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**MODERATING EFFECT OF PROGRAM CHARACTERISTICS ON THE
RELATIONSHIP BETWEEN STUDENT ATTRIBUTES, SOCIAL SUPPORT,
PERCEIVED STRESS AND INTENTION-TO-COMPLETE DOCTOR OF BUSINESS
ADMINISTRATION PROGRAMME**

By

RENU D/O RAMALINGGAM



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**Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
University Utara Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Business Administration**



OTHMAN YEOP ABDULLAH GRADUATE SCHOOL OF BUSINESS
UNIVERSITI UTARA MALAYSIA

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ABSTRACT

Student dropout in the Doctor of Business Administration (DBA) programme has emerged as the main barrier in achieving the targeted 60,000 doctoral graduates as envisioned in the 10th Malaysia Plan. The dropout rate shows that almost 80 percent of the DBA students did not complete the programme within the stipulated time frame. However, there has not been much research focused on doctoral programme completion in Malaysia. Hence, this study investigated the determinant factors of intention to complete DBA in Malaysia. Specifically, the aim of this study was to examine whether student attributes, social support and perceived stress determine the intention to complete DBA. Additionally, the moderating effect of programme characteristics on the proposed relationships was examined in this study. The survey method was employed to collect data for this study. DBA students who had completed at least two semesters of their studies in Universiti Sains Malaysia, Universiti Kebangsaan Malaysia, Universiti Islam Antarabangsa Malaysia and Universiti Utara Malaysia were chosen as respondents for this study. Seven research hypotheses were proposed in relation to the determinants of intention to complete the doctoral study. Structured questionnaires comprising 42 questions were used to measure the four independent variables and one moderating variable. Out of the 750 questionnaires sent out, only 413 were returned and usable, thus yielding a response rate of 55.1 percent. The findings revealed that positive relationships exist between student attributes, social support and intention to complete DBA. Unfortunately, perceived stress was not indicative of any significant relationship with intention to complete DBA. The findings also revealed that programme characteristics moderate the relationship between student attributes and intention to complete DBA. The study concluded with a discussion on theoretical and practical implications and suggestion for future research.

Keywords: Intention to complete DBA, programme characteristics, student attributes, social support, perceived stress.

ABSTRAK

Keciciran pelajar dalam program Doktor Pentadbiran Perniagaan (DBA) telah muncul sebagai penghalang utama dalam mencapai sasaran 60,000 orang siswazah kedoktoran seperti yang dihasratkan dalam Rancangan Malaysia ke-10. Kadar keciciran menunjukkan hampir 80 peratus pelajar DBA tidak menamatkan program dalam tempoh masa yang ditetapkan. Walau bagaimanapun, tiada banyak kajian yang telah memberi fokus kepada penamatan pengajian program kedoktoran di Malaysia. Justeru itu, kajian ini telah menyelidik faktor-faktor penentu niat untuk menamatkan pengajian DBA di Malaysia. Secara khususnya, kajian ini bertujuan untuk menyelidik sama ada atribut pelajar, sokongan sosial dan faktor tekanan menentukan niat untuk menamatkan program DBA. Selain itu, kesan penyederhana ciri-ciri program ke atas hubungan-hubungan yang dicadangkan telah dikaji dalam kajian ini. Kaedah kajian tinjauan telah diguna pakai untuk mengumpul data untuk kajian ini. Pelajar-pelajar DBA yang telah menamatkan sekurang-kurangnya dua semester daripada pengajian mereka di Universiti Sains Malaysia, Universiti Kebangsaan Malaysia, Universiti Islam Antarabangsa Malaysia dan Universiti Utara Malaysia telah dipilih sebagai responden untuk kajian ini. Tujuh hipotesis kajian telah dicadangkan berkaitan penentu niat menamatkan pengajian kedoktoran. Soal selidik berstruktur yang terdiri daripada 42 soalan telah digunakan untuk mengukur empat pemboleh ubah bebas dan satu pemboleh ubah penyederhana. Namun, daripada 750 soal selidik yang telah diedarkan, hanya 413 telah dikembalikan dan sesuai digunakan. Oleh itu, kadar maklum balas adalah sebanyak 55.1 peratus. Dapatan kajian menunjukkan bahawa wujud hubungan positif di antara atribut pelajar, sokongan sosial dan niat untuk menamatkan DBA. Malangnya, faktor tekanan tidak menunjukkan sebarang hubungan signifikan dengan niat untuk menamatkan pengajian DBA. Dapatan kajian juga mengetengahkan bahawa ciri-ciri program menyederhana hubungan di antara atribut pelajar dan niat untuk menamatkan pengajian DBA. Kajian ini dirumuskan dengan perbincangan mengenai implikasi teori dan praktikal serta cadangan untuk kajian akan datang.

Kata Kunci: Niat untuk menamatkan DBA, ciri-ciri program, atribut pelajar, sokongan sosial, tekanan

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CHAPTER ONE

INTRODUCTION

1.1 Background

Malaysia has been working towards an aspiration to be a high-income nation by 2020 capitalising on knowledge based economy which requires knowledgeable human capital. The 10th Malaysia Plan (2010) has indicated strongly the need to produce doctoral scholars in Malaysia. In fact, the Prime Minister of Malaysia has personally charged the then Higher Education Ministry with the responsibility of producing 60000 PhD scholars by 2023. To achieve this, the government has worked out a financial strategy through Ministry of Higher Education to fund lifelong learning via a program called MyBrain15. Through this program the government is aiming to achieve the mandate and produce an excellent pool of highly skilled scholars and research leaders. In accordance with that plan, doctoral studies are funded fully by the government and so far, around RM386 million has been utilized with remaining allocation of RM 112 million (The Star, 2014).

Among various doctoral programmes, Doctor of Business Administration (DBA) is a popular professional doctorate in business administration for business professionals. The growth of professional doctorates is a new sensation in the education community which has held the Doctor of Philosophy (PhD) as the gold standard in education since the 18th century. The doctoral education is expected to answer the demands and expectations set for it, these are being set also by the future scholars (Boud & Lee, 2009). After an initial sceptical reaction, the academic world has now embraced PhD

as the supreme status in education that an individual can achieve. Similarly, the emergence of professional doctorates in the 1980's was initially a shock to the academic world (Park, 2005). This new doctorate is intended for practising professionals as opposed to would-be academics or researchers, and has embraced a wide range of programmes most of which have field-specific titles. The DBA is considered the highest educational recognition in business education as an equivalent to PhD in business education. Unlike conventional PhD, the DBA requires a stronger component of coursework that instils corporate governance skills and subsequently leads to a dissertation that involves solving a particular business problem (O'Neill & McMullen, 2007). DBA has since become an important tool for enhancing capacity and competency of corporate employees around the world as opposed to academicians.

In Malaysia, the DBA program enrolment has been quite robust with many students viewing this doctorate as an important postgraduate education (MOHE, 2013). Although there are around 9 universities offering DBA programs both from public and private universities, only 5 main public universities offering DBA programs are University Teknologi Malaysia (UTM), University Kebangsaan Malaysia (UKM), University Sains Malaysia (USM), University Utara Malaysia (UUM) and University Islam Antarabangsa (UIA) are established institutions while the remaining universities are new in offering this program (MOHE., 2013). Out of this only UKM, USM, UUM and UIA have a track record of a minimum 5 years after DBA program was launched in their respective universities. UTM launched their DBA program only in 2013 and thus will not be included in the discussion on DBA non-completion in Malaysian Universities. All the other 4 universities have similar curriculum with a variety of

coursework and dissertation components as well as a business competency evaluation parameter. Additionally, majority of students enrolling in the DBA program in UKM, USM, UUM and UIA were part-time working-class students with a vision to enhance themselves adequately.

Currently, there is an arresting problem that haunts the community of Malaysian DBA students which cannot be ignored anymore. This emerging phenomenon is the attrition or non-completion rate of doctoral students globally (D'Andrea, 2002). Doctoral students represent a highly educated and typically motivated group of students that have demonstrated the academic aptitude and personal characteristics to successfully complete multiple degrees, yet a large number of students are not completing the doctoral degree. Malaysia has not been spared of this calamity as well whereby majority of DBA are not graduating in time. The main DBA-offering public universities in Malaysia have a graduating rate of 30% and below (Mathialagan & Mahmood, 2014). This graduating rate is not an isolated incident but has been persisting trend since 2011 with minimal efforts conducted to address the issue. A possible explanation for this inaction in addressing doctoral student non-completion is due to the fact that postgraduate students are considered as the 'adult' group of student population. They are assumed to have already experienced higher education during undergraduates, understand how to navigate institutional bureaucracies, thus warranting less attention than undergraduates students. Postgraduate students are more often than not required to be a lone ranger in their educational institution. A plea for assistance from this group is often considered a sign of immaturity. Unfortunately, these assumptions are not entirely true whereby many Malaysian universities have high intake of graduate students and these students have specific needs and face

developmental challenges that may differ from, but are as important as, those experienced by undergraduates. In fact, they consume more of its resources, such as faculty time, expertise, and energy; library facilities; and computer services. Therefore, DBA is not solely a student-centric problem but on contrary, it's an educational institution's concern and a nation's worry. It is timely universities, academics and researchers view DBA non-completion as a serious issue and immediate studies should be initiated to investigate factors and propose remedial action.

1.2 Problem Statement

Completion of DBA is a serious concern for country as scholarly production is not as expected currently (Ministry of Higher Education, 2010). This is not congruent with the expectations of the nation whereby Malaysia has already a target of accomplishing an educated community by 2020. The 10th Malaysia Plan (2010-2015) has indicated strongly the need to produce doctoral scholars in Malaysia. With such a target identified by the Malaysian government, drop outs are a waste of public funds and a serious impediment to the nation's ambitions. This includes DBA scholar production which can be strong driving force for doctoral scholars in Malaysia. DBA graduates are working professionals and top management leaders in the corporate world who have a direct impact towards the country's GDP. But this does not mean that it's an indication to compromise quality for quantity. Rather it's a signal to improve efficiency and identify any issues concerned with DBA completion and rectify them. This issue need to be addressed immediately as the nation needs DBA graduates as one of the drivers of the new high-income economy.

DBA non-completion is not exclusive to Malaysia alone and is a global concern. This concern has been in existence at least since the 1980s in Canada, United Kingdom (UK), United States of America (USA) and Australia (Elgar, 2003; Rodwell & Neumann, 2008; Lovitts & Nelson, 2000; Gale & Tranter, 2011 & Jiranek, 2010). For the U.K., completion rates after 10 years differed by general discipline area with arts/humanities rates being 51 per cent, and sciences cited at 64 per cent (Wright & Cochrane, 2000). In Australia, Martin, Maclachlan & Karmel, (2001) estimated that 60 per cent of beginning doctoral candidates in 1992 would have completed successfully by 2003 (that is 11 years after initial enrolment). Doctoral students are the prized possession of education institutions as significant scholarly and research outputs are primarily dependent on this particular student population. As mentioned earlier, Pontius and Harper (2006) asserted that institutions have categorized doctoral students as a huge resource but one that requires minimal institution assistance. Faculty, supervisors and departmental assistance are quite scarce for doctoral in comparison to undergraduate or even graduate student. In truth, facility, faculty utilizations and peer assistance are needed higher among graduate students as they are more research orientated than their undergraduate counterparts. Upon realizing this, studies have been initiated to identify factors causing DBA non-completion and the necessary measures needed to boost doctoral completion.

In Malaysia, this scenario is revisited in the DBA program, whereby enrolment has been quite robust while graduation rate has been very low. Identification of this problem in Malaysia was only done in the last 5 years as university administrators and policy makers understood the need to assist doctoral students in completing their

studies. Upon overcoming initial denial of this problem, academics and researchers agreed that the most important step forward is to identify factors contributing to DBA completion and non-completion. It was agreed that a strong understanding of DBA non-completion would ultimately pave a path for identification of necessary solutions to ensure acceptable graduating rates among students. With that, a seminal study in Malaysian DBA completion was conducted by Mathialagan and Mahmood (2014) that concluded doctoral students with problematic attributes who are not given proper institutional assistances and information coupled with inadequate social involvement are more likely to become dropouts. (Mathialagan & Mahmood, 2014). This study was the first in Malaysia to give a direct insight into the plight of Malaysian DBA students. But as with any pioneering study, it had its limitations whereby minimal factors were evaluated and no moderating effect was explored. A major justification for undertaking this current study is to build upon the work done by Mathialagan and Mahmood and contribute new developments in the Malaysian DBA arena. Taking these considerations into account, this study aims to explore new factors involved in intention-to-complete DBA and to evaluate possible role of moderators in this complex relationship.

One of the key factors identified in contributing to intention to complete DBA is student attributes (Mathialagan & Mahmood, 2014). This was summarized earlier by Golde (1994) who stated that attrition is undeniably a multi-factorial phenomenon that needs a detailed review of multiple factors, most notably student attributes. This is inherently true in terms of DBA completion as student attributes play a major role in determining successful completion. For instance, due to the obscure clarity of the DBA program, students may enter the program thinking either it's a very easy process

or a very difficult one. Relying on these extremes, students tend to get either frustrated or over-exerted which finally ends in attrition (Gardner & Holley, 2011). Students' attributes, which can be determined by external factors such as financial constraints, family commitments and employment change, can cause a student to become disillusioned and lose the intention to complete the DBA program (Gittings, 2010). For instance, a student who experiences an employment change during his studies may feel increased pressure at work to achieve the expectation of the employer and thrive to attain their thrust and relationship to climb the corporate ladder which then tends to bring more pressure to please the new working condition therefore leads the student to a point where there are not able to give full commitment to their study thus brings upon DBA non-completion (Gardner, 2008). Similarly, increased financial constrains due to high living costs can also disrupt intentions to complete DBA significantly. This can be seen especially with student who are about to raise a new family or getting into a new commitment. The cost to sustain the new family member can be overwhelming when it clashes with the time to meet deadlines in paying up tuition fees for their studies (Gittings, 2010). The impact of student attributes as a factor in intention-to-complete DBA in the Malaysian setting has been proven significant in the study done by Mathialagan and Mahmood in 2014. However, the study did not explore impact of moderation on this variable and the aforementioned researchers have emphasized in their recommendations that it is imperative that moderation effect of student variable is examined to ensure proper measures can be put in place by institutions.

Another important influence for doctoral completion is social support. Socialization is a very important aspect for a student. This can be seen in Lazarus Theory also known

as the appraisal theory, which means our assessment of a condition brings about an emotional reaction which is a basis of that appraisal. The significant part of the appraisal theory is that it involves individual differences of emotional reactions to the same event. Based on the preferred field of study, the student will need to undergo a phase of transition into their new profession with a new set of standards. Social support refers to support from both family and peers in the doctoral. A social support network is comprised of several individuals within one's environment who influence one's perceptions of his or her environment and might include family members, friends, and co-workers (Kelly, 2005). Encouraging and motivating support from family members are very important when balancing studies with work as is often the case with some of doctoral students (Lahey & Orehek, 2011, p. 482). Student would feel highly comforted that their efforts are supported and appreciated by their family. Similarly, support from peer and friends are also important in the doctoral journey. Peer would understand the rigorous sacrifices needed in doctoral journey and also act as a place for reducing both stress and feelings of social isolation (Ali & Kohun, 2006; Hadjioannou, Shelton, Fu, & Dhanarattigannon, 2007). Doctoral students feel a sense of well-being when their peers share the experiences and form a bond with one another that helps in determining their persistence in the doctoral journey (Nelson & Brice, 2008). Undeniably, social support is an important predictor of intention-to-complete DBA. Unfortunately, the influence of social support has not been explored before in the Malaysian DBA setting and would be an ideal predictor of DBA completion rate.

Program characteristics are also a major factor that can influence DBA degree completion. As discussed by Ehrenberg et al. (2006), program characteristics refers to

departmental assistance, program structure, student-supervisor relationships, quality and access to research materials as well as faculty guidance. All these factors play major roles in determining intention-to-complete DBA of students. For example, insufficient guidance or change of supervisors during dissertation phase in DBA could easily change student's intention leading to non-completion of doctoral degree (Ehrenberg et al, 2007). This was further supplemented by Breckner (2012) who emphasized the factors influencing degree completion and creative performance that includes the microenvironment (e.g., location, department, peers and other faculty, and advisor) and the macro-environment (e.g., culture of graduate education and culture of the discipline). Doctoral students are exposed to the provisions of the program, departmental rules and dissertation supervision in their doctoral journey. In the study done by Mathialagan and Mahmood in 2014, program characteristics was explored as factor for DBA completion among 342 DBA students and the results showed a strong significance in predicting intention-to-complete DBA. In fact, the influence of program characteristics was so strong that the aforementioned researchers recommended that follow up studies should utilize program characteristics as a moderator for other individual variables (Mathialagan & Mahmood., 2014). This hypothesis is highly rational as program characteristics is foundation on how DBA program is conducted and it possess the capacity to moderate other variables such as student's attributes and social support. For instance, students who receive adequate assistance from faculty will have reduced stress in undertaking the DBA program and this enables positive individual attributes to reinforce their intention-to-complete DBA. Thus, this study will utilize program characteristics as moderator for all the individual variables in this study

Finally, this study will also utilize perceive stress as a new variable to explore impact on intention-to-complete DBA. Perceived stress can impede or accelerate a doctoral student's progress towards his academic destination. A recent developed model relates a number of job features and individual difference variables in the likelihood of anxiety, sadness, and job fulfilment. Factors examined included: job demands, social support, decision authority, 40 coping behaviour (a key feature of the transactional models) which included the categories of problem focused coping, seeking advice, self-blame, wishful thinking, and escape/avoidance; attributional/explanatory styles; and age, gender, and demographic variables. This framework was called the Demands, Resources, and Individual Effects model (DRIVE), Mark & Smith (2008). In the earlier studies, stress was being looked into by quantifying the impact of specific stressors, eventually the work increased the person's understanding of the stressor rather than innate the nature of the event (Lovitts, 2005). The variable of perceived stress will then push the students from external forces to the completion of their doctoral study. Perceived stress relates to students experience towards the demands of course work, a new environment and new people, and for those living away from home for the first time learning to manage financially, emotionally and socially by themselves (Birks, McKendree & Watts, 2012). This variable has not been examined in the Malaysian DBA context and it is necessary to examine this variable as a possible predictor of intention-to-complete DBA.

1.3 Research Question

The researcher is seeking to find influence of student attributes, social support, perceived stress and program characteristics on intention-to-complete DBA. Specific research questions are as follows:

1. Is DBA student attributes directly related to intention-to-complete DBA?
2. Is DBA student social support directly related to intention-to-complete DBA?
3. Is DBA perceived stress directly related to intention-to-complete DBA?
4. Does DBA program characteristic moderate the effect of student attributes on intention-to-complete DBA?
5. Does DBA program characteristics moderate the effect of social support on intention-to-complete DBA?
6. Does DBA program characteristics moderate the relationship of perceived stress on intention-to-complete DBA?

1.4 Research Objectives

The general objective of this study is to determine the direct effect of student attribute, social support and perceived stress towards the intention-to-complete DBA among DBA students in Malaysia with the presence of program characteristics as a moderating variable.

1. To determine the direct effect of student attributes towards intention-to-complete DBA among DBA students in Malaysia
2. To determine the direct effect of social support towards intention-to-complete DBA among DBA students in Malaysia
3. To determine the direct effect of perceived stress towards intention-to-complete DBA
4. To ascertain the moderating effect of program characteristics on student attributes towards intention-to-complete DBA
5. To ascertain the moderating effect of program characteristics on social support towards intention-to-complete DBA
6. To ascertain the moderating effect of program characteristics on perceived stress towards intention-to-complete DBA.

1.5 Scope of Study

As acknowledged by the research problem above, DBA completion is a serious matter to consider in the current state of events. Malaysian researchers have expressed their woes that doctoral students in Malaysia are having a tough time completing their course (Norhasni & Ismail, 2011). Particularly DBA students, have a harder time in getting graduated as their course components is slightly different from traditional PhD's and is considered a new phenomenon in Malaysia. This research is aimed at investigating four key variables that may solve the DBA conundrum namely student attributes, social support, program characteristics and perceived stress that lead to successful completion of DBA degree. The population for this study are DBA students who have completed at least two semesters in all 4 public universities spanning the period 2007-2014. The reason why students who has completed two semesters are being studied is that they would be familiar with the program characteristics. This research has been conducted using a questionnaire adapted from 3 scales namely, Perceived Stress Scale (PSS), Multidimensional Scale of Perceived Social Support (MSPSS), and Doctoral Student Experiences Questionnaire (Tinto, 1997; Lee, 2003; Gittings, 2010). This tool is utilized to measure intention to complete doctoral with varying variables like personal attributes, program characteristics and social support. The purpose of this study is to identify individual student attributes, social support, perceived stress and program characteristics that influence intention-to-complete DBA and this study has been warranted by both overseas and Malaysian researchers (Nor Hasni et al,2010; Lee, 2003; Gardner, 2009; Malmberg,2000).

1.6 Significance of Study

The research framework is derived from the Theory of Planned Behavior (TPB) by Icek Ajzen in 1985. The researcher expects that this research is significant in several areas. It adds information to literature by exploring an extended use of TPB as a comprehensive model to investigate a set of antecedents that influence behavioral intention to complete doctoral studies. To date, current versions of TPB from Tinto (1993), Lovitts (2008) and Golde (2005) are able to factor in the most prominent variables affecting successful completion of doctoral programs. But interestingly, none of these studies have explored moderation using program characteristics among the existing variables. Furthermore, the newly developed model has not been applied in the South East Asian region in general, and not in Malaysia, in particular. Thus, the model generated from this research would be a useful tool for academics to understand these antecedents in the future

Systematic research into doctoral students in Malaysia has been scarce although doctoral students represent a community of important social, economic and political implications. In terms of the DBA education, there isn't any significant studies have ever been undertaken to understand the plight of doctoral students. Nonetheless, failure to graduate has been a stigma dogging the reputation of DBA for some time now. Examining doctoral completion factors remain an important and elusive issue for research. It is important because identifying these factors is the groundwork needed to ensure successful solutions are implemented to increase completion rate. Research into this area is elusive and a rarity because it involves a holistic approach that involves administrators, students and faculty to accept existing obstacles and

work towards improving effectiveness and efficiency of DBA education in Malaysia. The result of this study will provide in-depth information that would aid in recognizing hindrances that emerge during graduate education. Input from participants of this study can help advisors and students alike realize the challenges that lay ahead on the road to DBA completion.

1.7 Definition of Terms

1.7.1 Intention to Complete

Intention-to-complete indicates the likelihood of Malaysian DBA student to complete their DBA program, which includes comprehensive exams and dissertation, within the recommended timeline (Fishbein & Ajzen, 1975).

1.7.2 Student Attributes

Student attributes is defined as the qualities, values and dispositions that students have within them while embarking on the DBA program (Tinto., 2003).

1.7.3 Social Support

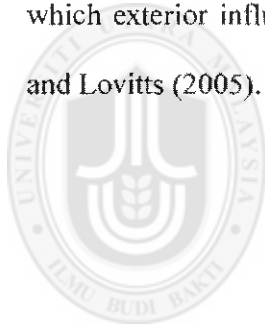
Social support refers to student's ability to integrate in the graduate community and obtain support from peers, faculty and family during their doctoral journey (Lovitts., 2008).

1.7.4 Program Characteristics

Program characteristics refers to departmental, structure, curriculum guidelines and supervisor role that are involved in the DBA journey (Golde., 2005).

1.7.5 Perceived Stress

Perceived stress will measure strains upon the student based on external impact in doctoral study. Bean (1990), has expanded Tinto's theory of persistence by adding the thought of "environmental pull" or the impact to which exterior influences, such as family. It is evident through Tinto (1993) and Lovitts (2005).



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The universities in concern, so as the students who are faces doctoral student attrition cause undesirable values. Undoubtedly, the students of doctoral study who do not complete their study pay a hefty emotional toll. They would spend years trying to resonate why they are unable to complete as they may personal live by distressed (Kamler & Thomson, 2008). There we also cases of attempted suicide and anger when the student faces emotional influence of attrition causes some to brawl with bouts of serious despair (Lovitts, 2001). The effect on the university surfaced slowly like a chronic complication of a disease. Waste of a university's manpower, monetary resources so as the time spent on students who never graduate drains the resources of a doctoral program and these are unrecoverable (Gittings, 2010). The universities may lose an enormous resource as the figure for attrition including academic discharge has been snowballing year by year.

Universities and colleges are now in a position to understand the driving force towards attrition as it involves costs, financial and otherwise. In Malaysia, the research of student attrition has been rarely undertaken to highlight the matter at hand by identifying the causal and find a resolution as to what causes doctoral student especially DBA to fail. This has been also noted by Protivnak & Foss (2009), whereby they mentioned that this phenomenon is huge and is not addressed within the higher

education institution. If this is not curbed soonest, universities in Malaysia will have large numbers of doctoral students who are unable to graduate. With an attempt to change their selection policies, or how they deal with their students, universities and colleges could reducing their rates of attritions to better understand why individuals withdraw from pursuing higher education. This study is aimed at understanding the influence of program characteristics as a moderator of student attributes, social support and perceived stress that affect DBA completion.

2.2 Malaysian Doctoral Attrition Scenario

During the early 1970s and 1980s, the number of doctoral students was quite low and as such doctoral attrition was an unknown term in Malaysia. Based on Higher Education Ministry Statistics (2013), there has been a triple-fold increase in postgraduate students all over Malaysia in the beginning of 1990s and 2000s. Statistical facts from the figures released from the Higher Education Ministry of Malaysia (2013), there is an influx in student admission, there has been a difference in the amount of student graduating and no major study has been done on specifically on doctoral attrition. Formerly a hidden problem that has been ignored, doctoral attrition has taken a serious turn with significant increase with each subsequent year lately. It's now becoming more evident that the issue is important and serious consideration has to be given from respective stakeholders (NM Shariff et al, 2015).

Krauss and Ismail (2010) made an attempt to understand this condition among students. They discovered a range of issues pertaining to best practice in research supervision by conducting a longitudinal study of the difficulties faced by 18

postgraduate students. Among the prominent outcome was capacity of student to adapt to doctoral demands. The study showed although all students had previous exposure to research methodology, many candidates still struggled with the main concepts of conducting research with the right tools and thesis writing skills. This had ultimately led to disengagements with supervisors and programs itself. In relating their findings to the supervision relationship, Krauss and Ismail (2010) suggest that these issues stem from conflicting expectations from both supervisor and student. The faculty supervisor expects the students to display research maturity and independence in work while students expect a stronger guidance from the supervisor in conventions of doctoral degree. In summary, this misalignment of expectations most often than not causes disillusionment in both students and supervisors to continue the doctoral journey.

The previous study was supported by another study by Norhasni Zainal Abidin in year 2012 who attempted to associate some of the issues of doctoral education in Malaysia by considering perceptions of faculty and students towards research supervision. In her study, Norhasni explored the role of a supervisor as perceived by students and the faculty. Interviews were held between six postgraduate students and supervisors from various fields of study and year. To ensure accuracy and were managed to obtain the real views of the interviewees, the interview was conducted based on a semi-structured interview schedule and using tape recorder. Interviews were recorded using recording machine. The results showed that students and faculty members have different assumptions of the role of a supervisor in the Malaysian education context. Students feel that supervisors should give heavy guidance in their postgraduate work while faculty members unanimously agree that postgraduate students, specifically

doctoral students, are independent engineers of their work and require very minimal supervision.

The study above has illustrated the issues of postgraduate education in Malaysia. The variables presented give an idea of the premise but not strong arguments to support or contradict any possible attrition models as it is not deemed to be generalizable but can be seen as a starting point to initiate a more intensive study. A concrete study that examines student attributes, social support and perceived stress factors in a large sample size study needs to be done to understand this phenomenon. The current study undertaken aims to solve this predicament by pioneering an attrition study of DBA students in Malaysia.

2.3 Previous study involving Intention-to-complete

Intention, as a tool to predict behavior, has been used numerous times before in social science and education research. The underlying rationale for using intention has more often than not been either Fishbein and Ajzen's Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) or Ajzen's Theory of Planned Behavior (TPB) (Ajzen, 1985). Both framework illustrates that intention is an accurate and useful predictor of behavior. Using this, numerous studies have able to predict behavior among various respondents. For example, a study by Murray in 1983, utilizes intention to evaluate whether nursing students would display behaviors that support departure from current undergraduate degree. The study showed that from a sample of 246, around 13% were likely to leave the course before completing. Intention to leave was found to be the strongest among third year students. The study revealed a significant difference in

intention ($p < 0.0001$) between years. Similarly, in 2013, a study by Thomas D showed intention-to-leave as an ideal dependent variable when investigating completion rate among students from four colleges in Philippines. The model explained around 37 % of the variance in doctoral completion.

However, it is important to remember that intention and retention are not the same. Intention and retention are two different concepts that are nonetheless accurate predictors of one another (Bean, 1982). Data from intention-to-complete studies can be used to create relevant retention programs for students. For instance, Vorhees (1987) found that data from intention- to-leave from a sample of fulltime, unmarried freshmen at a Midwestern University has shown that absence of journal clubs for doctoral students are a prompter to leave the course. Subsequently, creating such a social graduate organization became an imperative for the institution. Mulligan and Hennessey (1990) also found out that intention to leave was the single best forecaster of retention for most part-time students. Therefore, based on the above said studies, it is good to suggest that an institution needs to understand student's intent to stay or leave and this will then help in order to design a more significant retention program.

2.4 Student Attrition Model

The main premise of these theories outlines that attrition depends on two main factors which are academic integration and social integration. Within these macro factors, there are many intrinsic factors that can influence the impact of one another in various setting and environment. From the 1960's doctoral attrition has always been an issue of concern in Western countries. A true evolution in student attrition research

occurred in 1975 through the work of Vincent Tinto. Tinto et al, (1975) conceptualized a model for attrition that became the base for many studies around the world to conduct student attrition research to help students to complete their studies. Subsequently, in 1993, he developed a model for doctoral attrition that was considered to be one of the earliest steps in doctoral attrition studies. Lovitts (2001) another influential researcher in the area of doctoral persistence built her theory on undergraduate attrition research based on Tinto's research and contributed tremendously on the factors affecting student attrition.

Student attrition is a costly affair, more so when it involves doctoral students. Cost of time, institutional resources, efforts by faculty and department and overall loss to society are some of the major losers in doctoral attrition (Bennett, 2003; Schneider & Yin, 2011). Using a longitudinal study design, the American Institute of Research (AIR) have stated that around 3 to 4 billion dollars are lost due to student drop out over a period of 5 years (Schneider & Yin, 2011). The impact is augmented when it involves doctoral students as they are the frontiers of innovation and trend setting. Doctoral students by convention are innovators and inventors who are huge contributors to economy. Google Founders were both doctoral candidates from Stamford University who created thousands of jobs and billions in revenues (Gillis, 2007). The consequences associated with doctoral attrition rob the nation of similar human capital that transforms national and global economy. Inadequate training and depression of failure due to drop out from graduating, will forever haunt and prevent the individual from fully realizing his potential (Yukselturk & Inan, 2006). From these perspectives, governments have begun to focus on improving doctoral student completion as a means of increasing the skills of the workforce to better meet the

challenges of a global economy” (Hirschy et al, 2011, p. 300).

Another prominent researcher who was an advocate of doctoral attrition was CM Golde (2005) who outlined the role of departments and program characteristics on successful completion of doctoral studies. The literature review for this study was done with 4 variables outlined by the authors above along with many other attrition researchers. The four variables discussed are student attributes, perceived stress, social support and program characteristics.

In the Malaysian environment, it is seen to be lack of resource and guidance support render to the student as the institutions are very much focused profitable competition forced by economic stature this then brings about less time to focus on student completion rate (Abiddin & Ismail, 2011)

2.4.1 Student attributes

Vincent Tinto started focusing on doctoral attrition theories in 1990’s when he suggested a model for doctoral completion and its associated barriers in a book titled *‘Leaving college: rethinking the causes and cures of student attrition’*. Tinto then asserted that it is not a portray of a universal explanation for all doctoral students. Nonetheless, Tinto identified certain areas aspects of the model that is (a) student attributes (sexual category, age, race, skill sets, personal educational involvements, and societal class); (b) exterior obligations (job and domestic responsibilities); (c) personal goals (degree and profession); (d) obligations (goal and institutional); (e) economic capitals (form and sum of monetary aid); and (f) involvement in education

institution (full- or part-time and on- or off-campus student). In 2006 he then researched on influence by internal factors (i.e., department or institution) and external factors (i.e., family, employment, and society) which give rise to the Tinto's (2006) Longitudinal Model of Doctoral Persistence. Attributes of the individual relies heavily on Tinto's theory. The attributes of the individual help determine goals and commitments. These goals and commitments factor is heavy in determining doctoral completion. Tinto's (2006) model posits that individual attributes, most notably gender, age, race, ability, and social class, as well as individual educational experiences prior to entry to graduate school help shape individual goals (educational and career) and commitments (goal and institutional educational experiences). During the journey of dissertation progress unfolds, the attributes help determine the type and quality of the type of interactions that will occur. These attributes help specify the orientations that individuals bring with them to the task of completing a doctoral degree and, in turn, establish the conditions within which subsequent interactions occur (Tinto, 2006).

A discovery that students who were self-funded (as opposed to receiving financial aid) had higher attrition rates and an estimated 10–20% longer time to degree as mentioned by Golde (2005) as she explored factors related to the student's personal/work life, The latter figure translated to a full year longer than students receiving institutional support. At the same time, students with teaching assistantships had slightly higher rates of completion and shorter times to degree. The researchers attributed this statistic to a higher level of interaction between teaching assistants and faculty and other students, which was expected. Financial issues as well as family/relationship issues are some external pressures that were identified as one of

the two greatest barriers to completion by Ober (2005).

Myers (1999) found that work based obligations like paid jobs or professional responsibilities took time away from working on doctoral dissertation. Working doctoral students face difficulties in conducting research work while holding career responsibilities and this impedes their progress. In addition to this, Green and Powell argue that the nature of work commitment also influences doctoral completion. Generally, part time students have more commitment than the full time students, therefore, full time students are able to complete early than part time students. This scenario becomes more demanding when employers feel that postgraduate studies are an impediment on employee productivity and decide not to provide leave benefits for higher studies. Therefore, working students do find it difficult to devote time for studies continuously. Allocating few hours for dissertation work especially is insufficient to achieve a satisfactory progress. Therefore, insufficient allocation of time for DBA and job demands is a major student attribute that would impact DBA completion.

In terms of motivation, an early research by Miller (1983) showed that doctoral students are defined by the 3 persistence levels. A strong persistent student maintains a constant level of effort throughout the dissertation process and rarely fall prey to distractions. Regardless of obstacles that come through their path, the students are bullish in their determination to complete and are often successful. They set their goals clearly and have a strong sense of their completion deadline. The second class of students are alternating group who are typically fiery in their early doctoral years but are prone to interruptions and distractions. They do have a good degree of

motivation and have a reasonable sense of their doctoral duties but they are not immune to delays and procrastination. Nonetheless, they typically settle on a dissertation topic with relative ease and progresses through the proposal and research at a steady pace. The most vulnerable type of students is the 'weak battery'- the final subgroup under Miller's description. The weak battery graduate student characterization, has periods when effort is strong but the effort gradually tapers off, and requires outside intervention to "jump start" the dissertation. Such a student's "battery" is, unpredictable and very prone to external environment. Familial commitments, sour relationship with departmental staff and poor understanding of the program can permanently disable the battery of the student leading to drop out. It is difficult, if not impossible, to predict the level of persistence of the weak battery student. At any phase of the dissertation process, they may be focused or standing totally still.

To supplement Millers theory, Mwenda (2010) developed a model of doctoral student persistence that involves both micro and macro environment of doctoral studies. Student persistence relationship with teaching faculty and dissertation supervisor along with access and quality of research materials were examined on their influence towards doctoral completion. Interestingly, it showed that such defining characteristics contributed and often moderated student attributes in doctoral completion. Faculty-student relationships are pertinent in determining whether weak battery students are capable of completing their studies or remain disillusioned. In addition, faculty-student relationships characterized by faculty availability, approachability, interest in developing students' academic and professional competence, and support and encouragement are important. Mwenda concluded that

student persistence is highly relevant to doctoral completion but it also influenced by external factors that come into play in the doctoral environment.

In 2009, Harding examined the preparation of students for the dissertation process. She was interested in determining why so many people have difficulty writing the dissertation, which in turn can translate into non-completion of the doctoral degree. Harding discovered that many candidates approach the dissertation without an accurate picture of exactly what it entails. And in fact, most students thought the dissertation was like a term paper, only longer. This speaks to the misinformation many doctoral students have upon entry to the program, and the resulting unrealistic expectations they may have of the process. If not corrected, these misconceptions can certainly translate into early attrition or even non-completion after achieving candidacy, if those assumptions are not corrected. It also has implications for the importance of a comprehensive orientation of doctoral students before they progress too far into the program. D'Andrea (2002) surveyed 215 professors in 42 states to solicit their opinions about barriers to completion of the doctoral degree. Professors who participated felt that a major barrier to accomplishment of the thesis, and thus of the doctoral degree, was ineffective/inadequate writing skills. They reported that many students had difficulty writing the proposal, due in part to poor writing skills and in part to an inability to conceptualize, organize, and plan (D' Andrea, 2002, p. 51). All of these skills are clearly critical to the completion of an acceptable proposal. These findings might also make a good case for early indoctrination / socialization into the requirements of the program, like beginning the writing process early in the doctoral program.

Williams's 2012 discussion of self-reported barriers to completing the dissertation indicated that 26.9% reported problems with their personal lives that were seen as barriers to completion—the fourth most frequently cited barrier. These included things like jobs, money issues, divorce, parenting responsibilities, taking care of elderly parent. Yeager's 2008 study (*All About Dissertation – ABD*) comparing the completers discovered that professional advancement was reported as an inhibiting factor because increases in job responsibilities required more time and attention, thus detracting from available time for doctoral studies.

In Malaysia, the impact of doctoral student attributes has not been extensively explored for the DBA program. This is because doctoral completion studies were rarely conducted in Malaysia. The only study that examined student attributes for DBA program was by Mathialagan and Mahmood 2014. Mathialagan and Mahmood conducted a cross sectional study on 300 DBA students and found that student attributes do play a major role in promoting intention-to-complete DBA. The study concluded that future studies must be undertaken to examine moderating factors that impact student attributes as that would give a better understanding on the DBA completion dilemma. This current study has undertaken that challenge and has strived to uncover the impact of student attributes and moderating factors that affect it.

2.4.2 Perceived stress

Tinto's (2006) Longitudinal Model of Doctoral Persistence (Figure 2.1) emphasized the concept of graduate communities, which is influenced by internal factors (i.e., department or institution) and external factors (i.e., family, employment, and society).

Tinto's theory relies heavily on the attributes of the individual. Tinto perceives that due to the fact that the individual is important in attrition modeling, stress is an undeniable factor that can impair a doctoral student.

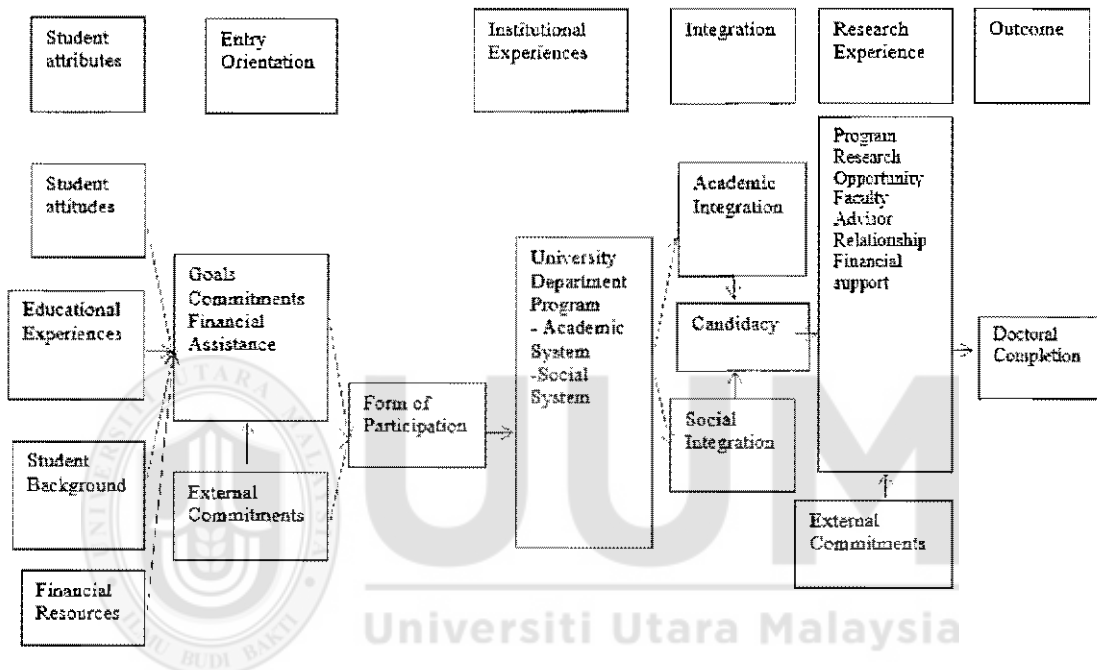


Figure 2.1

Tinto's Longitudinal Model of Doctoral Persistence

Although students' stress is non-traumatic, it is significant and persistent. Students are challenged to effectively manage their time and finances in addition to meeting academic and institutional goals (Gardner, 2009; Lovitts, 2001). Research has documented that students experience stress brought on by conducting research, writing research papers, studying for examinations, maintaining grade point averages, and dealing with time constraints (Rayle & Chung (2007). A significant sacrifice and

commitment are required of graduate students and also the commitment of time, money, and other resources can be stressful in and of itself (Johnson, 2007; Offstein et al., 2004). While Cheatham, Edwards, and Erickson, (1982) argue stress of writing a dissertation does not cause for non-completion of dissertation, some other authors (Moore, 1985; Powell & Dean, 1986) argue that pressure extensively cause for delay. Powell and Dean (1986) state that engaging in dissertation may be the cause for stress in two ways: stress in the social sense and stress in the task sense: stress in the social sense is generated when the student is unable to socialize and relax with family, friends, and significant others without feeling guilty that time is being wasted that could be spent working on the dissertation, stress in the task sense is generated because the amount of time spent working on the dissertation makes the researcher feel negligent in terms of time away from family, friends and significant others.

The process of balancing personal and academic issues can cause both psychological and physical stress for doctoral students. Consequences of psychological stress include inhibited concentration, frustrated learning, and reduced motivation and perseverance (Lin, Wenbo & Bing, 2005). There are various researches being done to examine the relationship between serious phases of stress towards doctoral degree completion in the education perspective. In general, serious phases of stress are positively related to non-completion. Non-completers has been accountable to have more serious phases of stress thus these students then lead to withdrawal from doctoral study. Academic pressures (Kadison & DiGeronimo, 2004), work pressures (Peña, Jiménez, Gokalp, Fischer, Gupton, 2010) are some sources of serious stress. In addition, it has been identified that non-graduates reported has more serious phases of stress due to broad obstacles be it from their family or financials. The utmost cause

for such a high rate of attrition is due to the growing amount of role clash (Gardner, 2008). CM Golde (2005) has also indicated that the decision to leave doctoral study was not due to a single reason typically however it is made out of a “constellation of reasons” (Golde, 2005, p. 211). She also made some conclusion whereby (70%) students more often give personal reasons for non-completion, as judging against academic or financial concerns. In the area of personal reasons category where it is seen that students face too much pressure, i.e.: lack of appropriate motivation whereby they face too much work pressure or even when the students are facing family pressures. Physical stress consequences can include greater susceptibility to illness, a weakened immune system and poor sleep quality (Gardner, 2007). Moreover, stress can increase as doctoral students attempt to balance personal and academic issues in their lives (Smith et al, 2006). Doctoral students who do not effectively cope with stress are likely to experience difficulty meeting program demands and may ultimately decide to depart from their academic institution (Zajacova, Lynch & Espenshade, 2008).

In Malaysia, the levels of stress faced by students are tremendous especially when it comes to meeting the demands at work. With the influx of globalization, the level of quality required to be delivered at work place has increased thus putting on stress to employees to perform even better at work. Then comes family responsibilities that students will need to carry on fulfilling while maintaining balance financially with education expectation. The impact of perceived stress on DBA students has not been explored before in the Malaysian setting and as shown in the discussion above, it is a worthy element to be explored in the Malaysian DBA setting. This study has undertaken the task of exploring the impact of perceived stress on Malaysian DBA

student on intention-to-complete DBA.

2.4.3 Social support

Tinto's 2006, model of graduate persistence relies on the psycho-social idea of "fit," integration of the student with their college. The more tightly students are linked with the school, both intellectually and socially, through classroom and out of classroom experiences, the more likely they are to graduate. Tinto's ideas of "fit" and "match" is coupled with the role that he sees that social integration plays in doctoral persistence. He further explained that DBA students are molded by numerous kinds of exchanges between numerous people at manifold community layers within the education institution. DBA students will be associating while moving into a new obligation and thus will be advancing new academic, community, and institutional requirements based on modification to the student's new school culture. The socialization of the student comprises of learning of the school philosophy of the current student and faculty when in view of student role, hopes, and sustenance. According to Lovitts (2008), students who are successfully integrated into the university's culture receive extensive resources that enhance and reinforce their persistence. They are satisfied with their programs and see themselves as achieving their personal, professional, and intellectual goals. Students who are poorly integrated have a different experience. They lack connections with the doctoral community that can help them be successful and bring their doctoral goals to fruition. Without the support and help of the community, they begin to rely on their own resources and attempt to go it alone in their doctoral journey. This view of the landscape, of being on your own without support, causes isolation and frustration. The student begins to experience social and

emotional impact of stress and begin to question whether it's worth the time and effort and as a result their persistence starts to wane (Reblin & Uchino, 2008).

Also, in 2004, Lovitts led an examination to identify the social-structural reasons of dropouts. The partakers ($N = 816$) in the examination were students that finished the doctoral degree ($n = 511$) and students that did not complete ($n = 305$) at two institutions. Academic background characteristics didn't forecast accomplishment status. It was observed, that completers hugely obtained study or coaching assistantships compared to non-completers and in a quarter of non-completers didn't get any monetary support. He then further elaborated that completers were more probable to have an advice-giver and satisfied with the guidance and have chosen the advice-giver based on their academic comforts. In summary, attrition related to irregular supply of sustenance resources for dissertation accomplishment. This initiated a lot of speculation that doctoral attrition was not exclusive to student attributes alone but involved a bigger set of determinants.

Lovitts' conclusion is supported by the findings of Bair & Haworth (1999) who assert that all but two researchers who studied socialization factors found them to be significant variables in attrition/completion (p. 11). Lovitts' book *Leaving the Ivory Tower* reinforces her convictions about the role of integration into the academic/departmental community as she enumerates factors that contribute or detract from integration. This list includes events like lunches, social hours, and colloquia; and even extends to the physical spaces used by students, such as graduate lounges and meeting areas. All of these and many others, Lovitts contends, can affect the socialization experiences of graduate students, and by extension, persistence.

Susan Gardner's 2008 study of socialization was conducted with 40 doctoral students in chemistry and history at two research institutions. This study uncovered disparities in the socialization experiences for students who do not fit the profile of the traditional graduate student: women, students of color, students with families, part-time students, and older students. They reported negative experiences related to interactions with others, structural barriers, and general feelings of being different, which in turn had an effect on their socialization in their programs (Gardner, 2008, p. 130). Other students who did not fit the traditional profile of a graduate student echoed similar issues, particularly those related to structural issues that impeded integration. In their article on facilitating the completion of the dissertation, Liechty, Liao, and Schull (2009) champion the importance of meaningful learning activities alongside expert mentors. This, they say, would allow students to learn the *tools of the culture*, which would be gradually transmitted through the interactions with the expert. They suggest that this type of relating is an important way to foster learning and would aid students' successful completion of the dissertation.

Studies in Malaysia that included social support (e.g. Saim, 2013; Achour and Mohd Roslan, 2014) have acknowledged that social support plays a major role in ensuring resilience in achieving academic and corporate goals. But to the best of our knowledge, no major study has evaluated social support in DBA completion. To answer that call, one of the objectives of the present study is to determine whether social support enables intention-complete DBA among DBA students.

2.4.4 Program characteristics

Program characteristic refers to departmental, structure, curriculum guidelines and supervisor role that are involved in the DBA journey. This is a very important predictor of doctoral completion as the support that doctoral students receive from their department and supervisor affects their well-being and intentions to complete or leave academia. The concept of perceived organizational support, which is readily adapted for different organizational foci such as a department or colleagues, provides insights on underlying mechanisms that might explain why departmental or faculty support contribute to favourable or unfavourable outcomes for doctoral students. Perceived organizational support, in organizational behaviour research, reflects employees' beliefs about the extent to which their organization values their contribution and cares about their well-being; perceived organizational support is an important antecedent of employee performance, well-being, and turnover (Rhoades & Eisenberger, 2002). Organizational support fulfils employees' socio-emotional needs by signalling that the organization cares about them, respects them, and approves of their performance, which has a favourable effect on employees' mood and job satisfaction (Baran, Shanock, & Miller, 2012; Rhoades & Eisenberger, 2002). As members of the university organization, doctoral students are likely to form beliefs about the extent to which they are cared about and appreciated; however, they are more likely to focus on the department (or faculty) level, because it is more salient to them. Some scholars have concluded that research on doctoral student experiences should focus on departments within the academic institution, rather than the institution as a whole (Barnes & Randall, 2012; Golde, 2005), as the policies that most affect students' lives are set at the department level (Golde, 2005). Lovitts and

Nelson (2000) noted that, while the overall university may treat graduate students as disposable and replaceable, individual departments can take a different approach to make themselves more hospitable and supportive, and graduate most of their doctoral students. Indeed, A study conducted by Hommadai (1990) on higher education in the third world countries and found, the absence of an adequate policy and the programming of research work in the universities, the reluctance to allocate funds for research, inadequate resources, the failure to allocate staff time for research, the lack of commitment and the inadequate competence of supervisors as major impediments to research and postgraduate completion. Similarly, a meta-synthesis of doctoral student attrition demonstrated that positive faculty and departmental support were positively related to degree completion (Bair & Haworth, 2005). Consequently, the extent to which the department or faculty offer support that satisfies doctoral students' socio-emotional needs, and the extent to which doctoral students feel recognized, appreciated, and cared about (i.e., the level of perceived department or faculty support), should affect their experiences of emotional exhaustion and influence their decisions regarding whether or not to continue in academia.

This was evidenced in a study by Golde (2005) whereby 58 students who had left four departments at a research university were interviewed. Two of the departments were in science fields (geology and biology) and two were in the humanities (history and English). These four departments represented a variety of attrition rates and patterns. First-year attrition accounts for about one-third of the overall attrition in three of the four departments. Although common reasons such as reluctance to give in to the high commitment of doctoral education surfaced in the findings, interestingly, a significant number of students indicated department policies and program curriculum and advisor

mismatch as their main reasons for leaving. The details of the curricular structures and other mechanisms for integrating students into the department affect how easily students make the transition into graduate school and which kinds of problems contribute to attrition. For example, departments that have core courses in their first year that requires intensive research and writing will give better training for the tough road ahead. Another main reason for departure turned out to be the role of the advisor. Students cited lack of supervision and personality clashes with their supervisor as the determinant of staying or leaving doctoral studies. Faculty interaction with students within the institution of learning is an important source of support that Golde emphasized in this study.

Faculty members who represent the institutions rules and values are a determinant of student adjustment in college. Empirical research has supported these claims, demonstrating that interactions between faculty and students inside and outside the classroom positively influence students' academic performances, retention, and educational and career goals (Anaya & Cole, 2001; Cole, 2008; Cox & Orehovec, 2007). Students have described several supportive and helpful faculty behaviors. Some behaviors are functionally supportive, such as giving helpful feedback and being available to students (Cole, 2008; Rogers, 2006). Other behaviors are psychologically supportive, such as offering encouragement, discussing personal values, and being empathetic (Cokley 2000; Coll & Draves, 2009; Kanuka & Jugdev, 2006), all of which help students gain a sense of self-worth and competency. Supportive interaction between faculty and students is important and has the potential to add richness to the academic experience (Gardner, 2009).

Mentors can also play a significant role in the graduate student's academic success (Smith, Maroney, Nelson, Abel, & Abel, 2006). Research highlights the importance of the helpful rapport between mentors and the doctoral students. In one study, doctoral students with mentors evaluated their graduate experience more positively compared to their counterparts who did not have a mentor. Minority and female doctoral students have particularly benefitted from mentors in both academic and personal development (Felder, 2010; Herzig, 2004; Maher, Ford, & Thompson, 2004; Patton & Harper, 2003; Walker, Wright, & Hanley, 2001). In addition, evidence suggests that productivity and publication success, which are significant outcomes of doctoral students, may be enhanced through faculty mentoring (Gardner, 2007).

In terms of the Malaysian universities offering DBA programs, there are similarities and variations in curriculum structure and department support. Students in UIA have to undergo between 4-5 semesters of coursework while the remaining time is research based study to complete dissertation and viva-voce. For students taking up DBA in USM, they will need to undergo 7-9 semesters, then followed by an additional field assessment called business consultancy. Once they have completed the business consultancy, then they embark on their dissertation phase. In UKM, students will need to take 3 core papers and thereafter choose their majors (Management, Finance or Marketing) with 5 subject papers and thereafter will be focusing on dissertation and viva. UUM offers both full time and part time program for DBA. Students have 4-10 semesters to complete the study, given the first 3 semesters the student needs to take up at least 4 subject papers including consultation, then from the fourth semester till the tenth the student will need to complete dissertation and viva. Although variations do exist, there is an overall similar structure in terms of program characteristics in the

universities above. The real difference that impacts intention-to-complete DBA lies in departmental support, access to research material and supervisor role. Mathialagan and Mahmood (2014) showed that this difference makes program characteristics one of the most important predictor of DBA completion. In fact, the researchers suggested that program characteristics is possibly the sole moderator that influence all the individual variables that impact DBA completion in Malaysia. The current study has sought to examine this assertion by examining the moderating role of program characteristics in DBA completion.

2.5 Summary

This chapter addressed the intention to complete DBA and the main factors that proposed to influence it. Furthermore, the chapter highlighted the influence of these factors namely; student attitude, social support, perceived stress and program characteristics on intention-to-complete DBA. The researcher also reviewed some of the prior studies carried out on how these factors affect students to facilitate the doctoral journey. Moreover, the researcher pointed out the important role of program characteristic as a moderator between the relationship between IVs and DV. This provides a scholarly justification for the study undertaken.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter offers an account of the research approaches used in steering this study. The aim of this study examines the effects of student attributes, student social support, perceived stress and doctoral program characteristics that causes doctoral student degree achievement. This chapter is divided into 10 sections: introduction, research framework, underpinning theories, hypothesis development, research design, operational definition and instrumentation, data sampling procedure and data analyses. The chapter illustrates the methodological considerations and measure undertaken to ensure viability and integrity of the research undertaking is preserved.

3.2 Conceptual Framework and Definition

For this study, the underpinning theory that became the guide for its conception was the Theory of Planned Behaviour (TPB) by Icek Ajzen in 1985. The TPB adopts that a person's behavior is directed and measured by behavioral intentions. In other words, behavioral intentions are a purpose of a person attitude towards the behavior, subjective norm and perceived behavioral control. The dependent variable is the intention-to-complete DBA and the independent variable consists of student attributes, social support and perceived stress. Program characteristics play the role as the moderating variable in this study. So, in accordance to the above, a theoretical

framework was designed that shows the relationships of the variables involved. This framework is shown below in Figure 3.1.

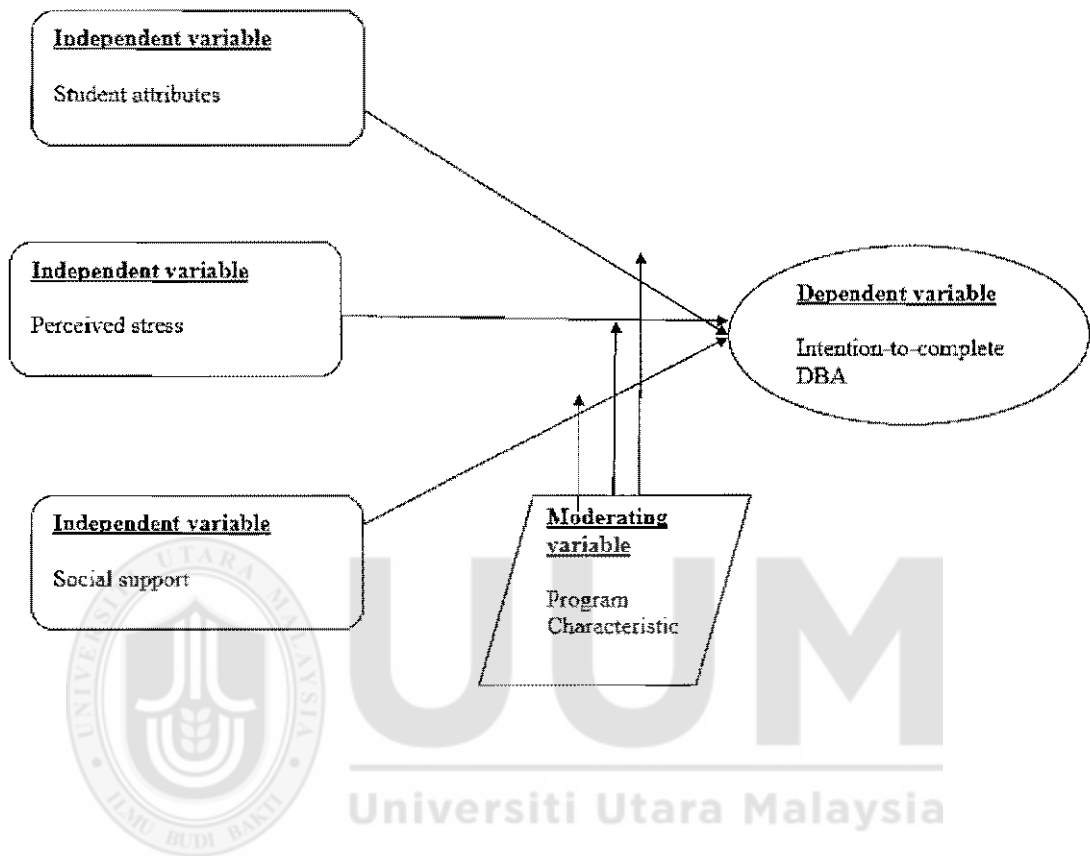


Figure 3.1 Theoretical Framework

Student attributes

Tinto postulated that one of the key factors of doctoral attrition is student attributes. Attributes refer to an individual's characteristics. Attitudes are a form of attribute and in this case, student's attitude is measured through this option. The attitudinal factor here looks into the person's attitude towards undertaking the behavior under deliberation as indicated by (Ajzen & Fishbein, 1980). When there is a beneficial attitude towards the performance of that behavior, the probability of performing a given behavior will

increase.

Social Support

To perform or not to do perform a behavior depends on the person's observation of the social pressures. This aspect is assessed by the measure of student social support in this study. The motivation to adhere to the referents is based on the behaviour performance which is known as the subjective norm. These beliefs, which trigger a person's subjective norm is known as *normative beliefs*. Therefore, when a person believes that important referents think that they should perform a specific conduct and is driven to fulfil with those referents' desires, will hold a positive subjective norm. This means, when a person believes that the behaviours will bring positive and significant outcome, they are most likely to perform the behaviour (Ajzen & Fishbein, 1980; Fishbein & Middlestadt, 1989; Montano & Kasprzyk, 2002). In the context of DBA program, social support from family and friends are important predictors of subjective norm and thus would lead to behaviour positively related to DBA degree completion

Perceived Stress

Perceived stress is a volitional control variable within the Theory Planned Behavior. Research has documented that students experience stress brought on by conducting research writing research papers, studying for examinations, maintaining grade point averages, and dealing with time constraints (Ross, Niebling, & Heckert, 1999). A significant sacrifice and commitment are required of graduate students (Rocha-Singh, 1994; Smith, Maroney, Nelson, Abel, & Abel, 2006). The commitment of time, money, and other resources can be stressful in and of itself (Johnson, 2007; Offstein et

al., 2004).

The process of balancing personal and academic issues can cause both psychological and physical stress for doctoral students. Consequences of psychological stress include inhibited concentration, frustrated learning, and reduced motivation and perseverance (Polson & Nida, 1998). In the context of DBA program, perceived stress is an important predictor of volitional control and thus would lead to behaviour positively related to DBA degree completion

Program Characteristics

Program characteristics is the moderating variable in this study. Research highlights the reputation of the supportive affiliation between mentors and doctoral students. In one study, doctoral students with mentors evaluated their graduate experience more positively compared to their counterparts who did not have a mentor (Lyons & Scroggins, 1990). Minority and female doctoral students have particularly benefitted from mentors in both academic and personal development (Felder, 2010; Herzig, 2004; Maher, Ford, & Thompson, 2004; Patton & Harper, 2003; Walker, Wright, & Hanley, 2001). In addition, evidence suggests that productivity and publication success, which are significant outcomes of doctoral students, may be enhanced through faculty mentoring (Gelso et al., 1983; Green, 1991).

Intention-to complete DBA

Intention is the direct cause of behavior, which is based on to the theory of planned

behavior. A precise prediction of that behavior can be obtained when the appropriate measures are identified. However, a measure of intention is not necessarily a direct prediction at all times as it is measured by the degree of correspondence and stability (Ajzen & Fishbein, 1980). In terms of correspondence, if the measure of intention corresponds strongly with the measure of behavior, then the prediction is accurate. Intentions must evidently match with the behaviors of awareness with relevance to the fundamentals of act, goal, setting and period. Fishbein and Middlestadt (1989) additional explain this fact by emphasizing that, in order to alter any behavior, the individual must change the intentions that correspond directly (in terms of action, target, context and time) with the behavior in question. In terms of DBA completion, there is a very strong intention among all students as it is the foundation of entering the program. This is a very accurate predictor of the behavior of the student itself. External and internal factors that impact this intention will ultimately impact the behavior of the student and result in either completion or non-completion the DBA degree.

Another important factor determining the accuracy of behavior prediction is the stability of intentions. Intentions are prone to change due to many factors and time stability is undoubtedly one of them. This is especially so when there is a prolonged time gap amongst the measure of intention and the time at which behavior is shown. Increase in time lapse causes weakening of the correspondence strength of the intention leading to inaccuracy of behavioral observation. For example, a person who is working hard for a promotion exhibits behavior that is consistent with that intention. But if the promotion keeps on getting delayed, his behavior is not consistent anymore with the earlier intentions (Ajzen & Fishbein, 1980). In the context of this study, there has no real-time lapse as attrition is an existing problem among DBA students. Hence, intention is a very stable variable to be used for this study.

3.3 Underpinning theory

For this study, the underpinning theory that became the guide for its conception was the Theory of Planned Behavior (TPB). TPB was derived from the theory of reasoned action as an answer to its limitations. The theory of reasoned action (Ajzen & Fishbein, 1980) was developed to understand the determinants of behavior. Basically, human behavior is determined by pre-emptive source of information that is systematically processed and rationally evaluated before exhibiting as a form of behavior. Prior to demonstrating a behavior, the individual will consider the consequences of their behavior and decide to either go ahead with the action or not to. This behavior is normally grounded on principles, purposes and attitudes. Based on this theory, the most insensible element of behavior is behavioral *intention*. The elements of people's behavioral purposes are their *attitudes* towards execution of the behavior and the *subjective norm* related with the behavior (Ajzen & Fishbein, 1980; Fishbein & Middlestadt, 1989; Montano & Kasprzyk, 2002). This is shown in Figure 3.2 below.

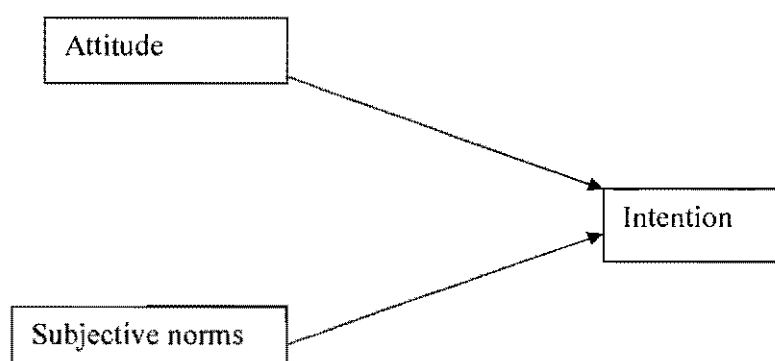


Figure 3.2 A conceptual framework of Theory of Reasoned Action (Ajzen & Fishbein, 1980)

Limitations of Theory of Reasoned Action

Ajzen (1985) indicated that the theory was incomplete due to the behavior under this study is not completely under volitional control. The issues under this theory acknowledged by Liska (1984) and Sheppard, Hartwick and Warsaw (1998) are that theory of reasoned action (TRA) unable to deal with behaviors that need resources, collaboration and skills. In addition, there isn't a delivery in the model for a likelihood of not able to accomplish is due to another behavior or because of one's intention. TRA too isn't capable to account for unreasonable choices and habitual Behavior (Sheppard et al., 1998).

Theory of Planned Behavior

Ajzen (1985) came up with Theory of Planned Behavior (TPB), whereby it derives from an extension of TRA. The major resemblance among TRB and TRA is that mutually they emphasis on the individual's intension to accomplish a given behavior. But TPB address the subject of behaviors that occur despite the person's volitional control. In fact, TPB improves the perceived behavioral control (PBC) component which distinguishes it significantly from TRA. PBC is the matter that makes up for the conditions where person has less than able to govern the behavior, which can vary based on numerous conditions and actions (Ajzen, 1991).

As stated in TRA, when the condition or behavior offers the individual absolute control over behavioral performance, intent is adequate to predict behavior. Ajzen

(1991) claims that in a condition where behavioral intentions make up a minor change in behavior, PBC can be freely projection of behavior. Together intentions and PBC are imperative to foresee behavior, with some partiality to each other concerning the normalness of certain situations. Therefore, when events happen in which forecasts of behavior from purposes is likely to be delayed by actual (volitional) control, PBC would (1) ease the development of the execution of behavioral intent into act, and (2) foresee behavior intent can be applied directly or indirectly to foresee behavior attainment. To exactly foresee behavior, numerous situations ought to be considered. Primarily, PBC scale of intents must be in line with the behavior that is to be foreseen. Also, the setting should be similar to the behavior of concern which is about to happen. The firmness of PBC and intentions might not be the initial situation for precise behavioral forecast in the interlude during their study of behavior because dominant event may cause intents and observation of behavioral control to alter. Accurateness behavioral control is the third factor to predict legitimacy. Predictions of behavior from apparent behavioral control should improve the volume of awareness for behavioral control and would convincingly replicate action control (Ajzen, 1991).

To come up with precise knowledge and predictions of behavior, TPB acts by the previous circumstances of attitude, subjective norms and perceived behavioral control. TPB hypothesized that behavioral is based on beliefs which are substantial to that behavior. This prominent belief is observed as the extensive factors of a persons' intents and acts. Figure 3.3 below, outlines these prominent beliefs.

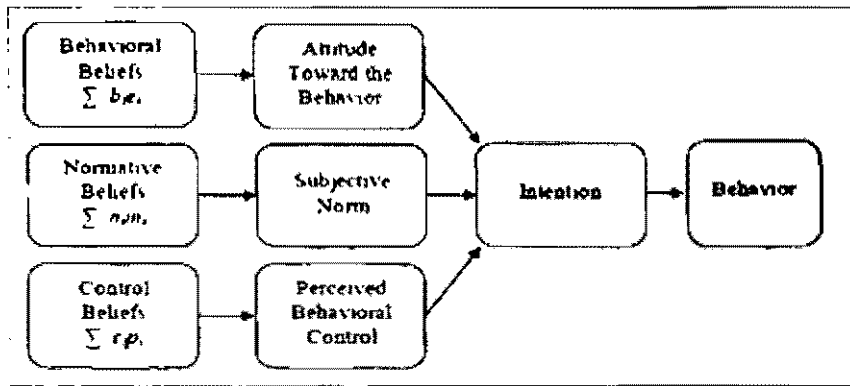


Figure 3.3 Theory of Planned Behavior (TPB) by Ajzen 1991

Figure 3.3 evidently shows the key factors of the TPB. Attitude, subjective norms, perceived behavioral control, intentions and behavior (Ajzen, 1991). TPB accepts that a person's behavior is directed and determined by behavioral intentions. In other words, behavioral intentions are a function of a person's attitude towards the behavior, subjective norm and perceived behavioral control.

In relevance to retaining of DBA students, the theory of planned behavior proposes that intentions to complete the program forecast the possibility that a pupil will graduate from the DBA program. Intentions to complete the DBA program, in turn, are determined by student attitudes, student social support (subjective norm), perceived stress and program characteristics. The 3 major determinants in the theory of planned behavior — attitudes, subjective norms and perceived behavioral control — are traced to corresponding sets of behavior-related beliefs. Consistent with an expectancy-value model (Feather, 1982; Fishbein, 1963), attitude in completing the DBA program is presumed to be based by principles about the significances of enduring the program, each belief is based by the subjective value of the consequence

in question (Fishbein, 1963, 1967; Fishbein & Ajzen, 1975). A comparable judgement is relevant to the connection between normative beliefs and subjective norm, and the connection among control beliefs and perceived behavioral control. Normative beliefs denote to the perceived behavioral opportunities of such vital persons or groups such as the pupil's family, acquaintances, and tutors. These normative beliefs — in addition with the pupil's enthusiasm to adhere with the different believes — govern the dominant subjective norm concerning university accomplishment. Several previous studies have integrated TPB with other theories that examine student intention. Table 3.1 summarizes these previous studies.



Table 3.1

Underpinning Theories of Previous studies

Author/ year	Country	Respondents	Underpinning Theory
Al-Jabari et al (2012)	Jordan	Academic Staff	TPB
Iman & Karaca (2011)	Turkey	Young customers	TPB
Lee and Chen (2010)	USA	University students	TPB
Tan et al (2010)	New Zealand	Online shoppers	TPB
Barkhi et al (2008)	USA	Undergraduate students	TPB
Yin-Shijiu & Wu Linhai (2008)	China	Internet users	TPB
George (2004)	USA	Undergraduate students	TPB
Jamil (2012)	Malaysia	Company staff	TPB & TAM
Nik Mat & Sentosa (2008)	Malaysia	University students	TPB & TAM
Lin (2007)	Taiwan	Undergraduate students	TPB, TAM and DTPB
Chen & Tan (2004)	USA	Online customers	TAM and DOI

3.4 Hypothesis Development

As explained earlier the conceptual framework for this study was developed from various researches that contributed significantly to doctoral attrition. Since the framework is now in place, it is important to discuss the relationship between the variables to further consolidate their place in DBA attrition in Malaysia.

3.4.1 Relationship between Student attributes and Intention-to-complete DBA

The first component that is addressed by this study is the role that student's attributes play in the completion of the DBA degree program. It is believed that student attributes influence the socialization and integration of the student into the graduate education community. Tinto's theory asserts that students' background characteristics and goal commitments influence not only how a student will perform in college, but also how he or she will interact with, and subsequently become integrated into an institution's social and academic systems. "Given individual characteristics, prior experiences, and commitments, it is the individual's integration into the social and academic systems of the college that most directly relates to his continuance in that college" (Tinto, 1975, p. 96). This is evidently so in the DBA as the students enrolled for this graduate education are diversified group with many different traits.

Studies by Golde (2005), Lovitts (2008) and Gittings (2010) have time and again debated the influence of student attributes as some have said that its impact is minimal compared to other factors. Golde (2005) asserted that departmental factors play a meatier role than earlier perceived and might outweigh the importance of student

attributes. But this has been refuted by many other researchers who have clung to the principle that student is a single most important factor in student attrition. Gittings (2010) in his research sought to examine the outcome of student attributes on doctoral degree completion. His research found that student attributes were very important predictors of doctoral degree completion. Studies by Lovitts has also illustrated similar findings which indicate that student attributes are undeniable factors of student attrition (Lovitts 2008; Lovitts 2005). In fact, the Council of Graduate Schools of the United States (2009) points out that there is a need to include student input as part of the PhD completion project because it is believed their perspective is critical to the understanding of how the interaction of student attributes and institutional characteristics contribute to success in completing Ph.D. programs. The Council goes on to state to understand doctoral program attrition and completion, one needs to understand both the student attributes and the institutional characteristics-at the graduate school, department, and discipline levels-that cause students to become fully integrated into or alienated from the department and discipline and their cultures, norms, and practices (Council of Graduate Schools, 2009). Thus, student attributes is definitely a valid and resourceful variable for DBA attrition study.

H1: Student attributes is significantly related with intention-to-complete DBA.

3.4.2 Relationship between Social Support and Intention-to-complete DBA

Social support is another important factor that determines successful completion of doctoral degree. Tinto described in his concept, doctoral students are formed by the numerous forms of exchanges among numerous persons at manifold social layers

within the establishment (Tinto, 1993). Doctoral students mingle while moving into a new obligation thus advancing into new academic, community, and institutional needs grounded on fine-tuning to the pupil's new institutional and departmental ethos. Austin (2002) came up with a paper on a prior collective study conducted by multiple scholars. Austin based this study on the investigation of doctoral education as socialization process and found several important aspects that improved graduate education. Among them, interactions with peers and the postgraduate community proved to be a very important predictor of successful graduate education.

This was subsequently acknowledged by fellow researchers in the field of student attrition. Bauer (2004) showed that there was a constant sign that where strong peer sustenance conquered, student cohesiveness and degree accomplishment improved. Bauer showed that all partakers mentioned peer associations as a main factor of the student doctoral involvement (Bauer, 2004). Stallone (2003) found that one of the human factors that were important to successful doctoral degree completion was collegial relationships between students and their peers. The level of interaction with not only faculty but also other doctoral students on two levels—social and academic—can make the difference between doctoral degree completers and non-completers (Stallone, 2003). Golde (2005) also stresses the importance of peer relations and graduate campus activities, by pointing out that isolation from peers and faculty and the resulting absence of collegial and supportive relationships contributed to doctoral attrition. Thus, it is very clear that social support is an essential component of intention-to-complete DBA.

H2: Social support is significantly related to intention-to-complete DBA.

3.4.3 Relationship between Program Characteristics and Intention-to-complete DBA

DBA is both identical and different from a PhD in Business Administration. The similarities are that both programs need a degree of coursework and independent research. The difference that occurs is that DBA has a heavier coursework component and it inclines more to practical examination rather than academic examination, particularly through the thesis writing stage (Bourner et al., 2001). As described earlier, DBA is classified as 'Mode 2' knowledge. Mode 1 is objective knowledge that is generated by researchers about practice, and generalized as a universal truth as much as possible while 'Mode 2' is knowledge created and used by practitioners in the context of their work directly and specifically (Gibbons, 1994). Acknowledging these differences, it is important to determine the influence of doctoral program characteristics in determining degree completion. Doctoral program characteristics define a broad range of concepts but in this study context, it refers to policies that support DBA students and the influence of the advisor that lead to successful doctoral attainment.

Departmental guidelines that relate to doctoral progression mold the type of doctoral experience that each student will encounter in their pursuit of the PhD (Becher & Trowler, 2001; Donald, 2002; Huber & Morreale, 2002). Golde (1995) in her research directly addressed department's policies and procedures that directly affect doctoral student attrition. She found that departments that implemented policies and procedures oriented to helping students through the graduate education process had

lower levels of attrition (Bauer, 2004). In fact, initiatives such orientation programs held by the department, course work, procedures to get to know graduate faculty, policies for selecting a dissertation advisor, and dissertation requirements all assisted deeply providing the right motivation to complete the doctoral study. While some attrition is expected and sometimes helpful to students in discovering what they are willing and wanting to do, a high number is not good for students nor the department thus encouraging many departments to adopt practices that may help reduce attrition rates (Golde, 2005). Another main component of this variable is the role that faculty play in doctoral degree completion. Most research on doctoral student persistence envision faculty as playing an instrumental role in doctoral students acquiring their degree. Tinto (1993) suggests that "the faculty-mentor relationship is the one that is most likely to shape completion" (p.241). The supervisor plays the guide for the student through the 2-4 years of dissertation practice. This symbiotic relationship is very sensitive to dissatisfaction and frustration from both elements. Bartolini (2009) contends that throughout the dissertation-completion process the relationship between the doctoral student and the advisor, chair, and other faculty continues to be a critical factor in the successful completion of the dissertation and attainment of the doctoral degree. With all these powerful elements building up the program characteristics bloc, it is easy to conclude that program characteristics play an important role in intention-to-complete-DBA.

H3: Program characteristics is significantly related to intention-to-complete DBA

3.4.4 Relationship between Perceived Stress and Intention-to-complete DBA

Stress has been widely defined. In the earlier studies stress was being looked into by quantifying the impact of specific stressors, eventually the work increased the person's understanding of the stressor rather than innate the nature of the event (Lovitts, 2005). This element differentiates the constructive stress, which Selye named eustress, and undesirable stress, which he named distress (Selye, 1985). As time goes by researchers are considering more specific models that can be incorporated in to the stress parts of the condition as well as continuing various characteristics. There are physiological responses due to stress affects. Fluctuations in heart beat rate, blood pressure, metabolism and physical activity are mainly due to the hormones flow through the stress retort, such as epinephrine and norepinephrine. Miller (1960) wanted to test whether constant exposure to stress would amplify the person's tolerance to stress. He found that superior performances under high levels of stress endured by the rats gradual increases. So as Vossel and Laux (1978) found that students performance increased and became better when they are trained under stress compared to controlled subjects. Academic-related stressors stood the greatest forceful reasons of pressure for students (Abouserie, 1994). Going through examinations and having to study and learn are the most salient stressor. Wagner (1986) identified that non-completers go through psychological counseling and unable to bear the pressure of graduate study. Undergoing a doctoral study is utmost demanding and factor such as understanding of stress and to develop the managing capabilities with the passion should be built-in into the persons structure.

H4: Perceived stress is significantly related to intention-to-complete DBA

3.4.5 Relationship between Program Characteristics and Student Attributes

Program characteristics also can play an indirect role in moderating the effect of student attribute towards intention-to-complete DBA. A student who is happy with program characteristics and departmental assistance and guidelines will develop similar positive attributes which will significantly improve completion of doctoral degree. Harsch (2008) studied the relative roles of status variables and social cognitive variables in describing dissertation accomplishment position in a doctoral study. The study showed that low levels of support from the department lead to students becoming more self-handicap, disillusioned and lack the drive to complete the doctoral degree.

Faculty and dissertation supervisors also play a role in allaying any fears and doubts of among students. Nyquist, Manning, Wulff, Austin, Sprague & Fraser (1999) seen that graduate students showed a need or help in handling pressure and concern that comes with doctoral education. Having a good program characteristic that enables faculty to act as mentors prevents students from plunging into despair during the doctoral study period. Issues of academic difficulty, career obstacles and family commitments become easier to handle when doctoral students are establishing appropriate social contact with their peers and the faculty in the graduate community (Tinto, 1993). As previously mentioned, Golde (2005) emphasized the dangers of isolation as one barrier to doctoral degree completion and this is believed to stem slowly through student characteristics leading to student attrition. So, it is acceptable to link a direct relationship between program characteristics and student attributes. This relationship can be further extrapolated to conceive program characteristics as a

moderator of the relationship between student attributes and intention-to-complete DBA.

H5: Program characteristics moderates the relationship between student attributes and intention-to-complete DBA.

3.4.6 Relationship between Program Characteristics and Social Support

DBA social support can also indirectly impact the completion of DBA through program characteristics. It is actually a natural phenomenon for universities to have an influencing effect on student performances through policies and faculty interaction (Lovitts., 2008). Kittell-Limerick (2005) opines that universities have a responsibility to be aware of graduate support programs that would aid in higher dissertation completion rates, due to the inherent ability to influence student perception of departmental assistance. Program characteristics that are student-friendly tend to build the right attitude and determination in the student to excel in studies. Students who do not not comprehend the departmental policies well and utilize departmental and faculty assistance efficiently, and start viewing policies and procedures as roadblocks in their path to academic success will not be actively involved in socialization (Golde., 2005). Azad Ali points out that the students who are happy with policies and procedures of a program have active social support and tend to complete their studies in time (Azad Ali., 2007). This gives even more evident among DBA students who are coming back into academia, after a long stint in the working environment.

Student's interaction with their supervisors can also determine DBA completion rates.

Lovitts & Nelson (2002) noted that faculty members are the socializing agents of the discipline; they impart the norms and expectations. Program characteristics that encourage high number of interactions between faculty and student invariably will foster strong socialization. Gittings (2010) in his review of the literature discovered that the most significant general findings with respect to faculty's role in doctoral persistence was that the formal and informal association with the faculty counsellor was key successful completion of the dissertation stage (de Valero, 2001; Lovitts & Nelson, 2000; Malmberg, 2000; Stallone, 2003). This shows that program characteristics can moderate the effect of program characteristics and subsequently promote high DBA completion rates.

H6: Program characteristics moderates the relationship between social support and intention-to-complete DBA

3.4.7 Relationship between Program Characteristics and Perceived Stress

Researchers have found that an optimal level of stress can enhance learning ability (Kaplan & Sadock, 2000), but too much perceived stress can be detrimental and cause physical and mental health problems and may affect students' academic achievement (Ang & Huan, 2006). This perceived stress can be contributed by student satisfaction and experience with the doctoral program characteristics. Pinugu (2013) has investigated the association between perceived stress and program characteristics satisfaction in college students. The findings of this study showed that there was negative association between program characteristics and perceived stress. Students who were experienced accommodating doctoral program characteristics and ideal

student-supervisor relationships experienced less perceived stress and were able to have successful academic completion. Similarly, studies on attrition of doctoral students have found that student's perceived stress were due in part to the fact that they received inadequate or inaccurate advising, the advisor was unavailable to the students or showed lack of interest or active guidance to the students, or because of poor quality, negative or conflictual relationships between the student and advisor (Lovitts, 1996, 2001; Muszynski, 1988; Nerad & Cerney, 1991). In fact, Bair & Haworth's (1999) meta-synthesis indicated that the most frequent finding that held true across quantitative, qualitative, and mixed-methodology studies was the critical role played by the student-advisor relationship in doctoral students' level of perceived stress and subsequent intention to complete their doctoral degree. Doctoral students who reported high levels of relatedness to their advisor, who perceived their advisors as more supportive and more personally interested in them, and those who reported more regular meetings and fewer delays in obtaining feedback, were more motivated and experienced less perceived stress than those who did not have such advisors (Lan & Williams, 2005), were more likely to be satisfied with their programs (Hesli et al., 2003; Lan & Williams, 2005; Mason, 2012) and more likely to complete their dissertations (Faghihi et al., 1999) and their doctoral programs (Lovitts, 2001; Muszynski, 1988). This illustrates that DBA program characteristics play a major role in influencing perceived stress of DBA students and their intention-to-complete DBA.

H7: Program characteristics moderates the relationship between perceived stress and intention-to-complete DBA

3.5 Research Design

A quantitative research process was chosen for this study whereby a survey was given to the study population to achieve the research objectives. Quantitative study by nature is investigational, explores for associations between variables, can be read statistically, and can be measured (Glatthorn & Joyner, 2005; Vogt, 2005). Thus, quantitative research is the appropriate methodology for this study which ensures a research design that analyzes relationships between the variables is conducted.

Under quantitative research, a cross-sectional study design was utilized. The cross-sectional study design was chosen because it is based on observations meaning that investigators keep track of data about their study without changing the study situation. The essential feature of a cross-sectional study is that it can associate diverse population groups at time. The advantage of a cross-sectional study design is that it permits investigators to associate many diverse variables at the same time (Martin & Bridgmon, 2012).

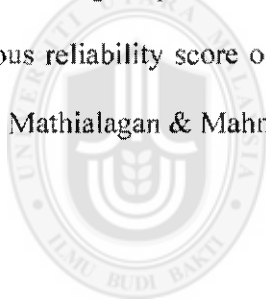
3.6 Operational Definition and Instrumentation

3.6.1 Operational Definition

3.6.1.1 Intention to Complete DBA

Intention-to-complete DBA is defined as the likelihood of Malaysian DBA student to complete their DBA program, which includes comprehensive exams and dissertation, within the recommended timeline. Based on prior research reviews, this research uses

intention-to-complete DBA as a solitary distinct technique of gauging doctoral student growth. Although not specifying to DBA, a number of studies have used intention-to-complete as a valid measure of student progress and a powerful predictor of attrition (Bauer, 2004; Bers, 1991; Bean 1982; Mulligan and Hennessey, 1990; Vanhanen & Janhonen, 2000; Vorhees, 1987; Tinto, 1993). As shown in the structural model, this construct is measured using 3 indicators which included the intent of respondent to either complete or drop the course. These items are shown below in Table 3.2 and are adapted from Mathialagan and Mahmood, 2014. This variable is measured using a 5 - point Likert Scale ranging from ‘Strong Diagree’ to ‘Strongly Agree’. Respondents indicate their agreement to the specific items using the scale aforementioned. A 5 - point Likert-type scale was used to increase response rate and response quality along with reducing respondents’ “frustration level” (Babakus & Mangold., 1992). The previous reliability score of this variable with the aforementioned questionnaire was 0.85 (Mathialagan & Mahmood., 2014).



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Table 3.2

Operational Definition of Intention to Complete DBA

Variable	Definition	Source	Items
Intention -to- complete	A student's aim and persistence to complete his doctoral degree within the designated time	Mathialagan & Mahmood, 2014; Vanhanen & Janhonen, 2000;	<p>I have achieved academically as well as I predicted</p> <p>I would</p> <p>I am certain that I made the right choice in selecting to be present at this course</p> <p>I regularly think of dropping out of this course</p>



3.6.1.2 Student attributes

Student attributes is defined as the qualities, values and dispositions that students have within them while embarking on the DBA program. The construct Individual student attributes have 4 indicators which include Financial Support, Disillusionment, Family

Commitments, Employment Status Change After Comprehensive Exams. This variable is measured using a 5 -point Likert Scale ranging from 'Not at All Important' to 'Very Important' and the scale was obtained from the adaption done in a study by Mathialagan and Mahmood in 2014. This study was one the pioneering DBA evaluation work done in Malaysia and has been a constant reference for doctoral completion study (Mathialagan & Mahmood, 2014). Respondents indicate their agreement to the specific items using the scale aforementioned. The previous reliability score of this variable was 0.79 (Mathialagan & Mahmood., 2014).

3.6.1.3 Perceived Stress

Perceived Stress is defined as the psychological demands upon the student from external forces in doctoral stud. This construct is measured directly through the Perceived Stress Scale (PSS; Cohen, Kamarch & Mermelstein, 1983) is a 10-item self-report instrument designed to assess the degree to which life events are appraised as stressful. This variable is measured using a 5 -point Likert Scale ranging from 'Not at All Important' to 'Very Important'. Respondents indicate their agreement to the specific items using the scale aforementioned. The previous reliability score of this variable was 0.82 (Andreou E., 2011).

3.6.1.4 Social Support

Social support refers to student's ability to integrate in the graduate community and obtain support from peers, faculty and family during their doctoral journey. Social Support is measured directly through the Multidimensional Scale of Perceived Social

Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS scale is a 12-item self-report assessment used to distinguish perceived social support from family, friends, and significant others. It also uses a 1-5 Likert type response scale to evaluate responses. Previous reliability score indicates a strong value of 0.919 (Guan NC et al., 2013).

3.6.1.5 Program Characteristics

Program characteristics refer to departmental, structure, curriculum guidelines and supervisor role that are involved in the DBA journey. The construct has 4 indicators which comprise of Departmental Assistance, Clarity and Understanding of Academic Program Procedures/Requirements, Dissertation Supervisor Contact and Academic Involvement. The construct is measured through a 14-item self-report assessment that was previously adapted by a study done by Mathialagan and Mahmood in 2014 to explore DBA intention to complete. This study was one the pioneering DBA evaluation work done in Malaysia and has been a constant reference for doctoral completion study (Mathialagan & Mahmood 2014). This item uses 5-point Likert scale with responses varying from 'Very Dissatisfied' to 'Very Satisfied'. The scale had a reliability score of 0.70 (Mathialagan & Mahmood., 2014). Table 3.3 gives the operational definition of the independent variables.

Table 3.3

Operational Definition of Independent Variable

Variable	Definition	Source	Measurement
Individual Student attributes	Personal attributes that encourage or impede a student's completion of the doctoral degree	Gittings 2010	Doctoral Studies Questionnaire 9 Item sections Likert 1-5 response
Perceived stress	Feelings or thoughts that an individual has about how much stress they are under at a given point in time or over a given time period.	Extremera, N., A. Durán, et al., 2009; Yu, R., Ho, S.C., 2010	Perceived Stress Scale 10-item section Likert 1-5 response
Social Support	Student's ability to integrate in the graduate community and obtain support from peers, faculty and family during their doctoral journey	Cohen, S., & Janicki-Deverts, D.2010;	Perceived Social support 12 item sections Likert 1-5 response
Program characteristics	Characteristic of the DBA program which includes appropriateness of coursework component, role of supervisor & dissertation experience	Gittings 2010	Doctoral Studies Questionnaire 14 item sections Likert 1-5 response

3.6.2 Instrumentation

The study consists of surveying DBA students in public universities who have fulfilled the study inclusion criteria. A questionnaire that measures the study variables is used to achieve the study objectives. This questionnaire was adapted from 3 scales namely, Perceived Stress Scale (PSS), Multidimensional Scale of Perceived Social Support (MSPSS), and Doctoral Student Experiences questionnaire which also measures intention to complete DBA. The Perceived Stress Scale (PSS; Cohen, Kamarch & Mermelstein, 1983) is a 10-item self-report instrument designed to assess the degree to which life events are appraised as stressful. This scale assesses an individual's perceived stress based on the idea that increased risk of health problems can occur when individuals perceive stressful events as threatening and demanding. The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) is a 12-item self-report assessment used to distinguish perceived social support from family, friends, and significant others. The MSPSS is a psychometrically sound questionnaire developed in 1987 (Dahlem, Zimet, & Walker, 1991; Kazarian & McCabe, 1991; Zimet, Powell, Farley, & Berkoff, 1990). The Doctoral Experience Questionnaires was adapted by Mathialagan and Mahmood in 2014 to specifically measure DBA intention-to-complete. The Doctoral Experiences Questionnaires explores 2 vital aspects of DBA completion, namely student attributes and program characteristics and compares it with Intention-to-complete DBA. Thus, the elements aforementioned in Doctoral Experiences Questionnaire were adopted to accomplish the objectives of this study.

3.7 Data Collection Sampling and Procedure

3.7.1 Population, Sample Size and Sampling Design

The samples of participants are drawn from the population of DBA students who are enrolled in public universities in Malaysia. According to the Higher Education Ministry, there are around 900 DBA students presently in public universities in Malaysia (MOHE, 2014). From this sampling frame, a sample size of 260 was deemed adequate to represent the population and was calculated based on the Krejcie and Morgan (1970) table. This sample size was also cross-checked with g power sample size calculator, which recommended a sample size of 269 (Hulley SB et al., 2007). To account for a good response rate (Porter and Umbach, 2006), around 750 students from the population of DBA students who entered the Graduate School of Business of UIA, USM, UKM and UUM spanning the academic years of 2009-2014 were selected for the study. All 4 universities are comprehensive DBA granting public institution with a significant DBA student population (MOHE., 2014). These universities were chosen for the study because more than 60% of the DBA student populations in universities in Malaysia are from these universities (Higher Education Ministry, Malaysia. 2012). Permission to conduct study was obtained from the respective universities, student bodies and social media resources.

The sampling design proposed for this study is by simple random sampling. Pursuant to this strategy, DBA students who are on their 3rd semesters onwards were picked for this study from the main DBA population of each selected university. This provides

an opportunity to improve precision and decrease sample variation (Mathialagan & Mahmood, 2014).

3.7.2 Unit of Analysis

The unit of analysis refers to the extent to which the level of investigation of collected data focuses specifically on objects. The unit of analysis utilized here are DBA students who have completed at least 2 semesters. The inclusion criteria of 2 semesters are important because students who answer the study questionnaire will already have adequate experiences within the DBA program to provide accurate responses.

3.7.3 Data Collection

Data collection was conducted by administering the survey online to the selected candidates from the study population. Online survey was chosen as the mode of research due to its capacity to reach a large amount of people in an extremely short period of time and also due to its relatively low survey/person costs and time. Email addresses obtained from postgraduate schools and relevant student bodies were utilized for this study. In order to protect the interests of the respondents, confidentiality and anonymity of the research participants were maintained exclusively. As stated by Dillman, Smyth, & Christian (2009), "The Internet is a useful mode for conducting surveys targeted at very specific populations such as college students and certain professionals" (p. 44). Furthermore, Dillman, Smyth, & Christian noted that, "Due to specific populations, such as students in universities,

having high internet access rates and skill levels internet surveys can be designed and implemented and results reported faster than with any of the traditional survey modes and often at lower costs” (p. 9).

Although using a web-based survey instruments has been encouraged, getting response that was free from a non-response bias, as with any type of survey, can be a difficulty. This scenario occurs when “individuals responding to a survey differ from non-respondents on variables relevant to the survey topic” (Rogelberg and Loung, 1998, p. 61). A variety of approaches supported by Dillman, Smyth & Christian (2009) are being used to reduce non response bias: (1) an email is sent to the individuals to inform that a survey is being held and they shall be receiving a set of questionnaire; (2) for those respondents who respond on time are given a token of appreciation; (3) demographic questionnaires are to be set at the last page as this is of less interest to respondents; (4) the benefit of the survey will also be included in the survey as to inform the respondents the purpose of participating in the survey; (5) a supporting cover page is included that this study is being conducted by a UUM student; and (6) automatic reminders are sent at weekly intervals during the survey window. While making effort to reduce non-response bias, there are some non-response bias as it is inevitable (Rogelberg & Loung, 1998). To counter this, a method suggested by Miller and Smith (1983) was deployed whereby comparison between responders to the population size are conducted and if similar, generalizations are made. Standard confidentiality practices were maintained while obtaining consent for study participation. Each respondent will only be allowed to respond to the survey once via the internet survey based tool and the responses were sent to a secure, unique email address.

3.8 Validity and Reliability

The reliability of a study tool is important to the gathering of reliable and valid data. Although the study tool used in this examination was grounded on previously validated questionnaires, it is imperative to determine validity and reliability of the adapted questionnaires before utilizing in study. Therefore, to provide reliability of the tool, extra stages were obligatory to check validity and reliability of the tool adopted by the researcher.

3.8.1 Validity

Validity refers to the “degree to which all the accumulated evidence supports the intended interpretation of test scores for the proposed purpose” (Mertler & Charles, 2005, p. 149). Vogt (2005) clarified that validity for a study tool happens when the tool simply and precisely measures what it is theoretical to measure.

Content and face validity is related to the degree that the scale items represent and the domain of the concept under study (Davis & Consenza, 1988). It involves a systematic and subjective assessment (Hair, Money, Samouel & Page, 2007). To report the content validity, the researcher provided the tool for evaluation by a board of specialists. The panel of experts included an academic who is well versed with DBA and a group of DBA students enrolled at University Utara Malaysia. The board of specialists studied the tool and evaluated it for concepts such as a) clarity, b) practicality, c) instrument length, d) instrument structure, e) wording and f) suitability

of items within scales. The researcher used the proposals and discoveries of the board of specialists to alter the study tool.

Although the above procedure is carried out, it will not guarantee the content validity of the scale, but it will give the researcher some degree of confidence (Davis & Consenza, 1988). Therefore, to ensure that the scale measures what it is supposed to measure, construct validity is assessed. Construct validity deals with two aspects in assessment: theoretical and statistical. Theoretical aspect involves the natured aspect which calls for the justification of the concept. The evidence of finding the variables of the construct are from past and current literatures (Davis & Consenza, 1988). The variables in this study that are related to literature are derived from doctoral attrition theories and the theory of reasoned action. In order to ascertain that all the measurements in this study exhibits construct validity, factor analysis (FA) was performed on all the constructs under study. All the variables construct in this study are one-dimensional and therefore the purpose is not only to validate the scales but also to assess the variables set so that only the most important information that are found in the relationships of the variables are reproduced (Davis & Consenza, 1988). Factor extraction was executed and any Eigenvalue that is greater than one (1) are adopted as recommended. To further simplify the interpretation and seek a simpler structure, the orthogonal technique and the Varimax rotation will then be performed. The advantage of this technique is that it has the tendency to reapportion the variance among factors so that they become relatively equal in importance (Tabachnick & Fidell, 2001).

After the Orthogonal rotation is performed on all the important variables of student attributes, program characteristics, social support and intention-to-complete DBA, they will then be submitted to factor analysis (FA) to determine their factor loading. As a rule of the thumb, (Tabachnick & Fidell, 2001) only variables with factor loading of 0.32 and above is considered. Nevertheless, Comrey and Lee (1992) interpreted the loading that exceeds 0.71 as “excellent”, 0.63 as “very good”, 0.55 as “good”, 0.45 as “fair” and 0.32 as “poor” (cited by Tabachnick & Fidell, 2001). However, as suggested by Tabachnick & Fidell, (2001) the cut off point for size of loading lay with the researcher’s preference. For this study, on the basis that the size of loading is going to be influenced by the homogeneity of scores in the samples, an interpretation of a higher loading of 0.3 would suffice.

3.8.2 Reliability

Reliability is established through uniformity (Mertler & Charles, 2005). According to Upton and Cook (2006), “Reliability is a measure of the confidence that we can have in the results obtained from a body of research”. The researcher will subject this tool to a pilot study to ensure how well the study examines doctoral student involvements. The pilot study participants ($N = 20$) were members of the most current group of doctoral students admitted into the DBA program at UUM. The researcher used this population due to the likeness of the planned population for the actual examination. Cronbach’s alpha measures are applied on the scaled items inside the tool to ensure survey reliability. As recommended by Nunnally and Bersten (1994) and Nunnally

Cronbach's alpha measures are applied on the scaled items inside the tool to ensure survey reliability. As recommended by Nunnally and Bersten (1994) and Nunnally (1978), the coefficient alpha of above 0.6 is used as the cut-off point of reliability for this study.

3.8.3 Pre-test

The instrument adapted to measure student attributes, program characteristics, social support, perceived stress and intention-to-complete have been previously validated. However, it is necessary that the contents be re-validated (Sekaran, 2005) especially if the instruments have been used in different environments, different context, on different sets of respondents and characteristics from the original studies carried out (Hair et al., 2007).

In order to establish the validity and reliability of the questionnaires instructions and design (Zikmund, 2003) pre-testing was conducted over which survey questionnaires are circulated in two stages to the respondents. In the first stage in order to improve on the content and face validity of the survey questionnaires, expert opinion of a professor and a group of doctoral students from University Utara Malaysia is obtained. A set of questionnaires were distributed to them for feedback and evaluation on the design of the questionnaires, grammar, phrasing of sentences and understanding. After receiving their feedbacks, the questionnaire is amended accordingly.

3.8.4 Pilot study

Pilot study refers to mini versions of the actual study being conducted with the purpose of evaluating the study design and the research instrument. As such, pilot studies should incorporate the procedures and protocols that had been designed for data and conduct it in the same target population (Cooper & Schindler, 1998). Pilot studies are very important as they increase the likelihood of success in the main study and provide valuable insights for researchers in conducting the main study. One of the few insights that is available from the pilot study is the reliability of the questionnaire and the actual response rates. The researcher can ensure reliability rates based on Cronbach Alpha analysis and at the same time, devise new methods of data collection if the response rate is low. Furthermore, the pilot test could highlight the complications that the participants might endure when finishing the survey or the directives may not be detailed enough to support the participants to finish the survey (Moore & Benbasat, 1991). Thus, pilot study can be utilized to improve any existing defects within the study frame and questionnaire.

For the purpose of this study, a pilot test was conducted whereby around 42 UUM DBA students were given the online questionnaire to answer by email. Around 28 respondents replied, giving a response rate of 66.6%. The results are shown below in Table 3.4.

Table 3.4

Reliability Analysis of Pilot Test

Pilot Test Reliability analysis		
Variable	No. of item	Cronbach's Alpha
Student Attributes	9	0.712
Program Characteristics	14	0.846
Perceived Stress	10	0.696
Social Support	12	0.774
Intention-To-Complete DBA	3	0.735

All variables in this study registered acceptable reliability levels in the pilot test.

3.9 Analysis of Data

The following section describes the analysis that is employed for this study.

Primarily two types of analysis is done which are descriptive and inferential analysis.

3.9.1 Descriptive analysis

Descriptive statistics has been utilized to outline the demographics of the study population such as age, gender, enrollment (part-time or full time), employment status and current semester enrollment and also on the variables within the study. This will involve analysis such as mean and standard deviation.

3.9.2 Hypothesis Testing

3.9.2.1 Measuring Direct Significant Effect

To measure the relationship of the independent variables to the dependent variable in this study, a multiple regression analysis was used. According to Field (2009), “Regression Analysis enables us to predict future outcomes based on predictor variables”. Hypothesis 1, 2 3 & 4 which involves student attributes, perceived stress, social support and program characteristics are examined using this technique to assess and determine their contribution to the outcome of the dependent variable of Intention-to-complete DBA.

3.9.2.2 Measuring Moderating effect of Program Characteristics

Hierarchical multiple regression analysis is a statistical technique that can be used to analyse the relationship between a single dependent variable, moderator variables and several independent variables. Hierarchical multiple regressions were utilized to test research hypothesis relating to the main effect of independent variables and dependent variables. Separate hierarchical multiple regressions were run for each independent variable and the dependent variable. The researcher chose to use this method of non-combination moderation analysis as it provides a clearer understanding of the moderation effects involved (Mathialagan & Mahmood, 2014). A form of hierarchical entry designed to determine if the relation between two variables was influenced by a third of moderating variable (Nunnally & Bernstein, 1994). Russell and Bobko (1992)

suggests that hierarchical multiple regression analysis is preferred statistical procedure for detecting interaction effects. The interaction effect involves using the main predictor and the moderators. The general procedure for testing moderating effects was to enter the sets of predictors onto the regression equation in the following order. Step 1, the main effects of variable was entered. Step 2, the moderator variable was entered into the equation. The two- way interaction terms obtained by multiplying the moderator variable and independent variables were entered at step 3. A significant term was taken as an indication of moderating effect (Zhang & Leung, 2002). For the dependent variable, hierarchical multiple regression analysis will run separately. Table 3.5 shows the summary of data analysis planned for this study.

Table 3.5

Summary of Data Analysis Planned for this study

No	Research Hypothesis	Proposed Statistical Test
H1	Student attributes is directly related to intention-to-complete DBA degree.	Multiple Regression
H2	Social support is directly related to intention-to-complete DBA degree	Multiple Regression
H3	Program characteristics is directly related to intention-to-complete DBA	Multiple Regression
H4	Perceived stress is directly related to	Multiple Regression

intention-to-complete DBA.

H5	Program Characteristics moderates the relationship between student attributes and intention-to-complete DBA.	Hierarchical Multiple Regression
H6	Program characteristics moderates the relationship between social support and intention-to-complete DBA	Hierarchical Multiple Regression
H7	Program characteristics moderates the relationship between perceived stress and intention-to-complete DBA	Hierarchical Multiple Regression



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CHAPTER FOUR

FINDINGS

4.1 Introduction

This chapter discusses the analysis of the data and explains the report of the statistical testing result as proposed in the previous chapter. Section 4.1 reports about the overview of this chapter. Secondly, Section 4.2 provides the reports of data collection procedure undertaken for this study and survey responses obtained. Section 4.3 describes the measures taken to ensure that non-response bias was addressed in this study. Section 4.4, 4.5 and 4.6 shows data preparation and screening result include missing data, outliers normality assumption, linearity, multi-collinearity and the profile of the respondent. Next, Section 4.7 presents the factor analysis and reliability of each variable followed by correlation analysis in section 4.8 respectively. To address and infers the hypothesis testing of research, multiple regression analysis was applied in Section 4.9. Last part is about the conclusion and summary of chapter.

4.2 Data Collection Process and Survey Responses

The researcher directed the study based on procedures structured by Dillman (2000) and Dillman, Smyth, & Christian (2009) through online survey. Permission to conduct study was obtained from the Institute of Postgraduate Studies of the respective universities. A letter of introduction (Appendix A) was generated by the researcher briefly described the intension of the survey, invited contribution, and gave the corresponding survey. Before the actual survey and the letter of introduction were

sent, an initial email alerting the prospective respondents of the study was sent out. A week later, a total of 750 surveys were sent to the email addresses of the students from the 4 main universities (UIA, UKM, USM and UUM). The email address of DBA students was obtained from the institute of postgraduate studies and postgraduate student bodies. After a month, a second wave of the survey was sent to the participants who did not respond in the first wave. As a result of the two e-mailings, a total of 441 surveys were returned for a return rate of 58.8%. This amount exceeded the necessary minimal sampling of 260 individuals required for the study (Krejcie & Morgan, 1970). After assessment for outliers; of the 441 responses collected, 413 were usable for further analysis making a valid response rate of 55.10%. Hence, the response rate was adequate, where a required response rate of 30% was acceptable for the survey (Sekaran, 2006).

4.3 Non-response Bias

It is important to note that even when employing every effort to eliminate nonresponse bias, some non-response bias is inevitable (Rogelberg & Luong, 1998). Non-response bias is strongest when respondents select themselves in relation to the perceived topic of the survey (Groves *et al.*, 1992). The main aspects of the topic with regard to responsiveness are reported to be salience. Heberlein and Baumgartner (1978) showed that salience (interested or not interested in the topic) has a strong influence on the response rate. When the topic of the survey is salient to the respondent, the costs of responding may be reduced. Martin (1994) verified that people's interest in the survey topic can have considerable impact on response rates: persons were almost twice as likely to participate if the topic was of high interest.

Similarly, Dillman and Carley-Baxter (2000) showed that salience is a significant determinant of response rate. The focus on salience gave rise to a two-tailed pattern of non-response bias of primary responders and secondary responders. This premise was then turned into a technique to detect non-response bias as proposed by Miller and Smith (1983). For the purposes of the current study, the aforementioned technique was utilized whereby early survey respondents were compared to the late respondents. Since late-respondents, or those that reply after numerous efforts, are hypothesized to have some resemblances with non-respondents, the method is to relate scores on key metrics from both the early respondents and the late-respondents. Any variations is regarded as an estimate of non-response bias. If there are no differences, then results can be added and generalized to the sample and population. Utilizing this concept, the responses obtained from the first wave of the email survey (n=200) and the second wave of email survey was compared (n=213) in this study using t-test analysis. The comparison did not yield any significant differences in response between the two groups. Thus, it was concluded that non-response bias did not exist in this study. Utilizing this concept, the responses obtained from the first wave of the email survey (n=200) and the second wave of email survey was compared (n=213) in this study using t-test analysis. This is shown in the table below. The comparison did not yield any significant differences in response between the two groups. Thus, it was concluded that non-response bias did not exist in this study. See table 4.1.

Table 4.1

Results from Non-Response Bias Evaluation

Variable	Group	N	Levene Test for Equality of Variance	
			F	Significance
Student Attitude	Early responders	200	0.033	0.87
	Late responders	213		
Social Support	Early responders	200	0.277	0.614
	Late responders	213		
Perceived Stress	Early responders	200	0.442	0.338
	Late responders	213		
Program Characteristics	Early responders	200	1.534	0.147
	Late responders	213		
Intention-to-complete	Early responders	200	0.113	0.775
	Late responders	213		

4.4 Data Cleaning

Data cleaning works with data issues once they have happened. Error-prevention plans can lessen countless glitches but is not able to eradicate them. Data cleaning is done to identify three main issues- missing data errors, outlier abnormalities and normality. . However, only missing values and outlier detection are discussed under this section while normality assumptions are reviewed under section 4.6.

4.4.1 Detection of Missing Data

A frequency test was carried out for every variable to detect any missing responses. According to the test, the survey did not register any missing data. This is not surprising as the pool of respondents were doctoral students who are more research inclined in comparison to the general population. Thus, the respondents have a higher degree of responsibility when filling up questionnaires, resulting in fully completed surveys being returned.

4.4.2 Outliers

The examination of data for outliers in this research was also done where extreme values on an item were observed. With regards to handling the data before analysis, the step after missing data analysis was multivariate outlier detection. Outliers are seen (cases) with an exceptional mixture of characteristics recognizable as noticeably diverse from the other observations. An exceptional characteristic was referred to be an oddly high or low value on a variable, or an exceptional mixture of values

throughout numerous variables that seem unique from the others. Outliers cannot be considered as either valuable or challenging but should be measured within the setting of the analysis and evaluated by the types of information they might provide. Useful outliers might be suggestive of characteristics of the populace that would not be revealed in the standard course of study. In contrast, challenging outliers are not illustrative of the populace, were counter to the purposes of the study and could extremely misrepresent statistical trials (Hair et al., 2010).

In testing, multivariate outliers, SPSS14 was used. The extreme case scores that might have a substantial effect on the results being too high, too low or have a exceptional mixture of values across several variables cases were removed (Hair et al., 2010). Thus, using multivariate analysis required identification and handling of outliers consequently. Mahalanobis Distance was applied to recognize and treat with outlying cases. The results of the χ (Chi-square) and $p = 0.001$ variable for 54 items is around 91.88, outlier results show that there were 28 dataset removed due to the Mahalanobis Distance (D2) being greater than 90.57 (χ value = 90.57). Thus, leaving a final dataset of 413 to be utilized for further analysis. It is likely for outliers to happen and that without these extreme cases will affect generalizability for the whole population of this research (Hair et al., 1998; Tabachnick & Fidell, 2001).

4.5 Descriptive Statistics– Profile of Respondents

The statistical frequency distribution of key variables in the survey was objectively classified and shown in logical groupings to mirror the uniqueness of the study. The

demographic profile characteristics selected for this research are as shown in below table 4.2.

Table 4.2

Demographic Profile of Respondent

Categories		Frequency	Percentage
Gender	Male	216	52.3
	Female	197	47.7
Ethnicity	Malays	238	57.6
	Chinese	92	22.3
	Indians	61	14.8
	Others	22	5.3
Employment status	Employed (full-time)	304	73.6
	Employed (part-time)	93	22.5
	Pursuing further studies on working leave	16	3.9
Age	15-25	10	2.4
	25-35	160	38.7
	35-55	178	43.1

	Above 55	65	15.7
Semester	Sem 2- Sem 4	87	21.1
	Sem 5 - Sem 7	168	40.7
	Above sem 7	158	38.3

Table 4.2 reports on the demographic profile of the respondents involved in this study. In terms of age, it is shown that more than 80% of DBA student are form the age group of 25 to 55. 2.4% were between age 15-25 years and 15.7% were above 50 years old. This is understandable as DBA is doctoral degree and although there are students who are can enroll as early as 23 years old for a DBA degree, normally, a person will finish his undergraduate degree by 22 and then pursue his masters for 2 years before embarking on a DBA degree. From gender and ethnicity perspective, Malays constitutes the highest number of respondents averaging around 57.6% followed by Chinese (22.3%), Indians (14.8%) and other ethnicities coming in with 5.3%. This is consistent with the current ethnic composition of the country. Table 4.2 also shows that the survey skewed slightly to the male population whereby males consisted of around 52.3% of the respondents. As shown in Table 4.2 above, employment position was recognized not only by full-time or part-time but permitting for not working and pursuing other education on working leave. The majority of respondents are full-time employed while following their doctoral education (73.6%) though a much smaller sectional respondent is part-time employed (22.5%). The residual portion of respondents only signified small scope of the populace with 3.9%

pursuing further studies. In terms of semester enrollment, majority of respondents for this survey came from semester 5 to semester 7 which constituted around 40.7% of total responses. Around 38.3% came from respondents who have finished more than 7 semesters and remainder 21.1 percent came from respondents currently between semester 2 and 4.

4.6 Assumption of Multiple Regression

4.6.1 Normality

Normality is the fundamental assumption for multivariate techniques such as multiple regression, indicating to the shape of the distribution of the data for an individual metric variable and it's identical to the normal distribution. Hair et al. (2006) termed the normality as the benchmark for statistical approach. The difference in the normal distribution of the responses is supposed to be small. For large variations, this will cause all statistical measurement resulting from the analysis to be invalidated (Hair et al., 2006).

There are many ways one could test the data distribution if it deviates from the normal distribution. Skewness and kurtosis are the most popular ways used by many researchers for describing the shape of the data distribution. Skewness is an indicator that shows to what extent a distribution of data leans from the center (symmetry) around the mean (George & Mallery, 2006). Skewness values which are outside the range of +1 to -1 implying a substantially skewed distribution (Hair et al., 2006). In

this study, the skewness values have been investigated and found that all variables are within the -1 to +1 limit). This is shown in Table 4.3.

Kurtosis is a test of flatness or peakedness of data distribution. A negative value for kurtosis refers to a shape flatter than normal while the positive value for the kurtosis refers to a data distribution more peaked than normal (George & Mallery, 2006). Kurtosis was recommended to be at the range of +3 to -3 according to Coakes and Steed (2003), some studies recommended to be at the range of +7 to -7 (Hu, Bentler, & Kano, 1992). In this research, all of the kurtosis values are filled within the recommended range +3 to -3 as seen in Table 4.3. This result indicated that the data set has not violated the normality assumption. Thus, it is shown that all variables are normally distributed.



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Table 4.3

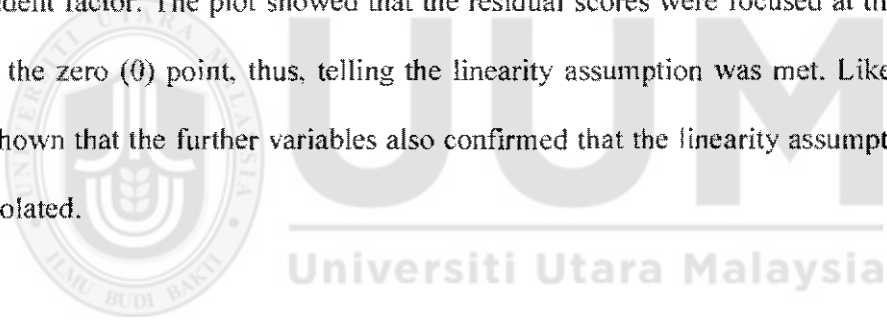
Summary of Skewness and Kurtosis Values of Study Variables

	<i>N</i>	<i>Mean</i>	<i>Skewness</i>	<i>Kurtosis</i>
	Statistic	Statistic	Statistic	Statistic
INTENTION-TO-COMplete DBA	413	3.11	-0.448	-0.298
STUDENT ATTRIBUTES	413	3.18	-0.863	2.637
PROGRAM CHARACTERISTIC	413	3.46	-1.005	-0.149
SOCIAL SUPPORT	413	4.18	0.661	-0.149
PERCEIVED STRESS	413	3.32	0.094	1.382

4.6.2 Linearity

Regression analysis too had an assumption on linearity. Linearity meant that there is a straight-line relationship amongst the independent variables and the dependent variables. This assumption was vital because regression analysis only confirmed for a linear relationship amongst the independent and the dependent variables. To examine for linearity, this study adopted the residual scatter plot. If the assumptions were fulfilled, the residuals would scatter around 0 or most of the scores should focus in the center along the 0 point (Flury & Riedwyl, 1988).

Figure 4.1 displays the scattered plot amongst the independent factor and the dependent factor. The plot showed that the residual scores were focused at the center along the zero (0) point, thus, telling the linearity assumption was met. Likewise, it was shown that the further variables also confirmed that the linearity assumption was not violated.



INTENTION-TO-COMPLETE DBA

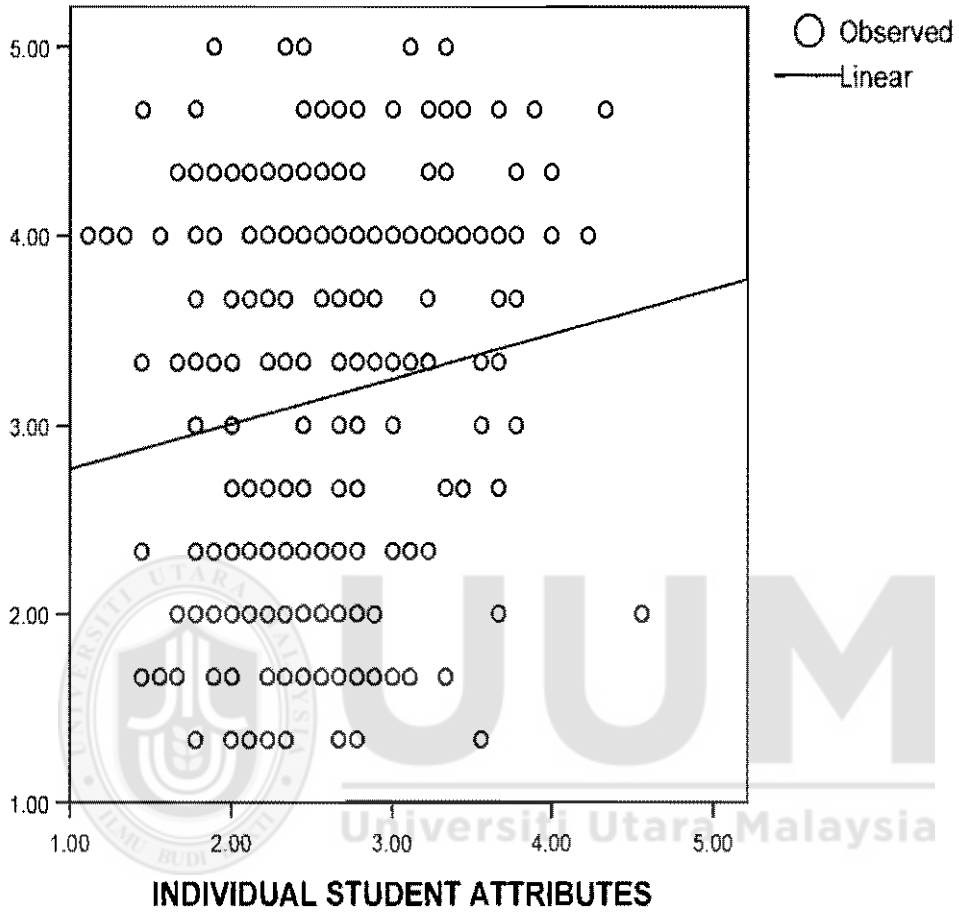


Figure 4.1 Residual scatter plot of dependent variable

4.6.3 Homoscedasticity

Alternatively, the normal probability plot fulfilled the homoscedasticity expectations of the variance of the random error component since all the points lie along 45 degrees' diagonal line. Likewise, the homoscedasticity assumption for other variables

was not violated and fulfilled requirements. Figure 4.2 shows the normal probability plot.

Normal P-P Plot of Regression Standardized Residual

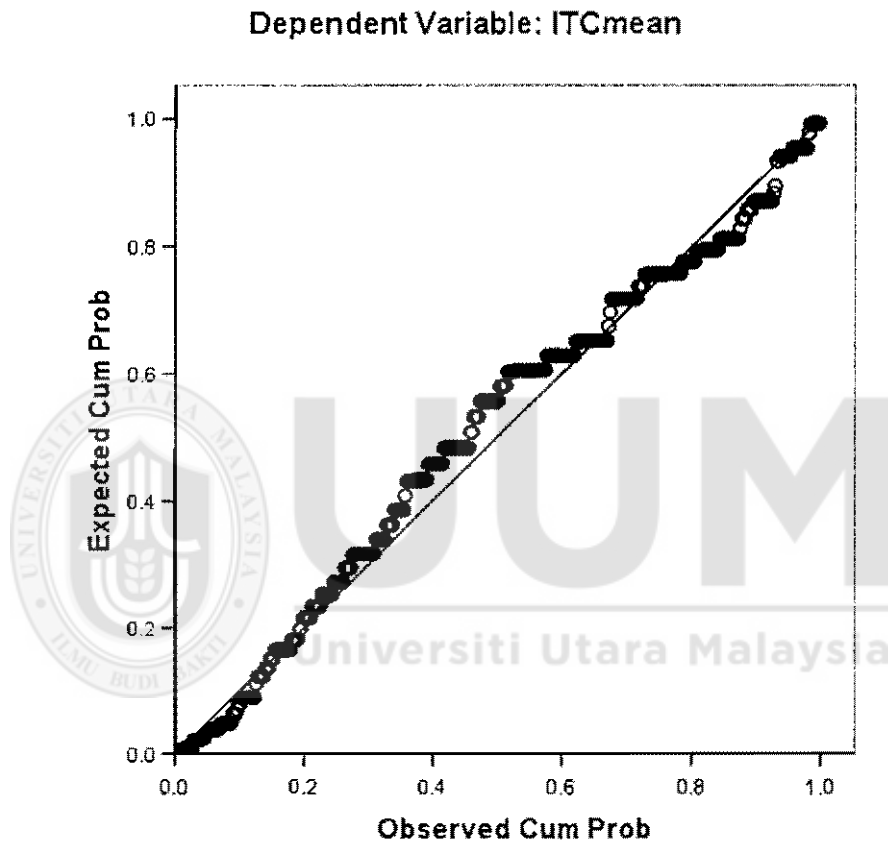


Figure 4.2 Normal Probability Plot of Dependent Variable

4.6.4 Multicollinearity

Multicollinearity is described as the degree of association among independent variables. Independent variables were extremely correlated (above 0.90) among

themselves (Hair et al., 2010). In this research, multicollinearity has been inspected from the variance inflated factor (VIF) and tolerance value. It was largely held that any variance inflation factor that surpassed 10 and tolerance value lesser than 0.10 indicated a possible issue of multicollinearity (Hair et al., 2010). Results in Table 4.4 showed that multicollinearity wasn't present amongst all independent variables since the tolerance value was more than 0.10 and VIF values were lesser than 10. The outcome indicated that the research did not have any multicollinearity issue. The hierarchical regression was exposed to condemnation since the interactions often lead to multicollinearity issue (Cohen & Cohen, 1983; Frazier, Baron & Tix, 2004). Because of centered mean, VIF and tolerances values were inside adequate compulsory range. Therefore, multicollinearity was not a issue in this research.

Table 4.4
Collinearity Diagnostics of Study Variables

Study Variables	Mean Tolerance	VIF
Student Attributes	0.937	1.067
Program Characteristics	0.870	1.150
Social Support	0.924	1.082
Perceived Stress	0.931	1.074

4.7 Factor Analysis

4.7.1 KMO, Sphericity Tests and Principal Component Analysis (PCA)

Validity concerns whether an instrument actually measures what it is meant to measure (Field 2009). Ticehurst & Veal (2000) explain that in business research, researchers encounter problems in regard to validity, specifically in the measurement of attitudes and behaviours. This is because there can always be some doubt about the actual meanings of responses given in surveys, interviews and self-reporting of behaviours. Field (2009) elaborates that there are two important components of validity, criterion and content validity. Criterion validity determines whether the instrument is measuring what it claims to measure and this can be tested by relating scores on the measure to real-life situations. Meanwhile, content validity is a self-report measure or questionnaire which assesses the degree to which individual items represent the construct being measured and whether they cover the complete range of the construct (Field 2009). While for Sekaran (2003), apart from criterion-related validity and construct validity, content validity is also important for testing the goodness of measures. Content validity alludes to validity of the measurement in oral and written skills combined with other abilities including creativity and forming abstract thoughts.

The total number of usable questionnaires for factor analysis was 413, which was greater than the minimum number suggested by Arrindell and Ende (1985), Hair et al. (2010), Cokes and Steed (2003), and by Bartlett, Kotrlik, and Higgins (2001) for the purpose of conducting factor analysis. In the present study, 49 items were

investigated. Five constructs were tested for validity, namely, student attitudes, program characteristics, social support, perceived stress and intention-to-complete DBA. All the constructs have fulfilled factor analysis requirements as shown below.

Table 4.5

Summary of Factor Analysis on Student Attributes

(KMO=0.50, Bartlett's Test of Sphericity=2260.190 (p-value<0.000))

Items	Communalities	Component Matrix	Loading Value
Could not afford to continue studies	.925	.429	.722
Found doctoral studies too difficult	.789	.453	-.530
False impression of dissertation demands during early candidature	.586	.687	-.652
Lack of motivation to continue dissertation after coursework	.675	.554	.680
Demands on my family	.679	.502	.861
Demands on my job	.762	.481	.696
Program not to my liking	.903	.497	.755
Program did not fit my career goals	.784	.594	.551

Change in career after coursework completion	.708	.789	.759
---	------	------	------

Table 4.5 shows the validity results for each item in the attribute of individual student's variable. Based on the results, KMO result is 0.500, which exceeds the significance level, 0.50. Meanwhile, Bartlett's Sphericity test is 2260.190; p-value equal to 0.000, which is below the significance level $\alpha = 0.05$. Each item in this variable has the communalities values more than 0.40, component matrix values were more than 0.30 and loading factor values for each item exceeds 0.40. Thus, the factor analysis proves adequate validation for this variable.

Table 4.6
Summary of Factor Analysis on Program Characteristics

(KMO=0.693, Bartlett's Test of Sphericity=2796.254 (p-value<0.000))

Items	Communalities	Component Matrix	Loading Value
Faculty availability in your program	.722	.020	.669
Access to research materials	.622	.565	.747
Quality of research Material	.835	.527	.768
Support and advice from staff of department	.579	.524	.623

Support and advice from faculty of Dept	.501	.239	.433
Availability of Courses Information about program requirements	.694	.691	.458
Coursework as an assistance to dissertation preparation	.493	.621	-.518
Selection of dissertation topic	.615	.480	-.567
Selection of supervisor	.756	.721	.789
Supervisor role in Preparation of proposal	.355	.501	.619
Guidance from supervisor	.801	.568	.723
Dissertation writing	.825	.816	-.572
Accessibility of Supervisor	.797	.806	.814
	.404	.570	.687

Table 4.6 reports the validity results for each item contained in program characteristics. The result revealed that KMO test has a value of 0.693, which is higher than the significance level of 0.50. On the other hand, the Bartlett's Sphericity test value was 1288.994 and p-value is less than 0.000, which is smaller than the significance level $\alpha = 0.05$. Next, all the questions have communalities results more than 0.40, component matrix values were more than 0.30 and loading factor values for

each item exceeds 0.40. These results show that the program characteristics variable satisfied the validity criteria.

Table 4.7

Summary of Factor Analysis on Perceived Stress

(KMO=0.546, Bartlett's Test of Sphericity= 4163.5 (p-value<0.000))

Items	Communalities	Component Matrix	Loading Value
How often have you been upset because of something that happened unexpectedly	.777	.877	.860
How often have you felt that you were unable to control the important things in your life	.799	.845	.866
How often have you felt nervous and "stressed"	.695	.783	.793
How often have you felt confident about your ability to handle your personal problems	.868	-.457	-.207
How often have you felt that things were going your way	.902	-.278	-.100

How often have you found that you could not cope with all the things that you had to do	.784	.867	.864
How often have you been able to control irritations in your life	.925	-.021	.440
How often have you felt that you were on top of things	.564	-.677	-.564
How often have you been angered because of things that were outside of your control	.873	.909	.931
How often have you felt difficulties were piling up so high that you could not overcome them	.899	.921	.938

As shown in Table 4.7, the result revealed that KMO test has a value of 0.546, which is higher than the significance level of 0.50. The Bartlett's Sphericity test value was 4163.5 and p-value is 0.001, which is smaller than the significance level $\alpha = 0.05$. All the questions have communalities results more than 0.40, component matrix values were more than 0.30 with adequate factor loadings. The validity of the study variable was satisfied for further analysis.

Table 4.8

Summary of Factor Analysis on Social Support

(KMO=0.594, Bartlett's Test of Sphericity= 5423.01 (p-value<0.000))

Items	Communalities	Component Matrix	Loading Value
There is a special person who is around when I am in need (SO)	.921	.639	.456
There is a special person with whom I can share my joys and sorrows (SO)	.939	.733	.812
My family really tries to help me (Fam)	.641	.799	.488
I get the emotional help and support I need from my family (Fam)	.909	-.149	.583
I have a special person who is a real source of comfort to me (SO)	.787	.882	.559
My friends really try to help me (Fri)	.638	.540	.796

I can count on my friends when things go wrong (Fri)	.847	.718	.902
I can talk about my problems with my family (Fam)	.722	.788	.738
I have friends with whom I can share my joys and sorrows (Fri)	.838	.860	.749
There is a special person in my life who cares about my feelings (SO)	.870	.773	.619
My family is willing to help me make decisions (Fam)	.629	.671	.401
I can talk about my problems with my friends (Fri)	.779	.657	.546

As shown in Table 4.8, the result revealed that KMO test has a value of 0.594, which is higher than the significance level of 0.50. The Bartlett's Sphericity test value was 5423.01 and p-value is 0.001, which is smaller than the significance level $\alpha = 0.05$. All the questions have communalities results more than 0.40, component matrix values were more than 0.30 with adequate factor loadings. The validity of the study variable was satisfied for further analysis. See table 4.9.

Table 4.9

Summary of Factor analysis for Intention-To-Complete DBA

(KMO=0.52, Bartlett's Test of Sphericity=122.32 (p-value=0.000),

Items	Communalities	Component Matrix	Loading Value
I have performed academically as well as I anticipated I would	0.667	0.350	Only One Component extracted, no rotation matrix.
I am confident that I made the right decision in choosing to attend this program	0.908	0.300	
I frequently think of dropping out of this program	0.789	0.953	

The result of validity test above revealed that KMO test has a value of 0.52, which is higher than the significance level of 0.50. The Bartlett's Sphericity test value was 122.32 and p-value is 0.000, which is smaller than the significance level $\alpha = 0.05$. The validity tests were satisfied for this study variable.

4.7.2 Reliability analysis

Ticehurst and Veal (2000) describe reliability as the degree to which study discoveries are alike and steady if the study is recurrent at a future date or with a changed sample of subjects. Determining reliability aids to govern the goodness of measure and specify accuracy in the measurement (Sekaran 2003). Field (2009) indicates that a

study tool is dependable when it can be used and understood steadily in the identical way in diverse settings. The tool must first be dependable before it can be effective. The simplest way to evaluate reliability is to examine the identical group of individuals twofold as a reliable tool will produce alike scores at both points in time (test-retest reliability) (Field 2009). Reliability test was deployed for testing the pilot and actual data gained from the surveys to recognize the consistency of respondents' responses to all the queries in this research and measure the ideas in terms of their association with one another. Cronbach's alpha was utilised to assess the reliability of questions for each variable. A value of Cronbach's alpha above 0.60 has been considered reliable by Nunnally (1978). The strength of reliability is measured based on procedures given by Hair et al. (2007) and the details of *Rule of Thumb* for Cronbach's Alpha are as below in table 4.10.

Table 4.10

The Cronbach's Alpha Value (Hair et al. 2007)

Alpha	Strength
<0.6	Weak (Not Acceptable)
0.6 - <0.7	Moderate
0.7 - <0.8	Good
0.8 - <0.9	Very Good
0.9	Excellent

In this research, the reliability test focuses on the important variables that use Likert scale point in section B, C, D and E of the questionnaire. The results of the reliability test for each section are as follows:

Table 4.11

Reliability Test for each variable

Reliability analysis		
Variable	No. of item	Cronbach's Alpha
Student Attributes	9	0.785
Program Characteristics	14	0.809
Perceived Stress	10	0.680
Social Support	12	0.684
Intention-To-Complete DBA	3	0.765

Table 4.11 shows the results of the reliability test for Student Attributes, Program Characteristics, Perceived Stress, Social Support and Intention-To-Complete DBA variable. The strength of reliability for Student Attributes was 0.785 (Moderate), Program Characteristics was 0.809 (Very Good), Perceived Stress was 0.680 (Moderate), Social Support was 0.687 (Moderate) and Intention-To-Complete DBA was 0.765 (Good). Since all the items in this section have Cronbach's Alpha values greater than 0.60, their level of reliability is acceptable.

4.8 Correlation Test

A Pearson correlation matrix was conducted to see direction, strength and significance of relationships among all variables. Correlation could vary between -1.0 or +1.0 and it is significant to distinguish if any correlation found among two variables is

substantial or not, that is, whether it happened exclusively by coincidental or if there is a high likelihood of its real presence (Sekaran & Bougie, 2010). This research attempted to recognize the associations, if any, amongst the predictors of independent variables and the dependent variable. To identify the association amongst the variables, Pallant (2005) recommended that when correlation value was 0, it shows that there was no association (either positive or negative). See table 4.12.

Table 4.12

Correlation matrix of study variables

Variable	<i>ITC</i>	<i>SA</i>	<i>PC</i>	<i>PSS</i>	<i>SSP</i>
Intention to complete (ITC) Student attributes (SA) Program Characteristics (PC) Perceived Stress (PSS) Social Support (SSP)	1	0.302**	0.159**	0.115(NS)	0.065(NS)
		1	0.251**	0.352**	0.064(NS)
			1	0.262**	0.272**
				1	
					1

**Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (1 tailed)

NS - Not significant

4.9 Regression Analysis

A multiple regression analysis was performed with the purpose of examining the research model and its proposed hypotheses. This statistical dependent (criterion) variable and several independent (predictors) variables might be found in the underlying research model (Hair et al., 2010). Multiple regression referred to a regression model in which the fitted value of the response variable Y was a function of the values of one or more predictor (X) variables (Diamantopoulos & Schlegelmilch, 2000). The most common form of multiple regression was multiple linear regression, a linear regression model with more than one X variable. The regression coefficients (or β coefficients) represents the independent contributions of each independent variable to the prediction of the dependent variable. In the regression equation, the value β_0 refers to the intercept or constant term. In the case of complete absence of the independent variable, the intercept represented a predictive value but this was a rare situation.

The purpose of the multiple linear regressions was to estimate the coefficients of the regression equation. The (β) value provides a useful interpretation of the relationship between independent and dependent variables. The (β) value, which may be either positive or negative, indicates the amount of increase or decrease in a dependent variable for one unit of difference in the independent variable. The p value is also an important pointer in the regression analysis. The p value matching to each coefficient

of estimate refers to the level of import of that independent variable and as to whether the p value of the independent variable had a important association with the dependent variable. In addition, the regression output delivers the correlation coefficient (r), coefficient of determination (R^2), and adjusted coefficient of determination (adjusted R), both of which specify how well an independent variable forecasts the dependent variable. The coefficient of determination (R^2) was the measure of the amount of the variance of the dependent variable about its mean that was clarified by the predictor (Hair et al., 2010). The (F) value is a principle to assess the complete practicality of the regression model in analyzing, predicting, or explaining the variation in the dependent variable (Sekaran, Bougie, 2010). The multiple regression analysis was used to test the hypotheses. The purpose of the regression analysis was to relate the dependent variable to a set of independent variables. To determine the relationships among the variables, β was very important as it compared the contribution of each independent variable. In this study, the relationship is statistically significant if the value of F is larger than 0.05 (Prob >F) which is the level of significance.

Regression analysis was performed to analyze the difference amongst the dependent and the independent variables, and in the degree to which dependent variables are described (or influenced) by the independent variables. In this analysis, the enter method technique was used. In the enter method technique all the determinants of the independent variables are entered in a single step. The purpose is to check any collinearity problem. Typically, Y is entered in the dependent box, and X1, X2 and X3 in the independent box. In the regression analysis, attention is given to the subsequent measures in the output: (Adjusted) R^2 . It shows us the variance in the

dependent variable is described by the independent variables in the model. For the Adjusted R^2 , but since the latter is more conventional estimates it is desirable to choose Adjusted R^2 . From the F-value, the result predicts whether the proportion of variance described by the model is significant. In other words, is whether the (Adj) R^2 is significant, if the model has enough explanatory power to be valuable. If the F-value is not significant, that means it makes no sense to continue the analysis.

The Beta can be compared to the correlation coefficient, and tells us how strong the relationship between the independent and the dependent variables are, and what direction it has (positive or negative). Typically, Beta values will lie between -1 and 1, and the most important thing here is whether the Beta value is significant ($p < 0.005$) or p-value is smaller than alpha value.

4.9.1 Direct Hypotheses Testing

Depicted in Table 4.13 are the statistical test results of the analysis testing the relationship between the independent variables as the determinant of Intention-to-complete DBA as the dependent variable of this study. Firstly, a regression analysis was conducted to test hypothesis H1 to hypothesis H4 and observe all the relationships between the independent and the dependent variable under study. The hypotheses are:

- H1: Student attributes is directly related to intention-to-complete DBA degree.
- H2: Social support is directly related to intention-to-complete DBA degree
- H3: Program characteristics is directly related to intention-to-complete DBA
- H4: Perceived stress is directly related to intention-to-complete DBA.

a. Testing Hypotheses 1

From the statistical results in table 4.13, the regression coefficient and determination for student attributes were ($\beta = 0.302$, $t = 6.413$, $F = 41.186$, $R^2 = 0.091$, $p < 0.001$). The statistical test results showed there was a significant relationship between Student Attributes and Intention to complete DBA. Thus, H1 was supported.

b. Testing Hypothesis 2

Hypothesis 2: Independent variable social support as determinant of Intention to complete DBA was also observed for statistical significance. From the statistical result, the regression coefficient and determination for student social support were ($\beta = 0.182$, $t = 2.342$, $F = 7.853$, $R^2 = 0.030$, $p < 0.01$). The test results showed there were significant relationship between social support and Intention-to-complete DBA. Thus, H2 was supported.

c. Testing Hypothesis 3

Hypothesis 3: Independent variable Program Characteristics as determinant of Intention to complete DBA was also observed for statistical significance. From the statistical result, the regression coefficient and determination for perceived usefulness were ($\beta = 0.159$, $t = 3.054$, $F = 8.232$, $R^2 = 0.025$, $p < 0.01$). The test results showed there was a significant relationship between Program Characteristics and Intention-to-complete DBA. Thus, H3 was supported.

d. Testing Hypothesis 4

Hypothesis 4: Independent variable Perceived Stress as determinant of Intention to complete DBA was also observed for statistical significance. From the statistical result, the regression coefficient and determination for perceived usefulness were ($\beta = 0.115$, $t = 10.188$, $F = 1.541$, $R^2 = 0.013$, $p > 0.05$). The test results showed there was no significant relationship between Perceived Stress and Intention-to-complete DBA. Thus, H4 was not supported.

Table 4.13

Summary of Direct Effect Testing using Regression analysis

Variables	Standardized co-efficient Beta	t	R2	F	Sig
Student	0.302	6.483	0.091	41.186	0.001**
Attributes					
Social	0.182	2.342	0.030	7.583	0.01**
Support					
Program	0.159	3.054	0.025	8.232	0.01**
Characteristics					
Perceived	0.115	10.188	0.013	1.541	Not
Stress					Significant

4.9.2 Moderation Hypothesis testing

Hierarchical multiple regression was performed to examine the moderating effect of program characteristics environment on the relationships between student attributes, social support and perceived towards intention-to-complete DBA. Several researchers such as Baron and Kenny (1986) and Frazier et al., (2004) have suggested hierarchical regression as the technique for analysing the moderating effect of a variable. Hierarchical regression is also known as sequential regression as variables are entered in steps or blocks (Pallant, 2011). Similarly, Baron and Kenny (1986) also suggested that hierarchical regression analysis is performed in several blocks. In the first block independent variables and dependent variable were entered. In the second block, the moderating variable was included to assess their predictive power towards dependent variable. In the third block interaction terms were entered. For the moderator effect to be present, there should be an increase in a significant R^2 square with a significant F-change value (Tabachnick & Fidel, 2007).

a. Testing Hypothesis 5

This study also involves investigating the moderating effect of program characteristics towards student attributes. This is described in the hypothesis below:

H5: Program characteristics moderate the relationship between student attributes and intention-to-complete DBA.

Step 1 is to test whether the student attributes (predictor) is related to the intention-to-complete (outcome). The total variance ($R^2 = 0.091$) indicated that the student attributes affects the intention-to-complete significantly ($p < 0.001$). Therefore, this step established an effect to be moderated as suggested in Step 1 by Baron and Kenny (1986).

Step 2 is to add moderating variable (program characteristics) inside the existing regression analysis. The total variance improved ($R^2 = 0.120$) with strong significance ($p < 0.001$).

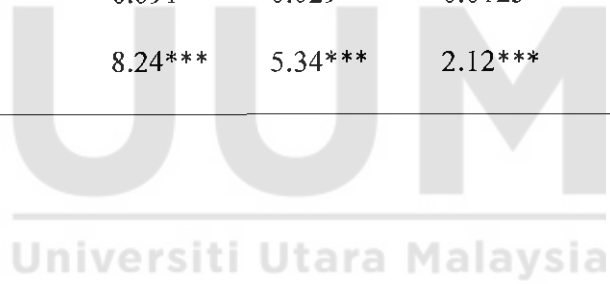
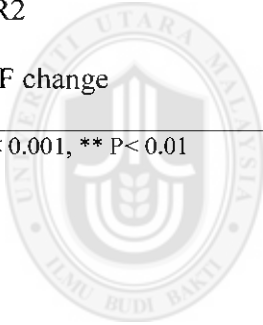
Step 3 is to enter the interaction terms, which resulted in additional of $R^2 = 0.0125$ with significance ($p < 0.001$). This showed the program characteristics do moderate the effects of student attributes. Hypothesis 5 is supported. See table 4.14.

Table 4.14

Moderation Test Results

Variable	Step 1	Step 2	Step 3
Intention-to-stay	0.302***	0.327**	0.353**
Student attributes			
Moderator Variable		0.159**	0.186**
Program Characteristics			
Interaction Terms			
Student attitudes X Program Characteristics			0.522***
R2	0.091	0.120	0.1325
△ R2	0.091	0.029	0.0125
△ F change	8.24***	5.34***	2.12***

*** P<0.001, ** P<0.01



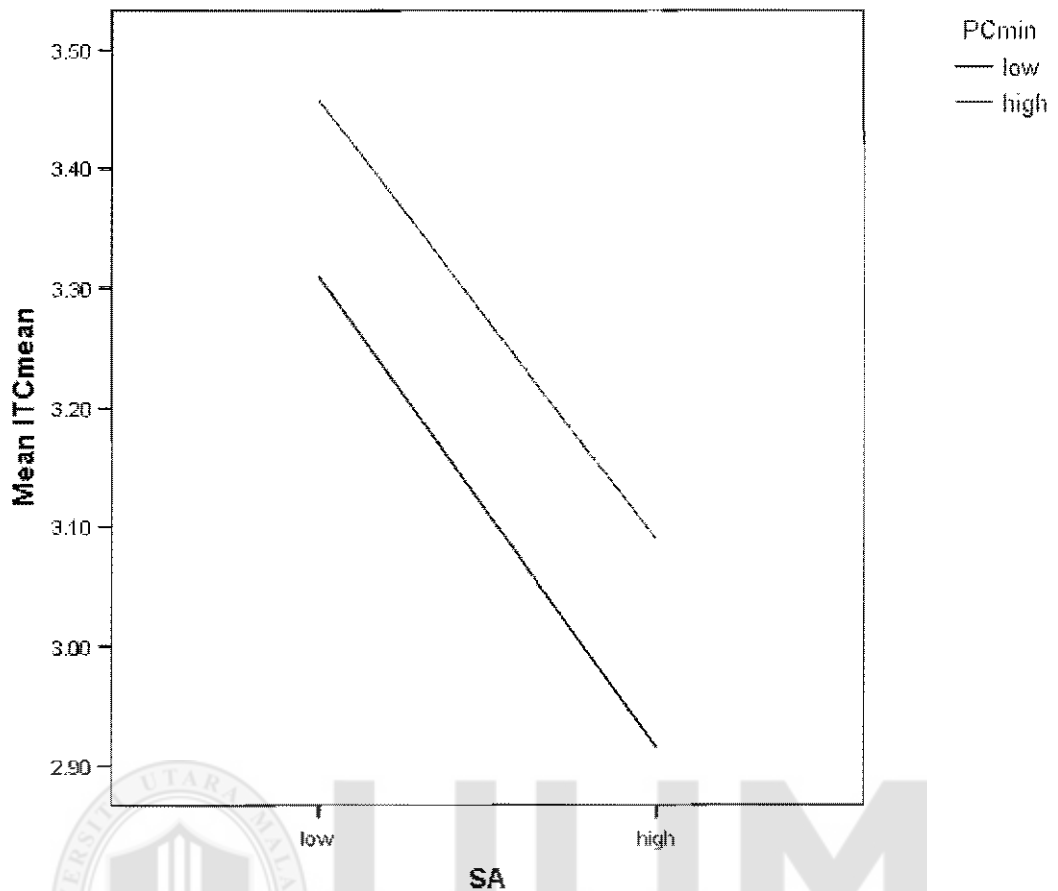


Figure 4.3 Interaction Effects between Student Attributes and Intention to Complete DBA with Moderating Variable of Program Characteristics

As shown in figure 4.3 above, program characteristics significantly moderated the relationship between student attributes and intention-to-complete. Figure 4.3 shows that the relationship between student attributes and program characteristics are inversely related. Students with low attributes and high satisfaction with program characteristics have stronger intention-to-complete their DBA. Students who have high attributes and low satisfaction with program characteristics have weaker intention-to-complete DBA.

b. Testing Hypothesis 6

This study also involves investigating the moderating effect of program characteristics towards social support. This is described in the hypothesis below:

H6: Program characteristics moderate the relationship between social support and intention-to-complete DBA.

Step 1 is to test whether the social support (predictor) is related to the intention-to-complete (outcome). The total variance ($R^2 = 0.030$) indicated that the social support affects the intention-to-complete significantly ($p < 0.01$). Therefore, this step established an effect to be moderated as suggested in Step 1 by Baron and Kenny (1986).

Step 2 is to add moderating variable (program characteristics) inside the existing regression analysis. The total variance improved ($R^2 = 0.045$) and significance was obtained at $p < 0.01$.

Step 3 is to enter the interaction terms, which resulted in additional of $R^2 = 0.048$ but there was no significance ($p > 0.05$). This showed the program characteristics do not moderate the effects of student attributes. Hypothesis 6 is not supported.

c. Testing Hypothesis 7

Finally, the study also investigated the moderating effect of program characteristics towards perceived stress. This is described in the hypothesis below:

H8: Program characteristics moderate the relationship between perceived stress and intention-to-complete DBA.

Step 1 is to test whether the perceived stress (predictor) is related to the intention-to-complete (outcome). The results were not significant indicating a non-influence on the part of perceived stress. This violates the 3 step protocol for moderation and further steps were not necessary. Program characteristics do not moderate the relationship between perceived stress and intention to complete DBA. Thus H7 is not supported. See table 4.15 summary of hypothesis testing.

Table 4.15

Summary of Hypothesis Testing

No	Research Hypothesis	Finding
H1	H1: Student attributes is directly related to intention-to-complete DBA degree.	Supported
H2	H2: Social support is directly related to intention-to-complete DBA degree Program characteristics is directly related	Supported

H3	to intention-to-complete DBA	Supported
H4	H3: Perceived stress is directly related to intention-to-complete DBA.	Not Supported
H5	Program Characteristics moderates the relationship between student attributes and intention-to-complete DBA.	Supported
H6	Program characteristics moderates the relationship between social support and intention-to-complete DBA	Not Supported
H7	Program characteristics moderates the relationship between perceived stress and intention-to-complete DBA	Not Supported

4.10 Summary

As a summary, the findings of this research were presented in this chapter. The data screening was performed and the data was cleaned with a low level of biasness. The majority of the respondents was from the semester 3 to 5 and was middle aged. Then, factor analysis was conducted and all the study variables fulfilled validity criterion. All the study variables also fulfilled the reliability measurements by Nunnaly 1980. After descriptive tests were done, correlation test and regression tests were done to answer the hypotheses questions. Several of the findings under Pearson correlation

were as expected and concurrent with previous findings. The multiple regression results showed that the predictive factors of the independent variables contributed to the intention-to-complete DBA, except for perceived stress. Subsequently, no moderating relationships were found with the perceived stress and also with social support as it did not fulfill the requirements of Baron and Kenny 1986. However, there was a moderation was found between program characteristics and student attributes towards intention-to-complete DBA. The findings in this study were interesting as it is the first of its kind to be conducted in Malaysia. Further discussion and conclusion in the next chapter is provided on the elaboration of the research findings and their implications.



CHAPTER FIVE

DISCUSSIONS AND CONCLUSION

5.1 Introduction

In this chapter, the overviews of the findings are elaborated as discussed in chapter 4. Under section 5.2, the study would revisit the objectives and purpose of the whole study. Thereafter in section 5.3 an overall discussion of the outcomes is elaborated. In section 5.4 there are suggestions on recommendations for future studies. Next, in section 5.5 the contributions of the study are presented. Section 5.6 indicated the limitations of the study followed by section 5.7 which would bring upon suggestion for future research. Finally, section 5.8 is the conclusion of the study.

5.2 Overview of Study

This study has tested the elements influencing intention-to-complete DBA among DBA students in public universities. Study respondents were requested to examine the factors affecting the doctoral completion, particularly student attributes and program characteristics. They were also evaluated through factors such as social support and perceived stress in their graduate life and to the degree it impacted completion. The study also sought to determine the moderating effect of program characteristics towards the relationships between independent predictors and dependent variables. This study aimed to provide a holistic view of predictors influencing intention-to-complete DBA. This research uses sample of DBA students from 4 public universities, namely, University Sains Malaysia, University Kebangsaan Malaysia,

University Utara Malaysia and International Islamic University Malaysia. The unit of analysis was DBA students who have joined at least one semester in a DBA program as respondents for the study questionnaire. Sample population calculation indicated a minimum sample of 260 was adequate (Krejcie & Morgan, 1970) and to accommodate for an acceptable response rate, around 750 questionnaires were distributed. The questionnaires were distributed through the student's email address between the duration of June 2015 to September 2015. The number of questionnaires retrieved were 441 making the response rate at 58.8%. From the 441 collected responses, only 413 were usable for analysis making a response rate of 55.1%.

5.3 Findings and Discussion

The subsequent section elaborates the results in corresponding to the study questions and hypothesis proposed for this research.

Research question 1: Is DBA student attributes directly related to intention-to-complete DBA?

The first study question pursued to determine the impact of student attributes towards intention-to-complete DBA. This study question derived the basis for Hypothesis 1. Student attributes is significantly related to intention-to-complete DBA. To analyze the relationship, a regression analysis was utilized stringently. According to the regression results and the hypothesis, student attributes ($\beta = 0.302$, $t = 6.413$, $F = 41.186$, $R^2 = 0.091$, $p < 0.001$) had a significant impact on student's intention-to-complete DBA. Student attributes plays a major role in determining doctoral success.

The variable was composed of 4 main components which were Financial Support, Disillusionment, Family Commitments and Work commitment and Employment Status Change After Comprehensive Exams. All these groups fully correlated with the intention-to-complete DBA therefore student's attribute and individual commitments play a key role in shaping the student's accomplishment in the doctoral field. Based on Brailsford (2010), student attribute is the main determinant of the spirit required to finish up the doctoral degree. Balancing the pressure of postgraduate studies along with domestic responsibilities as well as income generation burden was at times too demanding for individual students. Wasburn-Moses (2008) stated that "doctoral students are less content in managing work and family with their overall assignments" (p. 265). Additionally, family commitments are a major source of pressure especially for mature students who are in the DBA program (Smith et al., 2006), leading to elevated levels of stress. Many students are forced to set aside their DBA commitments due to family and domestic demands. These demands also come in the form of financial insecurity and increase in cost of livings. These factors will again force students to leave the DBA program and concentrate on increasing their income leading to non-completion. In a survey of departed students, Lovitts (2001) found that 70% cited personal reasons as the main reason for departure from doctoral programs. Furthermore, this study also showed that disillusionment, another subset of student attributes, to influence intention-to-complete DBA. Personal motivation and drive to succeed are very essential to completion of DBA degree (Grover, 2006). Studies have continuously shown that student who have high discipline, motivation and persistence are more likely to succeed in DBA programs as opposed to disillusioned candidates (Hoskins & Goldberg, 2005). Such attributes are normally associated with achievement, desire to succeed, ability to withstand failure and to be constantly

positive. Indeed, student attributes are important predictors of intention-to-complete DBA.

This study is also consistent with the Malaysian scenario as suggested by Mathialagan and Mahmood (2014). The study emphasizes Malaysian DBA student attitudes are important predictors of DBA completion. Students should seek to learn as much as possible about the doctoral program they propose to enter, and ensure they have the data necessary to make an informed decision about pursuing a doctorate. Students' selection criteria at the admission should also be redesigned in such a way to measure the students' ability, hardworking nature and their interest towards completion of the program. This measurement program should be shared with the student as to ensure the student knows where and how to prepare himself for graduate studies.

Research Question 2: Is DBA student social support directly related to intention-to-complete DBA?

The next research question sought to determine the impact of student social support towards intention-to-complete DBA. Hypothesis 2 proposed that student social support significantly related with intention-to-complete DBA. The hypothesis was supported through the regression analysis ($\beta = 0.182$, $t = 2.342$, $F = 7.853$, $R^2 = 0.030$, $p < 0.01$). Student social support significantly influenced intention-to-complete DBA. The main components in this variable were socialization and graduate campus organizations.

Social assimilation occurs in postgraduate student journey through learning platforms and shared knowledge transfer around the graduate community. This provides the student with the prospect of nurturing the attainment of wisdom and expertise while interacting with peers in the graduate community (Tinto,1997, p.610). Social assimilation and support are important predictors of success in the doctoral journey. Acceptance into the graduate community provides an informal support for the candidate and reassures the student that they are not alone in this journey. Loneliness is a very cruel impediment of the doctoral process (Rovai, 2002).

Graduate collegiality is an important element of social assimilation and support (Tinto, 1997). Assistance and guidance from peers have time and again shown remarkable progress in doctoral attainment. Research suggests that “a peer mentoring program that matches students with those who have had similar experiences may assist students in understanding and successfully navigating their own experience” (Gardner, 2008, p. 135). Moreover, through fostering socialization and integration with peers, cohorts serve to counter doubts and isolation (Jimenez, 2010). Candidate in the doctoral journey encounter isolation at many instance (more so during dissertation phase) that renders hopelessness. This social illness can be cured through adequate social assimilation and support (de Valero, 2001).

In Malaysia, doctoral associations are not very active and most of the time, its combined together as a postgraduate organization with the masters postgraduate scholars being the prominent active participants. Most of the time, Malaysian doctoral students are seen as separate and lone voyagers who are not part of a community (Mathialagan & Mahmood, 2014). Not surprisingly, it is revealed that majority of

doctoral students are not involved in graduate campus organizations universities and are seen to be alone (MOHE., 2010). . This again shows the importance of social assimilation and support for Malaysian doctoral scholars.

Research question 3: Is DBA perceived stress directly related to intention-to-complete DBA?

The subsequent research question explored the relationship between perceived stress and intention-to-complete DBA. Unfortunately, there was no significant relationship found between perceived stress and intention-to-complete DBA. This shows that perceived stress is not really a predictor of intention-to-complete DBA among DBA students in Malaysia. Understandably, this can be due to the fact perceived stress plays a major role in undergraduate studies as opposed to graduate students. According to Lazarus and Folkman (1984), a person's response towards stress depends very much on his and her capability to handle stress. Individuals tend to use a variety of coping mechanisms and strategies in order to deal with stressful life events. Within these three strategies were behaviour's that made students use their cognitive abilities, such as problem-solving skills and implementing active coping skills, to deal with stress. It was identified that mature students had strong problem-focused coping skills that allowed them to reduce perceived stress and do better in academic programs. It also included implementing some type of physical activity, confronting problems, changing their environment, and managing stress by actively talking or identifying support systems in the form of a person to talk the problem out with or reflecting on the issue. Thus, doctoral and graduate students are also less likely to perceive that stress has an impact on their academic performance as compared to

undergraduate students (ACHA, 2014). DBA student population consists mainly of mature students above the age of 30 who would have a better grasp of handling perceived stress as opposed to young students. This enables them to have fewer concerns on perceived stress factors as they are well versed with adequate coping mechanisms.

Research question 4: Does DBA program characteristic moderate the effect of student attributes on intention-to-complete DBA?

The next research question sought to ascertain the impact of program characteristics as a moderator between student attributes and intention-to-complete DBA. Hypothesis 5 postulated that program characteristics as a moderator for student attributes significantly related with intention-to-complete DBA. A regression analysis was conducted to evaluate the aforementioned relationship. Based on the regression results and confirming the hypothesis, program characteristics moderate's student attributes significantly towards intention-to-complete DBA. Program characteristics is an important moderator of student attributes. The student attributes variable outlines the possible problematic characteristics that may impede intention-to-complete DBA. The problem characteristic variable outlines student satisfaction in terms of faculty and departmental characteristics. The results show that students with low problematic characteristics and who have high satisfaction with program characteristics are more likely to have a stronger intention to complete DBA. A plausible explanation is that when program characteristics are highly satisfactory, students receive adequate assistance and help from departmental staffs and the curriculum and quality of materials are helping students to achieve better. An important element to consider

here is that DBA students are mature adults pursuing a doctoral degree for advancement of their career while balancing their work and domestic responsibilities. These students tend to excel more when their program caters to their demographics by being flexible and relevant with real life business case studies that they can relate with easily (Hoskins & Goldberg, 2005). Furthermore, doctoral programs are normally divided into coursework and dissertation requirements. The coursework part is generally familiar for students as they have encountered similar academic structures in their undergraduate studies but the dissertation will be quite new to them especially the rigorous process involved in conducting a proper research study (West et al., 2011). Completion of doctoral degree is high when programs are able recognize the needs of the mature students and also the particular challenges that occur when a student transitions from coursework to dissertation phase (de Valero, 2001; Jimenez, 2010).

Subsequently, a very important aspect of DBA is supervisor relationship. Student satisfaction with supervisor relationship is a strong moderator of student attributes that favour in completing or dropping DBA degree. This finding supports that doctoral student acquiring essential information regarding the doctoral process from faculty increases the likelihood of their acquiring the doctorate. This research found that there is a paramount connection between student's perceptions of how faculty helped them to understand the dissertation requirements This can be seen when there is a proper program charter being drawn out with details within subsets of course or classes that are being offered for the students; the students therefore are more comfortable in their pursuit of DBA completion. When there is proper guidelines and structure being laid out, access to information becomes more easily and readily

available rather than beating around the bush for a simple enquiry. There are times, the course structure and supervisor relationship is not well defined which leads to uneven expectations that may occur indefinitely which brings upon students having to undergo motivational chaos, emotional turmoil and distress in their journey to complete their DBA program. Thus, moderation of student attributes by program characteristics towards intention-to-complete is an important element in understanding DBA completion.

Research questions 5: Do DBA program characteristics moderate the effect of social support on intention-to-complete DBA?

This research question sought to ascertain the moderation capacity of program characteristics on social support towards intention-to-complete DBA. Unfortunately, there was no moderation detected between all the variables concerned. This could be because DBA program characteristics does not deter or influence social support from friends and family. Social support is a stand-alone variable which is influenced by external factors rather than institutional characteristics. This could be reason for the non-significance in moderation.

Research Question 6: Does DBA program characteristics moderate the relationship of perceived stress on intention-to-complete DBA?

This research question was found to be insignificant as perceived stress did not impact completion of intention-to-complete. As discussed in the earlier, DBA students were mature students who would have the capacity to manage their stress adequately as

opposed to undergraduate students. As perceived stress is insignificant in predicting intention-to-complete DBA, moderation analyses could not take place as well and this research question was found to be irrelevant.

5.4 Contributions

5.4.1 Theoretical contribution

The research framework that is derived from the TPB emphasizes the importance of attitude, subjective norms and perceived behavioral control towards doctoral completion in Malaysia. This study analytically supports the TPB by to offer some contributions to the existing literature in to body of knowledge. Firstly, this study extends new construct namely Program Characteristics as a moderator and Social Support as predictor into the model. The results show that Program Characteristics and Social Support are important determinants of intention-to-complete DBA. In fact, this is the first to utilize moderator analysis in doctoral completion in Malaysia. This suggests that the inclusion of program characteristics and social support as one of the determinants of acceptance of intention to complete DBA is appropriate. Accordingly, it is recommended that moderator roles are considered when studying doctoral completion in the future. Secondly, the results reveal that Attitude, Perceived Behavioral Control, and Subjective Norm have significant effects on Behavioral Intention to use complete DBA.

This study also recognized the efforts undertaken by previous researchers in adopting profound theories from fields such as social psychology and applied in the field of

doctoral completion indirectly. Thirdly, this study decomposes the main beliefs (i.e. Perceived Behavioral Control, Attitude, Subjective Norm, Perceived Risk and Perceived Trust) into multi-dimensional constructs. The results of this study can be used for future studies in doctoral completion rates by understanding the influencing factors in the intention to complete DBA. Fourthly, to the knowledge of the researchers, this study is one of the first to use the TPB in determining the intention-to-complete DBA in Malaysia. In addition, using the TPB in other cultural settings such as Malaysia has also contributed towards expanding the existing body of knowledge related to this theory. Finally, this study contributes to the existing literature on doctoral completion, on the behavior of the actual use by providing insights from the perspective of Malaysia.

5.4.2 Contributions to Policy

The study has shown that student attributes, program characteristics, social support and program characteristics as moderator for student attributes play a major role in predicting intention-to-complete DBA. To ensure smooth completion of the DBA program, certain policy changes needs to made. Firstly, a separate orientation program is needed for students embarking on DBA program. This is to ensure that the candidates understand fully the rigidity and hard work needed to attain this degree. Currently, many DBA students are given a joint orientation with the Masters student on the day of registration which focuses more on fee structure, subject coding, disciplinary issue and other university related substances rather than an introduction to DBA. False impression among students regarding their doctoral journey is a common phenomenon around the world but substituting an orientation program

worsens the problem even further. The student needs to understand the program requirements vividly from day 1. This will form the basis for the right motivation and attitude towards intention-to-complete DBA.

Secondly, a harmonious approach is needed in the DBA program. The influence of program characteristics shown in the study could be a guide to important policy opportunities for doctoral programs. Doctoral programs should identify opportunities to create research based assignments to students to acclimatize dissertation phase. Students should also be made aware of the responsibilities of supervisor and the student themselves during the dissertation. The importance of meticulous planning and consideration selecting a dissertation supervisor in the early stages of a doctoral program should be emphasized thoroughly. Strong assistance should be given to students through a matching system where a supervisor's research interest and guidance style can be illustrated for student to choose from. This will allow students to choose supervisors whom they are comfortable with and they are able to complete their DBA journey successfully. The program should also hold supervisors and students accountable for any unnecessary delay in their doctoral journey. Such initiatives will ensure that students and supervisors are both committed to begin and complete the doctoral journey in satisfying manner.

Furthermore, the dissertation phase is whole new process that working adults are normally not familiar with. As DBA is a professional doctorate with the rigidity of a PhD, the mature students will have a hard time grasping certain concepts especially in data analysis and thesis writing part. In fact, some even struggle to develop a strong proposal for their defense candidature. Again, these components can be assimilated in

coursework and in graduate campus association as a way to increase exposure to such concepts in the doctoral journey. The more experience and coverage a student obtains before his dissertation phase, the more prepared he is to the demands of dissertation. SPSS workshops that introduce data cleaning, reliability and validity measures in simple easy to understand methods will be a welcome encouragement for DBA students. Thesis writing workshops that show how logical arguments should be constructed are also very important arsenal for students preparing for the dissertation battle. These seminars and workshops should be free and not be charged extra as some universities are currently doing as these are part of the program characteristics.

5.4.3 Contributions to Practice

The study has shown that student attributes, program characteristics, social support play a major role in predicting intention-to-complete DBA. Students, program directors, faculty lecturers and social support measures all play a role in ensuring the appropriate success of DBA studies. Among the initiative that should be undertaken by the students are:

Student Attributes

Pre- course preparation

Students should endeavor to investigate the requirements of the doctoral program before embarking on the doctoral journey. Very often students are coming in with misguided conceptions of the actual tenacity of the DBA program. Clear information in regard to both coursework and the research process should be obtained by

prospective students from varsities involved. Perspectives of both lecturers and current students should also be obtained to get an outline of the whole process involved in the DBA programs. Current challenges by existing students will give a clear picture of the commitment needed to undertake the DBA program.

Self-assessment of DBA commitment and obligations

After obtaining the necessary information, prospective students should conduct a self-assessment analysis with a completion target. Prospective students would know that DBA would require an average of 8-9 hours a week of their available time after obtaining the necessary information. They should then cross check this commitment with their current schedule and obligations to determine whether the necessary time allocation can be done for the DBA program for the next 2-3 years. This would then prepare the student mentally and emotionally to start and complete the DBA program within the stipulated timeline.

The checklist should also contain the tangible and intangible cost of DBA to ensure the financial commitment can be managed by the student. Apart from tuition fees, cost for project assignments and consultation along with the travelling expenses for supervisory consultations should all be assessed to ensure that the student has the ability to support DBA studies without any financial aid. Student should also prepare themselves for the impact of employment change on their DBA studies.

Student-supervisor relationships

Universities should provide more platforms for DBA students to be able to communicate with potential supervisors. A huge majority of DBA students are part-timers and working professionally who are not in campus most of the time. Universities should encourage faculty to be responsive to student communications and needs. Responding to student communications instills a feeling of initial trust by the student to the supervisor which eventually builds a good collaboration. Faculty should also emphasize to the students to focus on their research component early in their DBA program and outline their expectations of students. This will give a clear picture to the students of the dedication needed for the dissertation phase which will eventually avoid any supervisor-student conflicts.

Supervisor and students have to set strict milestones on their roadmap to dissertation completion. This roadmap should be a consensus between the student and supervisor on their time and resource commitment to the DBA dissertation. Student should constantly update their supervisors and ensure that each stage of dissertation progress is reported. Supervisor should also follow up and monitor the progress of their students and to be cautious of performance letdown.

Social Support

Graduate Campus organization

Graduate campus organizations that are specific for DBA should be implemented in varsities offering DBA programs. This organization should provide opportunities for socialization among faculty and peers. This organization should organize activities such as forums for students to get to know each other. This forum should be a non-

formal event that resembles graduate campus socialization. During this forum, coursework difficulties, research design, previous experiences should be shared by the students among themselves. Students also get opportunities to interact with successful graduates who have completed the DBA program and find out their strategies. This process of socialization will instill motivation and support among the students and will ensure production in graduate scholars. The organization should also have a separate bureau to actively engage with DBA coordinators. A dedicated website for students to give feedback or complaints on the DBA program. This information gathering process should be presented in to the DBA coordinator on a monthly interval to achieve speedy action.

Another key policy change that should be constituted to improve DBA completion rate would be to improve existing student manual and orientation programs to contain a section for students and one for professors, detailing expectations for the supervisor's role. This would be extremely helpful as many of the DBA students are working professionals who very much isolated from the academic world. Currently, students are given a joint orientation with Masters student on the day of registration which focuses more on fee structure, subject coding, disciplinary issue and other university related substances rather than an introduction to DBA. False impression among students regarding their doctoral journey is a common phenomenon around the world but substituting an orientation program worsens the problem even further. This will aid in the integration of the students into the DBA community.

Following the findings of this study, universities should examine institutional policies that might affect attrition and completion. Revising or replacing ineffective policies or

implementing new communication instruments might mean the difference between completion and attrition for a student. Some of the measures that can be taken are:

5.5 Limitation of study

This study had to face several limitations considered to be normal as many other empirical studies. Firstly, the study gathered data from public institutions within Malaysia and did not consider the views of students from private institutions offering DBA. Limiting the sample to only public universities causes the study to ignore different factors that could influence students in private universities which can impede the generalization efforts of this study.

Secondly, the study design and data collection procedure in this study has certain limitations within them. This study employed a cross sectional design to achieve its study objectives. Cross sectional data can provide a snapshot of one point in time but does not provide a data on how responses evolve as the environments changes. Cross sectional data therefore limits interferences with regards to causality between the independent variables and the dependent variables. Additionally, the data collection procedure which uses online methods to reach study population can reduce the capacity of the researcher to adequately control the survey conditions and reduce confounding factors. For instance, although the survey was delivered specifically to the student's email address, there are possibilities it could have been answered by others. This has a possible impact on the conclusions presented in the study.

Finally, this study employed a quantitative methodology which does not give an opportunity to explore opinions of respondents on alternative factors that may encourage or impede their intention-to-complete DBA.

Despite these limitations, this study is a novel attempt to investigate the variables of influence towards intention-to-complete DBA among doctoral students. The findings reveal the existence of a positive relationship between student attributes, social support and program characteristics.

5.6 Suggestions for Future Research

In the process of constructing and executing this study, a number of research possibilities arose which shows new areas for improvement and research development for future studies. Upcoming studies can utilize a different doctoral population in a different field, namely the PhD population in Malaysia. Research is very scarce on the factors affecting PhD students in Malaysia. This study can be done in new field such as medicine and engineering and factors promoting or impeding doctoral studies can be explored there as well. Future research may also include a measurement of structural equation modelling in determining the effect of student attribute, program characteristics and social support. Furthermore, there is also a number of other variables that play a role in determining successful doctoral completion. These new variables can be introduced in to this existing model to further clarify DBA completion scenario.

Within this study, there was no analysis at the faculty level. Faculty are singled out for future research because taken together, it is apparent that doctoral degree completion is related to the experiences and interactions that students have with faculty, each other, and the colleges and universities of which they become a part (Bair, 1999). Further study is recommended revolves around faculty because this showed that faculty play a key and vital role in helping students move through the doctoral process. Research could involve identifying best practices that faculty could engage in with students to ensure that they complete their degree. Both quantitative and qualitative research should be conducted from both student and faculty perspectives.

Studies involving students could be conducted to determine from their perspective what type of information they need to ensure doctoral completion. Faculty studies could be conducted to determine their perspective of what type of information they think students need to ensure doctoral completion. The research would attempt to meld the two perspectives to devise a straightforward plan for doctoral student's success. Often faculty expectations differ from students' expectations on what type of information is needed for degree completion. Stallone (2003) indicates that when a positive relationship is absent between doctoral students and faculty progress toward the PhD may be hindered.

A quantifiable research method with SPSS data analysis was used for this study and the survey questionnaire was the only instrument used to collect data. A significant weakness in this strategy is that reliability of the data collected due to the fact that it depended on the respondent's attention to detail when answering the questions. Future

studies should also employ a mixed method approach whereby both quantitative and qualitative methods are utilized. This would entail using a data based strategy as above and an interview based verbal descriptions of characteristics, cases and the setting. Qualitative research usually involves fewer cases investigated in more depth than quantitative research. It would also provide a more comprehensive understanding of interactive and complex relationships among variables in specific contexts. Therefore this method could further develop insights into the realm of doctoral completion.

5.7 Conclusion

Doctoral attrition is a complex issue and that there are a myriad of factors that determine if students will persist or leave prior to completion of doctoral studies. Bair (1999) points out that the circumstances surrounding both attrition and persistence are highly complex, and no single variable explains doctoral student attrition or persistence; rather, several variables are at play in determining attrition or persistence. Jacks, Chubin, Porter, and Connolly (1983) underscored in their narrative study across 18 departments at 15 universities that the phenomena of attrition and doctoral completion are highly complex issues for students. Lovitts (1997) also addresses the many-sided issues of doctoral persistence and attrition by making the point that students who leave normally do not leave for a single reason, but often leave for multiple reasons.

From the results of this research, a number of conclusions emerged concerning DBA completion. Consistent to earlier studies, student attributes, program characteristics

and social support were significant predictors of intention-to-complete DBA. However, perceived stress was not a significant factor for DBA students in Malaysia for doctoral completion. The most interesting finding in this study was the full role of program characteristics in determining DBA completion. Program characteristics can directly impact intention-to-complete while at the same time also moderate the influence of student attribute. This shows that support from supervisor, access to quality materials, early research preparation in coursework and proper guidance in DBA curriculum can be the ultimate determinant of doctoral completion. play a strong role in ensuring DBA completion. Graduate organization and doctoral student clubs are important motivational factors to again ensure DBA completion.

Further research is suggested to explore on modifying program characteristics and creating the ultimate curriculum that can facilitate optimum doctoral completion while not compromising on doctoral quality. DBA program coordinators should consider the implications of providing the structure within doctoral programs that will merge appropriate program characteristics with individual doctoral student characteristics that lead to successful doctoral degree completion.

REFERENCES

- Abedi, J., & Benkin, E. (1987). The effects of students' academic, financial, and demographic variables on time to the doctorate. *Research in Higher Education, 27*, 3-14.
- Anastas W. J.; & Kuerbis, N. A. (2009). Doctoral education in social work: What we know and what we need to know? *Social Work; 54*(1) 71-81.
- Anderson, M., & Swazey, J. P. (1998). The experience of being in graduate school: An overview. In M.S. Anderson (ed.), *The Experience of being in graduate school: An exploration* (Vol. 26, pp. 3-14).
- Ang, R. P., & Huan, V. S. (2006). Relationship between academic stress and suicidal ideation: Testing for depression as a mediator using multiple regression. *Child psychiatry and human development, 37*(2), 133.
- Bair, C. R., Haworth, J. G (1999). Doctoral student attrition and persistence: A Meta-Synthesis of research. *Association for the Study of Higher Education*. San Antonio, TX: University of Northern Iowa.
- Bareham, J., Bournier, T. and Ruggeri-Stevens, G. (2000) "The DBA: what is it for?" *Career Development International*, Vol. 5 No. 7.
- Bartolini A. E. (2009) Measuring perceived dissertation-completion stress factors within school psychology doctoral students. *Dissertation Abstracts International 70*(08A) (University Microfilms No AAT 33-70609).
- Bauer, E.R. (2004). *An examination of the effect of departmental factors on student completion of doctoral requirements*. Unpublished doctoral dissertation, University of Massachusetts Boston. MA.
- Becher, T., & Trowler, P. R. (2001). *Academic tribes and territories: intellectual enquiry and the culture of disciplines* (2nd ed.). Buckingham: The Society for Research into Higher Education & Open University Press.
- Belt, W. T. (1976). Counseling graduate students. *The Graduate Journal, 9*, 193-202.
- Benkin, E. M. (1984). Where have all the doctoral students gone? A study of doctoral student attrition at UCLA (Doctoral dissertation, University of California, Los Angeles, 1984). *Dissertation Abstracts International, 45A*, 2770.
- Bennett, R. (2003). Determinants of undergraduate student drop out rates in a university business studies department. *Journal of Further and Higher Education, 27*(2), 123-141.
- Berelson, B. (1960). *Graduate education in the United States*. New York: McGraw-Hill.

- Boud, D., & Lee, A. (2009). Introduction. Teoksessa D. Boud & A. Lee (toim.) *Changing practices of doctoral education* (pp. 1-9). London: Routledge.
- Bourner, T., Bowden, R & Laing, S. 2001. 'Professional doctorates in England', *Studies in Higher Education*, 26 (1), 65-83.
- Bourner, T., Ruggeri-Stevens, G. and Bareham, J. (2000), "The DBA: form and function", *Education & Training*, Vol. 42 No. 9, pp. 481-95.
- Bowen, W. G., & Rudenstine, N. L. (1992). *In pursuit of the Ph.D.* Princeton, NJ: Princeton University Press.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Cabrera, A. E, A. Nora, and M. B. Castaneda. 1993. College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education* 64 (2): 123-139.
- Campbell, R.B. (1992). A study of the completion and non-completion of the Doctor of Education degree in Educational Leadership at the University of Delaware. *Dissertation Abstract International*, 53(06), 1813A.
- Cohen, S. (1986). Contrasting the hassle scale and the perceived stress scale. *American Psychologist*, 41, 716-719 (comment).
- Cohen, S., & Janicki-Deverts, D. (in press, 2010). Who's stressed? Distributions of psychological stress in the United States in probability samples from 1983, 2006 and 2009. *Journal of Applied Social Psychology*.
- Cohen, S., Kamarck, T., Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4): 385-396.
- Cole, S. (1999). Assessment of differential item functioning in the Perceived Stress Scale-10. *J Epidemiol Community Health*, 53:319-320.
- Colebatch, H.K. (2002). Through a Glass Darkly: policy development on higher degree completions in Australia. *Journal of Higher Education Policy and Management*, 24 (1), 27-35.
- Council of Graduate Schools in the United States. (1977). *The doctor of philosophy degree: A policy statement*. Washington, DC: Author.
- Council of Graduate Schools. (1995). *Research student and supervisor: An approach to good supervisory practice*. Washington, DC: Author.
- Cusworth, S. (2001). *Orientation and retention of counselling PhD students: A qualitative study*. Paper presented at the 109th Annual Conference of the American Psychological Association, San Francisco.

- D'Andrea, L.M. (2002). *Obstacles to completion of the doctoral degree in colleges of education*. Educational Research Quarterly, March.
- de Valero, Y. F. (2001). Departmental factors affecting time-to-degree and completion rates of doctoral students at one land-grant research institution. *Journal of Higher Education*, 72, 341-367.
- Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (2nd ed.). New York: John Wiley & Sons, Inc.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: John Wiley & Sons, Inc.
- Dorn, S. M., & Papalewis, R. (1995). Educators earning their doctorates: Doctoral student perceptions regarding cohesiveness and persistence. *Education*, 116, 305-314.
- Dorn, S.M., & Papalewis, R. (1997). *Improving doctoral student retention*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco
- Elgar, F. (2003). *PhD Completion in Canadian Universities. Final Report*. Halifax, Nova Scotia: Graduate Students Association of Canada.
- Emerson, J. (1998). *An investigation of the characteristics that facilitate or impede completion of inquiry, a nontraditionally organized doctoral program in Educational Administration*. Unpublished doctoral dissertation, Columbia University, New York.
- Extremera, N., A. Durán, et al. (2009). The moderating effect of trait meta-mood and perceived stress on life satisfaction. *Personality and Individual Differences*, 47(2), 116-121.
- Fletcher, E. C. (2009). Exploring the meaning doctoral candidates ascribed to their persistence, and the challenges and barriers they experienced. Paper presented at the 23rd annual Edward F. Hayes Graduate Research Forum at The Ohio State University. Retrieved from <https://kb.osu.edu/dspace/handle/1811/37027>
- Gardner, S. K. (2007). "I heard it through the grapevine": Doctoral student socialization in chemistry and history. *Higher Education*, 54(5), 723-740.
- Gardner, S.K. & Holley, K.A. (2011). "Those invisible barriers are real": The Progression of First-Generation Students Through Doctoral Education. *Equity & Excellence in Education*, 44(1), 77-92.

- Genn, J. M. (2001) Curriculum, environment, climate, quality and change in medical education - a unifying perspective (part I), *Medical Education*, 23(4), 337-344.
- Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. & Throw, M. (1994), 'The new production of knowledge: the dynamics of science and research in contemporary societies', Sage London.
- Gillingham, L., Seneca, J. J., & Taussig, M. K. (1991). The determinants of progress to the doctoral degree. *Research in Higher Education*, 32, 449-468
- Gillis, C. (2007). Leaving Seats Empty: Exploring Student Attrition in an Undergraduate Health Sciences Program. Mount Saint Vincent University.
- Gittings, A. G. (2010). The effect of student attributes and program characteristics on doctoral degree completion. *Dissertation Abstracts International*!rl(08A). (University Microfilms).
- Glatthorn, Allan, Joyner, Randy (2005), *Writing the Winning Theses or Dissertation: A Step by Step Guide*, California: Corwin Press.
- Golde, C. M. (1996). How departmental contextual factors shape doctoral student attrition. Unpublished doctoral dissertation, Stanford University, Palo Alto, CA.
- Golde, C. M. (1998). Beginning graduate school: Explaining first-year doctoral attrition. *New Directions for Higher Education*, 101, 55-64.
- Golde, C. M. (2000). Should I stay or should I go? Student descriptions of the doctoral attrition process. *Review of Higher Education*, 23, 199-227.
- Golde, C. M., & Dore, T. M. (2001). *At cross purposes: What the experiences of today's doctoral students reveal about doctoral education*. Philadelphia: Pew Charitable Trusts.
- Golde, C. M. (2005). The role of the department and discipline on doctoral student attrition: Lessons from four departments. *Journal of Higher Education*, 76, 669-700.
- Gravois, J. (2007). New data offer a rosier picture of Ph.D.-completion rates. *The Chronicle of Higher Education*.
- Greening, D. W., & Turban, D. B. (2000). Corporate Social performance as a competitive advantage in attracting a quality workforce. *Business and Society*, 39(3), 254-280
- Hahs, D. L. (1998, November). *Creating "good" graduate students: A model for success*. Paper presented at the meeting of the Mid-South Educational Research Association, New Orleans

- Hamer, M., G. J. Molloy and E. Stamatakis. (2008). Psychological distress as a risk factor for cardiovascular events: pathophysiological and Behavioral mechanisms, *Journal of the American College of Cardiology*, 52(25), 2156-2162.
- Harding, S. A. (2009). Training For the Viva Examination: A Translation Studies Student Perspective. *The Interpreter and Translator Trainer*, 3(1), 129-142.
- Hirshfield, L. E. (2011). *Authority, expertise, and impression management: Gendered professionalization of chemists in the academy* (The University of Michigan)
- Gardner, S. K. (2009). Conceptualizing success in doctoral education: Perspectives of faculty in seven disciplines. *Review of Higher Education*, 32, 383-406.
- Haksever, A.M. & Manisali, E. (2000). Assessing supervision requirements of PhD students: The case of construction management and engineering in the UK. *European Journal of Engineering Education*, March, 1-8.
- Hatley, R. V., & Fiene, J. R. (1995, April). *Enhancing doctoral student progress and improving dissertation quality: A success scenario*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Hazadiah, M. D, & Jamiah, B. (2006). A qualitative approach to adult learners' understanding of a supportive learning environment: A case study. *Malaysian Journal of University Education*, 1,1. 33-46.
- Hirschy, A. S., Bremer, C. D., & Castellano, M. (2011). Career and Technical Education (CTE) Student Success in Community Colleges. *Community College Review*, 39(3), 296-318.
- Holbrook, A., Bourke, S., Farley, P. & Carmichael, K. (2001). Analysing PhD Examination Reports and the Links Between PhD Candidate History and Examination Outcomes: A Methodology. *Research and Development in Higher Education*, 24. 51-61. Proceedings of the 24th International HERDSA Conference.
- Holdaway, E.A. (1996). Current issues in graduate education. *Journal of Higher Education Policy and Management*, 18 (1), 59-74.
- Hoyle, R.H. (Ed.). (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage.

- Huber, M. T., & Morreale, S. P. (Eds.). (2002). *Disciplinary styles in the scholarship of teaching and learning: Exploring common ground*. Washington, DC: American Association for Higher Education and The Carnegie Foundation for the Advancement of Teaching.
- Huguley, S. (1988). *An investigation of obstacles to completion of the dissertation and of doctoral student attitudes toward the dissertation experience*. Unpublished doctoral dissertation, Pepperdine University, Malibu, CA.
- Ibarra, R. A. (2001) *Beyond affirmative action: reframing the context of higher education* (Madison, WI, University of Wisconsin Press).
- Jacks, P., Chubin, D. E., Porter, A. L., & Connolly, T. (1983). The ABCs of ABDs: A study of incomplete doctorates. *Improving College and University Teaching*, 31(2), 74-83.
- Kadison, R., & DiGeronimo, T. F. (2004). *College of the overwhelmed: The campus mental health crisis and what to do about it*. Jossey-Bass
- Kamler, B., & Thomson, P. (2008). The failure of dissertation advice books: Toward alternative pedagogies for doctoral writing. *Educational Researcher*, 37(8), 507-514.
- Kaplan D 2000 *Structural Equation Modeling: Foundations and Extensions*. Sage, Newbury Park, CA
- Kelley, M. J. M. (2011). *The Role of Self-regulation in Doctoral Students' Status of All But Dissertation* (Doctoral dissertation, Auburn University).
- Kerlin, S.P. (1995). Pursuit of the Ph.D.: "Survival of the Fittest," Or Is It Time for a New Approach?. *Education Policy Analysis Archives*, 3 (16), 1-30.
- Kerlin, S.P. (1995). Surviving the Doctoral Years: Critical Perspectives. *Education Policy Analysis Archives*, 3 (17), 1-32.
- King, S. E., & Chepyator-Thompson, J. R. (1996). Factors affecting the enrolment and persistence of African-American doctoral students. *Physical Educator*, 53, 170-180.
- King, J. E. (2004). *A study of doctoral student-advisor satisfaction: Considering gender and ethnic grouping at a private research university*. Doctoral dissertation, University of Southern California.
- Kittell-Limerick, P. (2005). Perceived barriers to completion of the academic doctorate: A Delphi Stud. *Dissertation Abstracts International* 66(11 A).
- Kline, R.B. (2005). *Principles and practices of structural equation modeling-2nd edition*. New York: The Guilford Press

- Kluever, P. C., L. F., Green, K. L., and Katz, E. L. (1997), Rethinking the dissertation process: Tackling personal and institutional obstacles. *New Directions for Higher Education*. 99.
- Kluever, R. C., Green, K. E., & Katz, E. (1997). *Dissertation completers and non-completers: An analysis of psycho-social variables*. Paper presented at the annual meeting of the American Research Association, Chicago
- Krauss, SE., Ismail IA.,(2010). PhD Students' Experiences of Thesis Supervision in Malaysia: Managing Relationships in the Midst of Institutional Change. *The Qualitative Report* Vol 15(4) 802-822.
- Latona, K. & Browne, M. (2001). Factors Associated with Completion of Research Higher Degrees. *Higher Education Series, Report No.37*, May, Higher Education Division, Department of Education, Training and Youth Affairs, Canberra
- Leadabrand, J. A. (1985). *Doctoral candidate persistence in community and humanresources: A replication of the Pascarella and Terenzini studies based on Tinto's concept*. Unpublished doctoral dissertation, The University of Nebraska-Lincoln, Lincoln.
- Lee, B. (2003). Factors affecting non-completion of doctoral degrees as evidenced by students labeled all but the dissertation (ABD). *Unpublished doctoral dissertation*, Tennessee State University, Nashville.
- Lester S. (2004). Conceptualizing the practitioner doctorate. *Studies in Higher Education* 29 (5), 2004
- Lin, Z., Wenbo, C., & Bing, L. (2005). A Research on College Students' Coping Styles of Psychological Stress [J]. *Psychological Science*, 1, 008.
- Lovitts, B. E. (1996). *Leaving the ivory tower: A sociological analysis of the causes of departure from doctoral study*. Doctoral dissertation, University of Maryland, College Park
- Lovitts, B. E., & Nelson, C. (2000). The hidden crisis in graduate education: Attrition from Ph.D. programs. *Academe*, 86(6):44-50.
- Lovitts, B. E. (2001). *Leaving the ivory tower: The causes and consequences of departure from doctoral study* (1st ed.). New York: Rowman and Littlefield.
- Lovitts, B. E. (2004). Research on the structure and process of graduate education. In D.
- Lovitts, B. E. (2005). Being a good course-taker is not enough: A theoretical perspective on the transition to independent research. *Studies in Higher Education*, 30(2),137-154.

- Lovitts, B.E. (2008). The Transition to Independent Research: Who Makes It, Who Doesn't, and Why *The Journal of Higher Education*, Vol. 79, No. 3
- Malmberg, E. (2000). *Retention and attrition of doctoral candidates in higher education*. Unpublished doctoral dissertation, University of North Texas, Denton.
- Martin, Y.M., Maclachlan, M. & Karmel, T. (2001). *Postgraduate Completion Rates*. Occasional Paper Series, Higher Education Division, DETYA (now DEST), Canberra.
- Mathialagan, A. & Mahmood, R. (2014). *The Influence of Student Attributes, Social Involvement and Program Characteristics in Determining Intention To Complete Doctor of Business Administration*. DBA. thesis, Universiti Utara Malaysia.
- Maxwell, T.W., & Shanahan, P.J. (1996). 'Professionals' and professions' perceptions concerning professional doctorates'. In Conference, Coffs Harbour, 16-18 October, 79-103.
- Maxwell, T.W., & Shanahan, P.J. (1997). 'Towards a reconceptualising of the doctorate: issues arising from comparative data on the EdD degree in Australia', *Studies in Higher Education*, 22 (2), 133-150.
- Maxwell, T.W. (2001). 'From first generation to second generation professional doctorate', *unpublished paper, University of New England, Armidale*.
- Mccubbin, I. (2003). An Examination of Criticisms made of Tinto's 1975 Student Integration Model of Attrition. Unpublished paper.
- McLaughlin, G. (2006). Data mining analysis of the effect of educational, demographic, and economic factors on time from doctoral program entry to degree completion in education. *Dissertation Abstracts International* 68(02A)
- McWilliam, E., Taylor, P.G., Thomson, P., Green, B., Maxwell, T., Wildy, H. & Simons, D. (2002). Research training in doctoral programs: *What can be learned from professional doctorates?* Commonwealth Department of Education Science and Training, Canberra.
- Ministry of Higher Education Malaysia. (2013). Statistics. Retrieved 18 July, 2015, from http://www.mohe.gov.my/web_statistik/Perangkaan-2013.pdf
- Moses I. (1984) Supervising higher degree students - problem areas and possible solutions. *Higher Education and Development*, 3: 153-165.
- Mwenda, M. N. (2010). Underrepresented Minority Students in STEM Doctoral Programs: The Role of Financial Support and Relationships with Faculty and Peers. *ProQuest LLC*.

- Napoli, A. R., & Wortman, P. M. (1998). Psychological factors related to retention and early departure of two-year community college students. *Research in Higher Education*, 39, 419–455.
- National Center for Education Statistics(2000). Office of Educational Research and Improvement U.S.
- Norhasni, Z.A., Ismail, A.,(2011). Attrition and Completion Issues in Postgraduate Studies for student development. *International Review of Social Sciences and Humanities*. Vol. 1(1), pp. 15-29
- Northeastern University Archives (2003), available at: www.lib.neu.edu/archives/backgrnd/commenc.htm
- Nunnally, J.C. (1970). *Introduction to psychological measurement*. New York: McGraw-Hill.
- National Research Council. (1994). *Research doctorates in the United States*. Retrieved July 1, 2013.
- Ober, K. E. (2005). *Factor Analysis of the Dissertation Barriers Scale: Evidence for Dimensionality and Construct Validity* (Doctoral dissertation, UNIVERSITY OF OKLAHOMA).
- O'Neill, G., & McMullen, C. (2007). 'Managing the transition: MBA to DBA', in E McWilliam (ed.), *Research training for the knowledge economy*, proceedings of the 4th International Biennial Conference on Professional Doctorates, Queensland University of Technology, Brisbane.
- Palmer, G. (2002). 'Management and business studies: pressures from changing academic markets', in S Marginson (ed.), *Investing in social capital: postgraduate training in social sciences in Australia*, Academy of the Social Sciences, Perth.
- Park, C. (2005). New variant PhD: The changing nature of the doctorate in the UK. *Journal of Higher Education Policy and Management*, 27(2), 189-207.
- Pascarella, E. T. (1986, March). A program for research and policy development on student persistence at the institutional level. *Journal of College Student Personnel*, , 100-107.
- Pascarella, E.T., Brier, E., Smart, J.C., and Herzog, L. (1987). Becoming a physician: The influence of the undergraduate experience. *Research in Higher Education*, 26(2), 180-201.
- Pauley, R. (1998). *A study of factors relating to the attrition from West Virginia University-Marshall University-West Virginia Graduate College Cooperative Doctoral Program administered by the West Virginia*

Board of Trustees. Unpublished doctoral dissertation, West Virginia University, Morgantown.

- Pinugu, J. N. J. (2013). College self-efficacy and academic satisfaction moderated by academic stress. *International Journal*, 10.
- Pontius, J. L., & Harper, S. R. (2006). Principles for good practice in graduate and professional student engagement. *New Directions for Student Services*, 115, 47-58.
- Protivnak, J. J., & Foss, L. L. (2009). An exploration of themes that influence the counselor education doctoral student experience. *Counselor Education and Supervision*, 48(4), 239-256.
- Peña, E. V., Jimenez y West, I., Gokalp, G., Fischer, L., & Gupton, J. (2010). Exploring effective support practices for doctoral students' degree completion. *College Student Journal*
- Riordan, C.M., Gatewood, R.D., & Bill, J.B. (1997). Corporate Image: Employee Reactions and implications for managing corporate social performance. *Journal of Business Ethics*, 16, 401-412.
- Raykov, T., & Marcoulides, G.A. (2000). *A first course in structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc. Publishers
- Rayle, A. D., & Chung, K. Y. (2007). Revisiting first-year college students' mattering: Social support, academic stress, and the mattering experience. *Journal of College Student Retention: Research, Theory & Practice*, 9(1), 21-37
- Schneider, M. & Yin, L. (2011). The hidden costs of community colleges. American Institute for Research, available at www.air.org.
- Schumacker, R.E. & Lomax, R.G. (2004). *A Beginner's Guide to Structural Equation Modeling*, 2nd Edition. Lawrence Erlbaum Associates, Inc.: Mahwah, NJ
- Sheridan, P. M., & Pyke, S. W. (1994). Predictors of time to completion of graduate degrees. *Canadian Journal of Higher Education*, 24(2), 68-88.
- Smith, S.W., Brownell, M.T., Simpson, R.L. & Deshler, D.D. (1993). Successfully Completing the Dissertation: Two Reflections on the Process. *Remedial and Special Education*, 14(3), 53-60
- Smith, R. L., Maroney, K., Nelson, K. W., Abel, A. L., & Abel, H. S. (2006). Doctoral programs: Changing high rates of attrition. *The Journal of Humanistic Counseling, Education and Development*, 45(1), 17-31.
- Stallone, M. N. (2003). Factors associated with student attrition and retention in an educational leadership doctoral program. *Unpublished doctoral*

dissertation, Texas A&M University-Kingsville and Texas A&M University-Corpus Christi, Kingsville.

Statistics of Public Higher Education Institutions 2009-2010. *Planning and Research Division*. Ministry of Higher Education.

Sternberg, D. (1981). *How to complete and survive a doctoral dissertation*. New York: St. Martin's Press.

The 10th Malaysia Plan Frameworks-2011-2015.(2010). The Economic Planning Unit, Prime Ministers Department, Putrajaya.

Budget 2015: Full text of Najib's speech, *The Star Online*.(2014)<http://www.thestar.com.my/News/Nation/2014/10/10/Budget-2015-full-speech-text/>

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 46, 89-125.

Tinto, V., (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *Journal of Higher Education*, 68, 599-623.

Tinto, V. (2006). Research and practice of student retention: what next?. *Journal of College Student Retention: Research, Theory & Practice*, 8(1), 1-19.

Tucker, A. (1964). *Factors related to attrition among doctoral students* (Cooperative Research Project No. 1146). Washington, DC: U.S. Office of Education.

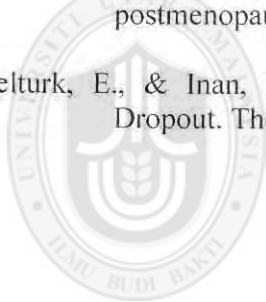
Vogt, W. P. (2005). *Dictionary of statistics & methodology: A nontechnical guide for the social sciences* (3rd ed.). Thousand Oaks, CA: Sage.

Wadell, B. and Naslund, B. (1973), "Doctoral research and practical management", *European Training*. Vol. 2 No. 2.

Wagner, D. V. (1986). *Selected personality characteristics and situational factors as correlates of completion and non-completion of the doctoral dissertation*. Unpublished doctoral dissertation, University of Michigan, Ann Arbor.

Wao, H. O. (2008) A mixed methods approach to examining factors related to time to attainment of the doctorate in education. *Dissertation Abstracts International* 70(02A).

- Weidman, J. C., Twale, D. J., & Stein, E. L. (2001). Socialization of graduate and professional students in higher education: A perilous passage? ASHE-ERIC Higher Education Report, 28. Jossey-Bass, San Francisco.
- Williams, C. L. (2012). A Funny Thing Happened on the Way to My Ph. D.: Exploring Issues Affecting Attrition and Completion in the Doctoral Program in Instructional Technology at a Major Research University.
- Wisker, G., Robinson, G., Trafford, V., Creighton, E. & Warnes, M. (2003) Recognizing and overcoming dissonance in postgraduate student research, *Studies in Higher Education*, 28(1), 91–105.
- Wright, L. M. (1991). Full-time teaching and the ABD phenomenon. *ACA Bulletin*, 76, 49-55.
- Wright, T. & Cochrane, R. (2000). Factors Influencing Successful Submission of PhD Theses. *Studies in Higher Education*, 25 (2), 181-195.
- Wulff, H & Austin, A. E. (Eds.), *Paths to the professoriate: Strategies for entering the preparation of future faculty* (pp. 115-136). San Francisco: Jossey-Bass
- Yu, R., Ho, S.C. (2010). Psychometric evaluation of the perceived stress scale in early postmenopausal Chinese women. *Psychology*, 1, 1-8.
- Yukselturk, E., & Inan, F.A. (2006). Examining the Factors Affecting Student Dropout. *The Turkish Online Journal of Distance Education*, 7.



APPENDIX 1: STUDY QUESTIONNAIRE

SECTION A – BACKGROUND INFORMATION

What is your current age?

Age (in years):

- 25 to 30
- 31 to 40
- 41 to 50
- 51 and above

What is your gender?

- Male
- Female

How do you describe your primary ethnicity?

- Malay
- Indian
- Chinese

Other (please specify)

Enrollment status:

- Part time
- Full time

What is your current employment status? (Check all that apply)

- Not in labor force
- Employed (full-time)
- Employed (part-time)

Pursuing further studies (i.e. postdoctoral research, other degree)

Other (please specify) _____

What semester are you in your DBA program?

SECTION B - INDIVIDUAL STUDENT ATTRIBUTES (SA)

In your perception, what are the possible reasons that impede completion of DBA program? Please tick the box that best represents your response.

Items	Not at all Important	Of little Importance	Neutral	Important	Very Important
Couldn't afford to continue studies					
Doctoral studies is too difficult					
False impression of dissertation demands during early candidature					
Lack of motivation to continue dissertation after coursework					
Demands on my family					
Demands on my job					
Program not to my liking					
Program did not fit my career goals					
Change in career after coursework completion					

Other reasons: _____

SECTION C - PROGRAM CHARACTERISTICS (PC)

As you look back over your doctoral studies, how satisfied are you with each of the following statements concerning departmental assistance? Please tick the box that best represents your response.

Please rate each of the following statements:

Items	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
Faculty availability in your program					
Access to research materials					
Quality of research material					
Support and advice from staff of department					
Support and advice from faculty of dept					
Availability of courses					
Information about program requirements					
Coursework as an assistance to dissertation preparation					
Selection of dissertation topic					
Selection of supervisor					
Supervisor role in Preparation of proposal					
Guidance from supervisor					
Dissertation writing					
Accessibility of supervisor					

Others: _____

SECTION D - PERCEIVED STRESS SCALE (PSS)

Instructions: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate with a check how often you felt or thought a certain way.

In the last month:

Items	Never	Almost Never	Sometimes	Fairly Often	Very Often
How often have you been upset because of something that happened unexpectedly					
How often have you felt that you were unable to control the important things in your life					
How often have you felt nervous and "stressed"					
How often have you felt confident about your ability to handle your personal problems					
How often have you felt that things were going your way					
How often have you found that you could not cope with all the things that you had to do					
How often have you been able to control irritations in your life					
How often have you felt that you were on top of things					

How often have you been angered because of things that were outside of your control						
How often have you felt difficulties were piling up so high that you could not overcome them						

Others: _____

Perceived Stress Scale Scoring

PSS-10 scores are obtained by reversing the scores on the four positive items, e.g., 0=4, 1=3, 2=2, etc. and then summing across all 10 items. Items 4, 5, 7, and 8 are the positively stated items.

The PSS was designed for use with community samples with at least a junior high school education. The items are easy to understand and the response alternatives are simple to grasp. Moreover, as noted above, the questions are quite general in nature and hence relatively free of content specific to any sub population group. The data reported in the article are from somewhat restricted samples, in that they are younger, more educated and contain fewer minority members than the general population. In light of the generality of scale content and simplicity of language and response alternatives, we feel that data from representative samples of the general population would not differ significantly from those reported below

SECTION E -MULTIDIMENSIONAL SCALE OF SOCIAL SUPPORT (SSP)

(adapted from Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested to how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Items	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree
There is a special person who is around when I am in need (SO)					
There is a special person with whom I can share my joys and sorrows (SO)					
My family really tries to help me (Fam)					
I get the emotional help and support I need from my family (Fam)					
I have a special person who is a real source of comfort to me (SO)					
My friends really try to help me (Fri)					
I can count on my friends when things go wrong (Fri)					
I can talk about my problems with my family (Fam)					
I have friends with whom I can share my joys and sorrows (Fri)					
There is a special person in my life who cares about my feelings (SO)					
My family is willing to help me make decisions (Fam)					
I can talk about my problems with my friends (Fri)					

Others: _____

The items tended to divide into factor groups relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO).

SECTION F - INTENTION TO COMPLETE DBA

Indicate your level of agreement or disagreement with each of the following statements on intention-to-complete DBA program. Please tick the box that best represents your response.

Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have performed academically as well as I anticipated I would					
I am confident that I made the right decision in choosing to attend this program					
I frequently think of dropping out of this program					

Others: _____

