

Assessment of the Reliability and Validity of a Proposed Questionnaire Measuring Students' Attitude

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Abstract

This study aims to assess the reliability and validity of the students' attitude questionnaire (SAQ) that we propose. The SAQ is developed based on existing measurement scales from the literature, focus groups discussions and interviews with students. Six constructs are identified which are as follows: perception that loan repayment will affect the quality of life after graduation, awareness of loan repayment issues, perception towards loan agreement, parents' influence, students' attitude towards loan repayment and intention to repay loan. Out of 255 distributed questionnaires, 199 have been completed fully by the respondents. The respondents are the final year degree students in five areas of studies (Engineering, Law, Business, Psychology and Communication) who are also National Higher Education Fund Corporation borrowers. The data obtained are further subjected to a purification process which involves scale reliability and exploratory factor analysis (EFA). The SPSS 15.0 for Windows is used in the study. EFA yields a 35-item measure of student sample, with a 6-construct solution. The reliability estimates of both scales are found satisfactory; being 0.9 for perception that loan repayment will affect the quality of life after graduation and 0.8 for the other constructs. The results show 6 constructs and 35 out of the initial 41 items represent the theoretical model. Only one construct that the - awareness of loan repayment issues - has multidimensional items.

Keywords: student loan, reliability, exploratory factor analysis, questionnaire

Introduction

The literature of students' repayment behaviour dates back to the beginning of the 20th century (Bean--blossom and Rodriguez, 1989; Cross and Olinsky, 1984; Lee, 1982; Pedalino *et al.*, 1992). Initially, writings on attitude were from psychology and focused on the individual's behaviour. Loan repayment and default behaviour can be substantially predicted by the pre-college, college, and post-college characteristics of individual borrowers (Fredericks and Szelest, 1995). Price (2004) defines student loan default as students with debt burden greater than 8 percent and the method is widely used by policy analysts to predict policy success. The above definition is supported by previous research on student indebtedness that that 8 percent of income constitutes an acceptable payment level (Baum and O'Malley, 2002). Repayment and default can be related by measuring the default

payment (Flint, 1997). The amount of default therefore can be a good indicator in order to predict the amount repaid.

Among the factors identified to reduce student loan default, i.e. flexibility of repayment and students understanding of the value of money. The repayment flexibility as well as subsidizing repayment could make college investment more attractive for student (Ionescu, 2008). However, the in-depth understanding of the students' values towards loans need for further research. So that, appropriate financial education approach and programs can be develop. The purpose is to prepare the university students with the right knowledge and skills to manage their financial matters when they started earning money (Abu Bakar *et al.*, 2006). The consequences of debt accumulation upon graduation also become an important indicator to policymakers' justification on changes that need to be addressed in order to minimize defaults.

Therefore, this study will focus on factors influencing students' attitudes towards student loan repayment and the way students background characteristics influence those factors in motivating towards loan repayment. It is pertinent that a comprehensive and in-depth study on student attitude based on background factors effects since the purpose of this study is to assess whether the attitude theory and findings in western countries can be applied to the situation in Malaysia. This study has two main research objectives. First, it attempts to develop a process model to explain the antecedents and consequences of students' attitude towards loan repayment. Second, it intends to empirically test the model in a non-western setting, which will help the researcher to examine the external validity of western-developed theory in a different context (i.e. the applicability of theory). This includes the re-evaluation of the dimension and operationalisation of constructs, and the assessment of certain assumptions associated with the findings reported in extent literature (i.e. the relationship between perception towards loan agreement and students attitude towards loan repayment). In particular, this study intends to answer the following research question:

Research Question 1: From the students' perspective, what can qualify as antecedents and consequences of students' attitude towards loan repayment? In particular, this question can be divided into three sub-questions as follows:

1. Are psychological factors, such as perceptions towards loan agreement, perceptions that loan repayment will affect quality of life after graduation and awareness of loan repayment issues, determinants of students' attitude towards loan repayment?
2. What is the relationship, if any, between students' attitude towards loan repayment and intention to repay loan?
3. What is the impact of students' attitude towards loan repayment on the intention to repay loan direct? In other words, are there any mediating effects embedded in the relationship between students' attitude towards loan repayment, intention to repay loan, and other institutional factors?

By achieving the aforementioned objectives, it is expected that this research will help advance current knowledge about the students' attitude towards loan repayment and offer practical insights to organisation providing student loans and public policy makers. The aim of this paper therefore is to develop a model to predict student loan repayment that assists students and families on how to manage loan funds, thus avoiding higher level of debt (Ferguson, 2003). In addressing this question, the paper has the following structure. In the next section, the literature overview and constructs are discussed, followed by the theoretical model development. After that, the methods used in this study are explained thoroughly. In the last part, results and discussions are presented in details along with the conclusions.

Discussion And Hypotheses

Students' attitude towards loan repayment and intention to repay loan

This refers to the student's attitude toward a variety of matters that could affect his or her tendency to default towards loans (Volkwein and Szelest, 1995); or way of handling debt experiences (Livingstone and Lunt, 1992; Walker, 1996). The literature points to a variety of factors to predict repayment behaviours, mostly based on the characteristics of individual borrowers (Volkwein and Szelest, 1995; Christman 2000). The important predictors of debt and debt repayments were identified as attitudinal and psychological factors (Livingstone and Lunt; 1992). However, in the western context, the relationship between attitudes and behavior has been identified as weak (Volkwein and Szelest, 1995; Baum and Schwartz, 1988; Flint, 2002). On the other hand, a study carried out in Universiti Putra Malaysia has found that overall respondents (students) have negative attitudes towards loan repayment and their negative attitudes may affect the repayment of the loan after graduation (Abu Bakar *et al.* 2006). Other works further explore the factors which influence student' attitude towards loan repayment, including ethnicity, gender, marital status, and employment status (Chien & DeVaney, 2001; Kitaev, *et al.*, 2003; St. John, 1998), and borrowers' willingness and ability to repay (Monteverde, 2000).

Attitude is identified to associate with the behavioural intention, then intention lead to the actual behaviour (Azjen and Fishbein, 1975; 1980). The study of Fishbein and Ajzen's (1975) introduces the Theory of Reasoned Action (TRA) to investigate the underlying processes leading to loan repayment decisions. Applied to loan repayment decisions, the TRA states that the immediate antecedent of the decision is the intention to repay loan (loan repayment intention). Loan repayment intention, in turn, is predicted by the extent to which a student evaluates loan repayment positively or negatively (students' attitude towards loan repayment), and the perception of social pressure (subjective norm) such as media, peers, family and parents, to repay the loan. That is, students will be more inclined to make a repayment if they have a positive, rather than a negative evaluation of loan repayment. Furthermore, they will be more inclined in making repayment if they experience positive social pressure from significant others to do so. Therefore, we can formulate a hypothesis in the following way.

H₁: The relationship between students' attitude towards loan repayment and their intention to repay loan is positive

Parents' influence

Parents influence refers to parents' roles as guardian. The influences by parents are identified to be direct or indirect (Jessor and Jessor, 1977). Usually, young people's behaviour is influenced by their parents' approval (Jessor and Jessor, 1977) and their parents knowledge of the problem at hand (Reynolds, 1980). Evidence from other research disciplines suggests that parents can have a positive impact on the development of their children's personalities, including attitude (Vandell, 2002). Parents influence their children directly, through discussions and training (Ward *et al.*, 1977). Young people who talk to their parents regularly about the positive habits are more likely to behave positively than young people whose parents do not talk to them regularly (Grolnick and Slowiaczek, 2008). Attitude is learnt from the family during the childhood and remains fairly stable throughout life (Hakwan, 2004). It attributes primary influence to parents because their contact with their children begins earlier and more sustained. Therefore, we can formulate a hypothesis in the following way.

H₂: Parents' influence is positively associated with students' attitude towards loan repayment

Perceptions that loan will affect quality of life after graduation

Several studies have reported that students' debt burdens cause them to delay buying a car, getting married, and having children (Baum and Mallie, 2002; Baum and Schwartz, 1988; Flint, 2002). Concern has been voiced how undergraduate debt delay students from buying cars, buying a home, having children or moving out of their parents' home after graduating (Baum and Sounders, 1998; Baum and Mallie, 2002). Similarly, students' concern about high debt burden will affect their life after graduation. Almost 70 percent of respondents claim that loan repayment would delay them from buying cars, 43.6 percent claim it would delay them from getting married and 36.1 percent claimed it would delay them from having children. Half of male respondents, compared to only 39 percent of females indicate that loan repayment would delay them from getting married. Having loans to pay back may have an impact on the respondents' ability to save for their marriage, therefore, will have an influence on when to have children (Abu Bakar *et al.*, 2006). The negative attitude occurs when repayment obligations delay the home and car ownership, living apart from parents, postponement of marriage and having children (Baum and Schwartz, 1988). A 1997 survey of student borrowers found that 40 percent of students with debt delayed purchasing a home, 31 percent delayed purchasing a car and 22 percent delayed having children (Cofer and Somers, 2000). The increased cost of college-education caused student borrowers to delay: starting families, purchasing new homes, and making other major life decisions (Zhou and Su, 2000).

Family resources are found to be critical influences on students' aspirations and expectations about participating in higher education (Christie *et al.*, 2001). The introduction of loans has tightened the financial link between parents and students (Christie *et al.*, 2001). It was strongly mediated by the cultural and economic resources of their parents. The assumed availability of financial support from parents underpins the means-testing for part of the student loan. But parents receive no identifiable signals about students' probable needs. Parents may feel they face open-ended and undefined financial obligations (Ahier, 2000). The actual flows of resources within families depend on both the cultural structure of needs and on the material circumstances of the family members (Jones and Martin, 1999; Gillies *et al.*, 2001). Parental strategies have been investigated in studies of education decision-making, in relation to school choice and quality of education for younger children (Edwards and Whitty, 1997; Tomlinson, 1997). But as yet these perspectives have not been more fully explained in relation to higher education. Some empirical work has, however, suggested that the size of any parental contribution is closely associated with social class (Callendar and Kemp, 2000). Therefore, we can formulate a hypothesis in the following way.

H₃: The relationship between perceptions that loan repayment will affect quality of life after graduation and students' attitude towards loan repayment is mediated by parents influence

Awareness of loan repayment issues

Awareness of loan repayment issues refers to information disseminated received by the students. Students identified receiving information from many sources. Evaluating the effectiveness of these sources enables a further development approach to engage awareness among young people (Grodnick and Slowiaczek, 2008). Many students in developing

countries have little access to quick broadband internet access; however, millions of students are becoming IT literate and dependent on the Net for information and education. Such engagements with young people would increase the effectiveness of the information, thus providing better opportunities for behaviour change. Volkwein *et al.*, (1998) show that students realise that loan repayment is required, so ignorance and misinformation cannot be a factor in loan defaults. However, the same study also found that three out of four students are not aware of loan deferment options. Similarly, another study claims students from the same course in the university have different concerns about repaying debt they owed (Hira *et al.*, 2000). Awareness among students on the importance of financial skills and the complexity of the financial world is important to ensure money earned or borrowed is being managed efficiently for the improvement of their quality of life during college years and after graduation (Abu Bakar *et al.*, 2006).

Parental contributions were significantly influenced by family type, race, and savings patterns of parents (Dennis, 1993). Students and family should start financial aid planning six months to a year prior to requesting loan (Dennis, 1993). Parents need to decide what part of their financial contribution will come from past savings, current income, and future borrowing. The role of parents includes having a college-educated parent, as well as family income above the thresholds (Volkwein *et al.*, 1998). In family financing of college education, parents played the ultimate role of aid administrators. Churaman (1992) reported that family financial management issues must be considered in order to manage the increasing cost of education. Each of the following borrower characteristics to have a statistically significant association with a lower probability of default i.e. parent's income, and presence of two parents at home (Knapp and Seaks, 1992). The individual student achievement depends on family resources and family size (Behrman *et al.*, 1989; Parish and Willis, 1993). Older students are more likely to default than younger students, perhaps due to a weakening of ties to parents and family who might assist a student experiencing financial difficulties (Woo, 2002). The parents became important because there are some schemes involve means testing on the basis of family income at the point of entry to HE (Jackson, 2002; Ziderman, 2004), and the financial situation of the student's family (Chung, 2003) as well as loan is guaranteed through the assets of parents/guardians (Ziderman, 2005). In Thailand, the family income ceilings set for loan eligibility.

The parental wealth has minimal effects on enrolment (Ionescu, 2008). Legislators required enhancing the nation through investing and encouraging students and families to believe that investment in education was right (Livingstone, 2003). The rising cost of higher education had outrun the capacity or willingness of parents to meet the entire bill (Johnstone, 1972). Students and parents have been viewed as "joint consumers" of higher education and their knowledge of cost may occur simultaneously with the decision-making process (Olson, 1982). Students and their families are willing to invest time and money and to assume debt when the students are rewarded by loan (Cofer and Somers, 1999). The integrated models of student persistence recognize the interrelatedness among financial circumstances and social support from significant others in the student's family (St. John, 2000). Therefore, we can formulate a hypothesis in the following way.

H₄: Awareness of loan repayment issues is positively associated with perceptions towards loan agreement

H₅: The relationship between overall awareness of loan repayment issues and student' attitude towards loan repayment is mediated by parents influence

H₈: Awareness of loan repayment issues is positively associated with parents influence

Perception towards loan agreement

Loan agreement refers to contracts between the organisation and student as a borrower. The loan agreement provides student detail requirements about the loan as well as repayment. According to Abu Bakar *et al.*, (2006), university students have knowledge about loan agreement and loan repayment. Majority of students were knowledgeable about the NHEFC loan agreement, though there were a small percentage of them who did not know basic facts about the loan they have received. In the western context, lack of knowledge about repayment does not appear to be a strong factor in default (Volkwein *et al.*, 1998). For example, 93 percent of borrowers surveyed realized the loan had to be repaid. However, one in four was confused by the repayment process. Several studies in the US have revealed that students lack knowledge about certain aspects of student loan (Hira *et al.*, 2000). However, senior students tended to have better knowledge compared to first year students. Borrowers who have never been in deferment or forbearance are less likely to default, perhaps because borrowers who are organized enough to follow through deferments, are also better at handling repayment (Woo, 2002).

The loan agreement could affect the future life of borrowers. If borrowers did not understand the agreement well, it affect loan repayment after graduation, hence their future life. By funding their education with student loans, college students are accumulating debt that can affect their career and life decisions for years to come (Lamkin, 2004). By funding their education with student loans, college students are accumulating debt that can affect their career and life decisions for years to come (Fossey, 1998). The potential causes of not repaying the loan as they may have other priorities in life (Abu Bakar *et al.*, 2006). A study has been done in Universiti Putra Malaysia has found three quarter of the students claim that the loan would affect their job options after graduation. With a study loan to pay back, respondents may have to look for a high pay job to support their living. Almost 70 percent respondents claim that loan repayment would delay them from buying cars, 43.6 percent claimed it would delay them from getting married and 36.1 percent claimed it would delay them to have children. Half of male respondents compared to only 39 percent female indicated that loan repayment would delay them from getting married (Abu Bakar *et al.*, 2006). Therefore, we can formulate a hypothesis in the following way.

H₆: Perceptions towards loan agreement is positively associated with students' attitude towards loan repayment

H₇: Perception towards loan agreement is positively associated with perceptions that loan repayment will affect quality of life after graduation

Theoretical Model

Following from the discussion in the previous section, the following theoretical model is drawn as depicted in Figure 1.

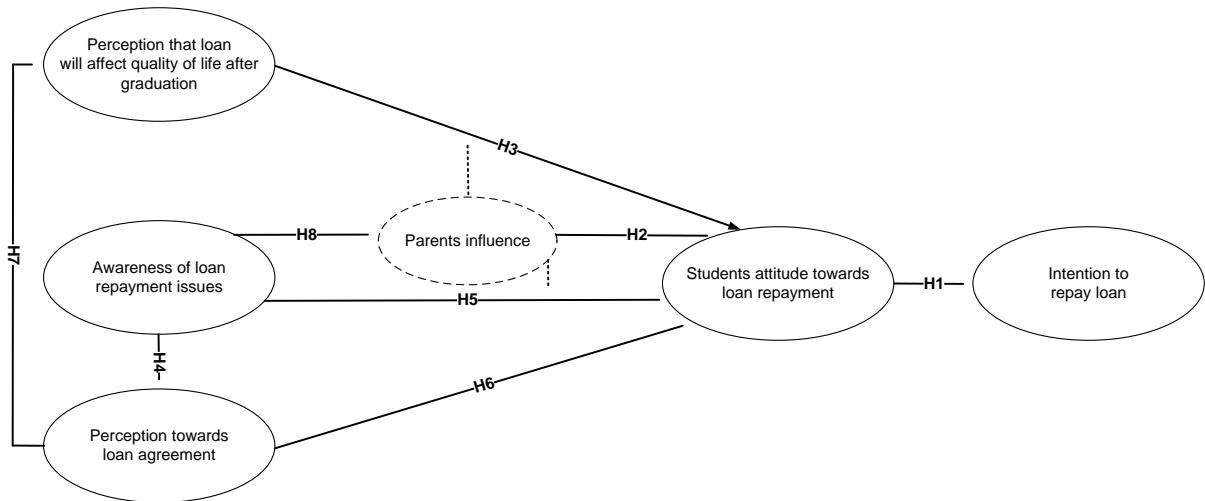


Figure 1: Constructs derived from literature

Procedures For Collecting Data

Existing Measurement Scales

The main objectives of conducting a literature search are to identify the domains of measurement scales. Domains of constructs were derived from existing related concepts and scales in various academic journals. The review of the literature resulted in the identification of 6 constructs of predicting student loan repayment. The constructs in this study were identified and integrated so as to be as concise as possible. Examples of constructs including their corresponding items are exhibited in Table 1.

Table 1: Constructs and items derived from literature

Construct	Items
Students' attitude towards loan repayment	AT01 The repayment will help other students AT02 Repayment is my obligation AT03 I have to put an effort to make repayments AT04 NHEFC can trace me to collect the loan AT05 There are legal penalties for non-repayment
Construct	Items
Perception that loan will affect quality of life after graduation	PQ01 loan repayment will affect my decision on the selection of the place to stay PQ02 loan repayment will affect my decision on job options PQ03 loan repayment will affect my decision on when to get married PQ04 loan repayment will affect my decision on when to buy my first car PQ05 loan repayment will affect my decision on when to have my first child PQ06 loan repayment will affect my decision on buying a house

Source: Abu Bakar et al., 2006

There are 5 items which represent students' attitude towards the loan repayment construct, and 6 items that represent the construct of perception that the loan will affect quality of life after graduation.

Items generation

Following the literature search, we have conducted four focus groups discussions, consisting of 32 students, followed by 6 semi-structured interviews. The respondents are first shown the

list of items generated from the literature, and they have agreed with the list of existing items shown. We have extracted items from qualitative data by using data reduction, and displayed functions in Nvivo8 software. A coding scheme has been designed based on literature and transcripts. Data are grouped according to relevant codes. Items are subsequently drawn from each group and compared with those obtained from literature. Additional items have been suggested to be inserted into relevant constructs. Table 2 and 3 show items derived from focus groups discussions and interviews.

Table 2: Items derived from focus groups and interviews

Construct	Items
Perception towards loan agreement	LP01 I think the loan agreement was written too long
	LP02 The loan agreement was difficult to understand
	LP03 The time given to complete the loan agreement form was not enough
	LP04 The loan agreement need to use a more easily understood language
	LP05 The loan agreement content is not clear
	LP06 I largely depended on the instructions given to me during briefing to fill up the loan agreement form
Construct	Items
Awareness of loan repayment issues	AW01 I am aware of latest information about NHEFC loan repayment in the newspapers
	AW02 I have watched the television programme about the latest information about NHEFC loan repayment
	AW03 I have read the latest information about NHEFC loan published on their website
	AW04 I have listened to the latest information about NHEFC loan broadcast on the radio
	AW05 I know about matters related to NHEFC loan repayment from family members
	AW06 I know about matters related to NHEFC loan repayment from friends
Construct	Items
Parents influence	PI01 My parents advise me after I graduate to find any job to pay the loan first
	PI02 My parents advise me after I graduate to make regular payments to reduce the debt
	PI03 My parents advise me to save from the NHEFC loan while a student, so that I can make payments immediately after I graduate
	PI04 My parents' experiences with any loan influence me to make repayment after I graduate
	PI05 My parents remind me of the importance of making loan repayment after I graduate
	PI06 My parents remind me to pay back the loan after I graduate to avoid problems in the future
	PI07 My parents, as guarantors of this loan, remind me to pay back the loan after graduate to avoid burden on them in the future

Sources: Focus groups discussions and face-to-face interviews for the purpose of this study

Table 3: Items derived from focus groups and interviews

Construct	Items
Intention to repay loan	IR01 I will make repayment because it is my priority
	IR02 I will find any job after I graduate to pay back educational loan

IR03	If I am unemployed after I graduate, my parents will make repayment, and I will continue paying the remainder after I get a job
IR04	I will save part of the loan during study, so that I can make repayments immediately after I graduate
IR05	I will make regular payments through salary deduction
IR06	I will make repayment because my culture norms says debt must be repaid
IR07	I will make repayment because my belief in religion says debt must be repaid
IR08	I will make regular payments to reduce the debt
IR09	I will make regular payments to avoid problems in the future
IR10	I will make regular payments after I graduate to avoid burden on my parents in the future

Sources: Focus groups discussions and face-to-face interviews for the purpose of this study

Our purpose is to develop a measure that is relevant in predicting student loans repayment. Therefore, after coding, transcribing and analysing the focus groups discussions and semi-structured interviews, we confirmed the 11 existing items. The new measurement items were generated for the 6 items concerning perceptions towards loan agreement, 6 items concerning awareness of loan repayment issues construct; 7 items regarding parents influence construct and 10 items in relation to intention to repay loan construct, as well as 1 new item in perception that loan will affect quality of life after graduation construct.

Content validation

The full list of potential items is then reviewed, selecting those items that best capture each dimension of predicting student loan repayment. The discussions have been conducted with the support of supervisors to reach a consensus on a final list of items. In total, 41 items have been generated, with the following constructs distribution: students' attitudes towards loan repayment - 5 items; parent' influence - 7 items; perceptions towards loan agreement - 6 items; awareness of loan repayment issues - 6 items; perceptions that loan will affects quality of life after graduation - 7 items and intention to repay loan - 10 items. Table 4 and 5 shows constructs and items tested in this study.

Table 4: Constructs and items tested in this study

Construct	Items
Students' attitude towards loan repayment	AT01 The repayment will help other students AT02 Repayment is my obligation AT03 I have to put an effort to make repayments AT04 NHEFC can trace me to collect the loan AT05 There are legal penalties for non-repayment
Construct	Items
Perception that loan will affect quality of life after graduation	PQ01 loan repayment will affect my decision on the selection of the place to stay PQ02 loan repayment will affect my decision on job options PQ03 loan repayment will affect my decision on when to get married PQ04 loan repayment will affect my decision on when to buy my first car PQ05 loan repayment will affect my decision on when to have my first child PQ06 loan repayment will affect my decision on buying a house PQ07 loan repayment will affect my decision on how much money I will contribute to my parents

Source: Generated through this study

Table 5: Constructs and items tested in the study

Construct	Items
Perception towards	LP01 I think the loan agreement was written too long

loan agreement	LP02 LP03 LP04 LP05 LP06	The loan agreement was difficult to understand The time given to complete the loan agreement form was not enough The loan agreement need to use a more easily understood language The loan agreement content is not clear I largely depended on the instructions given to me during briefing to fill up the loan agreement form
Construct	Items	
Awareness of loan repayment issues	AW01 AW02 AW03 AW04 AW05 AW06	I am aware of latest information about NHEFC loan repayment in the newspapers I have watched the television programme about latest information about NHEFC loan repayment I have read the latest information about NHEFC loan published on their website I have listened to the latest information about NHEFC loan broadcast on the radio I know about matters related to NHEFC loan repayment from family members I know about matters related to NHEFC loan repayment from friends
Construct	Items	
Parents' influence	PI01 PI02 PI03 PI04 PI05 PI06 PI07	My parents advise me after I graduate to find any job to pay the loan first My parents advise me after I graduate to make regular payments to reduce the debt My parents advise me to save from the NHEFC loan while a student, so that I can make payments immediately after I graduate My parents' experiences with any loan influence me to make repayment after I graduate My parents reminded me of the importance of making loan repayment after I graduate My parents remind me to pay back the loan after I graduate to avoid problems in the future My parents, as guarantors of this loan, remind me to pay back the loan after graduate to avoid burden on them in the future
Construct	Items	
Intention to repay loan	IR01 IR02 IR03 IR04 IR05 IR06 IR07 IR08 IR09 IR10	I will make repayment because it is my priority I will find any job after I graduate to pay back educational loan If I am unemployed after I graduate, my parents will make repayment, and I will continue paying the remainder after I get a job I will save part of the loan during study, so that I can make repayments immediately after I graduate I will make regular payments through salary deduction I will make repayment because my culture norms says debt must be repaid I will make repayment because my belief in religion says debt must be repaid I will make regular payments to reduce the debt I will make regular payments to avoid problems in the future I will make regular payments after graduate to avoid burden on my parents in the future

Source: Generated through this study

Instrument

A student attitude questionnaire (SAQ) is developed consisting of 41 positive and negative items and measuring participants' attitudes towards loan repayment that lead to intention to repay the respective loan. Items are scored on a 5-point Likert scale, where high scores indicated strong endorsement of the items on each scale (1=strongly disagree; 5=strongly agree). The validation of the scale is needed during the initial stages of development of a new questionnaire. Furthermore, the translation and adaptation of a scale into different languages makes it possible to use the questionnaires in comparative international multi-centre studies. Therefore, we decided first to translate, retranslate and then proceed to check the validity,

reliability and some other properties of the scale for Malaysian students. The translation and cultural adaptation of the SAQ were carried out at an early stage of the study. Because a Malay version was not available, reliability and validity studies were carried out for the present study. All the 41 SAQ items were translated into Malay by experts in both English and Malay (academics); they were then reconciled into one translated version and blindly back-translated into English and checked by a bilingual Malaysian academic and a single native English speaker fluent in spoken and written Malay and with considerable experience as a manuscript reviewer. The translation of each item was discussed and agreed. Furthermore, to assess the linguistic accuracy of the translated instrument, a study using bilingual people was carried out. It was found to be acceptable and no revision was required. In addition, the content of each item of the SAQ was evaluated by 8 academics, both supervisors as well as 6 lecturers from Malaysia, two NHEFC officers who were experts in loans in order to ensure satisfactory face, content and semantic equivalence of the translated instrument, following a procedure outline by Brislin (1970).

Ethical Considerations

Permission to carry out the research was obtained from the lecturers where the survey was performed. Students were approached by the researcher's representatives in their classrooms and invited to complete questionnaires voluntarily. The questionnaires were handed out and responses obtained during a series of lectures in November 2009. While the students were completing the questionnaire, there were no lecturers present in the classrooms and the researcher's representatives were there to answer any questions the students might have about the questionnaire. For those who consented to participate, their rights were explained and they were given an opportunity to ask questions about the study. They were informed about the purpose of the research, length of time it would take and were told that participation was voluntary and that they could withdraw from the study at any time. They were assured that their responses would remain confidential.

Participants and procedure

For the present study, which tests the questionnaire for reliability and validity, the participants were recruited from Universiti Utara Malaysia (UUM) and Universiti Teknologi Tun Hussein Onn Malaysia (UTHM), both final year degree students and NHEFC borrowers, on the basis of their availability. A total of 255 questionnaires (153 questionnaires to UUM and 102 questionnaires to UTHM) were distributed to final year undergraduate students studying on a variety of honours degree courses. The respondents were degree students in five areas of study (Engineering, Law, Business, Psychology and Communication). Out of 255 questionnaires distributed, 237 were returned; however, 199 of distributed questionnaires (78 percent) were completed fully by the respondents and satisfied the researcher. There were 24 students who did not fully complete the questionnaires and so were not included in the study.

Items purification

The scale used in the study consisted of 41 items used to measure the 6 constructs of students' attitude towards loan repayment. The majority (73 percent; n=30) of the items used in this scale were based on 4 focus groups discussions and 6 interviews. Out of all 41 items, 11 were transposed directly from Abu Bakar *et al.*, (2006) i.e. those items that represent the constructs of students' attitude towards loan repayment and perception that loan will affect quality of life after graduation. The data obtained was subjected to a further purification process which involved scale reliability consisting of coefficient alpha and item-to-total correlation, as well as exploratory factor analysis. SPSS 15.0 for Windows was used in the

study. To purify measurement scales, we conducted these two analyses as follows. First, in order to evaluate the internal inconsistency of all items, the coefficient alpha and item-to-total correlation were assessed for each provisional dimension. Scale reliability strictly refers to the proportion of variance attributable to the true score of latent variables (DeVellis, 2003). The statistical criteria for item retention in this stage were above 0.35 for item-to-total correlation (Bearden *et al.*, 2001) and above 0.7 for coefficient alpha (Churchill, 1979).

Second, the EFA were conducted to examine the factorial structure of scales, and started by checking general properties of data (descriptive statistics) and three basic assumptions underlying EFA including the absolute sample size, the correlation coefficient in the correlation matrix, and the sampling adequacy (Hair *et al.*, 1998). Items were divided into groups to ensure that the number of observations per item for each analysis was at least 5:1 (Cavusgil and Zou, 1994). Items were divided into 3 groups, of which the first one consisted of parents influence, perceptions towards loan agreement, awareness of loan repayment issues and perceptions that loan will affect quality of life after graduation constructs. The remaining 2 constructs, students' attitude towards loan repayment, and intention to repay loan, were separated into two different groups. To reduce the number of items and extract factors, the principal component analysis technique was performed (Hair *et al*, 1998). Then an oblique rotation was applied to initially-extract factors due to inherent correlations among constructs. Next, to assess the factorability of items, we examined anti-image matrices and two other indicators (i.e. Kaiser-Meyer-Olin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity). For every EFA, it was found that items have KMO Measures of Sampling Adequacy above 0.50 and p-values for Bartlett's Test of Sphericity below 0.05, suggesting satisfactory factorability for all items.

Factorial solutions (e.g. item loadings, percentage of variance extracted) obtained from SPSS were next evaluated. Any item whose highest factor loading was less than 0.55 or whose loadings were high on more than one factor was dropped following the approach in Hair *et al.*, (1998). Items which were repetitively regarded as unclear were also trimmed to reduce the chance of obtaining random guesses by future respondents. These two steps were repeated until all measurement scales had at least acceptable reliability (coefficient alpha > 0.70) and at the same time exhibited clear factor structures. Items not meeting these criteria were removed one at a time. Factor analyses were repeated until a solution was attained in which all items included in the analysis met all criteria.

Results And Discussions

Students' attitude towards loan repayment

The assessment of internal consistency reliability show higher levels of $\alpha=0.899$. Furthermore, item-to-total correlations are found to be above the threshold value of 0.35, (the minimum is 0.685 for AT04). Hence, every item is retained for the examination of dimensionality in EFA. The EFA result revealed that the items loaded clearly on one factor.

Perception that loan repayment will affect quality of life after graduation

The coefficient alpha for each dimension satisfies the set criteria with the result ($\alpha=0.905$). In addition, the item-to-total correlations are found to be above the threshold value of 0.35 (the lowest = 0.620 for PQ01). Moreover, the EFA result reveals that they load clearly on one factor.

Perceptions towards loan agreement

The corrected item-to-total correlation of each item is found to be more than 0.35 (the minimum is 0.443 for LP05) and $\alpha=0.853$. As for the dimensionality of the items, the EFA result shows that they loaded on two factors, which are in factor 1 (LP01, LP02, LP03 and LP04) and in factor 2 (LP05 and LP06). However, LP06 (I largely depended on the instructions given to me during briefing to fill up the loan agreement form) item is deleted because it loads in two factors (0.430/0.568). Therefore, only LP05 is left (The loan agreement content is not clear) as a single item and as such subject to deletion.

Awareness of loan repayment issues

The corrected item-to-total correlation of each item is found to be more than 0.35 (the minimum is 0.504 for AW01). Furthermore, the alpha is 0.826. Since scale items show sufficient internal consistency, all of them are retained and additionally tested for their dimensionality. As for the dimensionality of the remaining items, the EFA result shows that the items loads on two factors, i.e. AW05 and AW06 in factor 1, and AW01, AW02 and AW03 in factor 2. However, item AW04 (I have listened to the latest information about NHEFC loan broadcast on the radio) loads in two factors (0.719/0.436) and therefore subject to deletion. The alphas are recalculated for both dimension and the results for both dimension above 0.7; media ($\alpha = 0.738$) and family and peers ($\alpha = 0.876$).

Parents' influence

The item-to-total correlations of each item is found to be more than 0.35 (the minimum is 0.409 for PI03) and $\alpha=0.823$. As for the dimensionality of the items, the EFA result shows that items loaded on two factors, i.e. PI03 and PI04 in factor 2, and in factor 1 (PI01, PI02, PI05, PI06 and PI07). Coefficient alpha is recalculated for each dimension. The items for PI03 (My parents advise me to save from the NHEFC loan while a student, so that I can make payments immediately after I graduate) and PI04 (My parents' experiences with any loan influence me to make repayment after I graduate) do not satisfy the set criteria and thus subject to deletion.

Intention to repay loan

The corrected item-to-total correlation of IR03 (If I am unemployed after I graduate, my parents will make repayment, and I will continue paying the remainder after I get a job) item is found to be less than 0.35, it is 0.034 and the item is deleted. The coefficient alpha shows that $\alpha=0.832$. As for the dimensionality of the items, the EFA result shows that they loaded on two factors, i.e. in factor 1 (IR01, IR05, IR06, IR07, IR08, IR09, IR10) and in factor 2 (IR02 and IR04). However, IR02 (I will find any job after I graduate to pay back my educational loan) item is deleted because the communalities show below 0.5, it is 0.408. That leaves IR04 (I will save part of the loan during study, so that I can make repayments immediately after I graduate) as a single item and as such it is also subject to deletion.

The tested model and its coefficient values are presented in the following Figure 2.

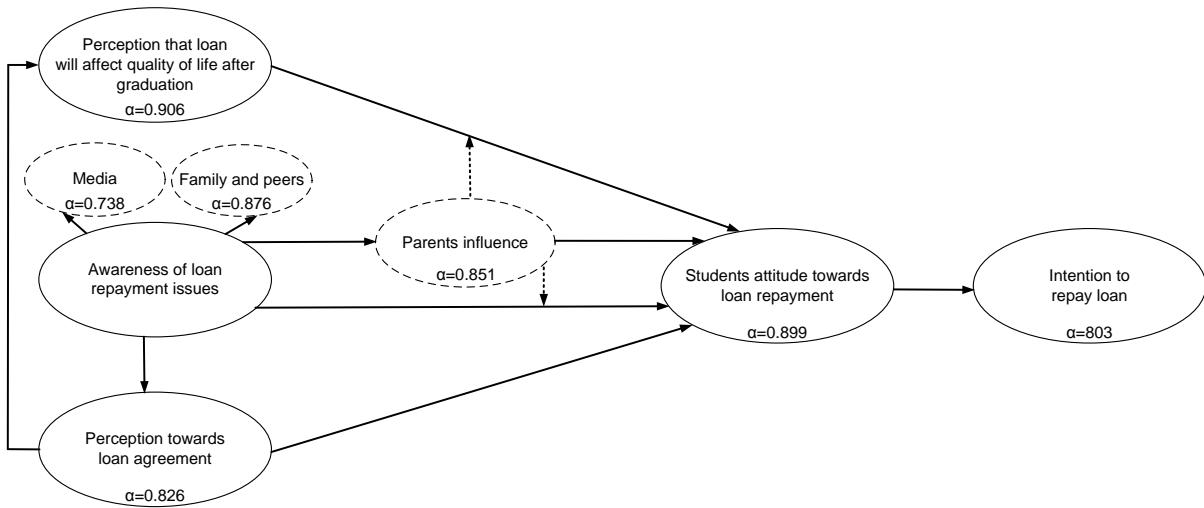


Figure 2: Model with identified coefficient values

The model holds when tested with the data. The scale reliability and the EFA results show that the 6 constructs and 35 items represent the theoretical model. One construct has multidimensional items; this construct is awareness of loan repayment issues. The first group is identified as awareness from media and the other group identified as awareness from family and peers.

Conclusions And Implications

The objective of this study is to determine the information obtained from students used to predict student loan repayment after they graduate. The results indicate items and confirmed that many factors prevent them from making payments in the future. First, loan agreement between students and the NHEFC should be reviewed to facilitate student understanding of the agreement. Second, the socialization agents such as media, peers and family play important roles in encouraging students to make repayment. Moreover, the policy makers should enhance awareness of loan repayment issues by providing intensive seminars, especially for final year students. The purpose is to educate current students of the importance of loan repayment, and in so doing help future students. Third, we also find that parents play a vital role in encouraging their children to make repayments, which is consistent with eastern cultures. Therefore, we suggest that policy makers should consider educating parents, in order to increase loan repayment.

Theoretical Implication

This research is expected to make contributions in three ways: theory extension and testing, verification of the conceptualization and operationalisation of constructs, and replication of the previous studies.

First, this study will advance current knowledge by adding alternative insights to factors that contributes to student loan repayment. This research will illustrate factors such as perception towards loan agreement, awareness of loan repayment issues, perceptions that loans repayment will affect the quality of life after graduation, and parents' influences have a relationship with students' attitude towards loan repayment. Students' background also plays important roles to become a predictor to loan repayment. The relevant attitudinal factors influence the intention to repay loan, as well as the applicability of theories that have been used in western context to non-western context particularly in Malaysia.

Second, this research seeks to provide further understanding about the dimensionality and operationalisation of concepts such as attitude, perceptions and awareness. Although constructs employed in this research have been well-defined in previous studies, surprisingly, little was understood about their underlying dimensions, prior to this study. Moreover, the measurement scales have not been subjected to adequate validity and reliability tests in the past. This study presents the opinions of Malaysian students about most important dimensions of all constructs. Technically, it also offers a proof about the construct validity and reliability of previous scales.

Third, this study contributes to existing knowledge by re-evaluating incomplete findings reported in past studies. For instance, several researchers (Abu Bakar *et al.*, 2006; Livingstone and Lunt, 1992; Baum and O'Malley, 2003; Fredericks and Szelest, 1995) have suggested that students' socio-demographic characteristics are positively correlated with student loan repayment, but there are some characteristics that have not been tested yet. Instead, many researchers (Abu Bakar et al, 2006; Flint, 1997; Knapp and Seaks, 1992) have investigated the relationship between attitude and perceptions of university students towards loan repayment. This research partly replicates and further extends those studies by investigating the relationship between these constructs, which are parts of the students' attitude model.

Finally, the research framework of this study can be introduced as standard measurement to measure students' attitude towards loan repayment. This research makes an important contribution to the literature, by studying the interaction between borrowers' attitude and factors' influence on attitude towards loan repayment. Hence, it facilitates the further development of a model for predicting student loan repayment.

References

- Ajzen, I. and Fishbein, M. (1980), Understanding attitudes and predicting social behaviour, *Prentice-Hall Englewood Cliffs: NJ*.
- Abu Bakar, E., Masud, J. and Jusoh M. Z. (2006), Knowledge, attitude and perceptions of university students towards educational loans in Malaysia, *Journal of Family Economics Issue*, Vol. 27, pp. 692–701.
- Baum, S. and O'Malley, M. (2003), College on credit: how borrowers perceive their education debt: Results of the 2002 national loan survey, *Braintree MA: Nellie Mae*.
- Baum, S. and Schwartz, S. (1988), The impact of student loans on borrowers: consumption patterns and attitudes toward repayment, *Mimeo Boston: Tufts University*.
- Baum, Sandy, and Marie O'Malley (2002), College on Credit: How Borrowers Perceive Their Education Debt: Results of the 2002 National Student Loan Survey. *Braintree, MA: Nellie Mae Corporation*.
- Baron, R.M. and Kenny, D.A. (1986), The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations, *Journal of Personality and Social Psychology*, Vol. 51, pp. 1173-1182.
- Beanblossom, G. and Rodriguez. B. R. (1989), Characteristics of Stafford Loan Program Defaulters: A National Study. *Washington: U.S. Department of Education, Office of Student Financial Assistance*
- Brislin W. R. (1970), Back-Translation for Cross-Cultural Research, *Journal of Cross-Cultural Psychology*, Vol.1, pp. 185

- Christman, D. E. (2000) Multiple Realities: Characteristics of Loan Defaulters at a Two-Year Public Institution. *Community College Review*, Vol. 27 (4), pp. 16-32.
- Churchill, G. (1979), A Paradigm for Developing Measures of Marketing Constructs, *Journal of Marketing Research*, Vol. 16 (1), pp. 64-73.
- Cavusgil, S. and S. Zou (1994), Marketing Strategy-Performance Relationship: An Investigation in Empirical Link in Export Market Ventures, *Journal of Marketing*, Vol. 58 (1), pp. 1-21.
- Cofer, J. and Somers, P. (2000), A comparison of the influence of debtload on the persistence of students at public and private colleges. *Journal of Student Financial Aid*, Spring.
- DeVellis, R. (2003) "Scale Development: Theory and Applications", 2nd edition, Sage: London.
- Flint, T. A. (1997), Predicting Student Loan Defaults, *Journal of Higher Education*, Vol. 68 (3), pp. 322-54
- Fishbein, M., and Ajzen, I. (1975), Belief, attitude, intention, and behavior: an introduction to theory and research, Reading, MA: Addison-Wesley
- Gray, K.S., (1985), Can student loan default be forecast accurately? *Journal of Student Financial Aid*, Vol. 15 (1), pp. 31-41
- Hair, J., R. Anderson, R. Tatham, and W. Black (1998), Multivariate Data Analysis, 5th edition, Prentice-Hall: London
- Hira, T. K., Anderson, M. M. and Petersen, K. (2000), Students' perceptions of their education debt and its impact on life after graduation, *Journal of Student Financial Aid*, Vol. 30, pp. 7-19.
- Hesseldenz, J. and Stockham, D. (1982), National direct student loan defaulters: the ability to repay, *Research in Higher Education*, Vol. 17 (1)
- Julia Y., Porter, W., Richard F., William E. D., Michael F. B., Janice S. and Patricia A. S. (2006), Students' perceptions of factors that affect college funding decisions NASFAA *Journal Of Student Financial Aid*, Vol. 36 (1)
- Jessor, R. and Jessor S.L. (1977), Problem Behavior and Psychosocial Development: A Longitudinal Study of Youth. New York: Academic Press.
- Grolnick, W. S. and Sloniaczek, M. L. (2008), Parents' involvement in children's schooling: a multidimensional conceptualization and motivational model, *Child Development*, Vol. 65 (1), pp. 237 – 252
- Kitaev, I., Teresita N., Virginia R. and Freddie B., (2003) Student loans in the Philippines: Lessons from the past, student loans schemes in Asia, UNESCO-International Institute for Educational Planning, Bangkok, Thailand.
- Livingstone, S. and P.K. Lunt, (1992), Predicting personal debt and debt repayment: Psychological, social and economic determinants, *Journal of Economic Psychology*, Vol. 13, pp. 111-134.
- Hakwan C. L., Robert D. R., Patrick H., Richard E. P. (2004), Attention to intention, Science, Vol. 303 (5661), pp. 1208 - 1210
- Masuo, D. M., Malrouto, Y. L., Hanashiro, R., and Kim, J. H. (2004), College students' money beliefs and behaviors: An Asian perspective, *Journal of Family and Economic Issues*, Vol. 25(4), pp. 469–481.
- Masud, J., Laily, P., and Hira, T.K. (2004), Financial beliefs and behavior of college students: Cultural differences, *Journal of Malaysian Studies*, Vol. 1, pp. 43–53.
- Millett, C. M. (2003), How undergraduate loan debt affects application and enrollment in graduate or first professional school, *Journal of Higher Education*, Vol. 74 (4), pp. 386–427
- Monteverde, Kirk. (2000), Managing Student Loan Default Risk: Evidence from a Privately Guaranteed Portfolio, *Research in Higher Education*, Vol. 41(3), pp. 331-352.

- National Higher Education Fund Corporation (2009), Available online: <http://www.ptptn.gov.my> [Accessed on 2 March 2008]
- Nordin, K. (2009), Bayaran pinjaman PTPTN dipermudah (NHEFC loan repayment uncomplicated), Available from: *Berita Harian online* [Accessed 10th October, 2009]
- Price, D. V. (2004), Educational debt burden among student borrowers: An analysis of the baccalaureate and beyond Panel, 1997 Follow-up, *Research in Higher Education*, Vol. 45 (7), pp. 701–737.
- Reynolds, C. R. (1980), Concurrent validity of What I Think and Feel: The Revised Children's Manifest Anxiety Scale, *Journal of Consulting and Clinical Psychology*, Vol. 48, pp. 774–775
- Stockham, D., & Hasseldenz, J. (1979), Predicting national direct student loan defaults: Role of personality data, *Research in Higher Education*, Vol. 10, pp. 195-205.
- Scherschel, P. (1998), Student indebtedness: Are borrowers pushing the limits? *USA Group Foundation*
- St. John, E. (1998), Loan debt: A new view, Black, *Issues in Higher Education*, Vol. 15 (10), pp. 1-3.
- Vandell, D. L., and Pierce, K. M. (2002), Commentary: After-school programs and structured activities that support children's development. In R. Garner (Ed.), Hanging out: *Community-based after-school programs for children*, pp. 167-178
- Volkwein, J. F, and Szelest, B. P. (1995), Individual and campus characteristics associated with student loan default, *Research in Higher Education*, Vol. 36 (1), pp 41-72.
- Volkwein, J. F. and Alberto F.C. (1998), Who defaults on student loans? The effects of race, class and gender on borrower behaviour: In Fossey, R. and Bateman, M., Editors, *Condemning Students to Debt: College Loans and Public Policy*, *Teachers College Press, Columbia University, New York*.
- Woo, J.H. (2002), Factors affecting the probability of default: student loans in California, *Journal of Student Financial Aid*, Vol. 32(2), pp. 5-25.
- Wilms, W. W., Moore, R. W. and Bolus, R. E. (1987). "Whose Fault is Default?" *Educational Evaluation and Policy Analysis*, Vol. 9(1), pp. 41–54.
- Walker, C. M. (1996), Financial management, coping debt in households under financial strain. *Journal of Economic Psychology*, Vol. 17(6), pp. 789–807
- Zhou, L., and Su, H. (2000), Predicting college student debt: An exploratory study on socio-demographic, economic, attitudinal and behavioral determinants, *Proceedings of Association for Financial Counseling and Planning Education (AFCPE)*, *Upper Arlington, OH*