

Understanding Student Motivation in Higher Education Participation: A Psychometric Validation of the Academic Motivation Scale in the Malaysian Context.

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Abstract. The purpose of the study was (1) to validate the psychometric properties of the Academic Motivation Scale (AMS) in the Malaysian higher education context and (2) to identify the dominant forms of motivation amongst university students in Malaysia. A questionnaire survey was carried out in 9 participating universities which consist of public universities, locally established private universities and foreign branch campuses in Malaysia. Based on a usable sample of 1,919 business undergraduate students in Malaysia, the AMS was validated through confirmatory factor analysis and the results confirmed the 7-factor structures proposed by Vallerand et al. (1992). The findings of the study also found that the university students were predominantly motivated by extrinsic motivation which is externally regulated, extrinsic motivation with internalised reasons and intrinsic motivation to know.

Keywords: Self-Determination Theory, Motivation, Higher Education Participation, Academic Motivation Scale

1. Introduction

Motivation has been a central theme of inquiry among psychologists due to its strong association with biological, cognitive and social regulation and the consequential effects upon human behavior (Deci & Ryan 2008). In the educational psychology literature, extensive research has been conducted in understanding student motivation as it has often been associated to student engagement, adjustment, persistence, help seeking and performance which are important outcomes to education (Deci & Ryan 2008; Meece, Anderman & Anderman 2006). While a majority of motivational literature was developed from the school or workplace setting, there is a lack of research attention in the higher education context, particularly in examining the reasons for higher education enrolment (Kember, Hong and Ho 2008). This research area is especially important in the emerging economies where the level of educational attainment of the population is viewed as an essential factor for social and economic development (Bennett 2004; Kember, Hong and Ho 2008). Additionally, understanding the motivation of university students in higher education enrolment provides useful insights towards promoting student retention in the university, and in the careers related to their course of study (Ballman and Mueller 2008).

In examining motivation for higher education participation, the Academic Motivation Scale (AMS) developed by Vallerand et al. (1992) has been widely used to measure student motivation in enrolling into college among high school students (Ratelle et al. 2007). The AMS is anchored upon the Self-Determination Theory (SDT) which postulates different forms of motivation which lead to varied outcomes. The role of motivation in higher education participation is highlighted by Kember, Ho and Hong (2012) who asserted that the form of student motivation to enrol for a degree and the intensity of it will influence students' dedication and approach to study during the course of study. While the AMS has been widely tested in the US and the European context, scarce attempts has been made to replicate its validity in the Asian context, particularly amongst the university students. To address the identified gaps in the literature, this study aims to validate the psychometric properties of the AMS scale amongst university student samples in the Malaysian context. This study also seeks to examine the types of motivation which are most prevalent among university students in Malaysia.

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2. The Self-Determination Theory Perspective

One of the leading human motivation theories in the psychology literature is self-determination theory (SDT) which is widely tested and applied in various fields such as education, sports, parenting, health and well-being (Deci & Ryan 2008). This theory asserts that to understand why people participate in certain activities or behave in certain ways, the different types of motivation need to be distinguished as they would lead to varied outcomes (Ballmann & Mueller 2008). The most central distinction in SDT is between autonomous motivation and controlled motivation.

Autonomous motivation is based on self-regulated orientation which comprises of intrinsic motivation and the type of extrinsic motivation in which people have identified with an activity's value and integrated into the sense of self (i.e. identified regulation). For instance, individuals engage in higher education which is accompanied by interest and excitement in new learning new things, to thrive towards accomplishments and/or because the importance of higher education pursuit is internalised within the individual. Controlled motivation, on the other hand consists of extrinsic motivation in the forms of external regulation where one's behaviour is determined by external contingencies of reward and punishment and introjected regulation which action is based on approval motive, avoidance of shame or contingent self-esteem (Deci & Ryan 2008). A student who pursues college education due to fear not able to find a job later, due to parental pressures or because that is what a "good" person would do may be subject to controlled motivation in higher education pursuit. While both autonomous motivation and controlled motivation energise and direct behavior, the state of amotivation refers to a lack of intention and motivation. A student who is in this state may not see the linkages between outcome and action, and they may be subjected to feelings of incompetence and uncontrollability. They may feel that the education pursuit is not meant for them and may stop participating in academic activities. Relative to controlled motivation and amotivation, autonomous motivation tends to yield greater psychological health, persistence, enjoyment, satisfaction and overall well-being.

Table 1: Sample Respondent Profile

Characteristics	Frequency	Percentage (%)
<i>Gender</i>		
Male	616	32.3
Female	1292	67.7
<i>Nationality</i>		
Local students	1632	85.6
International students	274	14.4
<i>Age</i>		
Less than 20 years	258	13.5
20-24 years	1567	82.1
25-29 years	81	4.2
More than 29 years	2	0.1
<i>Year of Study</i>		
First year undergraduates	540	28.2
Second year undergraduates	712	37.2
Final year undergraduates	660	34.5
<i>University Categories</i>		
Public Universities	648	33.8
Private Universities (local)	664	34.6
Foreign Branch Campuses	607	31.6

Applying SDT to the context of academic pursuits, Vallerand et al. (1992) developed the Academic Motivation Scale which measures student's tendencies toward the three types of intrinsic motivation (intrinsic motivation to know, to accomplish and experience stimulation), three types of extrinsic motivation

(external regulation, introjected regulation, identified regulation) and amotivation in the context of college education pursuit. The SDT proposes that the different types of motivation fall in a continuum with amotivation at the far left side and intrinsic motivation at the far right of the continuum, indicating that individuals may have a varying degree of self-determination (Ballmann & Mueller 2008; Ratelle et al. 2007).

3. Methods of Study

The subjects for this study are a representative cross-section of full-time business undergraduate students at public universities, private universities and foreign university branch campuses in Malaysia. A sampling frame which consisted of a list of universities in Malaysia was obtained from the Ministry of Higher Education of Malaysia and permission was sought from the selected institutions for the survey administration. A total of 9 universities (4 public universities, 3 local private universities and 2 foreign branch campuses) agreed to participate in the questionnaire survey. The questionnaires were administered at the faculty of business of the participating universities via stratified random sampling based on different university categories and year of study. A total usable sample consisted of 1,919 students was attained in this study (see Table 1 for respondent profile).

4. Data Analysis

4.1. Descriptive Statistics

From the mean of the AMS sub-scales, Self-Determination Index (SDI) was computed to indicate an individual's degree of self-determination in higher education participation. The SDI in this study measures the extent to which a student's decision to undertake a higher education pursuit is primarily driven by his/her own free will or due to certain controlling factors. In calculating the SDI, valid scores computed ranged from -18 and +18, with higher scores indicating greater level of self-determination. From the sample of study, it was observed that the distribution of the self-determination index was approximately normal, with sample respondents obtained an average of 5.04.

A one-way between groups analysis of variance was conducted to explore the impact of students' affiliation to different university categories and year of study on the levels of SDI. The sample data was divided into three university categories, namely Public University (PUU), Private University (PRU) and Foreign Branch Campuses (FBC). There was a significant difference at the $p < 0.05$ in SDI scores for the three university categories: $F(2, 1916) = 4.247$, $p = 0.014$. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for PUU ($M = 4.733$, $SD = 3.276$) was significantly different from PRU ($M = 5.166$, $SD = 3.342$) and FBC ($M = 5.226$, $SD = 3.297$). This results show that students from Public Universities are reported to have the least self-determination in higher education pursuit, relative to students from Private Universities and Foreign Branch Campuses. Although significant difference was found, it was noted that the effect size was very small. In comparing the mean difference between year of study, it was found that there was no significant difference at $p < 0.05$.

Table 2 presents a comparison of students' mean of motivational orientations by different university categories. The mean of the total sample indicated that Extrinsic Motivation – External Regulation (5.81) is the strongest form of motivation amongst the sample for this study. This is followed by Extrinsic Motivation – Identified Regulation (5.76) and Intrinsic Motivation – To Know (5.34) while Amotivation marked the least form of motivation amongst the total sample with a mean response of 2.54. In the inspection of the samples from different university categories, it was found that students from Foreign Branch Campuses and Private Universities (local establishments) are predominantly motivated by Extrinsic Motivation – External Regulation, which is a type of controlled motivation - with a mean response of 5.94 and 5.77 respectively. Students from Public Universities, on the other hand, reported the highest degree of EM – Identified Regulation (5.81), which is a form of autonomous motivation. The second highest form of motivation amongst students from Foreign Branch Campuses and Private Universities (local establishments) were Extrinsic Motivation – Identified Regulation while for Public Universities students, Extrinsic External Regulation was the second highest form of motivation. The third highest form of motivation for all three groups of students is reported to be the Intrinsic Motivation – To Know, which is a type of autonomous motivation.

Table 2: Comparison of Motivational Orientation Means by Total Sample and University Categories.

University Category	IM to Know	IM to Accomplish	IM to Experience Stimulation	EM Identified Regulation	EM Introjected Regulation	EM External Regulation	Amotivation
Total Sample	5.34	4.90	4.54	5.76	5.24	5.81	2.54
PUU	5.52	5.06	4.87	5.81	5.41	5.73	2.90
PRU	5.40	4.90	4.69	5.73	5.28	5.77	2.52
FBC	5.14	4.75	4.04	5.74	5.00	5.94	2.17

Note: PUU – Public Universities, PRU – Private Universities (Local), FBC – Foreign Branch Campuses; IM – Intrinsic Motivation, EX – Extrinsic Motivation

4.2. Scale Reliability Test

The Motivation for Higher Education Participation construct was measured by a 28-item scale which consisted of 7 subscales on the Academic Motivation Scale, i.e. intrinsic motivation (to know), intrinsic motivation (towards accomplishment) and intrinsic motivation (to experience stimulation), extrinsic motivation (identified regulation), extrinsic motivation (external regulation) and amotivation. The items were rated on a scale ranging from 1 (does not correspond at all) to 7 (corresponds exactly). Each subscale consists of four items each; thus, subscale scores could range from 4 to 28. A high score on a subscale indicated high endorsement of that particular motivation orientation. Overall, the Cronbach's alpha values for all sub-scales were more than 0.7 (0.708 – 0.804), which indicated adequate or good internal consistency.

4.3. Confirmatory Factor Analysis

Subsequent to the preliminary of reliability test using Cronbach's alpha, confirmatory factor analysis (CFA) was undertaken (using AMOS version 18) to assess the relationships between observed variables and their underlying latent constructs. For this study, χ^2 value tend to be large and p-value tend to be very small because the sample size involved was more than 1900, and the construct examined was relatively more complex. Due to this issue, other model fit indices were used as key consideration for model fit assessment (Tabachnick and Fidell 2007; Bryne 2010).

Initial outputs indicated that the model fit was not adequate (χ^2 (329) = 2657.487; $p < 0.01$; GFI=0.901, AGFI=0.878, CFI=0.902, TLI=0.888, RMSEA=0.061). Although some indices, i.e. GFI, AGFI and CFI were satisfactory, TLI and RMSEA suggested a need for further improvement. Based on the modification indices, a few error terms were identified with correlated measurement errors. Hence, the model was re-specified to include the correlation of the identified measurement error terms, one pair at a time, with the pair with the largest indices being performed first, followed by the second highest and so on. The final output of fit statistics indicated that the model fit was adequate (χ^2 (324) = 2182.411; $p < 0.01$; GFI=0.92, AGFI=0.9, CFI=0.92, TLI=0.909, RMSEA=0.055). The construct validity of the improved model was also found to be acceptable with CR > 0.7 and VE approximately 50%. Standardised loading for the variables were more than 0.5 and the correlation between subscales was below 0.9, indicating adequate discriminant validity. The correlation between the Intrinsic Motivation (IM) sub-scales (IM – To Know, IM – To Accomplish, IM – To Stimulate) and Extrinsic Motivation (Identified) were noted to be at the higher range, and this was expected as these sub-scales were related to autonomous motivation. The low correlation of these sub-scales to the Amotivation sub-scale was also expected as these two types of motivation were at the far end of the self-determination continuum. The results from the confirmatory factor analysis therefore, confirmed the seven-factor structure of the AMS.

5. Discussion and Conclusion

The purpose of the study was to (1) validate the psychometric properties of the AMS in the Malaysian higher education context and (2) identify the dominant forms of motivation amongst university students in Malaysia. To address the first objective of this study, the results gathered from the confirmatory factor analysis demonstrated that the AMS has adequate levels of reliability and support the contention that the AMS is a reliable instrument towards measuring students' motivational orientation in academic pursuit. This

is consistent with previous findings in AMS validation in the US and European context (e.g. Ratelle et al. 2007; Vallerand et al. 1992).

In identifying the predominant form of motivational orientation of university students in Malaysia, the results in this study indicated that external regulatory reasons in higher education participation are the highest form of motivation, particularly amongst students from foreign branch campuses and locally established private universities. This includes reasons such as an anticipated reward of a ‘better life’ and higher salary with a degree qualification. Besides external regulatory reasons, the overall sample of this study also found to be regulated by identified reasons which are aligned to the individual’s personal values. The dominant presence of extrinsic motivation in higher education may be contributed by social norms and pressures for tertiary qualification attainment in a knowledge-based economy. Although students in this study are predominantly driven by extrinsic motivation, extrinsic motivation with internalised reasons can similarly produce personal satisfaction or success that would be expected if the actions were intrinsically motivated. Apart from these types of extrinsic motivation, the students are also autonomously motivated by the intrinsic reason for learning.

As universities move towards a mass higher education system, it is expected that there will be greater variations in motivational orientations due to the diversity of student population. While the AMS serves as a useful tool to understand student motivation in higher education participation, student’s motivational orientation could also be understood as a multi-faceted phenomenon with students expressing context-dependent motivation (Kember, Hong & Ho 2008). Future studies of qualitative inquiry could further examine this area of research by considering additional antecedents such as cultural and personality factors.

6. References

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