

Exploring Learner to Institutional Factors and Learner Characteristics as a Success Factor in Distance Learning

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Date of publication (dd/mm/yyyy): 11/11/2017

Abstract – In spite of dramatic increase of online courses and student enrollment, there are many indications that online courses are unsuccessful at meeting students' needs and students are dissatisfied with their online course experiences, which brings about a serious concern regarding the dropout rates of online courses. For solving this issue, it is crucial that researchers identify and study the factors that lead to student satisfaction with online courses because course satisfaction is considered to be the largest determinant in reducing dropout in distance learning environment. Hence, the purpose of this study is to identify factors contributing to course satisfaction among distance learners in Malaysian research universities. These factors are categorized into institutional factors (administrative support, technology support and university support), learner characteristics (motivation, self-regulated learning and self-efficacy). In this study, all variables were selected based on the social presence and transactional distance theory and on previous studies on satisfaction of students. Researchers used quantitative research where data were collected through questionnaires among 367 distance-learning undergraduate students. The findings indicated a statistically significant relationship between institutional factors and learner characteristics toward course satisfaction. The study suggested that learners with high level of self-efficacy have better academic performance in the distance-learning programs and are more likely to be more engaged in their learning.

Keywords – Online Course, Success, University Support, Motivation, Technical Support, Self-Efficacy.

I. INTRODUCTION

Distance learning in Malaysia has seen a phenomenal growth, especially in her higher education system. In Malaysia, there are numerous universities offering on-line courses that specifically provide opportunities for students challenged by certain constraints such as space and time. There are pointers indicating that on-line courses do not successfully meet the students' felt needs, in spite of increase in these courses and students' enrollment [1]. Hence, the students do not seem to attain the satisfaction they had expected, while they took part in on-line courses. This brings about a serious concern regarding the rates of dropouts from these on-line courses. To solve this issue, it is crucial that researchers identify and study the constructs that lead to the student's satisfaction with on-line courses. According to the study of [2], it is important for researchers as well as practitioners to have an understanding of the factors influencing course satisfaction. This is because satisfaction is suggested as the most important determinant affecting the rate of dropouts in distance-learning environments. Past studies

have examined factors associated with a student's satisfaction. However, the factors examined in each study have been limited while the relevant literature indicates that there are a good number of other variables that may be involved as well [3].

Institutional factors in term of support, including administrative support, technology support, university support and learner characteristics (motivation, self-regulated learning and self-efficacy) are recognized as crucial, [4, 5, 6, 7]. Moore and Kearsley argued that the success of on-line courses is dependent on improving, on the development of support materials and the facilitation of dialogue [8]. This is expected to enhance a reduction in transactional distance according to individual learner characteristics felt needs [9]. According to Moore's theory of transactional distance, which has wider acceptance in the literature, suggested an extensive study in empirical research on institutional factors and learner characteristics [10, 11, 12].

As mentioned earlier, studies in the domain of institutional factors and learner characteristics are important to evaluate the success of distance learning [13]. Hence, research universities in Malaysia will be able to overcome the challenges of distance learning by investigating how institutional factors and learner characteristics affect student's satisfaction with on-line courses. This is because student's dissatisfaction represents a serious waste of the scarce economic resources. Hence, the objectives of this study are to:

1. To determine the influence of institutional factors (administrative support, technology support, and university support) on course satisfaction among undergraduate distance learning students in Malaysian Research Universities.
2. To determine the influence of learner characteristics (motivation, self-regulated learning and self-efficacy) on course satisfaction among undergraduate distance learning students in Malaysian Research Universities.

II. REVIEW OF LITERATURE

The exponential growth of the learner population is making Malaysian distance learning an increasingly popular choice [14]. This gives Malaysia a privilege to exploit opportunities that abound in distance learning: to facilitate access to qualitative content, enhance qualitative teaching and learning, relatively reduce its delivery cost, and showcase Malaysian's expertise to the global community [15]. As distance learning established itself as an option in higher education, which is poised to take a larger role in Malaysia, high dropout rate among distance-

learning students is viewed as a serious problem in the Malaysian higher education institutions [16]. To discourage students from dropping their on-line courses, [1] reported that course satisfaction has increasingly attracted the attention of related researchers and stakeholders of on-line courses as a crucial subject of investigation. In another research study, [17] mentioned that the satisfaction of students toward on-line courses is a baseline requirement for successful implementation of distance learning. [18] Believed that student satisfaction is the overall behavioral belief and attitude gained from the advantages the student perceived from a particular on-line course. Consequently, based on the importance of course satisfaction towards the success of on-line courses, it has become a focal point for the course providers to find out how they can increase satisfaction, hence, subsequently reducing the rate of dropout. Thus, identifying and studying the factors that contribute to student satisfaction towards on-line courses, which in turn reduces the number of dropouts, are indeed beneficial to higher education [19].

The Transactional Distance Theory (TDT) is one powerful theory that avails researchers' opportunity to investigate the multiple relationships between the independent variables and student satisfaction [20]. This theory is defined as the communication gap or psychological space between instructors and students, which we must come to terms on in order to ensure that maximum learning is achieved [21]. Transactional distance theory (TDT) was introduced by Moore (1972) as a measure of student involvement in distance-education courses [22]. Moore's theory of transactional distance was the first comprehensive consideration that addressed distance learning [20]. This theory allows the distance learners to make decisions about what should be learned, redefining the learning process, re-evaluating the anticipated outcomes and reformulating evaluation. However, the transactional distance theory provides a comprehensive framework for taking into account distance-learning experiences. This is a framework considered open enough to allow for new parts and all-encompassing enough to provide practical solutions [20].

The present study by considering the relevant literature seeks to examine factors contributing to course satisfaction. This study argues that learner characteristics (motivation, self-regulated and self-efficacy) play crucial roles in enhancing the satisfaction of students but these factors, however, are not sufficient. Student satisfaction also relies on institutional factors. Thus, this study argues that the university, technical and administrative supports are relevant in determining the satisfaction of students with on-line courses.

1. Institutional Factors

Institutional factors include those areas that affect the persistence of students that an institution may or may not be able to change [23]. Institutional factors include support programs or requirements that an institution sets as standards, practices, or criteria for student participation to meet the conditions as established for graduation [24]. Institutions need to pay attention to support programs and related issues that often-become obstacles to attaining

their goal of ensuring that distance-education program becomes a success. [25] Suggested that a successful distance education requires a significant amount of institutional support geared toward promoting the quality of distance teaching and learning. Thus, as institutional factors play a crucial role in enhancing the level of satisfaction toward distance-education program, it has been addressed in depth and many institutional factors pointed out that it may have an influence on the student's perception and satisfaction in the literature. However, only three are considered to be relevant to this study with regard to their importance to the distance-education environment: technical, administrative and university support [26, 27, 28, 29, 13].

1.1. Technical Support

Technical support is defined as an operation towards helping and assisting students regarding computers and communication technology [30]. Technical support is considered as the assistance received by the learner on the usage of the technological environment [31]. Researchers have identified technical support as an important factor that is related to the satisfaction of students. It is expected to have analytical outcomes on the beliefs of the users in their acceptance or rejection of information systems [32]. In the situation users are faced with challenging problems with no help or assistance in sight, they will get the perception that exploring such system is a complete waste of time resources. Hence, they are compelled to quit the course or program completely [33]. [34] Suggested that technical support should be considered merely as a means to facilitate student learning and must be met for a distance-education program to be successful. However, it is suggested that technical support is one of the essential elements necessary to convince users to have a positive perception and acceptance toward adopting a technology [35]. Hitherto, there is limited research work that investigated the influence of technical support on course satisfaction, especially in the context of Malaysia.

1.2. Administrative Support

Another type of institutional factors is administrative support. Administrative support is considered as professional actions executed or endorsed by the building principal or the principal's agent to support counselling programs [36]. Administrative support could as well facilitate adoption and renovation of technology, since it administers important aspects of on-line education, including registration, security of data, saving and updating learner progression data, institutional training and technical support [13]. [37] Emphasized that administrative support is important in the use of technology because a genuine support, which is more than just paying lip service, could assist in integrating the culture of technology use amongst the learners and instructors. Similarly, [38] noted that administrator support together with the technology use training that they administer through their support is highly crucial, making the use of technology more practical. Hence, in the distance-learning context, administrative support is essential for the satisfaction of students. More so, administrators are becoming committed to providing

quality experiences to them because the administrative issue is a significant cause of student anxiety and failure [39].

1.3. University Support

University support is considered as the tools, methods, facilities, personnel and services offered by an educational establishment to assist and encourage students in their learning [40]. [41] Claimed that the university support could play an important role in retaining students in distance-learning environment. This is because university support influences the students' way of thinking, problem solving ability, methods and interest in their life-long goals. According to [13], university support has a prominent position in distance learning, since it affects the speed of decision making and embracing the courses by the students. In this respect, a number of studies in organizational sciences, organizational communications affirmed strongly that supports from universities are essential factors that influences greatly diverse aspects of cognition and emotional outcomes in students [42, 43, 44]. It is comprehensible as students perceived they get open to more support from their universities, they likely are to get less stressed, but more satisfied [45]. Therefore, it is important to know the role of university support in the successful teaching-learning experience of distance learning. However, there is hitherto a dearth of information in the literature as no research study examining in any depth the support of students is available.

2. Learner Characteristics

A Learner's characteristics are defined as an individual mental factor, suggested to impact on the learning activities of students [46]. Learner characteristic constructs is recognized as a main construct, which is significant in the source of challenging problems related to on-line learning [47]. According to [48] learner characteristics are important components for instructional designers who in turn utilize those factors to design and create tailored instructions for a target group. While the literature on learner characteristic categories is extensive and well documented, this study has selected some of these characteristics, which include motivation, self-regulated learning and self-efficacy as important characteristics that may influence course satisfaction among students in distance-education settings.

2.1. Motivation

One of the relevant characteristics identified is motivation: the internal force that drives individuals to function and reason in the manner and the way they do [49]. According to [50], motivation refers to the desire or determination to work and complete a course through stimulus or influence such as incentive that causes a person to act. Motivation is a process that entails a feedback mechanism that can either encourage or discourage certain individual behavior, which can make them to discontinue their behavior and perhaps channel their energy into other purposeful means [51]. Motivation, therefore, is an analytical element that establishes success in learning outcomes. Low level of motivation is a principal cause of high dropout rates among on-line

learners [52]. As high attrition rates, a negative indicator of motivation becomes a pressing issue of on-line learning and a major concern of on-line educators, it is important to investigate on-line learner motivation [53]. In this sense, educators should try to motivate learners in the on-line environments by providing them with activities and tools that will enable them to adapt to the system [54].

2.2. Self-Regulated Learning

As distance-learning program grows, researchers and educators have a scholarly interest in students' self-regulation [55]. Self-regulation refers to an active process where students set their learning goals considering their previous experiences and the current environment [56]. While distance learning is independent in nature, students in the on-line classes need to be more self-regulated in order to complete the course [57]. Self-regulated students are cognizant of their academic strengths and weaknesses, and they have a repertoire of strategies they appropriately apply to tackle the challenges of academic tasks [58]. However, in order to be successful, distance learners must rely on their individual abilities to direct their learning, that is, employ self-regulated learning (SRL) strategies [59]. Hence, self-regulated learning is enormously required while registering for on-line courses because of the special characteristics inherent in the settings of on-line learning [60].

2.3. Self-Efficacy

An individual's capability or self-efficacy is another important characteristic. This refers to confidence and belief perceived by an individual that he/she has an ability to complete a given task [61]. [62] Defined self-efficacy as beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments. In the context of distance learning, self-efficacy refers to a student's self-confidence in his/her ability to carry out a given learning task using the learning management system [13]. Research has shown that students with higher academic self-efficacy are known to be more flexible in the learning strategies they use than students with lower self-efficacy [63]. [60] Found a significant relationship between self-efficacy and course satisfaction: how students approach different learning situations and decide whether to remain or withdraw from a distance-learning course. This contributes to students' belief, and this has become an important variable throughout the distance learning decision process.

III. RESEARCH MODEL AND HYPOTHESIS

Based on transactional distance theory (TDT) and the review of literature, the proposed model of this study includes two critical success factors: institutional factors (technical, administrative, and university support) and learner characteristics (motivation, self-regulated learning, and self-efficacy). This may affect course satisfaction as a dependent variable. Fig.1 showed the relationship between the constructs of the study.

The result of previous studies revealed that the institutional factors are crucial constructs that affect satisfaction, persistence and retention [23, 64, 65, 66, 67,

24]. For example, [68] described the importance of the institution in students' success, especially in their satisfaction with on-line courses. They stated that the lack of adequate faculty development could influence the distance program quality adversely. It is suggested that this could lead to attrition and dissatisfaction in students, which would adversely affect the reputation and branding of affected schools. According to [69], providing support, equipment accessibility and training are important issues for distance learning acceptance.

Based on information obtained from the review of literature, in order to improve completion rates, the institution is expected to benefit from further exploration of the institutional factors related to student satisfaction because literature revealed that the most barriers to implementation of distance education are related to institutional issues [70]. Hence, it is hypothesized that institutional factors in terms of technical support, administrative support and university support may have direct influence on course satisfaction. This implied that if distance learners were provided with sufficient support, they would obtain satisfaction towards on-line courses. Therefore, the following hypotheses were proposed:

H1. Institutional factors have a significant influence on course satisfaction.

H1a: Technical support has a significant influence on course satisfaction.

H1b: Administrative support has a significant influence on course satisfaction.

H1c: University support has a significant influence on course satisfaction.

towards on-line learning. According to [78] the variables associated with learner characteristics such as learner self-efficacy and motivation have been shown to impact on achievement and satisfaction with learning. Therefore, the following hypotheses were formulated:

H2. Learner characteristics have a significant influence on course satisfaction.

H2a: Motivation has a significant influence on course satisfaction.

H2b: Self-Regulated learning has a significant influence on course satisfaction.

H2c: Technical support has a significant influence on course satisfaction.

IV. RESEARCH METHODOLOGY

This study was mainly exploratory in nature as it specifically employs quantitative research methodology using a cross-sectional survey. Hence, primary data were collected. The survey was found to be the most appropriate design in order to achieve the research objectives of the study. Further, survey design enables researchers to describe, organize and summarize the observed data and the researcher can gather information relatively from a large sample [79]. Thus, survey was used in gathering relevant data from the respondents by using well-structured questionnaires. Before the data collection commenced, the ethics and procedures of carrying out the research were observed and compiled closely by the researchers.

V. DEVELOPMENT OF THE INSTRUMENT

The instrument used in the present study was a well-structured questionnaire with 93 items, which includes 4 Demographic, 18 Course Satisfaction, 20 Institutional Factors, 36 learner characteristics adopted or modified from previous validated instruments to suit the particular requirements of the constructs. Content validity of these instruments was examined by two education experts from the Universiti Putra Malaysia (UPM) and their respective comments were strictly adhered. The constructs: course satisfaction, institutional factors (technical, university, and administrative support) and one item on learner characteristics (self-efficacy) were measured using a 5-point Likert scale. The items were labelled as 1 (strongly disagree), 2 (disagree), 3 (slightly agree), 4 (agree), and 5 (strongly agree), while the two constructs of learner characteristics (motivation and self-regulated learning) were measured using a 7-point Likert-scale items labelled as 1 (not at all true of me) and 7 (very true of me).

A pilot test was conducted to test the instrument of a sample of 30 undergraduate students in order to determine and identify potential challenges that may impact on the outcome of the findings in the course of carrying out the main survey [80]. Cronbach's alpha was used to measure the reliability of the instrument. Table 1 indicate the Cronbach's alpha value for eight constructs for the present study. It ranges from 0.79 to 0.88, which are favorable [81].

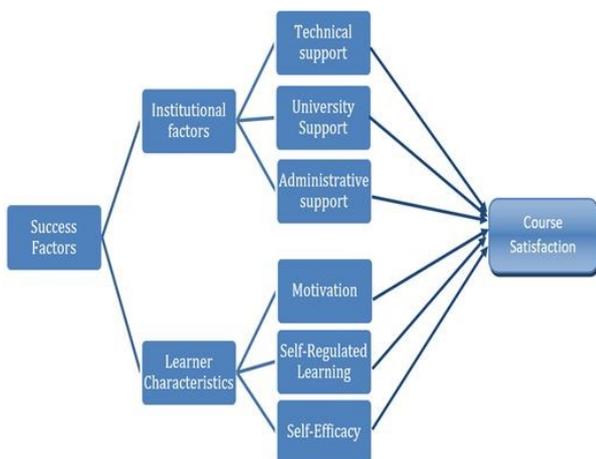


Fig. 1. The proposed research models

As mentioned above, various learner characteristics may affect learning outcomes of distance education. Prior studies indicate several pertinent learner characteristics, including computer self-efficacy, Internet self-efficacy, computer experience, Internet experience, computer anxiety and attitude toward e-learning [71, 72, 73, 74]. Further, a wide range of characteristics, such as motivation, self-efficacy, thinking style, personality, demography and past experience, have been introduced to increase the success of learners in distance learning [75, 65, 76]. [77] Points out that factors such as motivation, self-regulation and self-efficacy play an important role

Table 1: Cronbach's alpha coefficient of the constructs in the pilot study

Variables	Cronbach's alpha	Number of items
Course Satisfaction	0.82	18
Institutional Factors	0.85	20
Learner Characteristics	0.79	36
Total		74

VI. DATA COLLECTION

As earlier mentioned, the design for this study employed a survey method. This method is systematic in data gathering from a given participant [32]. The sample size for the study was 303 undergraduate distance learning students enrolled in their second semester (2016/17) at two universities in Malaysia, which are public research universities in the state of Selangor. This sample size was obtained using the cluster sampling technique from the Universiti Kebangsaan Malaysia (UKM) and Universiti Putra Malaysia (UPM) respectively. The choice of these two universities was because they have the largest number of distance learning centers and learner participants in Malaysia. These two research universities use SPIN and PutraBlast, which were developed by local vendors. More so, these two universities have approximately very similar course content delivery offering more than 50% of their courses online through the learning management system (LMS).

VII. DATA ANALYSIS AND RESULTS

The data analyses were applied through descriptive and inferential statistics to achieve the research objectives in this study. Table 2 shows the respondent's distribution for all demographic variables. Among the 303 of respondents, the highest frequency for gender was observed for female respondents (63%). Results from the analysis of respondent's age indicated that the respondents who aged between 18 to 25 years had the highest frequency (54.8%) followed by respondents aged between 26 to 35 years (35.1%). For employment status, the percentage belonged to respondents who were unemployed (52.7%) and 34.6% employed part time. The results for marital status revealed that 52.2% of respondents were single and 31.3% were married.

Table 2: Frequency Distribution of Students Demographic Characteristics

Variable	Level	Frequency	Valid Percent
Gender	Male	112	37
	Female	191	63
Age	18-25	164	54.8
	26-35	105	35.1
	36-45	23	7.7
	>45	7	2.3
Employment	Unemployment	157	52.7
	Part-time	103	34.6
	Full-time	38	12.8

Variable	Level	Frequency	Valid Percent
Marital	Single	155	52.2
	Married	93	31.3
	Divorced	49	16.5

Table 3 shows the level of each construct based on the perception of participate in Malaysian research universities. The level of each one was assessed by using the mean score interpretation, which is classified into three levels: low (<1.67), moderate (1.67-3.33) and high (> 3.33) [82]. As table shows, among undergraduate distance learning students, course satisfaction was moderate. The moderate level of satisfaction with online courses means that undergraduate's perception towards online courses experience was somewhat satisfied. In other words, they perceived online course as fairly useful for their learning experience. This concurred well with study by [83] who reported a moderate level of student satisfaction with online courses. Further, the results indicated high level of institutional factors and learner characteristics which are parallel to [85], [86], [77] and [87] who reported learner characteristics and institutional factors were the most important factor influencing student satisfaction.

Table 3: Descriptive Statistics

Construct	Mean	Standard Deviation
Course satisfaction	3.15	0.51
Institutional factors	3.34	0.51
Learner characteristics	4.05	1.26

Research Objective 1

The Influence of Institutional Factors (Administrative Support, University Support, and Technical Support) on Course Satisfaction.

Table 4 indicated that there was a significant influence of technical support on course satisfaction among the undergraduate distance learning students in Malaysian research universities (0.000), thus H_{1a} was supported in this study. Also, there was a significant influence of administrative support on course satisfaction among the undergraduate distance students in Malaysian research universities (0.006), thus H_{2b} was supported in this study. Finally, the results revealed that university support had a significant influence on course satisfaction among the undergraduate distance students in Malaysian research universities (0.000), thus H_{1c} was supported in this study.

Table 4: The Influence of University Support, Technical Support, and Administrative Support on Course Satisfaction

			B	β	S.E.	C.R.	P
Course Satisfaction	<--	SE	0.165	0.274	0.053	3.12	0.002
Course Satisfaction	<--	SR	0.06	0.21	0.017	3.617	***
Course Satisfaction	<--	M	0.081	0.256	0.028	2.924	0.003

Research Objective 2

The Influence of Learner Characteristics (Motivation, Self-Regulated Learning and Self-Efficacy) on Course Satisfaction

As the results of table 5 indicates that there was a significant influence of motivation on course satisfaction among the undergraduate distance students in Malaysian research universities (0.003), thus H_{2a} was supported in this study. Also, there was a significant influence of self-regulated learning on course satisfaction among the undergraduate distance students in Malaysian research universities (0.000), thus H_{2b} was supported in this study. Finally, the results revealed that self-efficacy had a significant influence on course satisfaction among the undergraduate distance students in Malaysian research universities (0.002), thus H_{2c} was supported in this study.

Table 5: The Influence of Motivation, Self-Regulated learning, and Self-Efficacy on Course Satisfaction

			B	β	S.E.	C.R.	P
Course Satisfaction	<---	US.	0.235	0.399	0.046	5.134	***
Course Satisfaction	<---	TS.	0.218	0.39	0.035	6.266	***
Course Satisfaction	<---	AS.	0.087	0.183	0.032	2.734	0.006

VIII. DISCUSSION

Since retaining students are a greater challenging problem for on-line courses than it is for face-to-face courses [82], it has long been a concern in higher education institutions in Malaysia. Therefore, it will become important to study the factors contributing to the satisfaction of on-line courses. In this study, the researcher examined the relationship between the constructs of institutional factors in terms of university support, technical support and administrative support and learner characteristics including motivation, self-regulated learning, and self-efficacy with course satisfaction. The results revealed that institutional factors have a positive significant factor that is associated with course satisfaction. Respondents paid attention to institutional factors in this study, which supports the findings of [83]. In their findings, they found out that institutional variables are more important than instruction variables. This implied that on-line students with high level of interaction and support from their institutions of learning would probably attain higher level of satisfaction towards on-line courses. Similarly, [84] suggested that universities should provide students with the necessary resources and facilities and technical support should be available and effective to encourage positive beliefs and attitudes in students.

Further, in the study of [85], they reported that the institutional supports were important to distance learning students. In their survey, participants rated majority of the services and supports with high level of importance. Hence, their findings support the findings of this study. But, the findings of [86] contradicts the result of this

study. They conducted a study on on-line students' perception towards various support services and found out that these support services do not seem to be of importance to the students. In their report, the respondents were mostly on-campus students who registered for on-line courses and not students enrolled for programs that were completely offered on-line. However, based on the importance of institutional factors in a distance-learning environment, this study suggested that without adequate institutional factors, students are less likely to persist at the distance-learning-education program if other options exist. Therefore, the efficient and real-time support should be provided from different fields and locations all across the institutes.

The outcome of this study indicated that learner characteristics had a significant effect on course satisfaction. The participants rated this construct as a more important factor in enhancing satisfaction towards on-line courses than the institutional factors. The finding is in agreement with certain previous studies that reported learner characteristics as important elements in promoting course satisfaction [48, 87]. These findings did not only validate the outcomes measured by [65], showing a significant relationship with learner characteristics and persistence, it also reflects the idea suggested by [88]. Their suggestion was that, a wide range of factors may contribute to the students' successes, of which student characteristics are dominant. A target population characteristic does not only inform the design and delivery of activities suitable to engage learners in the distance-education program; it also explains students' satisfaction toward the program. Moreover, the importance of learner characteristics (motivation, self-regulated learning and self-efficacy) in this study is in line with the outcome of [89], who found that student performance was significantly and positively influenced by self-regulating skilling, student motivation and academic self-efficacy, while the factor that was found to be mostly corresponding to student success was academic self-efficacy of the distance learning student. Hence, learner characteristics has received a wider attention in distance education research.

IX. CONCLUSION

The issue of distance learning activity in Malaysia is very interesting and worthy to be explored because a lot of success has been recorded in Malaysia. This gives the country a relatively higher position when compared with other Asian countries. In this respect, a relatively higher level of success logically could be related to a greater probability of student satisfaction with on-line courses, which impliedly translates to better academic performance. Thus, this study attempted to build a theoretical framework geared to explaining the main factors that potentially influence students' satisfaction toward on-line courses among Malaysian distance learners. The result of the Structural Equation Modelling (SEM) revealed that all the hypotheses were supported, and learner characteristics have been experienced to be the

most important construct for promoting the satisfaction in distance-learning programs.

Furthermore, the results of the study revealed that among the three subscales related to institutional factors, university support was found to relatively influence course satisfaction more than others did. Hence, universities should pay more attention to insufficient support and identify those behaviors and attitudes that are observed as poor to reduce relevant concerns. Consequently, on-line program administrators and university advisors must develop more effective and efficient on-line student support services for struggling students. Without adequate, professional, and caring institutional support, students are less likely to continue their enrollment at the distance-education programs even if there are no other options. Moreover, as learner characteristics in distance learning program are often an indicator of student satisfaction, the study provided valuable insights into the relationship between student motivation, self-regulated learning, and self-efficacy with course satisfaction. The results of the study showed that motivation and self-efficacy are powerful predictors of satisfaction for distance learning students. Based on acquired evidence, it could be claimed that students with high levels of self-efficacy have better academic performance in online educational programs and are more likely to be engaged in their learning, also students with more highly motivation are likely to be more satisfied. Likewise, students who focus on learning, mastery and self-improvement are more likely to be involved in learning and perform better. The findings suggest that success in online courses is related to students' need and it is reasonable to conclude that learner characteristics is one of the factors that strongly effects student satisfaction. Therefore, the present study added new empirical evidence to the limited research that exists in the area of learner characteristics in on-line education.

The current study suggests that policy makers, instructional designers and higher education administrations consider the components of student satisfaction in the curriculum as student satisfaction is often considered an essential quality measure in higher education [16]. Student satisfaction has also been found to result from and encourage learner engagement, better academic performance, greater learner motivation and learning, and a better possibility for online success. Moreover, when a learner is satisfied with a course or program they tend to persist and are less likely to drop out. This process, when supported by the research findings using quantitative methodology, could be used to further identify what and how influencing factors and practices are associated with course satisfaction among distance learners in Malaysia. Therefore, faculty members need to be trained in satisfaction issues regarding courses and look at all factors that might impact student satisfaction.

This study has some limitations. First, it explored course satisfaction among distance learners. Consequently, the findings of the study may not be conclusively drawn toward the face-to-face students. Furthermore, this study was restricted to two external variables: institutional factors and learner characteristics. There are varieties of

external variables: the instructor immediacy behavior, interaction and so on, which may affect satisfaction of students toward on-line courses. In fact, the proposed structural model could explain and predict 50.5% of variance in course satisfaction. In other words, 49.5% of variance in course satisfaction is still unexplained. Therefore, it is suggested the next research in future should explore more constructs and test the model in different context. This study was limited to an investigation on two public research universities. It is suggested that future studies should focus on private universities and examine the satisfaction of students toward on-line courses.

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