

## Relationship between Need Supply Major Fit and Demand Ability Major Fit with Academic Achievement

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### Abstract

Recently, despite the high budget that has been allocated for education in Malaysia, the educational performance among students remains low (Blueprint, 2013). Pascarella and Terenzini (2005; 1991) have identified four theories and models that affect students' learning, namely; (a) psychosocial, (b) cognitive-structural, (c) typological, and (d) person-environment interaction. This study focuses on the effects of person-environment interaction on academic achievement. The interactionist approach emphasizes that, neither personal characteristics nor situational factors alone are able to identify the attitudes or responses of people, but the interaction between them can be highly influential (Schneider, 1982; Terborg, 1981). Person-environment fit arguments were raised by interactionists who discussed that particular attitudes, behaviours and cognitions are the results of the interaction between situational factors and individuals (Chatman, 1989; Muchinsky & Monahan, 1987; Ostroff & Schulte, 2007). The present study used academic achievement that is one of the outcomes of person-environment (P-E) fit. This research employed different types of P-E fit such as, objective and perceived interest major fit. The main aim of the present study was to examine the relationship between the P-E fit and academic achievement. The study was carried out in University Putra Malaysia (UPM). The participants of the study included 2503 undergraduate students from 12 different faculties of UPM. The findings for the relationship between P-E fit and academic achievement revealed that there was a positive significant relationship between need supply major fit and demand ability major fit with academic achievement.

**Key Words:** P-E Fit, Need Supply Major Fit, Demand Ability Major Fit, Academic Achievement.

### 1. Introduction

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).

Malaysia has placed significant emphasis on providing wider and ample opportunities for education at higher education institutions. In 2010, the working age population (15-64 years) in Malaysia was expected to increase to 65.7%. However, only 14% of the labor force in Malaysia have higher education (Ibrahim, 2011). There are a large number of higher learning institutions in Malaysia that are governed by and under the supervision of the Ministry of Higher Education (MOHE). The students' academic achievement plays an important role in producing the best quality graduates who will eventually become leaders and contribute to the manpower of the country and consequently be responsible for the country's economic and social development.

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The performance of students in universities should be of concern not only to the 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 factors that could facilitate or impede students' academic achievement is of major concern in today's world and in Malaysia. Pascarella and Terenzini (2005; 1991) have identified four theories and models that affect students; (a) psychosocial, (b) cognitive-structural, (c) typological, and (d) person-environment interaction. This particular study is focused on the person-environment interaction factor; in this factor, the person-environment (P-E) fit theory was used.

Psychological research literature for decades has supported the idea that individuals' fit with their environment has a subsequent impact on their attitudes and behavior (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 behaviours 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 individuals and their environment. This, however, comes with the understanding 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 these study different types of fit such as need supply major fit and demand major fit were used to better understand the interaction of individuals and the environment. Education plays a pivotal role in the economic growth and national development of a country. There is no better predictor of a country's future than the status of the educational system of that country. Knowledge, skills, and competency of its people are the major elements that contribute to a nation's success in today's global economy.

It is apparent, that nations with higher education levels tend to enjoy greater economic prosperity. Education creates opportunities for individuals to improve their lives and become successful participants of the community and eventually contribute to the national development of a country. In recent years, the system of education in Malaysia has come under increased public scrutiny and debate, as expectations rise and employers are concerned whether the current system in place has the ability to adequately prepare young Malaysians for the challenges of the 21<sup>st</sup> century (Blueprint). The sincere commitment of the Malaysian Government towards improving education is evident as they have allocated a large budget for education and consider it a national priority. However, recent reports indicate that there is a growing gap between the Malaysian education systems and that of its more developed counterparts as well as a decline in Malaysian students' performance in recent years (Blueprint, 2013). This necessitates a comprehensive study on Malaysian university students' performance related to their person-environment fit to be undertaken. It seems to be a significant endeavor to undertake due to the paucity of information regarding this area of research in Malaysia. Therefore, the present study will attempt to determine how students' person-environment fit is associated with their academic achievement in Malaysian universities.

### 1.1. Problem statement

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 the outcome. This is highlighted by Li *et al.* (2012) who stated that the failure to consider different types of P-E fit may underestimate its significance in predicting academic outcomes of students. Moreover, the various studies conducted on the different types of fit and their effect on academic outcome, have focused on the fit related to the school or university setting and no study has examined the different types of fit in terms of the major of the student in a university context. Therefore, in attempt to elucidate the effects of different types of P-E fit, this study will examine how different P-E fit types are related to the students' academic majors associated with their academic outcome.

Concerning research on the academic performance in the Malaysian context, there is yet to be any studies conducted on the different types of P-E fit on academic achievement. Thus, there is a need to consider all types of fit in a single model to determine the association between them with regard to the major and academic performance of university students in Malaysia. This study can potentially make several contributions to the field of educational psychology. Firstly, it can demonstrate the importance of choosing a major that should fit the students' needs and abilities. Secondly, for the first time, Major Fit will be measured in different types of fit such as need supply Major Fit and demand ability Major Fit.

Thirdly, Kristof-Brown *et al.* (1996) noted that there are different types of fit namely; Person-Vocation, Person-Organization, Person-Job, Person-Group, and Person-Supervisor. This study can develop a concept of Major Fit as a new type of fit.

## 1.2. Definitions of Terms

### 1.2.1. Person-Environment Fit

Person-environment (P-E) fit is broadly defined as the compatibility between individuals and environments. This compatibility occurs when individuals' characteristics are well matched with their environment. There are different types of fit. In this study two types of fit were employed; need supply major fit and demand ability major fit.

### 1.2.2. Major Need Supply Fit

Need Supply Fit is one type of fit, defined as the congruence between a person's needs and what the environment supplies (Gilbreath *et al.*, 2011). In need supplies perspective, fit occurs when an environment satisfies an 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. In this study, to measure this concept, the researcher has adapted and modified previous measurements to reach need supply major fit measurements.

### 1.2.3. Major Demand Ability Fit

In terms of Demands 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). Demands ability perspective suggests that fit occurs when an individual has the ability required to meet environmental demands (Kristof, 1996). In school environments, demands ability fit occurs when students' knowledge, skills, abilities, time, and energy fit the requirements of their schoolwork (Li *et al.*, 2012). Demands ability major fit occurs when students' knowledge, skills, abilities, time, and energy fit the requirements of their major. In this study to measure this concept, the researcher has adapted and modified previous measurements to reach demands ability major fit measurements.

### 1.2.4. Academic Achievement or Academic Performance

Academic achievement or academic performance is the outcome of education, the extent to which a teacher, student or academia has achieved their educational objectives. To calculate academic achievement, cumulative grade point average (CGPA) was used.

## 1.3. Research Objectives

The two specific objectives of the present study are:

1. To describe the level of P-E fit and CGPA among undergraduate students.
2. To determine the relationship between P-E fit and academic achievement.

## 1.4. Research Hypothesis

There are two hypotheses in this study:

- H1. There is a positive significant relationship between need supply major fit and academic achievement.
- H2. There is a positive significant relationship between demand ability major fit and academic achievement.

## 2. Literature Review

### 2.1. Demand ability and need supply fit

Person-environment fit is defined as the degree of congruence or match between personal and situational variables in producing significant selected outcomes (Muchinsky & Monahan, 1987). There are two basic perspectives on person-environment fit namely; supplementary fit and complementary fit (Muchinsky & Monahan, 1987). According to the first perspective, supplementary fit, people may believe they fit the environment because they share similar characteristics, values, norms, or interests with the others in the environment.

Conversely, the second perspective, complementary fit, focuses on improving the link between the person and his or her environment. According to this perspective, person-environment fit occurs when an individual adds something that was previously missing to his or her environment, which in turn provides effective results for that environment (Muchinsky & Monahan, 1987), such as high productivity. Complementary fit is divided into two types; the need-supply fit and demands-ability fit (Kristof, 1996). In the needs-supply perspective, fit occurs when an environment satisfies individuals' needs, desires, or preferences. In contrast, the demands-ability perspective suggests that fit occurs when an individual has the ability required to meet environment demands (Kristof, 1996).

## 2.2. Previous studies of Demands ability fit and Need supply fit on Academic achievement

Li *et al.* (2012) with demands-ability [D-A] fit and need-supply [N-S] fit found that D-A fit correlated positively with GPA ( $r = 0.25$ ,  $p < 0.01$ ) and also N-S fit correlated positively with GPA ( $r = 0.22$ ,  $p < 0.01$ ). Etzel (2015) found that D-A fit ( $\beta = 0.49$ ,  $p < 0.01$ ) and N-S fit ( $\beta = 0.69$ ,  $p < 0.01$ ) have a positive relationship with academic performance.

The N-S and D-A fit types in an academic setting has only been studied previously by Li *et al.* (2012) and Etzel (2015). Thus, the relationship of these types of fit and achievement should be examined further. Also, in the reviewed studies above, the D-A fit and N-S fit related to university or school were considered, however D-A and N-S fit related to students' major had not been studied. Therefore, the current study attempts to determine the role of Major D-A and Major N-S fit for students.

## 3. Method

### 3.1 Population

There are two types of universities in Malaysia; public and private universities. Public universities were selected for the present research as they enroll more students than private universities. Among the public universities, the study was restricted to Research Universities (RU), since having access to all public universities would be close to impossible. The characteristics of RUs as defined by the Ministry of Higher Education (MOHE) include fields of study which focus on research, competitive enrollment which ensures the quality of students and lecturers and a ratio of 50:50 undergraduate to postgraduate students. RUs provide a role model to which most universities aspire to and they attempt to promote those characteristics.

The following five universities are designated research universities in Malaysia; University Putra Malaysia (UPM), Universities Kebangsaan Malaysia (UKM), University Malaya (UM), Universiti Sains Malaysia (USM), and Universiti Teknologi Malaysia (UTM). For a bachelor's degree (excluding doctoral degrees and diploma), UPM, UKM, UM, USM and UTM offer 72, 67, 70, 32 and 53 majors, respectively. Therefore UPM was selected since it offers the most majors, the majors that take less than (diploma) or more than four years (doctoral degree) were omitted in this study, in order to have a homogeneous sample, and only majors that take four years (bachelor's degree) were retained. Ultimately, 72 bachelor degree majors were identified. Moreover, the first semester students were not included in the study as they had not yet received any CGPA. Among all the majors in UPM, 12 different majors were selected randomly. According to the office of Admission for Academic and International students of UPM, a total of 2503 undergraduate students were enrolled in these 12 selected majors.

### 3.2. Sample Size

To determine the sample size, Cochran's formula (1977) was utilized to evaluate the appropriate sample size of population.

To calculate sample size, Cochran (1977) suggested Formula 1:

$$\text{Formula 1: } n_0 = \frac{z^2 pq}{e^2}$$

Where  $n_0$  is the sample size,  $Z^2$  is the abscissa of the normal curve cutting off an area at the tails ( $1 - \alpha$  equals the desired confidence level, e.g., 95%),  $e$  is the desired level of precision,  $P$  is the estimated proportion of an attribute present in the population, and  $q$  is  $1-p$ . The value for  $Z$  is found in the statistical table containing the area under the normal curve.

Thus,  $P = 0.5$  (maximum variability), at 95% confidence level and +5% precision would be assumed. The result of calculation is as follows:

$$n_0 = \frac{z^2 pq}{e^2} = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)^2} = 384$$

After a precise calculation, Formula 2 can be employed to measure the final sample size. In this formula,  $n$  is the sample size and  $N$  is the population size.  $N = 2503$  (in the 12 selected majors). Therefore, the sample size is 333.

$$\text{Formula 2: } n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}} = \frac{384}{1 + \frac{(384 - 1)}{2503}} = 333$$

Hair (2010) believed that 10 to 30% extra samples would be enough to account for the margin of errors. Thus, by collecting 30% extra samples, the number of sample size would come up to 433. After data collection, a total of 385 questionnaires were filled up completely by students and used for further analysis.

### 3.3 Sampling

A main step in inferential statistics is to determine the sample which is the population representative (Ary, Jacobs, Sorensen, & Walker, 2013). To draw the sample, probability sampling was employed. Probability sampling is a type of sampling that gives equal chances to every member of the population of being selected (Ary, *et al.*, 2013). The types of probability sampling which are most frequently used include; simple random sampling, cluster sampling, stratified sampling, and systematic sampling.

In this study, cluster random sampling was used. According to Ary *et al.* (2013), there are particular procedures for using the cluster sampling technique; the clusters of the study should be randomly selected, and all the members of the cluster must be included in the sample. Thus, in this study among the majors offered in UPM, 12 majors were randomly selected using the List Randomizer (Haahr). The List Randomizer of Dr. Mads Haahr arranges the items of a list randomly. Eighty-two majors were offered to undergraduate students in 15 faculties of UPM but the majors that take less (diploma) or more than four years (doctoral degree) were omitted from the study, in order to have a homogeneous sample, and only majors that take four years (bachelor's degree) were retained. Ultimately, 72 bachelor degree majors were identified. Moreover, the first semester students were excluded from the study since they have not yet received any CGPA.

According to the office of Admission for Academic and International students of UPM, 2503 undergraduate students study in the 12 selected majors. As the populations of majors were highly different from each other in number, proportionate technique was employed. After calculating the number of students required from each major, respondents were randomly selected from the list of students using List Randomizer (Haahr). Then, selected students were contacted for the purpose of arranging a meeting to distribute the questionnaires.

### 3.4. Instruments

In this study, three instruments were used as follows:

#### 3.4.1. Major Demand ability fit

This questionnaire has eight items. Item 1, 2 and 3 are adapted and modified from demands-ability fit of Cable and DeRue (2002), and from demands-ability academic fit of Li *et al.* (2012). Item 4 is adapted and modified from perceived job fit of Cable & Judge (1996), from demands-ability internship fit of Resick (2007), and from demands-ability organization fit of Uysal Irak (2010).

Item 5 is adapted and modified from perceived job fit of Cable and Judge (1996), from demands-ability internship fit of Resick (2007), and from demands-ability organization fit of Uysal Irak (2010). Items 6 and 7 are adapted and modified from perceived job fit of Cable and Judge (1996), and from demands-ability internship fit of Resick (2007). Item 8 is adapted and modified from academic perceived fit of Schmitt (2008). All these questionnaires have acceptable reliability and validity. **Table 1** shows the sources from which the items were adapted and modified.

**Table 1: Sources Adapted and Modified for Major Demands-Abilities Fit**

<b>Adapted and Modified item</b>	<b>Original item</b>
<b>Item 1. The match is very good between the demands of my major and my personal ability.</b>	- The match is very good between the demands of my job and my personal skills (Questionnaire: demands-abilities fit, Author: Cable & DeRue, 2002). - The match is very good between the demands of my schoolwork and my personal ability (Questionnaire: demands-abilities academic fit, Author: Li <i>et al.</i> , 2012).
<b>Item 2. My ability is a good fit with the requirements of my major.</b>	-My abilities and training are a good fit with the requirements of my job (Questionnaire: demands-abilities fit, Author: Cable & DeRue, 2002). -My ability is a good fit with the requirements of my schoolwork in the faculty (Questionnaire: demands-abilities academic fit, Author: Li <i>et al.</i> , 2012).
<b>Item 3. My personal learning ability and discipline backgrounds provide a good match with the demands that my major places on me.</b>	-My personal abilities and education provide a good match with the demands that my job places on me (Questionnaire: demands-abilities fit, Author: Cable & DeRue, 2002). -My personal learning ability and discipline backgrounds provide a good match with the demands that my schoolwork places on me (Questionnaire: demands-abilities academic fit, Author: Li <i>et al.</i> , 2012).
<b>Item 4. I believe my skills and abilities match those required by this major.</b>	-To what degree do you believe your skills and abilities match those required by the job (Questionnaire: perceived job fit, Author: Cable & Judge, 1996). -I believe my skills and abilities match those required by the internship (Questionnaire: demands-abilities internship fit, Author: Resick <i>et al.</i> , 2007). -I believe my skills and abilities match those required by this organization in general (Questionnaire: demands-ability organization fit, Author: Uysal Irak, 2010).
<b>Item 5. I think I possess the skills and abilities to succeed in this major.</b>	-To what degree do you think you possess the skills and abilities to perform this job (Questionnaire: perceived job fit, Author: Cable & Judge, 1996). -I possess the skills and abilities to perform this job (Questionnaire: demands-abilities internship fit, Author: Resick <i>et al.</i> , 2007). -I think I possess the skills and abilities to succeed in this organization (Questionnaire: demands-ability organization fit, Author: Uysal Irak, 2010).
<b>Item 6. My performance is hurt by a lack of expertise in the major.</b>	-To what degree is your job performance hurt by a lack of expertise in the job (Questionnaire: perceived job fit, Author: Cable & Judge, 1996). -My job performance is hurt by a lack of expertise in the job (Questionnaire: demands-abilities internship fit, Author: Resick <i>et al.</i> , 2007).
<b>Item 7. My knowledge, skills and abilities match the requirements of this major.</b>	-To what extent do your knowledge, skills, and abilities match the requirements of the job (Questionnaire: perceived job fit, Author: Cable & Judge, 1996). -My knowledge, skills, and abilities match the requirements of the internship (Questionnaire: demands-abilities internship fit, Author: Resick <i>et al.</i> , 2007).
<b>Item 8. I am able to use my talents, skills, and competencies in my current courses in this major.</b>	-I am able to use my talents, skills, and competencies in my current courses (Questionnaire: academic perceived fit, Author: Schmitt <i>et al.</i> , 2008).

### 3.4.2. Major Need supply fit

This questionnaire has eight items. Items 1, 2 and 3 are adapted and modified from need-supply fit of Cable & DeRue (2002), and from need-supply academic fit of Li *et al.* (2012).

Items 4 and 5 and 7 are adapted and modified from perception of job fit of Saks & Ashforth (1997), from need-supply internship fit of Resick (2007) and from need-supply organization fit of Uysal Irak (2010). Item 6 is adapted and modified from need-supply internship fit of Resick (2007) and from need-supply organization fit of Uysal Irak (2010). Item 8 is adapted and modified from academic perceived fit of Schmitt (2008). All these questionnaires have acceptable reliability and validity. The table 2 shows the sources from which the items were adapted and modified.

**Table 2: Sources Adapted and Modified for Major Need-Supply Fit**

<b>Adapted and Modified item</b>	<b>Original item</b>
<b>Item 1. There is a good fit between what my major offers I and what I am looking for in a major.</b>	-There is a good fit between what my job offers me and what I am looking for in a job (Questionnaire: need supply fit, Author: Cable & DeRue, 2002). -There is a good fit between what my schoolwork offers me and what I am looking for in schoolwork (Questionnaire: need supply academic fit , Author: Li <i>et al.</i> , 2012).
<b>Item 2. The attributes that I look for in a major are fulfilled very well by my present major.</b>	-The attributes that I look for in a job are fulfilled very well by my present job (Questionnaire: need supply fit, Author: Cable & DeRue, 2002). -The attributes that I look for in schoolwork are fulfilled very well by my present study (Questionnaire: need supply academic fit, Author: Li <i>et al.</i> , 2012).
<b>Item 3. The major that I currently have gives me just about everything that I want from a major.</b>	-The job that I currently hold gives me just about everything that I want from a job (Questionnaire: need supply fit, Author: Cable & DeRue, 2002). -The schoolwork that I currently have gives me just about everything that I want from schoolwork (Questionnaire: need supply academic fit, Author: Li <i>et al.</i> , 2012).
<b>Item 4. This major measure up to the kind of major I was seeking.</b>	-To what extent does your new job measure up to the kind of job you were seeking (Questionnaire: perception of job fit, Author: Saks & Ashforth, 1997). -This internship measures up to the kind of internship I was seeking (Questionnaire: need supply internship fit, Author: Resick, Baltes, & Shantz, 2007). -This organization measures up to the kind of organization I was seeking (Questionnaire: need supply organization fit, Author: Uysal Irak, 2010).
<b>Item 5. This major fulfills my needs.</b>	-To what extent does the job fulfill your needs (Questionnaire: perception of job fit, Author: Saks & Ashforth, 1997). -This internship fulfills my needs (Questionnaire: need supply internship fit, Author: Resick <i>et al.</i> , 2007). -This organization fulfills my needs (Questionnaire: need supply organization fit, Author: Uysal Irak, 2010).
<b>Item 6. This major is a good match for me.</b>	-To what extent is the job a good match for you (Questionnaire: perception of job fit, Author: Saks & Ashforth, 1997). -This internship is a good match for me (Questionnaire: need supply internship fit, Author: Resick <i>et al.</i> , 2007). -This organization is a good match for me (Questionnaire: need supply organization fit, Author: Uysal Irak, 2010).
<b>Item 7. I feel that this major enables me to do the kind of study I want to do.</b>	-To what extent does the job enable you to do the kind of work you want to do (Questionnaire: perception of job fit, Author: Saks & Ashforth, 1997). - I feel that this internship enables me to do the kind of work I want to do (Questionnaire: need supply internship fit, Author: Resick <i>et al.</i> , 2007). -I feel that this organization enables me to do the kind of work I want to do (Questionnaire: need supply organization fit, Author: Uysal Irak, 2010).
<b>Item 8. I feel that my academic goals and needs are met by this major.</b>	-I feel that my academic goals and needs are met by the faculty at this school (Questionnaire: academic perceived fit, Author: Schmitt <i>et al.</i> , 2008).

3.4.3. CGPA

To measure academic achievement, cumulative grade point average (CGPA) was used. CGPA is based on scale ranging from 0.0 to 4.0.

4. Findings

Initially, in order to describe objective 1 of the study, descriptive statistics was applied and for this purpose IBM SPSS (V20) was used. Furthermore, SEM – AMOS (V22) was used to test the hypotheses of the study (objective 2).

Descriptive analysis with SPSS 20 was used to explain the level of P-E fit and CGPA among undergraduate students. The criteria used for setting up the cutoff point of the categories were based on the range (the product of maximum score minus minimum score for each variable), which was then divided by the number of the desired categories (in this case 3). As Table 3 shows, the respondents' scores on major demands-ability fit scale range from 8 to 45 with a mean score of 26.14 and standard deviation of 6.66. To ascertain the respondents' level, the scores were recorded in three categories: low (8-20.33), moderate (20.34-32.66), and high (32.67-45). The descriptive analysis revealed that out of the 385 respondents, 103 (26.8%) were in the low level, 197 (51.2%) were in the moderate level, while 85 or 22.1% were in the high level. This indicates that the majority of the respondents (51.2%) were in the moderate level of major demands-ability fit scale.

**Table 3: Descriptive Analysis for Major Demands-Ability Fit**

Construct Code	Frequency and Percentage for Low Level	Frequency and Percentage for Moderate Level	Frequency and Percentage for High Level	Mean	Standard Deviation
MDAF	103 (26.8%)	197 (51.2%)	85 (22.1%)	26.14	6.66

The respondents' scores on major need-supply fit scale, as shown in Table 4, range from 8 to 45, with a mean of 27.11 and standard deviation of 5.37. Total major need-supply fit scores were recorded into three categories: low (8-20.33), moderate (20.34-32.66), and high (32.67-45). The descriptive analysis revealed that out of the 385 respondents, 51 (13.2%) were in the low level, 276(71.7%) in the moderate level, while 58 or 15.1% were in the high level. This indicates that the majority of the respondents (71.7%) were in the moderate level of major need-supply fit scale.

**Table 4: Descriptive Analysis for Major Need-Supply Fit**

Construct Code	Frequency and Percentage for Low Level	Frequency and Percentage for Moderate Level	Frequency and Percentage for High Level	Mean	Standard Deviation
MNSF	51 (13.2%)	276 (71.7%)	58 (15.1%)	27.11	5.37

As shown in Table 5, CGPA has a mean of 3.325 and standard deviation of 0.324. In this study, CGPA has four levels: CGPA below 2.5, between 2.51 and 3, between 3.01 and 3.5, and CGPA higher than 3.51. Descriptive findings indicate that none of the respondents have a CGPA below 2.5, 16.364% of respondents have a CGPA of between 2.51 and 3, and the majority of respondents (56.104%) have a CGPA of between 3.01 and 3.5.

**Table 5: Descriptive Analysis of CGPA**

Construct Code	Frequency and Percentage for CGPA below 2.5	Frequency And Percentage for CGPA between 2.51 and 3	Frequency And Percentage for CGPA between 3.01 and 3.5	Frequency And Percentage for CGPA higher than 3.51	Mean	Standard Deviation
CGPA	0 (0%)	63 (16.364%)	216 (56.104%)	106 (27.532%)	3.325	0.324



SEM – AMOS (V22) was used to test the hypotheses of the study. The first hypothesis examines the relationship between need supply Major Fit and Academic Achievement. Need supply major fit has a positive relationship with academic achievement ( $\beta = 0.190$ ,  $p < 0.000$ ). Therefore, Hypothesis 1 is supported.

The second hypothesis examines the relationship between demand ability major fit and academic achievement. Demand ability major fit has a positive significant relationship with academic achievement ( $\beta = 0.250$ ,  $p < 0.000$ ). Therefore, Hypothesis 2 is supported.

## 5. Discussion

The descriptive analysis for demand ability major fit reveals that out of the 385 respondents, 103 (26.8%) were in the low level, 197 (51.2%) in the moderate level, while 85 or 22.1% were in the high level. The findings of this study indicated that the majority, 51.2% of students in Malaysia have moderate level of Major Demands-Ability Fit, however only 22.1% of students have high level of Major Demands-Ability Fit. These findings indicate that there is a need for improvement to reach a high level in Major Demands-Ability Fit in Malaysian students. The descriptive analysis for need supply major fit shows that out of the 385 respondents, 51 (13.2%) were in the low level, 276 (71.7%) were in the moderate level, while 58 or 15.1% are in the high level. The finding of this study revealed that the majority, 71.7% of students in Malaysia have moderate level of Major Need-Supply Fit, however only 15.1% of students have a high level of Major Need-Supply Fit. These results suggest that there is a need for improvement to reach a high level in Major Need-Supply Fit among Malaysia students

From the descriptive findings, it was apparent that none of the respondents had a CGPA below 2.5, however, the majority of respondents (56.104%) had a CGPA of between 3.01 and 3.5. In light of the results obtained from this study, it shows there is a need for improvement to reach a high level in CGPA (CGPA higher than 3.51) among students in Malaysia. In this study,  $H_1$  is accepted as there was a positive significant relationship between major demands-ability fit and academic achievement. The results of this hypothesis parallel those of Li *et al.* (2012) and Etzel (2015). In a study conducted by Li *et al.* (2012) they also found a significant relationship between demands-ability fit and GPA ( $r = 0.25$ ,  $p < 0.01$ ). Similarly, Etzel (2015) found that D-A fit ( $\beta = 0.49$ ,  $p < 0.01$ ) had a positive relationship with academic achievement.  $H_2$  is accepted as there is a positive significant relationship between major need supply fit and academic achievement. The results of this hypothesis corroborates with those of Li *et al.* (2012) and Etzel (2015). Li *et al.* (2012) in their study also found a significant relationship between major need supply fit and GPA ( $r = 0.22$ ,  $p < 0.01$ ). Etzel (2015) found that N-S fit ( $\beta = -0.69$ ,  $p < 0.01$ ) had a positive relationship with academic achievement.

## 6. Conclusion

The present study was carried out to examine the relationship between P-E Fit on academic achievement. Based on the findings of this study, all hypotheses were accepted. In other words, all P-E fit type's had a significant relationship with academic achievement implications. The findings of the present study provide valuable information to the field of educational psychology both theoretically and practically. Theoretically, Kristof-Brown *et al.* (1996) noted that there are different types of fit: Person-Vocation, Person-Organization, Person-Job, Person-Group, and Person-Supervisor. This study used Major Fit as a type of fit and this type of fit can added to previous classifications of types of fit.

Furthermore, in this study all types of Major fit were used, because it is recommended to use different types of fit in a single model since each type of fit has a unique relationship with the outcome (Kristof, 1996; Kristof *et al.* 2005; Cable and DeRue, 2002) and also failure to consider different types of P-E fit may underestimate its significance in predicting academic outcomes of students (Li *et al.*, 2012). Therefore in this study, all types of Major fit were used, and to measure Need Supply Major fit, Demands Ability Major Fit, the researcher adapted and modified previously designed questionnaires and these questionnaires were used to measure these constructs.

On a practical level, the findings of this study can contribute in helping education advisors and counselors in guiding students to select majors that fit with their needs and their abilities which will eventually lead to a student's higher academic achievement. Furthermore, the descriptive analysis in this study shows that there is a need to reach a high level of Major demands ability fit, Major need supply fit and CGPA among students in Malaysia. Several recommendations in light of the results obtained in this study are proposed to fill the existing gaps and provide suggestions for future research. The current study was conducted only in research universities (RU) in Malaysia;

however, it is suggested that further studies conduct a similar research in private as well as non-research universities. In addition, this study is in the Malaysian context and it would be of interest to investigate it in other contexts too.

Furthermore, as Kristof-Brown *et al.* (1996) noted that there are different types of fit: Person-Vocation, Person-Organization, Person-Job, Person-Group, and Person-Supervisor, in this study Major fit was introduced as a type of fit for the first time, therefore it is recommended that researchers in education studies use Major fit as a type of fit in educational studies.

Moreover, it is recommended to use different types of fit in a single model because each type of fit has a unique relationship with outcomes (Kristof, 1996; Kristof *et al.* 2005; Cable and DeRue, 2002), and also Li *et al.* (2012) noted that failure to consider different types of P-E fit may underestimate its significance in predicting academic outcomes of students. Therefore, in this study two types of Major fit were used, and also to measure Need Supply Major fit and Demands Ability Major the researcher adapted and modified previous measurements to construct these concepts. A recommendation for future studies is to use these questionnaires to measure these concepts as well as to use all types of fit in a single model.

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