematical intelligence, visual/spatial intelligence, verbal/linguistic intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence, and spiritual intelligence (Gardner, 1999). Furthermore, possible career interest is determined based on graduates' MI profile. Moreover, when graduates' recognize their MI profiles, they would have the ability to grace their employability skills which help them in job placement. Thus, it is crucial for the graduates to identify their MI profiles in order for them to utilize them and give an excellent performance at workplace (Mohamed, 2014)

1.9.2 [b] Employability

Employability in this study means the ability of graduates to gain and maintain employment based on Gardner's nine intelligences namely, musical intelligence, bodily-kinaesthetic intelligence, logical/mathematical intelligence, visual/spatial intelligence, verbal/linguistic intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence, and spiritual intelligence (Gardner, 1999). In this study, graduates' MI profiles will be identified in order for them to gain a right job that suits their skills and intelligences which enhance individual's level of efficiency, thus aiming to greater financial profits for the individual and to enhanced nation's economic accomplishment (Morrison, 2014).

1.9.2 [c] Structural Equation Modelling

Structural Equation Modelling will be applied to discover the MI of management graduates for job offer purposes. The unobserved variables in this study are the Gardner's nine MI namely, musical intelligence, bodily-kinaesthetic intelligence, logical/mathematical intelligence, visual/spatial intelligence, verbal/linguistic intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence, and spiritual intelligence (Gardner, 1999). The observed variables are the items from ATIEm which are used to measure the graduates' MI. A measurement model will be developed to examine pattern of interrelationship among the observed and unobserved variables.

1.10   Summary

By identifying the MI profiles of the UTeM management graduates, it indirectly gives exposure to the management graduates on the types of intelligences, skills and abilities possess by them to help them in enhancing chances of being employed. Employers favour employees based on their intellectual ability and highly develop transferable skills.

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