



UNIVERSITI PUTRA MALAYSIA

***RELATIONSHIP BETWEEN PERSON-ENVIRONMENT FIT AND
ACADEMIC ACHIEVEMENT AMONG UNDERGRADUATE
STUDENTS IN A MALAYSIAN PUBLIC UNIVERSITY***

NAGHMEH VAHIDI GHAZVINI

FPP 2016 48



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By

NAGHMEH VAHIDI GHAZVINI

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfillment of the Requirements for the Degree of Doctor of Philosophy**

December 2016

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DEDICATION

To my lovely family: my dear Dad, Mom, Sister and Brother who support and encourage me throughout my education



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the Degree of Doctor of Philosophy

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December 2016

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In recent years despite the high budget allocating for education in Malaysia, the educational performance among students is low (Blueprint, 2013). Pascarella and Terenzini (2005; 1991) have identified four theories and models that affect on students academic achievement: (a) psychosocial, (b) cognitive-structural, (c) typological, and (d) person-environment interaction. This study is focused on person-environment interaction. The interactionist theory emphasized that neither personal characteristics nor situational factors alone could determine the responses or attitudes of individuals, but rather the interaction of these two was most important (Schneider, 1982; Terborg, 1981). Person-environment fit discussions were started by interactionists who believed that certain attitudes, cognitions, and behaviours are the outcomes of the interaction between the person and situational factors (Chatman, 1989; Muchinsky & Monahan, 1987; Ostroff & Schulte, 2007). Academic major satisfaction and academic achievement are two outcomes for person-environment (P-E) fit that use in this study. This study is used different types of P-E fit such as need supply major fit, demand ability major fit, objective and perceived interest major fit. The main aim of the present study was to examine the relationship between P-E fit on academic achievement, between P-E fit on academic satisfaction, and also the mediating effect of academic major satisfaction in relationship between P-E Fit and academic achievement. The present study is carried out in UPM. The population size of the study were 2503 undergraduate students of 12 faculties at UPM. The sample size for data analysis was 433. 385 students of 433 students replied the questions completely. After collecting the actual data, SPSS 20 and AMOS 22 software are used to analyze the obtained data. Findings for relationship between P-E fit and academic achievement have shown that there is a positive significant relationship between need supply major fit, demand ability major fit, perceived interest major fit with academic achievement, but there is not any significant relationship between objective interest major fit with academic achievement. Results for relationship between academic major satisfaction with academic achievement, and for relationship between P-E with major satisfaction was significant. Mediation analysis shows that major satisfaction partially mediate the

relationship between demand ability major fit, need supply major fit, perceived interest major fit with academic achievement, but it fully mediate the relationship between objective interest major fit and academic achievement. This study has shown the importance role of academic major satisfaction for academic achievement especially for objective interest major fit as there is not relationship between objective interest major fit with academic achievement but major satisfaction can fully mediate this relationship.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

**HUBUNGAN ANTARA FIT INDIVIDU- PERSEKITARAN DAN
PENCAPAIAN AKADEMIK DI KALANGAN MAHASISWA DALAM
UNIVERSITI AWAM MALAYSIA**

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Sejak kebelakangan ini, meskipun bajet peruntukan yang tinggi bagi pendidikan di Malaysia, pencapaian pendidikan di kalangan pelajar adalah rendah (Blueprint, 2013). Pascarella dan Terenzini (2005; 1991) telah mengenal pasti empat teori dan model yang memberi kesan kepada pelajar: (a) psikososial, (b) struktur kognitif, (c) tipologi, dan (d) interaksi individu - persekitaran. Kajian ini memberi tumpuan kepada interaksi individu –persekitaran. Teori Interactionist menekankan bahawa kedua-dua ciri-ciri peribadi atau faktor-faktor situasi sahaja boleh menentukan jawapan atau sikap individu, tetapi sebaliknya interaksi kedua-dua adalah yang paling penting (Schneider, 1982; Terborg, 1981). Perbincangan fit individu -persekitaran telah dimulakan oleh interactionists yang percaya bahawa sikap tertentu, kognisi, dan tingkah laku adalah hasil daripada interaksi antara orang dan situasi faktor (Chatman, 1989; Muchinsky & Monahan, 1987; Ostroff & Judge, 2007). Kepuasan akademik dan pencapaian akademik adalah dua hasil untuk orang -persekitaran (P-E) sesuai dengan yang digunakan dalam kajian ini. Kajian ini menggunakan pelbagai jenis PE sesuai seperti perlu membekalkan fit utama, menuntut keupayaan fit utama, objektif dan fit utama dilihat. Tujuan utama kajian ini adalah untuk mengkaji kesan yang menjadi pengantara bagi kepuasan utama akademik dalam hubungan antara fit PE dan pencapaian akademik. Kajian ini telah dijalankan di UPM. Para peserta kajian adalah 2503 mahasiswa diambil daripada 12 fakulti di UPM. Saiz sampel untuk analisis data adalah 433. Seramai 385 pelajar daripada 433 menjawab sepenuhnya borang soal selidik. Selepas mengumpul data sebenar, perisian SPSS 20 dan AMOS22 telah digunakan untuk menganalisis data yang diperolehi. Penemuan kepada hubungan antara fit PE dan pencapaian akademik menunjukkan bahawa terdapat hubungan signifikan yang positif antara bekalan utama fit keperluan, keupayaan utama fit permintaan, minat fit utama dilihat dengan pencapaian akademik, tetapi tidak ada apa-apa hubungan yang signifikan antara minat objektif fit utama dan pencapaian akademik. Keputusan hubungan antara kepuasan akademik utama dengan pencapaian akademik, dan hubungan antara P-E dengan kepuasan utama adalah ketara. Analisis pengantaraan menunjukkan bahawa kepuasan utama sebahagiannya menjadi pengantara hubungan antara keupayaan permintaan fit utama, perlu membekalkan fit

utama , faedah dirasakan fit utama dengan pencapaian akademik, tetapi ia mengantara sepenuhnya hubungan antara kepentingan objektif fit utama dan pencapaian akademik. Kajian ini telah menunjukkan peranan penting kepuasan akademik utama dalam pencapaian akademik khusus untuk kepentingan objektif fit utama kerana tidak ada hubungan antara kepentingan objektif fit utama dengan pencapaian akademik tetapi kepuasan utama sepenuhnya boleh menjadi pengantara bagi hubungan ini.



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I certify that a Thesis Examination Committee has met on 28 October 2016 to conduct the final examination of Naghme Vahidighazvini on her thesis entitled "Relationship between Person- Environment Fit and Academic Achievement among Undergraduate Students in a Malaysian Public University" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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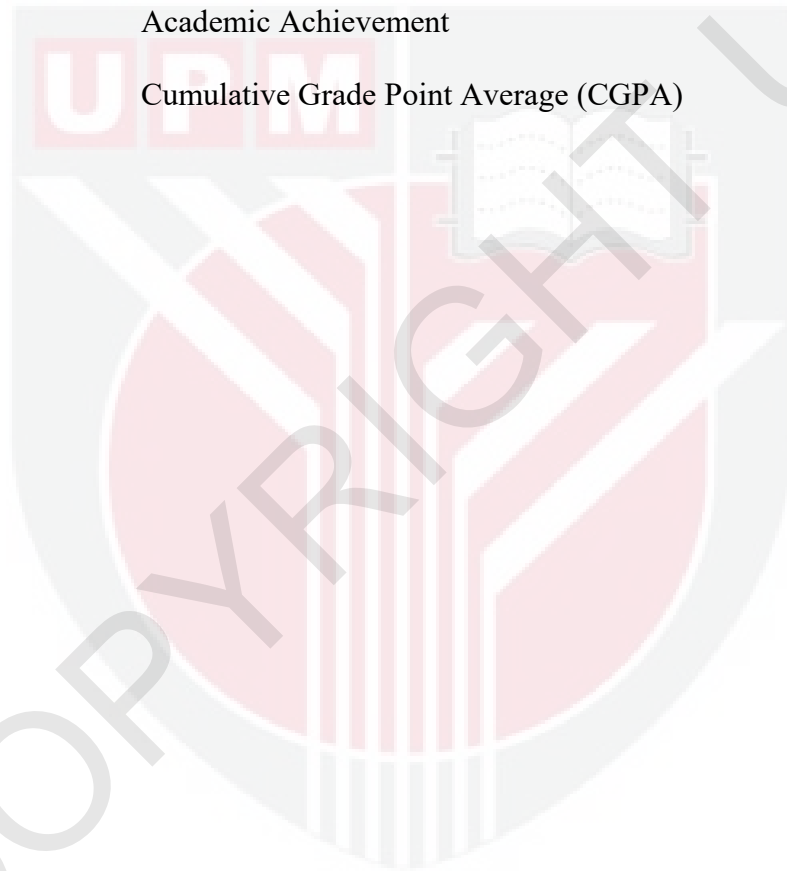
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LIST OF ABBREVIATIONS

| | |
|------|---------------------------------------|
| MDAF | Major Demand Ability Fit |
| MNSF | Major Need Supply Fit |
| PIMF | Perceived Interest Major Fit |
| OIMF | Objective Interest Major Fit |
| AMS | Academic Major Satisfaction |
| AA | Academic Achievement |
| CGPA | Cumulative Grade Point Average (CGPA) |



CHAPTER 1

INTRODUCTION

1.1 Background of Study

There is a gradual trend in today's world, moving from capitalist-based societies to knowledge-based societies and educated people are the critical factors contributing to economic growth. Knowledge-based societies will possess global trade competitiveness, which will drive organizations to find ways to increase productivity via technological innovation and development of new products and services. Due to the speed of competition, future growth will depend more than ever on a highly-skilled labor force. Higher level and wider range of skills together with flexibility and adaptability is expected from the future work force (Fye, 2006). According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO), higher education is becoming a necessity as the worldwide economy continues to shift from manufacturing to knowledge-based industries (UNESCO, 2009). Chao *et al.* (2007) and Ritt (2006) emphasized that, most of the fastest growing jobs require higher education qualifications (as cited in Ibrahim, 2011). The existing labor force today is getting old and less adaptable to the challenges faced in knowledge-based societies. In an attempt to rectify the problem of an older labor force, retraining and education have become important agendas for many countries (Fye, 2006).

Education plays a pivotal role in a country's pursuit of economic growth and national development. There is no better predictor of a country's future than the status of the education system of that country. In today's global economy, a nation's success depends fundamentally on the knowledge, skills and competency of its people. Nations with higher education levels tend to enjoy greater economic prosperity. Education provides individuals with the opportunity to improve their lives, become successful members of the community and active contributors to national development (Blueprint, 2013).

In 2010, the working age population (15-64 years) in Malaysia was expected to increase to 65.7 % with a median age of 26.7 years. However, only 14% of the labor force in Malaysia have higher education (Ibrahim, 2011). This indicates that there is a need to create more opportunities for adult learners to improve their education and training so they can face the challenges of a knowledge-based society.

Students' academic achievements play an important role in producing the best quality graduates who will be potential leaders and contribute to the workforce of a country and consequently be responsible for the country's economic and social development. Performance of students in universities should be a concern not only to administrators and educators, but also to corporations in the labor market. Academic achievement is one of the main factors considered by employers when recruiting workers (Ali, Jusof, Ali, Mokhtar, & Salamat, 2009). Thus, determining the factors that could facilitate or

impede students' academic achievements should be a major concern in today's world including Malaysia.

Pascarella and Terenzini (2005; 1991) have identified four theories and models that affect students' academic achievement namely; (a) psychosocial, (b) cognitive-structural, (c) typological, and (d) person-environment interaction. This study focuses on the person-environment interaction factor. The fundamental idea that individuals' fit with their environment has a subsequent impact on their attitudes and behavior, is a notion that has been supported by psychological researchers for decades (Schmitt, Oswald, Friede, Imus, & Merritt, 2008). P-E fit research has been conducted to investigate how the fit between person and environment is related to an individual's attitudes and behavior in a variety of contexts (Kristof-Brown, Zimmerman, & Johnson, 2005). P-E fit researchers argue that it is a person's perception of fit within an environment that is essential in explaining their behavior within that environment. As such, it is important to understand the person, the environment that they are experiencing, and the fit between the individual and their environment. This, however, comes with the recognition that both the person and the environment are dynamic and always evolving. Therefore, it is necessary to understand the interaction between the person and the environment (Nadler, 2013). In this study, different types of fit such as Need Supply Major Fit, Demand Ability Major Fit, and Interest Major Fit in two types of Perceived and Objective were used to understand the interaction between the person fit with their academic environment.

1.2 Problem Statement

In recent years, the Malaysian education system has come under increased public scrutiny and debate, as expectations rise and employers voice their concern regarding the system's ability to adequately prepare young Malaysians for the challenges of the 21st century (Blueprint, 2013). The Malaysian government's commitment towards recognizing education as a national priority by allocating a high budget for education and reports of a growing gap between the Malaysian education system and that of its developed counterparts as well as a decline in Malaysian students' performance in recent years (Blueprint, 2013), warrants a study to investigate the performance of Malaysian university students. It is a significant endeavor to undertake therefore, the present study will attempt to determine how students' person-environment fit and their major satisfaction are associated with their academic achievement in Malaysian universities.

Pascarella and Terenzini (2005; 1991) have identified four theories and models that affect student's academic achievement namely; (a) psychosocial, (b) cognitive-structural, (c) typological, and (d) person-environment interaction. This study focused on the Person-Environment interaction factor.

The research conducted on academic performance in the Malaysian context, have mostly focused on the relationship of factors including emotional intelligence by Abidin, Rezaee, Abdullah, and Singh (2011) and Hassan, Sulaiman, and Ishak (2009),

motivation by Bakar *et al.* (2010), stress by Rafidah *et al.* (2009), learning style by Abidin *et al.* (2011), anxiety by Mohd Ghani, Nubli, Wahab, Ahmad, and Prima (2010), self-concept by Ahmad, Mazila, and Aminuddin (2011), self-regulated learning by Kosnin (2007), parents' actions by Yen and Lan (2010), creativity by Naderi, Abdullah, Aizan, Sharir, and Kumar (2009) and socio-economic factors by Hanafi (2008) on academic achievement of students. However, the P-E fit and different types of P-E fit have not been examined in the above-mentioned studies. Thus, there is a need to consider all types of fit in a single model to determine the association between them in regards to major and academic performance of university students in Malaysia.

The current study aims to determine the relationship between different types of Person-Environment Fit and Academic Achievement, with mediating effect of Academic Major Satisfaction. Several studies in the academic setting have focused on examining the relationship between different types of P-E fit on Academic Achievement and Satisfaction. These studies have mainly investigated the relationship between P-E fit on academic achievement and satisfaction by considering individual types such as Perceived Fit by Schmitt *et al.* (2008) and Nadler (2013), Objective Fit by Allen and Robbins (2010), Nye *et al.* (2012), and Tracey and Robbins (2006), Need Supply Fit by Gilbreath *et al.* (2011) or a combination of fit types such as Objective Fit + Perceived Fit by Wessel *et al.* (2008) and Perceived Fit + Need Supply Fit + Demand Ability Fit by Li *et al.* (2012). However, researchers such as Kristof (1996), Kristof *et al.* (2005) and Cable and DeRue (2002) have recommended studying the relationships of multiple types of fit in a single model because each type of fit has a unique relationship with outcomes. Thus, the above-mentioned studies do not seem to provide a full picture and understanding about the relationship between P-E fit and academic outcomes. This is highlighted by Li *et al.* (2012) who state that the failure to consider different types of P-E fit may underestimate its significance in predicting academic outcomes of students. Moreover, in previous studies on the different types of fit and their contribution to academic outcome, the focus was on the fit related to the school or university setting and no study has examined the four types of fit in terms of the Major of students in a university context. Therefore, the present study will attempt to elucidate how different P-E fit types are related to the students' academic majors associated with their academic outcome.

In addition, to determine the relationship of the four types of P-E fit (Perceived Interest Major Fit, Objective Interest Major Fit, Need Supply Major Fit, Demand Ability Major Fit) and Academic Achievement, the current study will also attempt to examine whether Academic Major Satisfaction of university students has a mediating role in the relationship between fit types and their academic performance. The association between academic satisfaction and performance has been demonstrated in some studies conducted by; Low (2000), Graunke and Woosley (2005), Oja (2011), Simões, Matos, Tomé, and Ferreira (2010), and Huam Hon Tat (2011). Most of these previous studies only measure general academic satisfaction, while general academic satisfaction may be influenced by many non-academic factors. It is recommended to use major satisfaction for research and practice with college students, and for assessing the outcome of career interventions (Nauta, 2007). Major satisfaction, an important construct, which is analogous to job satisfaction (Allen, 1996), has not been studied

as a possible mediator, while job satisfaction was used as a mediator in some studies carried out by; Crede, Chernyshenko, Stark, Dalal, and Bashshur (2007), Lok and Crawford (2001), Westerman and Cyr (2004), Yousef (2002). In addition, academic satisfaction was used as a mediator in some studies by Nadler (2013) and Schmitt (2008), therefore, it seems necessary to propose a new model to include major satisfaction as a mediator. The present study thus proposes this new model for students in Malaysia. To the best of our knowledge, there is no literature available in the Malaysian context and no researcher has attempted to undertake such an endeavor to date. Therefore, this study can contribute to the knowledge available on academic performance in general as well as in the Malaysian context in particular

1.3 Contribution of study

This study can make several contributions to the field of educational psychology. Firstly, it can show the importance of choosing a major that should fit with the students' needs, abilities and interests. Secondly, for the first time, Major Fit will be measured in different types of fit in a single model such as Need Supply Major fit, Demand Ability Major Fit, Perceived Interest Major Fit, and Objective Interest Major Fit. Thirdly, Kristof-Brown *et al.* (1996) noted that there are different types of fit: Person-Vocation, Person-Organization, Person-Job, Person-Group, and Person-Supervisor fit, therefore this study can develop a concept of Major Fit as a new type of fit.

1.4 Research Objectives

There are five research objectives in this study:

- 1) To describe the level of P-E fit, Academic Major Satisfaction, and Academic Achievement among undergraduate students.
- 2) To determine the relationship between P-E fit and Academic Achievement.
- 3) To determine the relationship between Academic Major Satisfaction and Academic Achievement.
- 4) To determine the relationship between P-E fit and Academic Major Satisfaction.
- 5) To determine the mediating effect of Academic Major Satisfaction in the relationship between P-E fit on Academic Achievement.

1.5 Research Questions

Based on the five research objectives, there are five research questions that have been formulated for this study:

- 1) What is the level of P-E fit, Academic Major Satisfaction, and Academic Achievement among undergraduate students?
- 2) What is the relationship between P-E fit and Academic Achievement?
- 3) What is the relationship between Academic Major Satisfaction and Academic Achievement?

- 4) What is the relationship between P-E fit and Academic Major Satisfaction?
- 5) What is the mediating effect of Academic Major Satisfaction as a mediator in the relationship between P-E fit and Academic Achievement?

1.6 Research Hypothesis

There are 13 hypotheses in this study. H₁ to H₄ are for objective and question 2; H₅ is for objective and question 3; H₆ to H₉ are for objective and question 4, and finally H₁₀ to H₁₃ are for objective and question 5.

H₁. There is a positive significant relationship between Demand Ability Major Fit and Academic Achievement.

H₂. There is a positive significant relationship between Need Supply Major Fit and Academic Achievement.

H₃. There is a positive significant relationship between Perceived Interest Major Fit and Academic Achievement.

H₄. There is a positive significant relationship between Objective Interest Major Fit and Academic Achievement.

H₅. There is a positive significant relationship between Academic Major Satisfaction and Academic Achievement.

H₆. There is a positive significant relationship between Demand Ability Major Fit and Academic Major Satisfaction.

H₇. There is a positive significant relationship between Need Supply Major Fit and Academic Major Satisfaction.

H₈. There is a positive significant relationship between Perceived Interest Major Fit and Academic Major Satisfaction.

H₉. There is a positive significant relationship between Objective Interest Major Fit and Academic Major Satisfaction.

H₁₀. Academic major satisfaction significantly mediates the relationship between Demand Ability Major Fit and Academic Achievement.

H₁₁. Academic major satisfaction significantly mediates the relationship between Need Supply Major Fit and Academic Achievement.

H₁₂. Academic Major Satisfaction significantly mediates the relationship between Perceived Interest Major Fit and Academic Achievement.

H₁₃. Academic Major Satisfaction significantly mediates the relationship between Objective Interest Major Fit and Academic Achievement.

The research objectives, questions and hypotheses have been summarized in Table 1.1. As can be seen in Table 1.1, for research objective and question 1 there is no hypothesis, for research objective and question 2 there are four hypotheses (H₁ to H₄), for research objective and question 3 there is one hypothesis (H₅), for research objective and question 4 there are four hypotheses (H₆ to H₉), and finally for research objective and question 5 there are four hypotheses (H₁₀ to H₁₃).

Table 1.1 : Summary of Research Objectives, Questions and Hypotheses

| Research objectives | Research Questions | Research Hypothesis |
|--|--|--|
| 1.To describe the level of P-E fit, Academic Major Satisfaction, and Academic Achievement among undergraduate students | 1. What is the level of P-E fit, Academic Major Satisfaction, and Academic Achievement among undergraduate students? | - |
| 2. To determine the relationship between P-E fit and Academic Achievement | 2. What is the relationship between P-E fit and Academic Achievement? | H1. There is a positive significant relationship between Demand Ability Major Fit and Academic Achievement |
| | | H2. There is a positive significant relationship between Need Supply Major Fit and Academic Achievement |
| | | H3. There is a positive significant relationship between Perceived Interest Major Fit and Academic Achievement |
| | | H4. There is a positive significant relationship between Objective Interest Major Fit and Academic Achievement |
| 3. To determine the relationship between Academic Major Satisfaction and Academic Achievement | 3. What is the relationship between Academic Major Satisfaction and Academic Achievement? | H5. There is a positive significant relationship between Academic Major Satisfaction and Academic Achievement |

**Table 1.1 : Summary of Research Objectives, Questions and Hypotheses
(Cont'd)**

| | | |
|---|--|--|
| 4. To determine the relationship between P-E fit and Academic Major Satisfaction | 4. What is the relationship between P-E fit and Academic Major Satisfaction? | H6. There is a positive significant relationship between Demand Ability Major Fit and Academic Major Satisfaction |
| | | H7. There is a positive significant relationship between Need Supply Major Fit and Academic Major Satisfaction |
| | | H8. There is a positive significant relationship between Perceived Interest Major Fit and Academic Major Satisfaction |
| | | H9. There is a positive significant relationship between Objective Interest Major Fit and Academic Major Satisfaction |
| 5. To determine the mediating effect of Academic Major Satisfaction in the relationship between P-E fit on Academic Achievement | 5. What is the mediating effect of Academic Major Satisfaction as mediator in the relationship between P-E fit and Academic Achievement? | H10. Academic major satisfaction significantly mediates the relationship between Demand Ability Major Fit and Academic Achievement |
| | | H11. Academic major satisfaction significantly mediates the relationship between Need Supply Major Fit and Academic Achievement |
| | | H12. Academic Major Satisfaction significantly mediates the relationship between Perceived Interest Major Fit and Academic Achievement |
| | | H13. Academic Major Satisfaction significantly mediates the relationship between Objective Interest Major Fit and Academic Achievement |

1.7 Significance of the Study

The findings of this study would contribute further to the literature on the relationship between academic performance and P-E fit as well as major satisfaction by providing insight and knowledge on how these variables are related. This would be specifically significant as there is a dearth of literature addressing this issue. This study will particularly highlight and provide new information on the mediating effect between students' satisfaction of their majors and their academic performance.

In addition to the theoretical contributions of this study, the findings of this research can practically benefit different sectors as well. Firstly, higher education authorities in Malaysia and other countries with low academic performance among students, may utilize the information provided by this study to ensure students select majors that match their interests, abilities and needs and consequently improve academic performance and success among university students.

Secondly, the findings of this study may benefit education advisors and counsellors who work with high school and college students. They can help students in selecting a major by applying the methods used in the current study and advising them to select the majors that best fit their needs, interests and abilities.

In addition, parents and students can use the information presented in this study to gain knowledge and understanding of the importance of the association between academic performance and students' satisfaction with their major and their interests, needs and abilities fit. Since considerable funds are invested for the education of students by parents and families, the wrong major selection can lead to a waste of money and time. Providing students and their parents with the necessary knowledge on the selection of suitable majors in university seems to be an essential and significant process.

1.8 Definitions of Terms

The following section provides the concepts and operational definition of terms that were used in this study.

1.8.1 Need Supply Major Fit or Major Need Supply Fit

Conceptual definition: Needs-supplies fit is one type of fit, defined as the congruence between a person's needs and what the environment supplies (Gilbreath et al., 2011). From a need supply perspective, fit occurs when an environment satisfies individual's needs, desires, or preferences (Kristof, 1996). In academic environments, students have diverse needs that require fulfillment by the academic environment (Li *et al.*, 2012). Needs-supplies major fit occurs when students' major need fits the supplies of the major.

Operational definition: To measure need supply major fit, the researcher adapts and modifies previous measurements to reach this concept.

1.8.2 Demand Ability Major Fit or Major Demand Ability Fit

Conceptual definition: In terms of Demand ability fit, demands include task requirements, role expectations, and institutional norms; whereas abilities include aptitudes, time, and energy one needs to meet these demands (Edwards, Caplan, & Van Harrison, 1998). A demand ability perspective suggests that fit occurs when an individual has the ability required to meet environmental demands (Kristof, 1996). In school environments, demand ability fit occurs when students' knowledge, skills, abilities, time, and energy fit the requirements of their schoolwork (Li *et al.*, 2012). Demand ability major fit occurs when students' knowledge, skills, abilities, time, and energy fit the requirements of their major.

Operational definition: To measure demand ability major fit, the researcher adapts and modifies previous measurements to reach this concept.

1.8.3 Perceived Interest Major Fit

Conceptual definition: Kristof (1996) views perceived fit as a direct measure of fit, in that perceived fit entails directly asking individuals about the degree to which they believe they “fit” with their environment. Perceived interest major fit is directly asking individuals about the degree to which they believe their interests “fit” with their major.

Operational definition: To measure perceived interest major fit, the researcher adapts and modifies previous measurements to reach this concept.

1.8.4 Objective Interest Major Fit

Conceptual definition: The role of interests in determining fit has been investigated and documented over the past several decades, in fact, Holland’s Theory has been supported by researchers for decades and is in fact a broad theory of person–environment fit (Schmitt et al., 2008). Objective fit is when fit is assessed indirectly through the comparison of P and E variables as reported by different sources (Kristof - Brown, Zimmerman, & Johnson, 2005). Objective fit relies less on the individual’s perception. Rather, it is a computed comparison between an individual’s interests and a classification of the occupation (Ghandour, 2013). Brown and Gore (1994), Hoeglund and Hansen (1999) have noted that Holland’s common classification of occupations and interests is typically the foundation for measures of objective fit (as cited in Ghandour, 2013). Objective fit in terms of congruence in Holland’s Theory, is defined as the relative proximity in the hexagon between the person’s dominant personality and the dominant type of his or her occupational or college environment. It is said to be congruent when, an individual lives or studies in a type of environment that is identical or similar to his own personality type. The hexagon of Holland’s personality and environment is depicted in Figure 1.1.

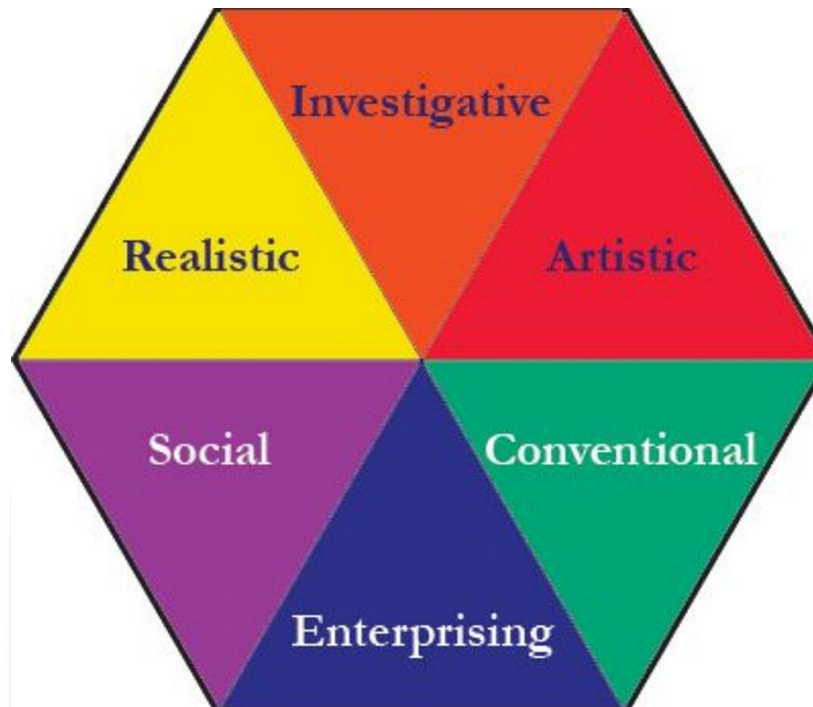


Figure 1.1 : Hexagon of Holland

Operational definition: In this study, congruence is determined by using Holland's first letter agreement based on the hexagon. Holland (1997) states that, "The most positive studies usually employed simple garden variety indices of congruence such as a single-letter code for both the person and the environment" (p. 166). Holland further states, "The sampling and quality of the research design appears to be more important than the indices of congruency" (p. 166). Therefore, in this study first letter agreement was used. In this index, congruence is comprised of four levels. To use this index, the first letters of the person and environment codes are compared and assigned a value of 1 if they are opposite on the hexagon, 2 if they are alternate on the hexagon, 3 if they are adjacent on the hexagon, and 4 if they are a perfect match.

1.8.5 Academic Major Satisfaction or Major Satisfaction

Conceptual definition: Merriam (2004) defines satisfaction as fulfillment of a need or want. Consumer satisfaction is defined as the favorability of one's subjective evaluation of his or her various outcomes and experiences (Oliver, 1989). Translating that definition to higher education, Elliott (2002) added that satisfaction is defined by the students favorable assessment of his or her outcomes and experiences with education. In a major setting, it is defined as the student's favorable assessment of their major. Therefore, a student's major satisfaction occurs when a student determines that his/her need in a major has been fulfilled. Major satisfaction probably depends on whether an individual feels the major is meeting his or her academic needs (Starr, Betz, & Menne, 1972) or fulfilling the student's educational expectations (Suhre, Jansen, & Harskamp, 2007).

Operational definition: To measure academic major satisfaction, the six-item of the Academic Major Satisfaction Scale (AMSS; by Nauta) was used.

1.8.6 Academic Achievement or Academic Performance

Conceptual definition: Academic achievement or academic performance is the outcome of education to the extent to which a student, teacher or institution has achieved their educational goals.

Operational definition: To measure academic achievement, cumulative grade point average (CGPA) was used. The CGPA shows the overall student's academic performance where it takes into account the average of all examination grades for all semesters during the course of study in university. Many factors could act as barriers or catalysts to students achieving a high CGPA that reflects their overall academic performance. There are several ways to determine a student's academic performance namely; cumulative grade point average (CGPA), grade point average (GPA), tests and others. In Malaysia, researchers evaluate student academic performance based on CGPA. However, most of the research conducted in other countries used GPA as a measurement of academic performance. They used GPA because they examined students' performance for a particular semester. Other researchers have used test results since they were studying performance for a specific subject.

1.9 Limitations and delimitations of the Study

The limitation of this study is the population, which is limited to undergraduate students of Universiti Putra Malaysia (UPM). Universities in Malaysia are generally categorized as public or private universities. In this study, public universities were selected as these universities have more students than private universities. Among the public universities, Research Universities (RU) were selected as it was impossible to access all public universities. RUs were chosen based on their characteristics as defined by the Ministry of Higher Education (MOHE). The characteristics of RUs as stipulated by the MOHE include fields of study which focus on research. Therefore, students in RUs have more courses which fit with their research and their field of study, whereas students in non-research universities may have to take courses which may not necessarily fit their field of study. Therefore, the CGPA of students in RUs is a reflection of their grades for courses that fit with their field of study and research however, the CGPA of students in non-research universities is affected by grades for courses that do not fit with their field of study. Another component of RUs is competitive enrollment, which ensures the quality of students and lecturers as well as a ratio of 50:50 for undergraduate to postgraduate students. RUs provide a role model to which most universities aspire to and emulate.

There are five universities classified as research universities in Malaysia. Holland (1997) suggests to use all personality types to obtain an accurate outcome and out of all the RUs, UPM has the most offered majors, so a greater number of majors leads to a greater number of personality types.

The delimitation (scope) for this study is that this study is bound to fit theory. Pascarella and Terenzini (2005; 1991) have identified four theories and models that affect students' academic achievement: (a) psychosocial, (b) cognitive-structural, (c) typological, and (d) person-environment interaction; but this study is bound to only the person-environment interaction factor. Furthermore, as Holland (1997) and Kristof (1996) noted academic achievement, academic satisfaction and academic persistence are outcomes of P-E fit, but this study is bound to academic achievement and satisfaction.



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LIST OF PUBLICATIONS

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<http://www.journals.aiac.org.au/index.php/IJELS/article/view/2445>

Relationship between Need Supply Major Fit and Demand Ability Major Fit with Academic Achievement, Journal of Education and Human Development, Vol 5, No 2, June 2016.

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