

FACTORS AFFECTING ACADEMIC PERFORMANCE OF FIRST-YEAR UNIVERSITY STUDENTS: A CASE OF A VIETNAMESE UNIVERSITY

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ABSTRACT

Having research-informed and evidence-based information into factors that impact students' academic performance is crucial for institutions to be able to identify gaps in the provision of training and support for students. This study is motivated by the need to determine and analyse such factors at a university that has been experiencing high academic failure and dropout rates. The study employed quantitative research methods with the leading research instrument being a survey administered to 397 first-year students from 13 disciplines and 7 faculties. Exploratory Factor Analysis (EFA) and multiple linear regression were used to identify the underlying relationships between variables. According to the research findings, there are five key factors that contribute to academic performance and success of first-year university students, namely, students' motivation, lecturers' pedagogical knowledge and skills, lecturers' professional knowledge and credential, learning resources and conditions and course structure. These factors have been ranked from the one with the most substantial effect to the one that confers least impact. The findings can have important implications for proposing measures to improve academic performance for the university as well as other institutions in the higher education sector.

Contribution/Originality: The paper's primary objective was to find out the prime factors, which affect the academic performance of first-year university students as well as the motivation to study. The findings can be used by the instructors as the basis upon which they can help students overcome stress and integrate into the learning environment as soon as they enter university.

1. INTRODUCTION

In the higher education sector, understanding factors that underlie students' academic achievement has, for long, been a topic of interest for educators, universities, and policymakers. For individual students, achieving academic success has essential and far-reaching impacts in personal, educational, and professional terms. It contributes to students' self-esteem, wellbeing, motivation, and perseverance in learning and has implications on their career choice, personal income, level of success, and community participation (Durden and Ellis, 1995; Gainen,

1995; Hassel and Ridout, 2018). Poor academic performance or academic failure are often associated with attrition, reduced graduate output, and an increased cost of education (Jayanthi *et al.*, 2014; Bolton, 2019). Universities students' progress and success are an integral part of institutional strategic directions and policies (Meer *et al.*, 2018). In the current climate of increased accountability, students' success is also a testimony of institutional effectiveness in producing competent, skilled and employable graduates (Osaikhiuwu, 2014). More importantly, this contributes to the production of skilled manpower required for a country's growth and for international development – a mission that the higher education sector is to undertake. These are compelling rationales to discuss the topic of how student progress and succeed academically at university.

The task of understanding university students' learning experience and helping them to succeed is particularly important when considering the first-year student cohort. This is given the fact it is an often-reported challenge, especially for those transitioning straight from high school, to switch to university life and learning (Pittman and Richmond, 2008). According to Meer *et al.* (2018), most of higher education institutions in the world recognise that first-year students should be the prime focus of any retention strategy.. However, it is widely acknowledged that ensuring academic success for students is much context-dependent as local affordances and constraints need to be considered (Meer *et al.*, 2010; Nelson *et al.*, 2012; Meer *et al.*, 2018).

As a country that is in its process of industrialisation and modernisation, Vietnam attaches great significance to having a skilled and competitive labour force. Education, especially higher education, assumes a crucial role for both the country and its population. The Vietnamese culture itself highly values academic success, often seeing this as the most respected attainable attribute of status (Nguyen, 2016). Observing the college transition and completion rate of Asian students in the United States, Hirschman (2016) also notes that 'Vietnamese students are very likely to complete college' than any other group and that 'the exceptional commitment of Vietnamese students to higher education is evident in almost every indicator' (p. 232). However, for local educators and researchers, it has been concerning that a growing number of students do not make satisfactory achievement in their study, fail to meet the learning outcomes expected of their majors or to accumulate the credit points needed to graduate (Phan, 2013). There is a staggering number of dropouts reported even at Vietnam's most established universities. Nguyen (2018) and Thanh (2018) document that dropout figures range between some hundred to some thousand a year per institution and can reach 10% of the total enrolments. Notice ably, the data shows three in five university students are dropping out without finishing their first year of study (Nguyen, 2018).

Having research-informed and evidence-based information into factors that impact on students' academic performance is crucial for institutions to be able to identify gaps in the provision of training and support for students. This study is motivated by the need to determine all the possible causal factors and discuss ways of addressing them in universities that have been experiencing high academic failure and dropout rates. The study employed quantitative research methods with the main research instrument being a survey administered to 397 first-year students from 13 disciplines and 7 faculties. Exploratory Factor Analysis (EFA) and multiple linear regression were used to identify the underlying relationships between variables. Findings conclude five key factors that contribute to the academic performance and success of first-year university students. The findings can have important implications for the university as well as other institutions in the higher education sector.

2. LITERATURE REVIEW

2.1. First-Year Students and the transitioning to University Learning

It is widely perceived that transitioning to the freshman year often confer a positive experience, which involve presenting new opportunities to the students. The challenges in the transition stage have been explored in academic, personal, professional and interpersonal terms (Fisher and Hood, 1987; Towbes and Cohen, 1996; DeBerard *et al.*, 2004; Brooker *et al.*, 2017; Akanni and Oduaran, 2018).

From a psychological perspective, the transition to university life often involves the need to break from the old routines and previous life-cycles as to adjust to a new living environment, including adapting to new social and residential changes and challenges (Fisher and Hood, 1987). Fisher and Hood (1987) argue that this is a difficulty period for all students regardless of their residential status, which results in an increase in psychological disturbance, depression, obsession and absent-mindedness. In different studies conducted on boarding school and university students, Fisher (1984;1986;1987) found that between 60% and 70% of freshmen had to deal with homesickness and other accompanying symptoms such as depression, anxiety and somatic changes. An increase in depression among first-year students is attributable to the loss of control when old plans and procedures are no longer suitable for new circumstances (Fisher and Hood, 1987). For those who leave home for the first time, stress comes from different sources, including finding their way around, sharing accommodation with unfamiliar people, budgeting money, and setting their own limits (Lafreniere *et al.*, 1997). This has been observed to cause them to have higher absent-mindedness scores and more difficulties in focusing on and handling academic work, which impacts on their academic performance in their first and later years of study (Fisher *et al.*, 1985; Bruffaerts *et al.*, 2018). Giddan (1988) argues that there is no other place that needs more lively social support than the reactions of new students entering university for the first time.

Inside the curricular space, college freshmen have to handle new intellectual changes, such as new time management, workload, and academic expectations. For one thing, the environment of high school appears to be more structured, highly controlled and teacher-driven. Meanwhile, the academic life at university often involves more ambiguous expectations and demands on students (Lafreniere *et al.*, 1997). Vasconcelos and Almeida (2018)

point out that successful transitioning is affected by the expectations and aspirations that students have for their tertiary education. Those who enter with either overtly low or too optimistic expectations, possibly due to the lack of disciplinary aspirations or having little knowledge of the academic reality, tend to be more easily discouraged and are, therefore, more likely to experience higher levels of stress and depression when they soon realise that unrealistic expectations are not easily met (Vasconcelos and Almeida, 2018). The challenge for first-year students also come from unrealistic beliefs about class sizes, staff availability, and workload (Lowe and Cook, 2003; Smith and Hopkins, 2005; Crisp *et al.*, 2009; Kandinko and Mawer, 2013; Hassel and Ridout, 2018). For another, first-year students may lack the fundamental understanding of their course. Some research findings on first-year chemistry students in South Africa, for example, found that many students lacked an inadequate knowledge of the fundamental principles underpinning the study of chemistry (Rollnick *et al.*, 2008; Marais and Mji, 2009; Steenkamp *et al.*, 2009).

The difficulties faced by university freshmen are exacerbated to the extent that students are unable to manage the transition and choose to leave higher education during or at the end of their first year of study. First-year attrition, as defined by the Australian Government's Tertiary Education Quality and Standards Agency (TEQSA) (TEQSA, 2017) is 'the number of first-year commencing students (higher education only) in a year who neither complete nor return to study in the following year as a percentage of the total commencing students' (p. 8). The attrition rates at Australian higher education providers between 2012 and 2014 were reported to worsen slightly, with a large proportion of providers being in the high or moderate attrition categories (Martin, 2017). It is worth noting that universities are cognizant of the difficulties facing first-year students and offer counselling services and academic support in order to assist alleviating the challenges faced by their freshmen (Bochner, 1971). DeBerard *et al.* (2004), however argues that attrition rates have not changed appreciably over the last few decades and are commonly as high as 20% to 30%. Being able to understand and identify risk factors for the low academic performance of university students is thus important and provides an impetus for the development of intervention programmes.

2.2. Factors Affecting on Academic Performance of First-Year University Students

Academic performance can be defined as the performance outcomes that show the extent to which a person has accomplished specific goals in instructional environments (Steinmayr *et al.*, 2017). There are widespread scholarly investigations which highlight that this is the outcome of a complex interaction of different home, personal and institutional factors (Evans, 1999; Stinebrickner and Stinebrickner, 2000; Stinebrickner and Stinebrickner, 2003; Nelson *et al.*, 2012).

Family factors have been found to contribute to the successful academic attainment of students. Employing a duration model of attrition, Stinebrickner and Stinebrickner (2000) identified a strong positive relationship between family income and the length that an individual remained in college. In particular, it was revealed that students in the bottom third of the income distribution were more likely to drop out of school before the third year than those in the upper third of the income distribution (Stinebrickner and Stinebrickner, 2000). Checchi *et al.* (1999) also found that while family income did not discourage enrolment in higher education, it was positively correlated with students' performance. However, Checchi *et al.* (1996) and Checchi *et al.* (1999) emphasised that cultural family background was more indicative of students' academic success. Students from better-educated families, for example having a graduated mother, were seen to receive stronger pressure and have higher persistence to complete their academic study, which enabled them to perform better and not to drop out during initial years (Checchi *et al.*, 1996; Checchi *et al.*, 1999). The model of educational investment proposed by Checchi *et al.* (1999) argues that families will always invest a fraction of their income in their children's education. An increase in the investment means a reduction in parents' spending but is likely in exchange for higher future earnings for their children (Checchi *et al.*, 1999).

Among personal variables, an extensive number of studies have pointed out the impact of previous academic performance, including secondary school grades and study skills, to students' performance at university (McKenzie and Schweitzer, 2001; Puddley and Mercer, 2014; Sladek *et al.*, 2016; Anderton, 2017; Bazelais *et al.*, 2018; Millman, 2018). Between secondary school grades and study skills, the latter has been found to be a stronger and more consistent predictor of academic performance (Schmelzer *et al.*, 1987; Killen, 1994; Hassanbeigi *et al.*, 2011). 'Study skills' itself is an umbrella term that encompasses different academic and non-academic strategies employed by a learner. Some of the most important ones for university success, as identified by Hassanbeigi *et al.* (2011), comprise time management, concentration and memory; note-taking skills; anxiety management; organisational skills; motivation and attitude, and reading comprehension skills. Many authors (Schmelzer *et al.*, 1987; Talbot, 1990; Killen, 1994; Komaraju *et al.*, 2009; Bratti and Staffolani, 2013) share the view that academic individual differences strongly influence academic success in motivation. The rationale is that the responsibility for success rests entirely with students; therefore, being motivated helps students be more persistent and active in their learning behaviour and have a higher commitment to the goal of college completion. Talbot (1990) has argued that 'the single most influential personality traits (in relation to academic persistence and achievement) appear to be intrinsic motivation and the student's level of cognitive categorisation (attributional complexity) (p. 57). However, since such findings may come from lecturers' and students' self-reported data, caution must be taken in attempting to generalise particular results to other contexts or even to all the students across the university where the data are collected.

3. RESEARCH METHODOLOGY

3.1. Research Instrument

There exist varying conceptual frameworks that inform investigations into students' academic performance. These frameworks may use different approaches to measure the cognitive, emotional, attitude, and behavioural formation and development of students against educational goals and purposes. This study followed Tinto's (1975) view that university success or failure is 'a longitudinal process of interactions between the individual and the academic and social systems of the college' (p. 94). To be able to determine factors that impact on academic performance of first-year university students, the study reviewed relevant literature and used focus group discussions with students and lecturers from several Vietnamese universities. During the focus group discussions, the participants were provided with a list of the challenges that first-year students were likely to face and were asked to give their opinions on those that had the most significant effects on students' academic results as well as adding missing factors to the list. Attention was drawn to factors relevant to the teaching and learning contexts of Vietnamese higher education. Consensus reaching at the end of this stage allowed for seven factors (corresponding to 29 observable variables) to be identified in Table 1. Three among these were connected to lecturers' teaching competencies; two to students' personal factors; two were found to institutionally related. The proposed factor model is given in Figure 1.

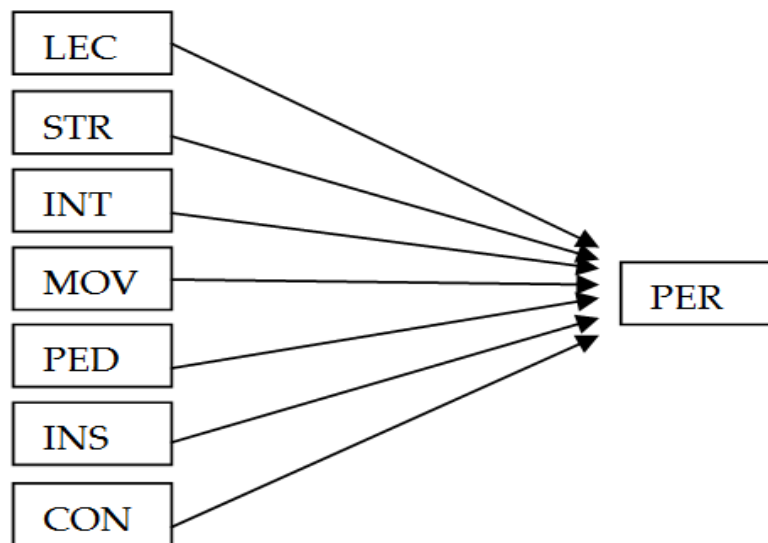


Figure-1. Propose seven factors model.

LEC: Lecturers' professional knowledge and credential; STR: Course structure; INT: Classroom interactions; MOV: students' motivation; PED: Lecturers' pedagogical knowledge and skills; INS: students' course preference; CON: educational resources and learning conditions; and PER: students' academic performance.

Drawing on those preliminary results, a questionnaire was then developed to gain insight into factors impacting on academic achievement of first-year university students. The survey was comprised of demographic questions and 34 Likert items. The demographic questions sought information about the respondents' gender, ethnicity, place of residence, family background, as well as their reasons for choosing their course of study at the university, and their time allocation to their university learning. The Likert questions, meanwhile, served to explore the extent to which each aspect of students' university life impacted on their academic achievement. A score of 1 (Strongly Disagree) represented the least significant factor, and a score of 5 (Strongly Agree) represented the most significant one.

3.2. Sampling

The study was conducted at a university located in the northern Vietnam, where students came from different ethnic and socio-economic backgrounds. The questionnaire was distributed to 403 first-year students enrolled in 13 disciplines and from 7 faculties. 397 valid response forms were collected, which was composed of 221 males and 176 females. 58.9% of the respondents were from Kinh ethnicities – the leading ethnic group in Vietnam – and the remaining 41.1% were students from minor ethnicities that inhabit the northern uplands. It should be noted that in Vietnam, Kinh residents constitute about 87% of the total population, densely populated major cities. At the same time, ethnic minority groups makeup approximately 13%, scattered over mountainous areas, and lagging behind the Kinh in terms of material life (The Government, 2019). Accordingly, the data for the current study were representative of a northern mountainous locality of Vietnam.

3.3. Data Analysis

Responses from the survey were coded and entered in SPSS Version 20 and then checked for reliability using the Cronbach's α reliability estimate ($\alpha = Np / [1 + p(N-1)]$). A high-reliability coefficient was achieved, with the

Cronbach's α estimates ranging from 0.716 to 0.874(≥ 0.6) Table 1. The corrected item-total correlation estimates were also higher than 0.3, showing functional correlations between the variables.

Table-1. Reliability estimates.

| Factors | Observed variables | Cronbach's α | Corrected item-total correlation |
|---------|------------------------------|---------------------|----------------------------------|
| LEC | LEC1, LEC2, LEC3, LEC4, LEC5 | 0.716 | > 0.3 |
| STR | STR1, STR2, STR3, STR4 | 0.791 | > 0.3 |
| INT | INT1, INT2, INT3, INT4, INT5 | 0.807 | > 0.3 |
| MOV | MOV1, MOV2, MOV3, MOV4 | 0.874 | > 0.3 |
| PED | PED1, PED2, PED3, PED4 | 0.797 | > 0.3 |
| INS | INS1, INS2, INS3, INS4 | 0.770 | > 0.3 |
| CON | CON1, CON2, CON3, CON4 | 0.724 | > 0.3 |

Following a reliability check, an Exploratory Factor Analysis (EFA) was conducted to determine the correlation between the competencies and their factor loadings. Kaiser-Meyer-Olkin (KMO) Test = 0.895 (satisfying $0.55 \leq KMO \leq 1$), Sig Bartlett's Test = 0.000 (< 0.05) Table 2 showed good correlations between the observed variables.

Table-2. KMO and Bartlett's test.

| | | |
|--------------------------------------------------|--------------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .895 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 4711.261 |
| | Df | 406 |
| | Sig. | .000 |

The Rotated Component Matrix Table 3 showed that the 29 observable variables loaded on 6 factors and there were changes to the position of the variables.

Table-3. Rotated component matrix.

| Observed variables | Component | | | | | |
|--------------------|-----------|------|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| MOV3 | .853 | | | | | |
| MOV4 | .822 | | | | | |
| MOV2 | .807 | | | | | |
| INS4 | .705 | | | | | |
| MOV1 | .688 | | | | | |
| INS1 | .637 | | | | | |
| INS3 | .626 | | | | | |
| INS2 | .571 | | | | | |
| INT4 | | .795 | | | | |
| INT5 | | .721 | | | | |
| INT1 | | .704 | | | | |
| INT2 | | .688 | | | | |
| INT3 | | .625 | | | | |
| STR3 | | | .753 | | | |
| STR1 | | | .744 | | | |
| STR2 | | | .700 | | | |
| STR4 | | | .676 | | | |
| PED3 | | | | .761 | | |
| PED2 | | | | .745 | | |
| PED4 | | | | .673 | | |
| PED1 | | | | .619 | | |
| CON3 | | | | | .775 | |
| CON2 | | | | | .762 | |
| CON4 | | | | | .662 | |
| CON1 | | | | | .619 | |
| LEC2 | | | | | | .750 |
| LEC1 | | | | | | .665 |
| LEC4 | | | | | | .601 |
| LEC3 | | | | | | .550 |

The EFA outputs produced a revised set of factors and variables. Table 4 that could fit the data and model.

Table-4. Revised factors and variables.

| Factors | Observed variables | Variable types |
|---------|------------------------------------------------|----------------|
| X1(MOV) | MOV1, MOV2, MOV3, MOV4, INS1, INS2, INS3, INS4 | Independent |
| X2(PED) | PED1, PED2, PED3, PED4 | Independent |
| X3(LEC) | LEC1, LEC2, LEC3, LEC4 | Independent |
| X4(CON) | CON1, CON2, CON3, CON4 | Independent |
| X5(STR) | STR1, STR2, STR3, STR4 | Independent |
| X6(INT) | INT1, INT2, INT3, INT4, INT5 | Independent |
| Y(PER) | PER1, PER2, PER3, PER4, PER5 | Dependent |

Having been able to identify the dependent and independent variables, a multiple regression model was used to determine the overall fit of the model and the relative contribution of each of the predictors to the total variance explained. In the Model Summary table below Table 5, R² (Adjusted R Square)= 0.483 showed that independent variables X1, X2, X3, X4, X5, X6 explained 48.3% of the variability of the dependent variable Y. The remaining 51.7% of the variability was told by other variables outside the studied model.

Table-5. Model Summary.

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | .701 ^a | .491 | .483 | .465 | 1.924 |

a. Predictors: (Constant), INT, CON, STR, MOV, LEC, PED

b. Dependent Variable: PER.

The *F*-ratio in the ANOVA table Table 6 tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly predict the dependent variable, $F = 62.720$, $p = .000 < .0005$.

Table-6. ANOVA.

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1 | Regression | 81.356 | 6 | 13.559 | 62.720 | .000 ^b |
| | Residual | 84.313 | 390 | .216 | | |
| | Total | 165.668 | 396 | | | |

a. Dependent variable: PER

b. Predictors: (Constant), INT, CON, STR, MOV, LEC, PED.

Correlation coefficients and tolerance were then checked to measure the impact of collinearity among the variables in the regression model. In statistics, multicollinearity is a state of very high intercorrelations or inter-association among the independent variables. It is, therefore, a type of disturbance in the data and if present in the data, the statistical inferences made about the data may not be reliable. As shown in Table 7, the Variance Inflation Factor (VIF) values of all the independent variables were lower than 10, indicating that multicollinearity did not occur in the current model.

Table-7. Coefficients.

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | Collinearity Statistics | |
|------------|-----------------------------|------------|---------------------------|-------|------|-------------------------|-------|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| (Constant) | .068 | .206 | | .332 | .740 | | |
| MOV | .319 | .038 | .356 | 8.293 | .000 | .706 | 1.416 |
| PED | .193 | .044 | .202 | 4.355 | .000 | .607 | 1.647 |
| LEC | .105 | .052 | .092 | 2.011 | .045 | .628 | 1.593 |
| CON | .102 | .038 | .107 | 2.663 | .008 | .816 | 1.226 |
| STR | .147 | .043 | .151 | 3.406 | .001 | .665 | 1.504 |
| INT | .059 | .042 | .059 | 1.412 | .159 | .738 | 1.355 |

From Table 7, the new model for the data is:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7)$$

Meaning: $Y = B_1 * X_1 + B_2 * X_2 + B_3 * X_3 + B_4 * X_4 + B_5 * X_5 + B_6 * X_6$

In which B1, B2, B3, B4, B5, and B6 are the standard Beta coefficients in the multiple regression model. X1, X2, X3, X4, X5, and X6 are the new independent variables.

Variables X1(MOV), X2(PED), X3(LEC), X4(CON), and X5(STR) statistically significantly predicted the independent variable Y ($p < 0.05$) while variable X6(INT) did not add statistical significance to the prediction ($p > 0.05$).

4. DISCUSSION

Initially, seven factors were proposed as contributors to the academic performance of first-year university students. These were lecturers' professional knowledge and credential (LEC), course structure (STR), classroom interaction (INT), lecturers' pedagogical knowledge and skills (PED), students' learning motivation (MOV), students' course preference (INS) and educational resources and learning conditions (CON). Statistical analyses employing EFA and a multiple linear regression models showed that only five factors significantly predicted students' academic success, namely students' motivation (X1), lecturers' pedagogical knowledge and skills (X2), lecturers' professional expertise and credential (X3), learning resources and conditions (X4) and course structure (X5). The multiple regression model $Y = 0.356 * X1 + 0.202 * X2 + 0.092 * X3 + 0.107 * X4 + 0.151 * X5$ showed that students' motivation had the most robust relationship with academic achievement of first-year students, which was followed by lecturers' pedagogy, course organisation, learning conditions and lecturers' knowledge on the content.

Findings of the role of motivation from this study support the literature (DeBerard *et al.*, 2004; Bratti and Staffolani, 2013; Vasconcelos and Almeida, 2018) that self-belief is the key to transition and first-year performance. Vietnam has been known as a 'degree mindset' society where students carry high expectations about their careers and a successful life with a university degree (Ngan, 2015; Nguyen, 2018). With the current inadequate capacity of the country's higher education system, the process in which high school students compete in the national high school graduation examination and apply for a university course of their choice is often very stressful and high-stakes. The considerable time and financial investment made, therefore, makes it very important that students be motivated by their choice of their course of study and their studies at university. Bui (2016) found that when deciding which course to apply for, Vietnamese students place great importance on course options that could help them find a decent job after graduation. Failing to select the right major would affect their motivation for studying and, accordingly, their academic results. In this study, when asked about the reason that motivated them in selecting their course of study at the University, 48.9% of the surveyed students claimed that the course matched their academic ability, interest, and career goals. Also, when asked about whether the course they were doing was useful and interesting for them. The mean rating scores that students gave was with a range of 3.41 to 3.64, out of 5. The figures showed a somewhat positive sign of students having intrinsic and extrinsic motivation for their study. The academic results of the surveyed respondents supported the claim, with 17.6% achieving high distinction grades (8.0-10.0 out of 10) and 70.6% achieving between a credit and distinction grades (6.5-7.9 out of 10).

The second significant factor impacting on students' academic performance was identified to be the lecturers' pedagogical skills and knowledge. Pedagogies can be argued to contribute to positive changes in teaching, curricular and assessment practices of a lecturer who can contribute to students' academic success. For first-year students, a structured, inspiring and cognitively facilitative instructional environment is critical for an effective transition from their high school learning. In Vietnam, almost all recent reforms and international aid projects in the higher education sector more or less highlight the importance of supporting lecturers with new pedagogies and methods of instruction (Hamano, 2008; Nguyen, 2010). In the literature, many authors (such as Baumert *et al.* (2010); Akanni and Oduaran (2018); Bruffaerts *et al.* (2018); Chalapati *et al.* (2018); Keller *et al.* (2017); Mortenson (2006)) relate lecturers' pedagogical competencies to students' motivation for learning, claiming that this is the key to inspire learners. Kunter *et al.* (2008), for example, found that enthusiastic teaching, characterised with teachers' express style and energetic, animated, inspiring teaching, particularly produces high-quality learning and is indicative of student outcomes and interest. However, providing a simulating lesson is only the beginning of helping students to learn. Having a sound teaching pedagogy assists lecturers in understanding how students learn, how to leverage their preferred learning styles, and how to help them achieve deep learning. In a study conducted on students enrolled in a physics course, Keller *et al.* (2017) note that physics as a domain is challenging and demanding; therefore, only lecturers with well-thought pedagogies could provide cognitively activating instruction and well-structured learning opportunities. In short, classroom instruction delivered by pedagogically competent lecturers will help first-year students engaged in useful elaborations and discussions.

Course structure, commonly known as the choice of topics and the organisation and sequencing of course content (Carnegie Mellon University, 2019), contributes to positive learning outcomes for students across the years in general and first-year students in particular. Fink (2003) refers to this as an overall teaching strategy in helping students to accomplish the learning goals of their class and their course, rather than individual lecturers' instructional strategies or techniques. There are different ways in which a course can be organised, such as from concrete to abstract, from theory to application, or based on disciplinary classifications and categories. An excellent course structure not only helps an institution and teaching staff to organise teaching and learning in an effective manner. The fact that content, skills and learning outcomes have to be organised with greater complexity also makes it important to first-year students as they are provided with foundational skills and knowledge in order to master more difficult concepts later in their study. Vietnamese universities have been implementing a credit system for undergraduate and postgraduate courses for almost 15 years. Besides enabling greater flexibility, the system also aims to promote learner autonomy where students are expected to double their preparation and self-study outside class hours. Academic advising teams have been installed at institutions to support students in planning and implementing learning plans and in bridging the gap in their learning. For first-year students, getting to know their institutions' course structure as well as benefitting from that is important for their academic planning.

Learning conditions are the fourth most important factor to first-year students' academic performance. In the context of this study, learning conditions cover both educational resources and facilities and students' financial

situations that impact on their learning. It has been a long-held assumption that curriculum and lecturers' competences have an effect on learning. Nevertheless, it is increasingly recognised that the physical condition of universities can impact on student achievement. Well-equipped and easily accessible classrooms, libraries, laboratories, learning space, and services, for one thing, contribute to students' motivation and wellbeing and, for another thing, provide a healthy and conducive learning environment. Previous studies in international literature yield oppose results regarding the relationships between school facility conditions and students' achievement, attendance, discipline, and completion rate. For example, using multiple regression analyses, McGowen (2007) found no statistically significant correlation between students' total learning assessments and school facilities; instead, students' behaviour and their disciplines were more indicative of their assessment results. Other studies (O'Neill and Oates, 2001; Earthman, 2002; Price *et al.*, 2003; Uline and Tschannen-Moran, 2008) found better attendance rates and dropout prevention upon the presence of proper school facilities. Studies on factors affecting teaching and learning efficacy at Vietnamese institutions have only been scarcely conducted. However, it has been pointed out that the infrastructure and academics capacities of Vietnamese universities need to make a much more significant stride before these can adequately meet students' learning needs.

It should be noted that aside from the university's infrastructure, students need to make their investment in their learning conditions. Transitioning from high school is often the time when students have to be financially independent or financially wise for the first time. Vuong *et al.* (2016) found that the vast majority of first-year students at Vietnamese universities find a part-time job to afford their study and living expenditure, which affects their academic performance. Stinebrickner and Stinebrickner (2003) make similar findings in this regard, which gives implications about properly informing first-year students about the academic adjustments and expectations they need to prepare for the first year of study before deciding on dividing up their time budget.

The last factor in the list that has been found to correlate with students' academic achievement is lecturers' knowledge of the content. While the Beta coefficient is rather small (0.092), professional knowledge is the core part of first-year students' academic experience. First-year students often need support with the foundational and technical expertise of their field to complement the basic understanding that they take with them from their high school learning. However, the finding in this respect needs to be interpreted with caution since college freshmen may not have the ability to evaluate with confidence their lecturers' professional credential. Comparing the perspectives of first-year and last-year students could be a topic for future studies.

5. CONCLUSION

Through developing and validating a model factor that helps explain factors influencing first-year university students' academic success, this study has highlighted the importance of learner characteristics and institutional parameters. The study found students' motivation had the strongest relationship with the academic achievement of first-year students, which was followed by lecturers' pedagogy, course organisation, learning conditions and lecturers' knowledge of the content. Being able to identify the key dimensions that influence student success in the first year at university will be useful to improvements in curriculum, teaching and learning practices and conditions for students. Undertaking measures to enhance academic motivation, for example, can include changing curriculum based on student motivation or by targeting early those students with reduced self-belief (Edgar *et al.*, 2019). Universities in Vietnam should take into account factors such as interior environment and academic learning space so as to positively promote students' learning.

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