

FACTORS INFLUENCING STUDENTS' PERFORMANCE AT UNIVERSITI TEKNOLOGI MARA (UiTM) KELANTAN BRANCH

Mas Ayu Diana Mohd Fauzi¹

*Faculty of Business and Management, Universiti Teknologi MARA Cawangan Kelantan
masayu@uitm.edu.my*

Zaleha Hassan²

*Faculty of Business and Management, Universiti Teknologi MARA Cawangan Kelantan
jaadee08@gmail.com*

Mariam Setapa^{3*}

*Faculty of Business and Management, Universiti Teknologi MARA Cawangan Kelantan
maria135@uitm.edu.my*

Nur Atiqah Zakiyyah Ramlee⁴

*Faculty of Business and Management, Universiti Teknologi MARA Cawangan Kelantan
nurat3842@uitm.edu.my*

Siti Maziah Ab Rahman⁵

*Faculty of Business and Management, Universiti Teknologi MARA Cawangan Kelantan
maziah650@uitm.edu.my*

Abstract: In the new Era of fourth Industrial Revolution (IR 4.0), high quality of education is crucial in as much as it can benefit students when they embark on career paths. Thus, academic performance is an important measurement for employers to choose their future employees. Ones who are academically successful will have better chances to earn higher salaries and less dependent on social assistance. Student performance measurement has received considerable attention in previous research, it is one of the challenging aspects of academic literature, and student performance is influenced by friends, self-motivation and family factors. In the light of this issue, this research is carried out to discover the performance of the diploma students in the Faculty of Business and Management, Universiti Teknologi MARA Kelantan Branch (UiTMCK), Malaysia. Furthermore, this study is to determine the relationship between factors influencing students' performance and their results in UiTMCK. Data were collected from 35 students of Diploma in Business Studies through a question survey. The data were analysed using SmartPLS 3.2.1 software. The analysis shows both self-motivation and family have strong direct relationships with the students' performance but friends were not significantly related to students' performance. Thus, the hypothesis 2 and 3 was accepted.

Keywords: Family, Friends, Public University, Self-Motivation, Students Performance

1. Introduction

The Malaysian government has taken a very good initiative by establishing a large number of higher learning institutions in Malaysia and now 20 public universities already established around Malaysia (MOHE, 2019) including Universiti Teknologi MARA Kelantan Branch (UiTMCK), Malaysia. The students' academic achievement plays an important role in order to produce good quality of graduates who will become great leaders and manpower for industries (Ali, Jusoff, Ali, Mokhtar & Andin Salamat, 2009). In UiTM Kelantan, there are two key performance index that are hard to be achieved, which are the percentage of student to graduate on time and the percentage of failure rate for any courses that should not be more than 25%. Based on the result of the academic performance year 2018, 15.39% of diploma student in UiTM Kelantan branch is not graduate on time (GOT) and the percentage of the

* Corresponding author: Faculty Business and Management, University Technology MARA Cawangan Kelantan, Bukit Ilmu, Machang, Kelantan, maria135@uitm.edu.my

course failure among diploma students in UiTM Kelantan branch is also high with more than 25%. So, investigating the factors that can influence students' performance is vital in attempts to achieve the university key performance index. The objective of our study is to examine whether factors such as friends, self-motivation and family would influence student's performance or not.

2. Literature Review

This paper intends to study about students' performance and the three factors identified; family, friends and self-motivation.

2.1. Students' Performance

Students' performance is indicated on the students' capability to establish required skills and knowledge as expected by future employer as well as to fulfill the public expectation (Shaffee, Ahmad, Idris, Ismail & Ghani, 2018). Student successfully understands the current form of knowledge, and improve it, and able to make decision in facing the subject difficulties (Sardauna & Yusuf, 2018). The students' performance is important as it profoundly impacted students, teacher and university policy-makers (Yousef, 2019). In the educational system, the consistency of students' academic performance is vital to ensure teaching-learning process is significantly giving positive impact holistically (Bonaci, Mustata, Mutiu, & Strouhal, 2014). There are several factors that are identified which influence students performance namely gender, prior knowledge, learning and teaching style (Saharudin et. Al, 2018).

2.2. Factors Influencing Students Performance

Study on student performance among Nigerian students found that academic assessment, parent or family background and teaching methods have greater impact towards students' academic performance rather than the conductivity of the school and general academic environment (Ayodele, Oladokun, & Gbadegesin, 2016). Socio-economic status is identified as a predictor of student's performance (Sardauna & Yusuf, 2018). Thus, this paper discovered the factors influencing students' performance; family, friends and self-motivation.

2.2.1. Friends

The research on exploring how network of friends affects students' performance shows that friendship has relationship with students' academic performance (Li, Li, Wei, & Liu, 2019). A study on educational impact of school social relationships of Latino Immigrant Adolescents found that students experience negative experiences during their period of adolescence such as negative internalization and inaccurate stereotype (Lee, Dean, & Kim, 2017). Thus, those negative thought resulted in the absence of academic supporters. The authors added peer relationships may affect students' academic based on types of peers, non-academically oriented peers and dropout friends (Lee, Dean, & Kim, 2017). The study has found that friend influence play provide evidence it significant education (Raabe, Boda and Stadfeld, 2019). In addition, adolescents whom are valued and respected by classmates have the tendency to be more motivated in their study and perform better when having good quality of friendship (Nelson & DeBacker, 2010).

2.2.2. Self-Motivation

A person may have these types of motivation simultaneously at different levels and may display a variety of profiles based on such motivational characteristic (Demir, Can & Ceyhan 2019). Self-motivation is a critical factor needed to achieve academic success (Ekpe, Adelaiye, Adubasim, & Adim, 2014). The finding is similar with the study by Jung, Zhou, & Lee, (2017) that mention on how self-directed academic is a crucial contributor to academic achievement. A motivated student will put effort to get a good grade and find a good strategy in their learning process. A study by Kusrkar, Ten Cate, Vos, Westers, and Croiset (2015) stated that relative autonomous motivation is positively associated

with the use of a good study strategy by the students which are positively associated with higher study effort. It was concluded that the competence of self-regulated learning has a strong impact on the level of attainment achieved by students, enhancing the relationship between motivation and performance.

2.2.3. Family

The definition of family in Cambridge Dictionary (2019), family is a group of people who are related to each other like parents and kids. There are so many prominent researches discussing on how family can actually give impact on students' performance. Apart from family engagement or direct involvement in student performance, family background has been proven to affect student's academic performance in university, Subramanim,(2015). The current study also reveals that student' adjustment in school is depending on family environment and school environment, Shafa and Paul (2014). However these researches is contrary to a study by Nazneen, Jenny and Richard (2011) in a college which shows that family conflict is negatively associated with the academic performance of Asian American students during their first semester in college.

2.3. Development of Research Hypotheses

Most previous studies indicate a significant relationship between factors and students' performance (Li, et al., 2019; Lee, et al., 2017; Raabe, et al., 2019; Nelson & DeBacker, 2010). For instance, recently, Li, et al., (2019) did a study on how friends affect students' performance and the result shows that friendship has relationship with students' academic performance. In addition, Nelson and DeBacker (2010) proved that students have tendency to be more motivated in their study when having good quality friendship and best friend who values the academic. Thus, the authors propose that:

H1: Friends are positively significant with the students' performance.

Meanwhile, a study by Kusrkar et al., (2015) stated that motivation is positively associated with the use of good study strategies by students who put greater efforts to score in academic. Thus, the authors propose that:

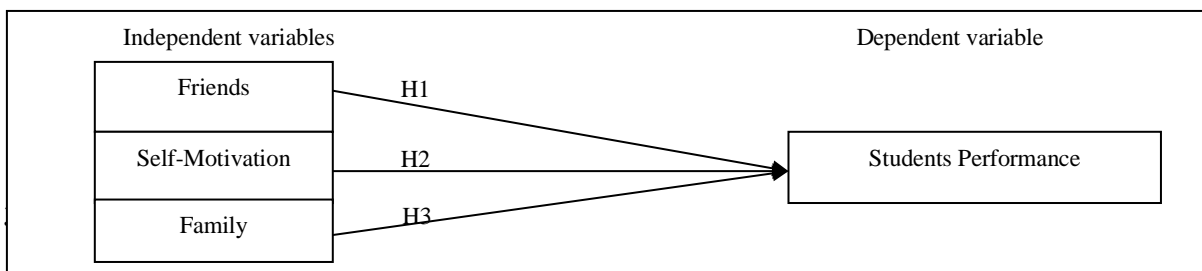
H2: Self-motivation is positively significant with the students' performance.

Furthermore, a study by Irfan and Shabana (2012), family environment such as family members having depression also affects student's performance and reduces the performance of the student and affect negatively student performance. This is in line with another study by Shafa and Paul (2014) which revealed that there is a relationship between family environment of the students and their school environment in term of their adjustment in school.

H3: Family is positively significant with the students' performance.

Based on a comprehensive review on previous studies, a conceptual framework using hypotheses H1 – H3 is proposed to understand the relationships as presented in Figure 1.

Figure 1: A Conceptual Framework with Hypotheses Development between Factors and Students Performance



Research methodology is a mandatory component of any study in answering three basic questions; (1) how the study will be implemented, (2) how the questions will be answered and (3) how the answers from respondents will be analysed.

3.1. Population and Sample

The sampling units of this study are student itself. The target population and sample of this study includes one group of students consists of 35 students of Diploma in Business Studies. Since all of them involved in this research, so that they are samples. Roscoe (1975) proposed the rules of thumb in determining the sample size, the appropriate sample size is larger than 30 and less than 500. He added samples that broken into subsamples a minimum sample size of 30 is necessary. The questionnaires were distributed to all respondents.

4. Result

Based on analysis using SEM-PLS, the measurement and structural model evaluation is presented below.

4.1. Measurement Model Evaluation

The measurement model evaluation consists of internal consistency reliability, convergent validity and discriminant validity.

4.1.1. Internal Consistency Reliability

The first criterion to be determined in the measurement model is internal consistency reliability which includes Cronbach's alpha and composite reliability. Specifically, the composite reliability values should be higher than 0.70 (Hair et al., 2014) to show the modest reliability applicable in the research.

Table 1: Internal Consistency Reliability

Construct	Item	Loading range	Composite Reliability	Cronbach's Alpha (α)
Friends	7 items	0.910 – 0.972	0.982	0.979
Self-Motivation	7 items	0.657 – 0.932	0.912	0.904
Family	6 items	0.912 – 0.945	0.969	0.961
Student Performance	7 items	0.857 – 0.972	0.974	0.968

Table 1 reports the SEM-PLS analysis that shows the composite reliability and Cronbach's Alpha values for the friends, self-motivation, family and students' performance respectively. From the table, the composite reliability value for friends was 0.982, self-motivation was 0.912, family was 0.969, and students' performance was 0.974. All of the constructs had strong composite reliability.

The Cronbach's alpha values for the constructs were strong with the friends reported as 0.979, self-motivation as 0.904, family as 0.961 and students' performance as 0.968. Therefore, this indicates that all the constructs had composite reliability greater than 0.70 and the Cronbach's alpha values were above 0.60, suggesting the acceptable reliability.

4.1.2. Convergent Validity

Convergent validity of the measurement model is usually ascertained by examining the loadings, average variance extracted (AVE) and also the composite reliability (Gholami et al., 2013). As suggested by Hair et al., (2010), the authors used the factor loading value more than 0.50 (Hair et al., 2010). The loadings were all higher than 0.5 except for BFamily5 (0.279) and BStudentPerformance1

(-0.326) which need to be deleted. Besides the loading values, other considerations in determining the convergence validity is the composite reliability and average variance extracted (AVE). After deleting 2 items, the new loading values are shown in Table 2. The loadings for all items exceeded the recommended value of 0.5 (Hair et al., 2010). The composite reliability values which depict the degree to which the construct indicators indicate the latent, construct ranged from 0.912 to 0.982 which exceeded the recommended value of 0.7 (Hair et al., 2010). The AVE of the construct should be greater than 0.50 because it is believed to explain more than half of the variance. Meanwhile the AVE values of less than 0.50 implied that there are more remaining errors in the items that are not yet explained by the construct. Therefore, all the AVE values at the construct level that are shown in Table 2 indicate the convergent validity of the measurement model. The AVE was in the range of 0.601 and 0.887.

Table 2: Convergent Validity of Measurement Model (*after deletion 2 items*)

Construct	Item	Loading	CR	AVE (>0.50)	Cronbach Alpha (α)
Friends	BFriends1	0.916	0.982	0.887	0.979
	BFriends2	0.910			
	BFriends3	0.929			
	BFriends4	0.964			
	BFriends5	0.972			
	BFriends6	0.956			
	BFriends7	0.944			
Self-Motivation	BSelf-Motivation1	0.657	0.912	0.601	0.904
	BSelf-Motivation2	0.661			
	BSelf-Motivation3	0.932			
	BSelf-Motivation4	0.682			
	BSelf-Motivation5	0.811			
	BSelf-Motivation6	0.739			
	BSelf-Motivation7	0.894			
Family	BFamily1	0.944	0.969	0.862	0.961
	BFamily2	0.913			
	BFamily3	0.945			
	BFamily4	0.912			
	BFamily6	0.927			
Students Performance	BStudentPerformance2	0.924	0.974	0.863	0.968
	BStudentPerformance3	0.857			
	BStudentPerformance4	0.972			
	BStudentPerformance5	0.931			
	BStudentPerformance6	0.954			
	BStudentPerformance7	0.931			

4.1.3. Discriminant Validity

Table 3 shows the results of loadings and cross-loading of constructs.

Table 3: Loadings and Cross-Loading of Each Item

	Friends	Self-Motivation	Family	Students Performance
BFriends1	0.916	0.749	0.074	0.294
BFriends2	0.910	0.736	0.052	0.225
BFriends3	0.929	0.587	0.119	0.232
BFriends4	0.964	0.667	0.094	0.277
BFriends5	0.972	0.680	0.174	0.281
BFriends6	0.956	0.664	0.266	0.453
BFriends7	0.944	0.590	0.340	0.377
BSelf-Motivation1	0.228	0.657	-0.030	0.189
BSelf-Motivation2	0.472	0.661	0.099	0.030
BSelf-Motivation3	0.630	0.932	0.065	0.610
BSelf-Motivation4	0.491	0.682	0.249	0.146
BSelf-Motivation5	0.536	0.811	0.116	0.298
BSelf-Motivation6	0.605	0.739	0.283	0.253
BSelf-Motivation7	0.705	0.894	0.223	0.633
BFamily1	0.160	0.177	0.944	0.463
BFamily2	0.220	0.205	0.913	0.637
BFamily3	0.135	0.143	0.945	0.422
BFamily4	0.124	0.171	0.912	0.386
BFamily6	0.213	0.114	0.927	0.504
BStudentPerformance2	0.294	0.570	0.535	0.924
BStudentPerformance3	0.263	0.568	0.493	0.857
BStudentPerformance4	0.333	0.548	0.430	0.972
BStudentPerformance5	0.337	0.448	0.503	0.931
BStudentPerformance6	0.344	0.455	0.463	0.954
BStudentPerformance7	0.353	0.409	0.556	0.931

According to this method, discriminant validity is determined when the loading of an item on a construct is higher than all of its cross-loading with other constructs. The result shows that the first construct which is friends consists of seven (7) items and they were found to have significant loadings in this construct. For the self-motivation, seven (7) items were found to have significant loadings while the family comprises of five (5) items was found to have significant loadings. In addition, the students' performance consists of six (6) items was found to have significant loadings.

The next method is the Fornell-Larcker criterion that compares the square root of the AVE values with the latent variable's correlations. This method requires that the square root of each construct of AVE should be greater than its highest correlation with any other constructs.

Table 4: Fornell-Larcker Criterion

Constructs	1	2	3	4
1. Family	0.928			
2. Friends	0.191	0.942		
3. Self-Motivation	0.177	0.704	0.775	
4. Students Performance	0.537	0.344	0.544	0.929

Note: Diagonals (in bold) represent the average variance extracted while the others entries represent the squared correlation.

Table 4 shows the results of the Fornell-Larcker criterion assessment with the square root of the AVE on the diagonal and the correlations between the variables in the lower left triangle. Overall, the square roots of the AVEs for the construct family (0.928), friends (0.942), self-motivation (0.775), and students' performance (0.929). Thus, this research paper fulfils those criterions on both of cross-loadings method and the Fornell-Larcker criterion, providing evidence for the discriminant validity of the constructs. In sum, both convergent and discriminant validity of the measures in this research were established.

4.2. Structural Model Evaluation

The structural model involves the analysis of the relationship between the latent variables or constructs. This includes the collinearity assessment, path coefficient, coefficient of determination (R^2), effect size (f^2) predictive relevance (Q^2) and blindfolding (Hair, 2014).

4.2.1. Assessment of Collinearity among the Constructs

The first step in evaluating the structural model is to examine collinearity issues between each set of constructs separately for each subpart of the structural model. Table 5 shows the Variance Inflation Factor (VIF) values of the analyses. It can be seen that all the VIF outputs are clearly below the threshold of 5. Therefore, collinearity among the constructs is not an issue in the structural model. Thus, the author can continue examining the default report such as path coefficient, R^2 , f^2 , and Q^2 .

Table 5: Collinearity Assessment of the Constructs

Construct	VIF
Friends	2.001
Self-Motivation	1.991
Family	1.042

4.2.2. Assessment of Path Coefficients

Path coefficients indicate that the strengths of the relationships and hypotheses are empirically supported. As seen in Table 6, it is confirmed that two path relationships are significant. The exogenous constructs such as the self-motivation and family are significantly contributed in explaining the variation in the endogenous latent variable namely the students' performance with the β value 0.560 (56%) and 0.464 (50%) respectively. Meanwhile the relationship between friends and students' performance is not significant with the β value -0.139. The t-values of the parameter indicate the strength of the relationship represented by the parameter where the higher the t-value, the stronger the relationship.

Table 6: Significant Testing Results of the Structural Model Path Coefficients

Structural Path	Path coefficient (β)	t- value	P value
Friends → Students Performance	-0.139	0.452	0.651
Self-Motivation → Students Performance	0.560	2.526	0.012**
Family → Students Performance	0.464	3.552	0.000**

4.2.3. Assessment of Coefficient of Determination (R^2)

The R^2 value refers to a measure of the model predictive accuracy and is calculated as the squared correlation between a specific endogenous construct's actual and predicted values. There is no specific rule of thumb for R^2 value. The threshold values that were suggested by Chin (1998) to measure R^2 value are 0.67 (substantial), 0.33 (moderate) and 0.19 (weak). Table 7 shows the R^2 value for the endogenous construct that achieves the acceptable value of R^2 . Overall, the model explains 'moderate' portion. For the research model of this research, the R^2 values for the endogenous variable indicate that the proposed theoretical model explains 50% or 0.506 of the variance in the students' performance, which is a very satisfactory level of model predictability. Thus, this model is meaningful with strong predictive capacity.

Table 7: Determination Coefficient (R^2)

Endogenous variable	R^2 value	Threshold
Students Performance	0.506	≥ 0.33 (moderate)

4.2.4. Assessment of Effect Size (f^2)

The effect size (f^2) is a measure used to assess the relative impact of a predictor (exogenous) construct on an endogenous construct (E.g. Hair, 2014). By following the guidelines from Cohen (1988), to measure the relative effect size of exogenous construct on the endogenous construct, the f^2 values of 0.02 may be considered as small effect, 0.15 is considered as medium effect and above 0.35 as large effects. The result is presented in Table 8. The exogenous constructs namely friends, self-motivation and family in explaining the predictive value on endogenous latent variable, namely students' performance has an f^2 effect size of 0.020, 0.319, and 0.418 respectively. In summary, all of constructs had a small, medium and large effect size in producing the R^2 for students' performance.

Table 8: Effect Size (f^2) of the Latent Variable

Structural Path	Effect size (f^2)	Rating
Friends → Students Performance	0.020	Small
Self-Motivation → Students Performance	0.319	Medium
Family → Students Performance	0.418	Large

Note: The values of f^2 ; 0.02=small, 0.15=medium, 0.35=large

4.2.5. Assessment of Predictive Relevance (Q^2) and Blindfolding

The Q^2 value is a measure of predictive relevance based on the *blindfolding* technique in PLS-SEM (E.g. Hair, 2014). In the structural model, the Q^2 value that is larger than zero for a certain reflective endogenous latent variable indicates the path models predictive is relevant for this particular construct. By running the blindfolding technique in SmartPLS3.2.1, the Q^2 values were obtained as shown in Table 9. All Q^2 values are considerably above zero, thus providing support for the model predictive relevance regarding the reflective endogenous latent variables.

Table 9: Predictive Relevance (Q^2) of Endogenous (Omission distance=7)

Relationship	$Q^2 > 0$
Friends → Students Performance	0.767
Self-Motivation → Students Performance	0.470
Family → Students Performance	0.721

4.2.6. Overall Results of Structural Model Analysis

The results of the hypotheses testing are summarized in Table 10. Overall, two hypotheses were accepted and significant at $p < 0.01$. It can be concluded that both self-motivation and family have strong direct relationships with the students' performance (H2; $\beta = 0.560$, $t = 2.560^{**}$) and (H3; $\beta = 0.464$, $t = 3.552^{**}$). In conclusion, two hypotheses were accepted in this research.

Table 10: Results of the Structural Model Analysis (Hypotheses Testing)

Hypotheses	Relationship	Standard Beta	Standard Error	t-value	f ²	Q ² >0	Decision
H1	Friends → Students Performance	-0.139	0.308	0.452	0.020	0.767	Not Supported
H2	Self-Motivation → Students Performance	0.560	0.222	2.560**	0.319	0.470	Supported
H3	Family → Students Performance	0.464	0.131	3.552**	0.418	0.721	Supported

* 1.645 - 2.32 ** 2.33 and above ** $p < 0.01$

5. Discussion and Conclusion

This study is conducted to identify factors influencing performance of Diploma students in the Faculty of Business and Management, Universiti Teknologi MARA Kelantan Branch (UiTMCK), Malaysia. The CGPA is used as measurement for students' performance. The findings of the study were summarized and discussed in the following paragraphs.

Three factors have been tested in this study such as friends, self-motivation and family towards students' performance. The result of the analyses indicates that only two hypotheses formulated for this study are statistically significant and another one is not significant. By using SmartPLS 3.2.1 software, the analysis result shows that students' performance is associated with self-motivation factors with β value 0.560, t value 2.560** and family factors with β value 0.464, t value 3.552. The result analysis for friends' factors show that this factor is not associated with students' performance.

This research finding will help students to understand better on factors that contribute to their excellent performance. Since the result show that self-motivation and family factors are related with their performance, so it is vital for them to assure that they have high intrinsic motivation and stable family environment. On the other part, for university management, this research can help the management to understand the factors that can improve students' performance in future. University management for example can manipulate factors such as students' motivation to boost student's performance.

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