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MODEL OF MOTIVATIONAL FORCES INFLUENCING ACADEMIC ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS THROUGH THE MEDIATION OF FLOW

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By

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July 2015

Chair : Professor Habibah Elias, PhD
Faculty : Educational Studies

Motivation is a combined force that influences students to work hard and achieve academically. However, motivational force alone is not adequately strong to ensure students perform well in their academic tasks. There is a missing link between motivation and academic achievement which can be filled by flow, defined as an optimal state of engagement, concentration and enjoyment when doing a task. Students must get deeply engrossed, concentrated and focused on their learning tasks in order to perform better in school tasks and examinations. Therefore, this study proposed that when students have the motivation to perform well, they will get into flow when studying and subsequently achieve higher marks in examinations. The purpose of this study was to test a structural equation model of six motivational variables that influence academic achievement through the mediation of flow. The six motivational variables were future targets, achievement desire, learning goal, learning value, learning efficacy and learning regulation. A total of 395 Form Four students attending daily secondary schools in the state of Selangor responded to a set of questionnaire after their final year examination. Confirmatory factor analysis showed that the initial model of six motivational constructs had to be re-specified where five motivational constructs were combined into one major construct renamed as 'intrinsic'. The five variables were future targets, achievement desire, learning value, mastery goal and learning regulation. This resulted in a re-specified model with three motivational constructs: intrinsic, performance goal and learning efficacy. Evidently, analysis on the modified structural equation model showed that the three motivational constructs had no direct effect on academic achievement. Intrinsic and learning efficacy, but not performance goal, had direct effects on flow. Flow had a significantly positive effect on academic achievement. It was established that intrinsic and learning efficacy had indirect effects on academic achievement through the mediation of flow. It can be concluded that students with higher intrinsic and learning efficacy motivation were more likely to experience higher flow and thus perform better in their examination. The accepted model has highlighted the complex interactions of motivation and flow that contributed to students' achievement in school. The focus on flow theory has emphasized the

importance of being in this state in order to improve concentration, engagement and therefore learning. It is recommended that students be exposed to the concept of flow and to appreciate the importance of achieving it when they perform a learning task. Teachers can also create training programs or workshops to educate students on ways to achieve a flow state as well as have high levels of motivation.

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

MODEL GABUNGAN MOTIVASI YANG MEMPENGARUHI PENCAPAIAN AKADEMIK PELAJAR SEKOLAH MENENGAH MELALUI PERANTARAAN KHUSYUK

Oleh

SHARIFAH MUZLIA BINTI SYED MUSTAFA

Julai 2015

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Motivasi adalah gabungan tenaga yang mempengaruhi pelajar untuk berusaha dalam mencapai prestasi akademik. Walaubagaimanapun, tenaga motivasi sahaja tidak cukup kuat untuk memastikan pelajar mencapai prestasi yang baik dalam tugasan sekolah mereka. Terdapat kekosongan di antara rantaian motivasi dan pencapaian akademik yang boleh dipenuhi oleh kekhusyukan, yang didefinisikan sebagai suatu keadaan optimum penglibatan diri, tumpuan dan keseronokan apabila membuat sesuatu tugasan. Pelajar mesti melibatkan diri, menumpukan perhatian dan memfokus kepada pembelajaran mereka untuk mencapai prestasi yang lebih baik di dalam tugasan sekolah serta peperiksaan. Oleh itu kajian ini mencadangkan bahawa apabila pelajar mempunyai motivasi untuk mencapai prestasi cemerlang, mereka akan memperolehi tahap kekhusyukan ketika belajar, dan seterusnya mendapat markah yang lebih tinggi dalam peperiksaan. Tujuan kajian ini adalah untuk menguji sebuah model persamaan berstruktur yang menggabungkan enam angkubah motivasi yang mempengaruhi pencapaian akademik melalui perantaraan kekhusyukan. Enam angkubah motivasi tersebut adalah target masa depan, keinginan pencapaian, matlamat pembelajaran, nilai pembelajaran, keupayaan kendiri belajar dan pengawalan pembelajaran kendiri. Seramai 395 pelajar Tingkatan Empat di sekolah-sekolah harian dalam negeri Selangor menjawab soalselidik selepas mereka menduduki peperiksaan akhir tahun. Analisis pengesahan faktor menunjukkan bahawa model asal yang mengandungi enam konstruk motivasi perlu di ubahsuai dimana lima konstruk motivasi telah digabungkan menjadi satu konstruk utama dinamakan ‘motivasi dalaman’. Lima angkubah tersebut adalah target masa depan, keinginan pencapaian, matlamat penguasaan pembelajaran, nilai pembelajaran, dan pengawalan pembelajaran kendiri Langkah ini menghasilkan model baru yang telah diubahsuai mengandungi hanya tiga konstruk motivasi: motivasi dalaman, matlamat prestasi dan keupayaan kendiri belajar. Analisis ke atas model persamaan berstruktur yang diubahsuai ini menunjukkan bahawa ketiga-tiga konstruk motivasi tersebut tidak memberi kesan secara langsung terhadap pencapaian akademik. motivasi dalaman dan keupayaan kendiri, tetapi tidak matlamat prestasi, memberi kesan terus terhadap kekhusyukan.

Tambahan lagi, kekhusyukan mempunyai kesan yang positif dan signifikan terhadap pencapaian akademik. Adalah didapati bahawa motivasi dalaman dan keupayaan kendiri mempunyai kesan tidak langsung terhadap pencapaian akademik melalui perantaraan kekhusyukan. Kesimpulannya, pelajar yang mempunyai tahap motivasi dalaman dan keupayaan kendiri yang tinggi akan mengalami lebih kekhusyukan dan oleh itu memperolehi pencapaian yang lebih baik dalam peperiksaan mereka. Model yang boleh diterima ini menonjolkan interaksi kompleks tentang gabungan motivasi dan kekhusyukan yang menyumbang kepada pencapaian pelajar di sekolah. Penekanan terhadap teori khusyuk menekankan peri pentingnya pelajar berada di dalam keadaan ini demi memperbaiki tahap penumpuan, penglibatan dan seterusnya pembelajaran. Adalah disarankan supaya pelajar didedahkan kepada konsep khusyuk dan menghargai kepentingan berada dalam kekhusyukan apabila melakukan tugasan pembelajaran. Guru pula boleh merangka program latihan atau bengkel untuk mendidik pelajar cara-cara mendapatkan tahap kekhusyukan serta tahap motivasi yang tinggi.

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Most sincerely,

Sharifah Muzlia Syed Mustafa
July 2015

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) are adhered to.

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CHAPTER ONE

INTRODUCTION

Academic achievement based on performances in examinations has become a significant measure of success in the field of education. This is very true in the modern societies where good academic performance promises better opportunity for students to further their education at a higher level. Additionally, they have better chances of being called for job interviews and higher probability of being paid a high salary. Good academic achievement has been found to correlate positively with students' academic self-concept, future opportunities and career planning (Asma-Tuz-Zahra, Arif & Yousof, 2010; Legum & Hoare, 2004; Mohd Ali & Sidek, 2000). Good high school grades have been linked to many positive outcomes in future college education, such as increased confidence, better academic preparedness, better appreciation of college success and better coping of college life (Michaels, 2013). Academic success is said to represent the first steps in the development of healthy functioning students (Seligman & Csikszentmihalyi, 2000). Many studies have found that academic achievement is positively correlated with self-esteem (M. Aryana, 2010; Vialle, Heaven & Ciarrochi., 2005). Good academic grades in school have also been shown to act as a preventive shield for adolescents from involving in risky behaviors, being absent from school and dropping out of school (www.mauryk12.org/School_Health/overall_benefits.html).

Education in Malaysia has also been emphasizing on academic achievement based on performances in examinations. Although the ideal vision of the National Philosophy of Education is to produce holistic students who excel both in academic and non-academic aspects, the Malaysian education landscape has been dominated with examinations and grades. The recent plan called Malaysian Education Blueprint (MEB) (2013-2025) is developed to transform the education system within thirteen years. It still maintains its emphasis on cognitive knowledge and performance in spite of claiming that more priority will be given to the development of student soft skills. In concluding about the current standard of the Malaysian education system, MEB reported that Malaysian students' performance is declining. This conclusion was based on comparison between Malaysian students' cognitive performance with international standard as measured by the Programme for International Student Assessment (PISA) as well as the Trends in International Mathematics and Science Study (TIMSS). Thus, it is one of the government's aspiration that within 15 years, Malaysia will achieve the top three countries in international assessments such as TIMSS and PISA. MEB also listed eleven shifts to transform the education system in which the sixth shift is targeted at ensuring that by the year 2020 there will be no more underperforming schools (Bands 6 or 7) as well as more schools shall be awarded as high performing or cluster schools.

The emphasis on academic achievement is further proven by the Ministry of Education by continuously monitoring the performances of students in national

examinations. At the end of Year 6, Form 3 and Form 5, Malaysian students sit for major national examinations called Ujian Penilaian Sekolah Rendah (UPSR), Penilaian Menengah Rendah (PMR), and Sijil Pelajaran Malaysia (SPM), respectively (http://www.moe.gov.my). Successful students are often measured by the number of A's they receive in the national examinations. Top scorers in PMR and SPM have always been the subjects of spotlight. Every year, students who achieve straight As at each state and national level will be announced, celebrated and rewarded. The Form Five examination is specially treated as an important indicator for success among school students since obtaining good results will increase students' chances of obtaining scholarships or sponsorship to further studies in higher education abroad or better opportunities to gain an entry to public universities locally.

Every year, PMR and SPM results will be analyzed and reported in detail by the number of candidates getting grade A, B, C, D and E to summarize the number of passes and failures. Table 1.1 shows an example of reported analysis of the trend in increased achievements of students in PMR from year 2008 to 2011, as publicized in the Announcement of PMR2011 Result Analysis (http://www.moe.gov.my). Highlighted was the increased number of candidates who scored all As ranging from 5.97% in 2008 to 7.77% in 2011. Such increase was applauded in news with headlines such as "2011 PMR results: Best in four years" (2011).

Table 1.1. Overall Achievement of PMR Candidates from 2008 to 2011

Achievement of candidates	2008	2009	2010	2011	Difference (2011-2010)
All As	26,441 5.97%	28,192 6.37%	30,863 7.02%	34,271 7.77%	3,408 0.75%
Minimum D (not including all A)	252,421 56.99%	253,671 57.29%	265,388 60.39%	272,966 61.88%	7,578 1.49%
Other combinations	163,645 36.94%	160,495 36.25%	142,819 32.50%	133,554 30.27%	-9,265 -2.22%
All E	404 0.10%	403 0.09%	386 0.09%	346 0.08%	-40 -0.01%
Total candidates	442,947	442,761	439,456	441,137	1,681
GPN	2.83	2.78	2.74	2.71	-0.03

Source: http://www.moe.gov.my

Similarly, SPM results are analyzed to show improvement of grades. It was reported that the SPM 2011 overall achievement was the best performance in five years from 2007 to 2011, where 559 (0.12%) candidates scored all As compared to 363 (0.08%) in the year 2010 (Kulasagaran, 2012). The National Average Grade (GPN) was said to have improved from 5.19 in 2012 to 5.04 in 2011 on a 1 to 6 scale with smaller number indicating better performance. These percentages display that less than 10% of the candidates all over Malaysia achieved straight As, whereas about 90% of the students were achieved moderately (minimum Ds plus other combinations) and 1% failed all subjects (all Es). It can be concluded that only about 10% of the students were excellent while another 90% were average and weak in terms of academic achievement.

The High Performance School (*Sekolah Berprestasi Tinggi* - SBT) award comes with several monetary rewards and special attention from the ministry. Three cohorts of SBT were announced in the year 2010 (20 schools), 2011 (32 schools) and 2012 (39 schools). Table 1.2 exhibits the number of secondary schools awarded the status of High Prestige School (SBT) in three consecutive years. It can be seen that in terms of secondary school category, only a small number of daily secondary schools received the SBT awards compared to a majority of boarding schools. The numbers indicate that in 2010, only 4 daily schools compared to 10 boarding schools secured the award, in 2011 only 3 daily schools versus 17 boarding schools, and in 2012 only 2 daily schools compared to 14 boarding schools. This indicates that the performance of students in daily secondary schools is low in comparison to those in boarding schools.

Table 1.2. Number of Schools Awarded the High Prestigious School (SBT) Status

Year	2010	2011	2012
Fully residential schools	12	19	14
National secondary schools	5	2	2
Primary Schools	6	11	23
Total	20	32	39

Sources: http://www.moe.gov.my

An analysis of five cohorts of schools awarded with the Cluster School of Excellence status since 2006 revealed that a significant number of secondary schools had received the recognition (Table 1.3). However, the secondary school clusters comprised of the various types of schools namely Fully Residential Schools (SBP), Technical Secondary Schools (SMT), Religious National Secondary Schools (SMKA), Normal Day Secondary Schools, Premier Schools, Centenary Schools, schools in Putrajaya and Cyberjaya and Special Model Schools (www.moe.gov.my). Many of the daily schools benefitting from the award are among the oldest schools in the country with prestigious and unique ethos attached to them such as SMK St John, SMK Victoria, SMK Raja Permaisuri Bainun, SMK Clifford as well as many convent schools. Nonetheless, many more regular daily schools have not achieved the minimum requirement

for being eligible to apply for the award, which is scoring a school GPA of 4.0 and below. This indicates that the achievement of GPA of regular daily schools need to be improved in order to make them qualified and be considered for the cluster school award.

Table 1.3. Number of Schools Awarded the Cluster School of Excellence Status

Phase	1	2	3	4	5
Fully residential schools	4	4	8	2	10
National secondary schools	7	9	22	10	14
Primary Schools	3	4	10	8	9
Total	14	17	40	20	33

Sources: http://www.moe.gov.my

Analysis of the schools awarded SBT and Cluster School of Excellence revealed another conclusion: the performance of schools across the states in Malaysia is not representative of the population. Selangor representing the central zone of schools has the largest number of students compared to other large states (Johore – South zone; Terengganu – East coast; Sabah – East Malaysia; and Kedah – North zone) (MEB 2013-2025, pp A-8). However, the percentage of schools awarded with high performance and cluster awards was not proportionately distributed. Table 1.4 shows that Selangor with 230 daily secondary schools has only 14 (6.1%) cluster schools and 9 (3.9%) high performance schools. In contrast, Kedah and Terengganu with a smaller number of daily secondary schools have a higher percentage of awards i.e. Kedah having 11 (7.1%) cluster schools and 76 (3.9%) high performance schools; whereas, Terengganu has 16 (14%) cluster schools and 5 (4.4%) high performance schools.

Table 1.4. Number of Schools in Five Large States Awarded the High Prestigious School (SBT) and Cluster School of Excellence Statuses

		Daily Secondary Schools	Cluster Schools		High Performance Schools	
			frequency	%	frequency	%
Johore	South	231	23	10.0	7	3.0
Kedah	North	155	11	7.1	6	3.9
Sabah	East	198	7	3.5	1	0.5
Selangor	Central	230	14	6.1	9	3.9
Terengganu	East Coast	114	16	14.0	5	4.4

In conclusion, the previous statistics on PMR and SPM results, as well as the number of schools awarded with excellent statuses implied students in daily secondary schools had not achieved high academic performance as measured by examination grades. Although a small percentage of students in daily secondary schools is excellent, the larger percentage is average to weak. This could be mainly attributed to the majority of excellent students had left to study in boarding schools when they entered Form One and Form Four. In addition, the recognition of daily secondary schools with excellent performance is not well represented by the size of states and number of schools. Selangor being the largest state with the largest number of students surprisingly had not performed equally well as other smaller states. Being in the central location of the country and having better facilities of modern societies, students in Selangor daily secondary schools should have at least good if not better academic performance compared to those from other states. Low performances in major examinations contribute to low school CGPA, causing the school standard to remain low. Due to the emphasis put on excellent school grade point average based on examinations as well as the various benefits of having good grades, there is a need to identify factors that can influence students in Selangor daily secondary schools to achieve better grades.

The identification of factors that promote academic achievement is imperative because there are still many students who do not perform well, show disinterest in learning and completing school education, and a small number even drop out of school. Traditional punitive interventions are not adequate to keep students interested in school and motivated to complete it. So much emphasis is put on external regulations of the students with the purpose of making sure they stay in school and become interested in learning. So much effort, time and money are invested into monitoring, supervising and forcing students into becoming excellent students to the extent that the students themselves are not given the responsibility to monitor their own selves. It is high time that adults in this society put less emphasis on external forces and more attention on internal factors in order to develop the students into positive, self-regulating individuals who are interested in school because of the good values attached to academic success. In this way, being focused on school, learning and trying their best to achieve will direct students' time and energy into positive activities and at the same time not be attracted to mischievous, delinquency or even criminal activities. If students are personally interested in learning and performing well in school, hopefully they will easily engage in learning and studying. Interest to gain knowledge and inner drive to succeed may put students into a state of focus and concentration when studying, thus contributing to better performance in tests and assessments

1.1 Background of the Study

Among the abundant investigations in search of contributing factors to academic achievement, motivation has been identified as one of the most influential predictors of students' success or failure in school (Hidi & Harackiewicz, 2000). Motivation is the internal state of an individual that arouses, directs and sustains behavior (Santrock, 2011; Murphy & Alexander, 2000; Pintrich, 2003). Motivations are the reasons for individuals to decide in order to engage in a

certain behavior in any given situation that they believe is important (Ames, 1992). Students who are motivated will be able to accomplish more since they become their best selves and thus strive to achieve at their highest levels (Haupt 2006; Elliot, Heimpel, & Wood, 2006). Lepper, Sethi, Dialdin and Drake (1997) had long ago recommended that schools strive to cultivate the feelings of motivation in their students which will sustain the desire to learn long after they leave school.

It is suggested that when student motivation is at its highest, then achievement can also occur at the highest rate (Hein & Hagger, 2007). Subsequently, the more motivated students are, the more successful they may become academically. When students are motivated to learn, they get involved in learning behaviors that they find meaningful and valueswhile and from which they foresee academic benefits (Brophy, 1988). Gilman and Anderman (2006) found that highly motivated students reported higher satisfaction with their lives, had higher self-esteem, higher intrinsic motivation and higher grade point averages compared to students who were categorized as having low motivation levels. Motivated students were also found to be using higher cognitive process while learning, as well as retain and absorb more of what they learn (Driscoll, 2005; Jetton & Alexander, 2001). In local studies, motivation had been found to correlate positively with high academic performance and positive attitude towards learning (Thang, Ting & Nurjanah., 2011; Dalinah, 1998).

Based on the many findings establishing motivation as a strong predictor of academic achievement, this study was conducted on the premise that students should have a strong intrinsic drive to motivate them to achieve their best in learning performance. Students who have a clear picture of what they wish to achieve in the future will definitely be more willing to work hard during school time. Students who see the benefits of having good grades in school will tend to work hard and monitor their performance in order to get what they aim for in future. Knowing the value of good grades can become a strong push for students to dedicate their time and effort in learning tasks. Enjoying and having interest in learning and good performance also can contribute to students being motivated to attend school and putting extra time into learning behaviors. When students lack the motivation to learn, they will not get involved in learning behaviors because they cannot appreciate the valuesiness of sitting down to study and they do not foresee any future benefits associated with having good grades. Therefore, having future targets and the desire to achieve will lead to students valuing good grades in school. Such motivation will then generate their interest in learning and performing, thus improving their confidence in own ability to succeed. Having all these basic ingredients of internally driven motivation will develop students into learners who knows what they aim for and how to achieve the targets through monitoring their own behaviors.

However, this current study has identified two main issues regarding the role of motivation in influencing academic achievement. The first issue relates to the inconsistent results that showed weak to moderate correlations or small effects between the two variables (Stanescu, D. F. & Iorga, M. E., 2015; Melnic, A-S. &

Botez, N., 2014; .Afzal, H., Ali, I., Khan, M. A. & Hamid, K. , 2010; Turner, E. A., Chandler, M., Heffer, R. W., 2009; Wang, F.X., 2008; Areepattamannil, S., Freeman, J. G. F. & Klinger, D. A., 2011; Fasciani, L. M., 2015; Mohd Remali, A., Ghazali, M. A., Kamaruddin, M. K. & Kee, T.Y., 2013). In fact, a number of studies found no relationship at all between motivation and academic achievement (Çetin, B., 2015; Salley, L. D., 2005; Taylor, E., 2014; McClintic-Gilbert, M. S., Corpus, J. H.; Wormington, S. V., & Haimovitz, K., 2013; Abu Bakar, K., Ahmad Tarmizi, R., Mahyuddin, R., Elias, H., Luana, W. S., Mohd Ayub, A. F, 2010). Such inconclusive findings on the relationship between the two variables have led to the hypothesis that there must be another contributing factor that can enhance the effect of motivation on academic achievement.

The second issue relates to the unclear mechanism by which motivation influences academic achievement. How does motivation translate into behavior that eventually leads to the achievement of good grades? Put it another way, being motivated is not a direct determinant of achievement. The motivation to study hard in order to achieve good results in the examination is only the initial drive that moves students to the directed goal. After being motivated, students need to spend time and effort to study effectively for the examination. They must put a considerable amount of effort into studying strategies such as reading the assigned topics and materials, reviewing their notes, doing exercises and quizzes and practicing exam questions. At the same time, students need to regulate their time by organizing their study time versus daily routines such as eating right, taking time to relax, and sleeping adequately. McCann (2015) wrote that students need to find a suitable place to study, regulate study sessions by taking breaks and study materials that they can manage to understand. In short, motivation must be followed by increased quality learning and studying that later may be reflected in increased score or good grades (Gurung & McCann, 2011).

Therefore, there seems to be a missing link between motivation and academic achievement. This study proposed that one important mediating variable between motivation and academic achievement is the state of flow. Psychologist Mihaly Csikszentmihalyi (1975, 1990 and 2006) defined ‘flow’ as a state of being deeply absorbed when engaging in an activity that one has a good sense of mastery and enjoys doing. Students who are motivated must get deeply engrossed, concentrated and focused on their learning tasks in order to perform better in tests and assessments. Engaging in studying behaviors and focusing when studying for examinations are two highly important states that students must fulfil in order to perform well in examinations.

Flow theory suggests that students can enter a flow state when they are fully absorbed in their learning activity during which they lose their sense of time and have feelings of great satisfaction (Pajares, 2001). According to Csikszentmihalyi (1975), flow is a state when people become committed to a particular task or activity that they enjoy and find rewarding in itself without getting any external reward directly. Hence, flow was found to be a predictor of academic achievement. For example, Shernoff and Schmidt (2008) discovered that flow as measured by student engagement is a significant predictor of GPA. Engeser and

Rheinberg (2008) in their study found that flow significantly explained a small percentage of the variance in final exam results. Flow has been linked to bright students because they reported the highest flow states when engaged in their favorite, challenging and interesting subjects (Collins, 2013). Several other studies have demonstrated significant correlations between learners' flow and achievement-related outcomes (Park & Kim, 2006; Kiili, 2005; Marks, 2000). Students who experienced flow were found to have better learning and achievement, tend to complete school, have higher motivation, commitment and performance (Shernoff, Csikszentmihalyi, Schneider & Shernoff, 2003).

Research has also established significant relationships between flow and motivation. Many studies have discovered a positive relationship between intrinsic motivation and flow (Demerouti, 2006; Jackson, 1996; Mills & Fullagar, 2008). Especially relevant was the finding by Moon and Baek (2010) who revealed that students' intrinsic motivation was positively correlated to flow and game achievement. A significant relation between flow experiences in academic activities and the more self-determined forms of intrinsic motivation has also been established (Fullagar & Mills, 2008). Csikszentmihalyi and LeFevre (1989) exposed that highly motivated individuals are likely to experience high levels of flow. Some authors perceive flow as the highest level of intrinsic motivation (Borovay, 2008; Karageorghis & Terry, n.d.).

Flow has been found to correlate positively with engagement in learning (Shernoff et. al, 2003) and academic achievement (Hood, 2007). Most of this research has focused on leisure or sporting activities, activities that are chosen by individuals and that contain a high level of intrinsic motivation. Recent studies of flow and work have found an association between the experience of flow and positive mood as well as performance among high achievement-oriented employees (Demerouti, 2006) and flow as being an effect of intrinsically motivating job characteristics (Eisenberger, Jones, Stinglhamber, Shanock & Randall, 2005). Flow was found to promote learning and development among teenagers and young adults (Rathunde, 2003), improves learning among secondary school students (Shernoff et.al., 2003; Whalen, 1998) and positively correlated to learning of subject matter, perceived skill development and student satisfaction (Klein et. al, 2010). Whitson and Consoli (2009) concluded that being in flow "may increase the positive learning outcomes associated with increased student engagement such as lower high school drop-out rates, a narrowing of the achievement gap between whites and minorities, and increased GPA averages" (pp. 47-48).

Based on previous research that found significant correlations between motivation and academic achievement, motivation and flow, as well as flow and academic achievement, this study posited that it is more relevant to combine the relationships into one whole and integrated model in order to get a holistic picture of the interrelations among the three variables. According to Baron and Kenny (1986), when X^1 affects Y; X^1 affects X^2, and X^2 affects Y, then X^2 can become a mediating variable in the relationships between X^1 and Y. Therefore, this study proposed that flow becomes the mediating variable between motivation and

academic achievement. Including flow, motivation and academic achievement into a single framework might explain the variability in the relationship between motivation and academic achievement.

1.2 Statement of the Problem

This study attempted to address a concern over the low academic performance among students in daily secondary schools, as indicated by the various reports and awards based on the national major examinations. Based on critical literature reviews, this study has selected motivation as the solution to the problem. However, there are several issues that need to be resolved. One issue is the inconsistent findings on the strength of the relationship between motivation and academic achievement. Another issue relates to what constitutes motivation since the literature has numerous theories to explain this variable. Yet another issue to be addressed is the mechanism by which motivation affects student performance in examinations. Being motivated does not seem to translate directly into higher grades unless students concentrate on studying behaviors. Therefore the troubling question is: what complements the relationship between being motivated and getting good grades in examinations?

In respect to addressing the highlighted issues, this study was designed with several purposes. One purpose was to consider a significant gap in the theoretical bases with which motivational influences are understood. Although motivation has been found to positively affect academic achievement, the problem with most past research was the investigation included only one or two constructs of motivation at one time. Admittedly, several studies have focused on the interrelations between two or three motivational aspects, yet the picture is still not comprehensive. Dornyei and Ushioda (2010) doubted that the complexity of defining motivation can be accounted for by any single theory. There is a need to understand the drives and pushes that influence students to academic excellence by obtaining a more comprehensive and integrated picture of motivation. This view was earlier voiced by Weiner (1984) who recommended that a theory of student motivation must include many concepts and interrelationships of different concepts. In addition, studying the theories individually will limit in the explanations of why students are motivated to achieve. Future researchers have been recommended to focus on model-based research in order to determine the causal and interactive relationships between domains of motivation and academic achievement (Middleton & Spanias, 1999).

Subsequently, this study also filled the gap in research by studying six motivational constructs together. In line with the humanistic and cognitive perspectives on motivation, the six constructs were chosen because they represent a more intrinsic drive in terms of thoughts and emotions that move students to engage in productive learning behaviors, thus achieving better grades in their academics. Future target, achievement desire, learning goals, learning values, learning ability and learning regulation were the six constructs of motivation predicted to work together to influence students' success. It was hypothesized that when students have high levels of all six kinds of motivation,

they will be more achievement-oriented. In contrast, if any of these motivational components is lacking, or several of them are low, then students will have low motivation and not be driven to success.

Another purpose of this study was to fill the gap in research by including flow as a mediating variable in the relationship between motivation and academic achievement. Being motivated is not a direct determinant of high achievement. There seems to be a missing link between motivation and academic achievement. This study proposed that one possible mediator between motivation and academic achievement is the state of flow – being deeply absorbed when engage in an activity that one enjoys and have a good sense of mastery (Csikszentmihalyi, 1990, 2006). Between motivation and achievement, students must get deeply engrossed, concentrated and focused on their learning task in order to perform better in tests and school appraisals. A student may have all the necessary ingredients of motivation to succeed, but when he or she gets down to working on a task, the state of concentration might escape him or her. A state of high focus and high engagement is seen as a requirement for optimal performance. Students who experienced flow were found to have better learning and achievement, tend to complete school, have higher motivation, commitment and performance (Shernoff et al., 2003).

The next gap in research context is the lack of reports found on the research of flow when studying for examination. Although flow has been investiagted in many specific tasks and different subject fields, no report can be found on the effects of flow in studying for examinations. This learning task is very important since studying well for examinations often result in good grades which is an indicator of high academic achievement. Therefore, there is a need to study the experience of flow when students study for their examination. Finally, there is a contextual gap in research that can be addressed by this study that seek to determine the experience of flow among Malaysian students. Despite the abundant reports on the benefits of flow done in the West, little is known about the experience of flow among students in the Malaysian educational setting. Consequently, this study hoped to contribute to the literature of flow by investigating whether Malaysian students experience flow when they study. Admitting the high interest and emphasis on academic achievement in Malaysian education, little is known about the possible contributing effect of flow as an important element in increasing students' probability of performing well in their examination. The lack of research in the flow variable may be due to a lack of awareness among Malaysian educators as to the significant role that flow can play in influencing the outcome of academic achievement for school students.

As a conclusion, this study attempted to examine the relationship between motivation, flow and academic achievement. Specifically, this study would test the hypothesis that motivational forces (future target, achievement desire, learning goals, learning values, learning ability and learning regulation) can positively predict students' academic achievement through being in a state of flow when they study for their examinations.

1.3 Research Objectives

This study aimed at testing a motivational model that explains students' academic achievement through the mediation of flow. Specifically, there were five objectives in this investigation.

1. To develop and validate the newly developed instrument I*f*-ME using confirmatory factor analysis.
2. To determine whether motivation to face examination positively affects students' academic achievement.
3. To determine whether motivation to face examination positively affects flow when studying for examination.
4. To determine whether flow when studying for examination positively affects students' academic achievement.
5. To determine whether flow when studying for examination mediates the positive effects of motivation to face examination on academic achievement.

1.4 Research Questions

This study was designed to answer the following five research questions:

1. Does the newly developed instrument I*f*-ME have acceptable measurement models as measured by model fitness?
2. Does motivation to face examination have a direct effect on academic achievement?
3. Does motivation to face examination have a direct effect on flow when studying for examination?
4. Does flow when studying for examination have a direct effect on academic achievement?
5. Does flow when studying for examination mediates the effect of motivation to face examination on academic achievement?

1.5 Hypotheses of the Study

The five main hypotheses of this study were as follows:

Ha1. The newly developed instrument I*f*-ME will have acceptable measurement models as measured by model fitness.

Ha2. Motivation to face examination will have a significantly positive direct effect on academic achievement.

Ha3. Motivation to face examination will have a significantly positive direct effect on flow when studying for examination.

Ha4. Flow when studying for examination will have a significantly positive direct effect on academic achievement.

Ha5. Flow when studying for examination will have a significantly positive mediating effect between motivation to face examination and academic achievement.

1.6 Significance of the Study

The findings of this study will benefit students, teachers, stakeholders and the community at large. To students, awareness and knowledge about the importance of having a strong drive to succeed is important. The majority of average students attending upper secondary daily schools in Malaysia have moderate to low achievement motivation and achievement need. Excellent Form Four and Five students have left their daily schools to attend boarding schools. Thus, it is imperative that the average students who remained in daily schools are not left behind in terms of having high motivation and good academic performance. The results of this study, if found to be significant, can be shared with students, parents and teachers in order to highlight the beneficial effects of having high motivation and high level of flow.

In addition, the findings of this study will result in a path model delineating the motivational path for students to achieve in school. Influences of important motivational forces to academic performance can be highlighted to students, teachers and parents so that everybody can acknowledge the significance of each construct. The model will hopefully delineate the complex interactions of motivation that contribute to students' achievement in school.

To stakeholders such as parents, teachers and the Ministry of Education, establishment of the significance of motivational strength within students will help to explain the reasons behind students' failures and success. Internal strength in the form of having high intrinsic motivation to be successful in school is seen as one of the better approaches in dealing with academic and disciplinary problems in schools. It is high time that adults in this society put less emphasis into external forces in educating the young people in becoming good students. It is imperative that students themselves be given the responsibility to develop into positive, self-regulating individuals who are interested in school because of the good values attached to academic success. In this way, being focused on school, learning and trying their best to achieve will direct students' time and energy into positive activities and at the same time not be attracted to mischievous, delinquent or even criminal activities. It is proposed that personal regulators such as interest in school, engagement in learning tasks and high values for achievement are better predictors of engagement in school. Being in school, in effect, would contribute to a better chance of performing in academic.

The significant effect of flow found in this study can be reported to various stakeholders in order to highlight the importance of being in this state in order to improve students' concentration, engagement and therefore learning. Being in a flow state can be taught to students so that they appreciate the importance of

achieving flow when they perform a learning task. The ministry can design training modules or programs to teach students how to achieve a flow state.

To teachers, counselors and principals, the tested instrument can serve as a valuable research tool in studying the motivation of secondary school by determining the levels of each motivational component and flow in the students. The instrument can be used for counseling purposes so that students may identify and better understand the specific types and levels of motivation that they possess. Teachers can use the instrument to assess motivational levels of their students, and when possible and necessary, reinforce the components of motivation that will help students become more efficient and academically successful. The instrument can also serve as a valuable resource and basis of information in studying the motivation of students in school as well as for designing programs in school in order to improve students' motivation in learning.

1.7 Scope of the Study

The scope of this study was focused only on six motivational constructs and one state of flow in the search of motivational forces that can affect academic achievement. There may be many other motivational forces or theories in the field, but they were not included in the model tested here. The six motivational theories selected here were chosen after reviewing the literature and determining the most influential theories of motivation that have been shown to significantly affect academic performance among school students. Although many other motivational theories might have contributed to academic achievement, they were not included and therefore were beyond the scope of this study.

This scope of this study was also narrowed to a specific population of Form Four students attending daily schools in the state of Selangor. Actually, in terms of measuring optimal levels of motivation, Form Three and Form Five students would be a better target population since they are studying for their major examinations. However, it is the Ministry's regulation not to conduct research on students taking major examinations, thus limiting the opportunity to investigate students with high level of motivation when sitting for a major examination. This research could only be satisfied with studying the Form Four students who normally are enjoying the school year after they have sat for a major examination the year before. Thus the measured level of motivation and flow might not be truly reflected in the students' responses.

In terms of schools, this study did not include other secondary schools defined by the Ministry of Education: fully residential schools (SBP), technical secondary schools (SMT), religious national secondary schools (SMKA), premier schools, centenary schools, and special model schools. This study also excluded special education secondary schools (SMPK), vocational special education secondary schools (SMPKV), international schools and private schools. Limiting the scope to students attending daily schools gave a better picture of motivational forces existing in the average group of students. Students in boarding schools are

normally high achievers and are assumed to have a high level of motivation to succeed. In comparison, private schools are often attended by students from affluent families and their level of motivation may be different from the majority of students from average-income families. Of course more studies need to be conducted to determine whether the above assumptions are correct or not.

1.8 Limitations of the Study

This study has several limitations that may influence the results obtained and the generalizability of the results to the larger population. First, this study may be limited in the strength of the instruments used to measure the seven variables in this study since they were constructed personally by the researcher after referring to the numerous studies found in the literature. Although the validity and reliability of the instruments have been shown to be good, further validation of the scales must be done to improve the items and strengthen their reliability.

Secondly, this study included only six selected motivational constructs that are deemed significant to the influence on academic achievement as mediated by flow. Probably other constructs can explain motivation as well since the field of motivation is vast and contains abundant theories attempting to explain what drive people to behave in a certain way. Future studies may want to include more theories in the attempt to find which motivational drives can be considered as intrinsic and which are extrinsic.

Thirdly, in terms of choosing the schools in the state of Selangor, this study was limited in terms of time and financial budget thus a small-scale study was deemed adequate for the purpose of conducting the current research without jeopardizing the sampling size and technique. Studying all schools in Malaysia as the target population would be too large for the researcher's restricted resources. In addition, although the sampling procedures had been carefully planned using a sampling strategy to increase the generalizability of the findings to the larger population, the actual data collection could not permit such ideal conditions because of several reasons.

One of the reasons affecting an ideal data collection process was the limited time to collect data after final year examination weeks that limit the researcher's sampling strategy. There were only three weeks of school remaining before students left for their year end holday. During this time frame, only a small number of schools could be visited. To complicate things, teachers are busy with marking and completing their year end examination reports, thus the time to entertain the researcher was sometimes often limited. Another reason was although the sample of schools was initially identified based on random sampling, a number of principals kindly rejected the researcher's request to conduct the study in their schools for reasons of being busy with end-of-the year assessment tasks. In such case, the researcher had to select another school but the selection was still done based on the cluster and random sampling techniques used. Furthermore, many students did not attend classes since they felt free after

completing their examination, thus teachers could only select those who were present to participate in the study. When selecting students for the study, the researcher had to depend totally on teachers' discretion and willingness to gather their students, hence complete randomness could not be obtained.

The fourth limitation was related to the inability to choose the ideal sample to conduct this study and achieve a better result. As mentioned earlier, the ideal population would be Form Three and Form Four students who are sitting for their major examinations. Nevertheless, the regulation stated by the Ministry of Education was explained above, and this study had to be satisfied with the group of students allowed to be included in the research. Focusing on students aged sixteen who attend Form Four in the state of Selangor only further limit the generalizability of the findings to the whole population of students in Malaysia.

Another limitation of this study was the two-stage cluster sampling technique used to select the students had reduced the probability that randomness of students was achieved in terms of background variables such as race, gender and family background. This study sampled schools representing urban and rural areas in Selangor based on the state's nine districts. After that, the researcher identified the percentage of students registered for Form Four and calculated the number of sample to be included in each group. They were selected based on classrooms conveniently determined by the teachers until the researcher met the quota proportional to the population. The students had varied personal and family background as well as different levels of academic abilities. Again, the generalizability of the findings in this study may not truly apply to the rest of the population.

It seems that many of the limitations in this study relate to the inability to choose a truly random sample of respondents. However, due to practical constraints described above, the researcher had to be satisfied with a combination of cluster, stratified and convenient sampling. Nevertheless, the researcher had attempted her best to reduce the severe limitations of non-random sampling at every step of data collection.

1.9 Operational Definitions of the Study

The variables studied in this research have wide interpretations from various perspectives and expertise. Thus, it is important that the definition of each construct be operationally defined specifically for this study so that the focus can be narrowed down and therefore fulfill the immediate objectives of the study.

Academic achievement in this study refers to the total percentage of the total marks that students get in all subjects tested in their final examination. Most students took nine subjects and others sat for ten subjects. The total percentages ranged from 0 to 100, with larger numbers indicating higher achievement.

Secondary school students in this study refer to 16-year old male and female students in Form Four attending daily secondary schools in the state of Selangor, Malaysia.

Daily secondary schools refer to non-boarding government secondary schools registered in the state of Selangor as listed by the Ministry of Education, Malaysia. This type of school is also referred to as normal day secondary schools or regular secondary schools. Majority of these schools have students attending Form 1 until Form 5 classes, whereas a small number of the schools has students attending Form Six classes.

Flow is defined as a state of high concentration in which students are totally absorbed in an activity or set of activities (Demerouti, 2006; Schaufeli, Salanova, González-Romá, & Bakker, 2002). A state of flow is achieved when students reach deep absorption in an activity that is pleasurable, challenging, and valuesy of doing for its own sake. Concentration, interest, and enjoyment occur simultaneously during the flow experience. This study measured the level of flow that students have when studying for the examination in the nine traits of flow as proposed by the pioneer of the theory, Csikszentmihalyi (1975, 1990) : (1) clear goals for what grades they target in the examination; (2) concentration and focus when studying for the examination; (3) a loss of feeling of self to extent they forget about other things (4) distorted sense of time consciousness as a result of being very engrossed in studying; (5) a balance between the challenge of passing the examination and their skill in understanding the subjects; (6) a sense of personal control when preparing for the examination; (7) autotelic experience due to feeling that studying for the examination is values doing for its own sake. According to www.yourdictionary.com, autotelic is defined as 'having an end in itself; engaged in for its own sake'; (8) become absorbed and focused when studying for the examination; and (9) preferring to get direct and immediate feedback regarding their performance for the subjects.

In this study, flow refers to the state of engagement when studying for examinations. The newly constructed instrument measure students' level of flow named The E- Flow Scale. The items asked students to rate the extent that they agreed with each item on a scale from 1 – very untrue of me to 5 – very true of me. Students' ratings for the items would be summed and averaged to determine the level of flow experience that they have. Higher means indicate higher level of flow, implying higher level of concentration and enjoyment when studying for examination.

Motivation refers to an internal state that activates, creates a drive and directs one's behavior towards a certain goal (Lahey, 2004). Motivational forces in this study refer to the combination of motivational constructs that have been identified in previous studies as being significant influences on students' achievement in school examinations. In this study, the six motivational forces tested in the

constructed instrument were future targets, achievement desire, learning goals, learning values, learning ability and learning regulation.

Future targets in this study measured the connections that students make between studying for and performing in the examination and achieving short term (the current school year) and long term future (professional career and future life) goals. Based on the theory of future time perspective, people make connections between what they do in present and what they will gain in future (Simons et.al, 2004; De Volder & Lens, 1982). The newly constructed instrument to measure future targets in this study was named The E- Future Scale measuring students' short term and long term targets when studying for examinations. The items asked students to rate the extent that they agreed with each item on a scale from 1 – very untrue of me to 5 – very true of me. Students' ratings for the items would be summed and averaged to determine the level of future aspirations that they have. Higher means indicate stronger connections that students have between the present and the future.

Achievement desire in this study refers to a concern that students have for achieving excellence through individual efforts including the need for success and desire to excel in study, school and other academic-related tasks. The basis is on achievement need theory referring to a relatively stable disposition toward engaging in achievement-oriented activities (Atkinson, 1957) as well as the capacity to feel pride in accomplishment (McClelland, 1987, Kunnanatt, 2008; Kluger & Koslowsky, 1988). Five traits that have been identified in previous studies to be the characteristics of high achievers were chosen to be measured in this study: students set their goals realistically, take only moderate levels of risk**,** possess the need for immediate feedback on the success or failure of the learning tasks they have executed, tend to be preoccupied with studying once they start working on it, and crave satisfaction with accomplishment in the examination. The constructs were translated to simple items suitable for the study purpose. The newly constructed instrument to measure students' level of achievement need in this study was named The E- Achieve Scale measuring students' achievement desire for success as they study for examination. The items asked students to rate the extent that they agreed with each item on a scale from 1 – very untrue of me to 5 – very true of me. Students' ratings for the items would be summed and averaged to determine the level of achievement need that they have. Higher means indicate higher level of achievement, indicating higher level of desire to achieve and succeed in their examination.

Learning goals in this study refers to students' reasons for engaging in their learning behavior (Ames, 1992; Ames & Archer, 1988). The goal orientations measured in this study are mastery and performance goal.

i. **Mastery goal** is based on mastery goal which is defined as having the urge to do work in order to develop competence and seek knowledge (Smith et. al., 2002; Dweck & Leggett, 1988; Nicholls, 1984). Students with

mastery purpose have a desire to develop competence, increase knowledge and understanding through putting efforts during learning.

ii. **Performance goal** is based on the theory of performance goal, defined as having the orientation towards wanting to demonstrate competence or perform better than others (Church, Elliot, & Gable, 2001; Dweck & Leggett, 1988; Nicholls, 1984). In this study, it measures the extent to which students do their work to demonstrate their competence relative to other students in the class or the school.

The newly constructed instrument to measure students' level of mastery and performance purpose in this study was named The E-Goal Scale consisting of items to measure students' mastery orientation and performance orientation when studying for examination. The items asked students to rate the extent that they agreed with each item on a scale from 1 – very untrue of me to 5 – very true of me. Students' ratings for the items would be summed and averaged to determine the level of both types of goals that they have. Higher means indicate higher level of mastery and performance purposes, indicating higher orientation to learn for the sake of mastering knowledge and higher desire for obtaining good grades in their examination.

Learning values in this study refers to the values or value that students put on good grades and studying for examination**.** The foundation of this construct is expectancy value theory which relates to individuals' expectation and values for doing a task (Eccles et al., 1983; Wigfield & Eccles, 2000; Wentzel & Wigfield, 1998). There are two components to the theory: expectations for success when doing a task, and the values one attach to a task. This study only focused on the second component: task values. Eccles et. al. (1983) defined three components of values which are attainment, interest and utility. This study measured the three kinds of value students may have for the task of studying for their examination. Attainment value is when students evaluate how important it is to perform well in the examination. Interest value is the extent of liking the activity and how much students enjoy studying for the examination. Finally, utility value refers to the usefulness of the studying tasks to help students achieve their short term or long term goals. The newly constructed instrument to measure students' level of expectancy value in this study was named The E-Values consisting of items measuring students' values for examination and good grades. The items asked students to rate the extent that they agreed with each item on a scale from 1 – very untrue of me to 5 – very true of me. Students' ratings for the items would be summed and averaged to determine the values or value that they put on examination and good grades. Higher means indicate that students put higher level of attainment, interest and utility values on examinations and good grades.

Learning efficacy in this study refers to the perception of ability and capability that students have for studying and performing well in the examinations. The theory of self-efficacy defines it as students' perceptions of their capability to succeed when doing a task (Bandura, 1997, 2001; Schunk & Pajares, 2004). Students with self-efficacy believe that they can master a situation and produce

positive learning outcomes (Bandura, 1993). The newly constructed instrument to measure students' level of self-efficacy in this study was named The E-Efficacy Scale consisting of items measuring students' perceived capability for studying when it comes to examinations. The items asked students to rate the extent that they agreed with each item on a scale from 1 – very untrue of me to 5 – very true of me. Students' ratings for the items would be summed and averaged to determine the level self-efficacy that they have. Higher means indicate higher level of self-efficacy, specifying that students perceived themselves as capable to study well for the examination.

Learning regulation in this study refers to control that students have on their learning behaviors based on whether their motivation is extrinsic or intrinsic. This notion is based on the theory of self-determination which refers to the need to experience choice and control in what one is doing (Deci & Ryan, 2000; Ryan & Deci, 2009). Two dimensions of determination were included in this study. One is intrinsic motivation when students participate in a task for the inherent pleasure and satisfaction in the activity itself. Second is extrinsic motivation where Ryan and Deci proposed four levels that vary in the degree of their autonomous regulation when doing a task. The lowest level is named external regulation when students do a task to get reward or avoid punishment. The second higher level is introjection when students do a task because they feel approved for doing it or guilty for not doing it. The third level is identification when students do a task because it feels personally important. The fourth level is named integration and considered as the highest level of extrinsic motivation approaching intrinsic motivation whereby students do a task because of their own choice (Ryan & Deci, 2000). The newly constructed instrument to measure students' level of self-regulation in this study was named The E-Regulation Scale. The items asked students to rate the extent that they agreed with each item on a scale from 1 – very untrue of me to 5 – very true of me. Since the four levels of extrinsic motivation and one level of intrinsic motivation are seen as a hierarchy of motivation from lowest to highest, students' ratings for the items would be summed and averaged to determine the level of self-regulation that they possess. Higher means indicate higher level of self-regulation, indicating that students study well for the examination because the regulation comes from within themselves, not regulated by others.

1.10 Summary

This chapter started by introducing to readers the significance of academic achievement in Malaysian education scenario. Motivation was suggested as beneficial for students to acquire since it comes from within the self and can become a strong drive to succeed. Motivational forces are viewed as one of the best solution to ensure that students remain focused in school and learning tasks. Readers were briefly introduced to the six motivational theories selected for this study. Next, the researcher presented her statement of problem mainly in identifying a gap in the relationship between motivation and academic achievement. Flow was explained as a potentially significant mediating variable that can result from having high level of motivation and thus contributing to higher academic achievement. The chapter continues with a number of objectives and

research questions of this research. The scope and limitations of the study were highlighted because they may influence the generalizability of the findings. Finally, a list of operational definitions for important constructs of the study was provided.

The next four chapters will consist of reports delineating the various aspects of tasks and activities conducted in this study. Chapter Two will consist of critical literature reviews and synthesis of numerous past research and studies on motivation, flow and academic achievement among students. Reviews of significant studies on each of the chosen theory will be presented. The chapter will end with a synthesis of the literature that resulted in the conceptual framework and the proposed path model. Chapter Three will describe the research design, population and sampling techniques, instrument development process, as well as data collection steps. Since this study used structural equation modeling, a significant effort was taken to detail the numerous analysis activities taken in order to ensure that the data met the requirement for SEM procedures. The following Chapter Four presents the findings of data analysis and discussions to answer research questions. Finally, Chapter Five ends the thesis with a conclusion, implications and recommendations that are deem relevant based on the findings of this study.

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