The Impact of Supply Chain Management Practices on the Performance of Private Universities in Malaysia

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Abstract

Supply chain management SCM practices have determined the performance of organizations throughout the years. Recently there has been an upsurge in research on SCM and related practices in the education industry. The objective of this paper is to explore the potential benefits of adopting supply chain management practices towards the achievement of performance and to attain competitiveness in education industry. This empirical study was conducted among the Malaysian private universities. A total of ten universities are selected and 119 responses were received. The research design consisted of a cross sectional study of selected private universities in Malaysia based on their Setara rating as A, B and C categories. Factor analysis was conducted to explain the variance in the observed variables. Multiple regression analysis was used to test the hypotheses. The empirical results showed that the SCM practices have a positive impact on university performance especially in the of area information sharing and innovation which showing the highest impact. This study may contribute to a more in-depth analysis of the impact of SCM on the performance of private universities.

Keywords: ***Supply chain management, supply chain management practices, Factor analysis, Higher education, University performance***

1. Introduction

Service industries contribute significantly to the Gross Domestic Product (GDP) and major employment opportunities in developed and developing countries [1]. Ref. [2] noted that the service sector is beginning to gain more importance than other sectors towards the Malaysian economy. Malaysian education industry has strong potential to compete successfully and to earn foreign exchange. Besides that, there is a global acceptance of the vital role of higher education in the functioning of a modern society [3]. As education is one of the sectors with high potential to contribute towards Malaysian economy, it is important to look into the determinants that will improve the education sectors' performance. Supply chain management (SCM) is one of the best strategies that can be used to improve higher education institutions performance. Among the various factors, SCM practices have been viewed as the key determinant. SCM practices are associated with supply chain responsiveness which will increase supply chain competitive advantage and lead to organizational performance [4].

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Lately, supply chain management has become extremely important to all industries which are operating in an increasingly competitive global marketplace [5]. There is significant evidence that the effective implementation of SCM can result in improvements in the performance of firms [6]. Besides that, the core reasons for the development of the supply chain management approach in an organisation is to improve operations, increase outsourcing, control the rising costs phenomenon, reduce competitive pressures, decrease globalization risk, balance the increasing importance of e-commerce and complexity of the supply chain. SCM seeks to enhance performance by closely integrating and coordinating the internal functions within a company and effectively networking them with the external operations of suppliers and customers [7]. A firm must achieve a relatively high degree of integration to implement SCM successfully; this involves integration, coordination and collaboration across organizations and throughout the supply chain [8].

Many organizations have chosen to work closely with their suppliers, customers and competitors in a collaborative supply chain environment [9]. Ref. [10] noted that higher education institution such as private universities have acknowledged the critical role of SCM and the need to effectively manage the flow of raw materials (students), money, information and services across the educational SCM. Ref. [11] has examined the concept of adapting manufacturing industry models to education with definite reference to the idea of an educational supply chain, in which employers, students, university staff, schools and colleges work as a team to ensure that the needs of all are satisfied. Moreover, one of the main goals of an educational supply chain is to improve the well-being of the end customer to the society. In order to achieve this, educational institutions such as private universities need to have an idea and knowledge about the constraints in their supply chain including the suppliers, customers and consumers [10].

The researcher has found many journals and articles on supply chain management and related practices in the manufacturing sector. However, only few articles discuss the application of SCM practices in higher education [12]. Hence this study focuses on the education industry in Malaysia. This study may be relevant to the current Malaysian education industry, especially Private University (PU). Lacking in sustainability performance is one of the growing problems among Malaysian Private Universities [13]. The researcher further commented on the financial health of 41 private universities, 8 foreign branch campuses and 27 university colleges in Malaysia. Accordingly, these private universities are facing serious challenges in terms of financial sustainability and quality. In order to ensure they remain competitive, Malaysian universities and educational institutions need to manage their supply chain systematically. Ref. [12] noted that SCM helps the business organization to compete in the dynamic and resilient global market. Therefore the paper has attempted to study how the SCM related practices can improve and sustain the Malaysia private university performance.

2.0. Theoretical background and hypotheses development

This section explores the conceptual model which studies the relationships between SCM and university performance within the context of Malaysian private universities. Further, hypothesis for the study were also proposed and discussed.

2.1 The impact of supply chain practices on Organizational (University) Performance

Universities are regarded as the focal (central) company and service provider of manpower resources to the public and private sectors. As a focal firm in education supply chain, university play its role and ensure that there is a two-way communication between the upstream (suppliers),

focal firm (University), downstream (customers) and consumer (society). The university can produce quality outcomes for the society at large through proper educational SC management [14]. To gain competitive advantage over rapid changes, university's internal processes must be responsive and flexible in responding to market changes. An organization's internal operation is the critical basis in creating superior supply chain performance before embarking on external coordination [15]. As technology improves the transfer of information, a broader range of customers and stakeholders gain access to more information about what happens within supply chains [16].

University performance is an indicator which measures how well the institution accomplishes its objectives. However, how well the university performs, is subject to the quality of graduates, research outcomes and how good it applies their respective supply chain management concept and practices [17]. Ref. [18] defined organizational performance in terms of how well an organization achieves its market orientation and financial goals. Ref. [19] noted that universities financial goals, an organization's profits, return on investments, as well as the growth of sales, business performance and organization effectiveness, are indicators of organizational performance. Ref. [20] and [15] however, look at organizational performance from the perspective of SCM organizational performance. Ref. [20] rightly pointed out that, organizational performance is measured by both financial and market criteria Besides that, the short-term objectives such as maximizing productivity and reducing inventory, lead time and long-term objectives such as increasing market share and the integration of supply chain are an important indicator of organizational performance [20].

2.2. SCM Practices

SCM practices are defined as activities that organizations undertake to promote effective and efficient management of the supply chain. Ref. [21] defined SCM practice as a special form of strategic partnership between retailers and suppliers. Ref. [22] identified SCM practices as agreed vision and goals, information sharing, risks and awards sharing, cooperation, integration of process, long term relationship and agreed supply chain leadership. Further, Ref. [23] stress the importance of SCM practices by including supplier partnership, outsourcing, cycle-time compression, continuous process flow and information technology (IT) sharing. Ref. [24] based on their surveys from senior managers in the USA, summarized SCM practices from the following aspects: supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity and IT capability. Ref. [25] summarized overall SCM practices into demand management, supplier and customer relationship, capacity and resource management service performance, information and technology management and order process management. In general, SCM practices are used to achieve organisations short term and long term goals such as to enhance productivity, control inventory, reduce waste, increase market share and sustain growth [20].

A synthesis of literature summary indicates that the shortcomings of previous studies on SCM are relevant to and applicable across different type of organisations. The researcher also realized that SCM practices are depicted from different perspectives with a goal of improving organizational performance. The limitations from the above study warrant for further research into the service industry's SCM practices by focusing on the education sector in Malaysia. In this regard , this study concludes the SCM practices that are suitable to higher education namely strategic supplier partnership, strategic customer partnership, information sharing, information Technology and Innovation to be included in the framework.

2.2.1 Strategic Supplier Partnership

Strategic supplier partnership is defined as having a long-term relationship between the organization and its supplier [26]. It involves developing trust and collaboration among supply chain partners as well as customers [27]. In education supply chain, strategic supplier partnership refers to the collaboration between higher education institutions as organizations must work closely with suppliers, i.e schools, colleges, parents, government and societies. A successful strategic alliance and good relationship with suppliers and buyers is required. It should revolve around trust, loyalty, positive sum game such as a win-win situation, cross functional teams, achieving common goals and collaboration [28].

Schools and colleges could participate in joint program development and sharing of program demand forecasts with universities. Suppliers at upstream level may share information regarding program requirements and cost related information with the universities directly. Through strategic supplier partnerships, organizations can work closely with suppliers who can share responsibility for the success of the products [26]. Such strategic supplier partnerships should enable a successful SCM and provide a win-win situation to both parties by reducing costs and increasing profit [29]. Based on the theoretical justification and supporting empirical evidence, the first hypothesis proposes that Strategic supplier partnership has a positive effect on university performance.

2.2.2 Strategic Customer Partnership

Customer relationship management (CRM) is a fundamental component of SCM and involves building and maintaining long-term relationship with customers [26]. For university as an organization needs to maintain close relationship with its customers, i.e employer and society, to fulfill customer needs and wants at the right time. In designing curriculum, programme development and innovation the university's curriculum committee may work together and develop the right programmes which match the current needs and wants of the industry. Maintaining good customer relationships will enable organizations to be more responsive to customer needs, thus creating greater customer loyalty, repeat purchase and willingness to pay premium prices for higher quality products [30]. Customer loyalty and customer satisfaction are the main goals of SCM. Therefore, the second hypothesis suggests that Strategic customer partnership has a positive effect on university performance.

2.2.3 Information sharing.

Ref. [18] defined information sharing in the supply chain as the extent to which vital and proprietary information is communicated to the company's supply chain partners. The success of any organization's SCM depends on the accuracy, speed and timely information provided by each business partner [9] and information fluency within the network in inventory levels' reporting [31]. In education SCM, information sharing among education stakeholders, government as a supplier and employer and society as a customer and university itself as a service provider has to be maintained for the benefit of everyone in the supply chain parameter. Sharing of useful information among the education stakeholders can result in reducing lead time, cost and create good understanding of customer needs and responds to market changes. In summary, information will create wealth for a university. Wal-Mart is an example of successful information sharing organization which shares online summaries of point-of-sales data to its close suppliers such as Johnson and Johnson and Lever Brothers [32]. Hence, the third hypothesis suggests that information sharing has a positive effect on university performance.

2.2.4. Information Technology

Information Technology (IT) is an integral part of any organization including university. IT is claimed to be the backbone of SCM practices where integration of supply chain is difficult to achieve without its contribution [33]. Recently, advances in IT has seen a growing trend for educational organization to create external linkages based on the sharing of information in order to gain increased visibility of their customers (parents) and suppliers (schools), [10]. IT technologies, such as the Electronic Data Interchange (EDI), Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) system can improve supply chain performance. They provide accurate information; improve planning and controlling of operations, as well as trigger customer satisfaction [34]. Information Technology also helps supply chain members to share their real time information on time. Therefore, hypothesis four suggests that information technology has a positive effect on university performance.

2.2.5 Innovation

Innovation is defined as the "adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization" [35]. Innovation is a core competency of service organizations. Ref, [36] also promoted the idea of open innovation where firms are encouraged to use external and internal and their paths to market as the firms look to advance their technology.

Ref, [37] however suggests that it is better to focus innovation on the service itself. Accordingly, in order for the service firms to create new markets, they must implement specific service innovation practices. Ref, [37] also state that innovation will take place when organizations have competencies related to technologies and customers. Generally there are various types of innovations in practice, however most of the literature and researchers focus only on process and product innovation which adds value and improves organization's competitive sustainability.

Universities must be very responsive in adopting processes with technological innovation and use up to date or new technology in the teaching and learning process. Besides, academia must use the latest's systems in program development. Moreover universities must be responsive and agile to the changes around in processes, techniques and information technology. Thus, the fifth hypothesis proposed that Innovation has a positive effect on university performance.

2.0 Methodology

3.1 Research Design

In this section, we define the constructs and develop a set of hypotheses based on the relationship between SCM practices and private university performance. Figure 1 depicts the conceptual model.

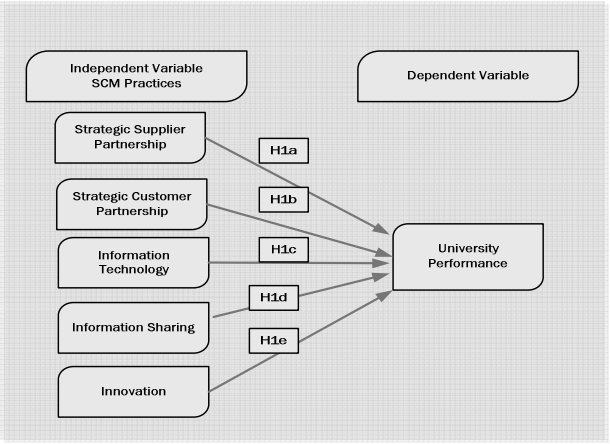

Figure 1 Research Framework for SCM practices and University Performance

Hypothesis:

H1. SCM practices have positive effects on university performance

H1a. Strategic supplier partnership has a positive effect on university performance

H1b. Strategic customer partnership has a positive effect on university performance

H1c. Information sharing has positive effect on

university performance

H1d. Information technology has positive effect on university performance.

H1e. Innovation has positive effect on university performance

3.2 Sampling and data collection

The study employs quantitative method with cross-sectional design which involves one time collection of information from the respondents. The target population of this study consists of Malaysian private universities and its stakeholders. The study was conducted among selected Malaysian private universities. In the first stage, 15 private universities were chosen and were stratified in to three categories i.e, category A, high achievers, category B medium achievers and category C lower achievers. The stratification was based on the Malaysian Setara[13] ranking, expert opinion and public's perceptions. In the second stage, 3 universities from each category were chosen randomly; hence a total of 9 universities were selected. The targeted respondents were selected from senior management personal, managers, department heads, divisional administrative staff and lecturers. These respondents were selected because they are the staffs most likely to engage in the operation of the universities supply chain. The questionnaires were distributed to the respondents by hand, post, email and WhatsApp. A total of 600 questionnaires were sent to all the 9 private universities. After several reminders, 140 completed questionnaires had been received by the researchers. This represented 23.33% of the total eligible sample of potential participants. The rate is consistent with the anticipated response from a mail survey and adequate for statistical analysis. Of this, 21 questionnaires were eliminated from the pool because of missing data; the remaining sample size (119) was still large enough to permit appropriate statistical analysis [38] and [39]. The demographic particulars of all the respondents who completed the survey are summarized in Table 2.

To enable the respondents to indicate their answers, a five-point Likert scale questionnaire was developed to collect the primary data in this study. To measure the dimensions of this research, twenty seven questions were included in the questionnaire which was divided into five constructs. The constructs were strategic supplier partnership, strategic customer partnership and information sharing information technology and innovation.

The primary purpose of the research was to measure the importance and impact of SCM practices on Malaysian private university performance. The goal was to understand and determine measures of SCM practices that may boost performance and enhance sustainability of the universities

The instrument developed in this study comprised variables measuring SCM practices. The measures for SCM were adopted and adapted from the literature [40], [41] and [42]. The respondents were asked to indicate the significant level of SCM practices towards university performance. The measures of university performance were adopted from literature [43] and [44.

Validity and reliability tests were conducted to select and assess the final items of the independent constructs that were used for statistical testing. Since data for the study were generated using a multi-scaled response, it was necessary to test for reliability [45] and [46]. The internal consistency of each factor was examined using Cronbach's Alpha analysis. Items that did not significantly contribute to the reliability were eliminated for parsimonious purpose. The result indicated that the Cronbach's alpha measures for the constructs exceeded the threshold point of 0.60 suggested [47]. Alpha coefficients for SCM practices and university performance ranged between 0.847 and 0.938 after the alpha maximization process was carried out, indicating good internal consistency.

3.3 Method of analysis

Factor Analysis (FA) followed by Correlation matrix were initiated. Factor analysis (FA) is a data reduction technic where a large number of variables clustered into a smaller set. Exploratory Factor Analysis (EFA) with varimax rotation was performed on SCM practices and organizational performance in order to extract dimensions underlying each construct. The EFA of the 27 items were loaded into the five SCM practices. As for the organizational performance five items were loaded. Subsequently correlation matrix was conducted. The correlation matrix is used to determine the relationships between variables [48]. Ref. [49] recommends inspecting the correlation matrix for correlation coefficients over 0.30.

Finally, multiple regression analysis was conducted to measure correlation coefficients among dependent and independent variables and the significant relationship among the variables. Regression analysis is used to predict the mean value of a dependent variable *Y* from known values of one or more independent variables *X*, [50]. Multiple regressions predict the dependent variable from more than one independent variable [51], [52], [53] and [54].

4. Data Analysis and Results

4.1 Descriptive Statistics

The data pertaining to the respondents was examined for demographic and other academic details. The analysis and scale reliability were carried out for the responses to the dimensional items using SPSS22 software. The details are provided in the succeeding sub-sections.

Table 1: Characteristics ofRespondents

Demographic	Description	Frequency	Percentage	Cumulative %
University category	Category A	35	29.4	29.4
	Category B	35	29.4	58.8
	Category C	49	41.2	100.0
Gender	Male	65	54.6	54.6
	Female	54	45.4	100.0
Education level	Diploma	5	4.2	4.2
	Degree	59	49.6	53.8
	Post Graduates	51	42.9	96.6
	Others	4	3.4	100.0
Age	26-35	48	40.3	40.3
	36-45	54	45.4	85.7
	46-55	14	11.8	97.5
	56 above	3	2.5	100.0

The characteristics of the respondents to the questionnaires on SCM practices and university

performance are presented in the Table 1. In terms of gender, male respondents consisted of 54.6% and while 45.4%, were female. In view of the age, 40% of the respondents were less than 35 years of age. This implies that most of the respondents were fairly experienced and knowledgeable. From the university category perspective, Category A and B carried equal 29% each, where else category C carries 41.2%. It proved that the questionnaires were fairly distributed among universities. In terms of education level of respondents, 42% of the respondents were postgraduates and 49% degree holders and the remaining were certificate and diploma holders.

4.2. Correlation – Coefficient

Table 2, shows the means of the five variables of SCM practices. The correlation coefficient among the variables revealed that the Malaysian private universities emphasized more on information technology (mean 4.19), information sharing (mean 4.11), innovation (4.11), supplier partnership (3.85) and customer partnership (3.19). The mean of all five variables was 3.89. Given that the scale used a 5 point Likert scale (1 = strongly disagree and 5= strongly agree), it can be concluded that the Malaysian private universities strongly practiced SCM practices towards their ultimate performance.

On the other hand the mean for university performance showed 3.84, indicated that the Malaysian PU's were concern about their performance through SCM practices. The correlation matrix table shows the relationship among the organization performance and SCM practices. These bivariate correlations allow for preliminary assessment provide information for hypothesized relationships. Besides that correlation matrix also provide information to test the presence of multicollinearity.

Table 3, shows the correlation level among the variables. The supplier partnership variable is not significantly correlated with university performance (r= -.162, p <.039), strategic customer partnership also not significantly correlated with university performance (r=-.061, p<.255) and information technology not significant with university performance (r=.068, p<.230). Information sharing is significant with UP (r= .469, p< .000) and innovation is significantly correlated with university performance (r = .326, p< .000). Overall out of the five variables only two variables have significant relationship with university performance while the remaining three variables are showing weak relationship.

Table 2: Pearson's Correlation Coefficient between University performance and SCM practices
**p<.01, *p<.05

	Variables	Mean	UP	SSP	SCP	IS	IT	IN	Sig (1-t)
Pearson Correlation	University Performance	3.84	1.000						
	strategic supplier partnership	3.85	-.162	1.000					.039
	strategic customer partnership	3.19	-.061	.071	1.000				.255
	Information sharing	4.11	.469**	.044	.010	1.000			.000
	Information Technology	4.19	.068	.067	.245*	.206*	1.000		.230
	Innovation	4.11	.326**	.022	-.117	.280**	.199	1.000	.000

4.3. Factor Analysis

This multivariate statistical technique is used for primary reasons: Reduce the number of variables from large to small, establish underlying dimensions between measured variables and constructs and provide construct validity evidence [55]. In conducting the FA for this study, assumptions recommended [56] were used.

Factor analysis was performed to identify the factors which play a predominant role in the supply chain management practices towards organization performance. KMO value for SCM practices and organizational performance of 0.724 and 0.828 suggested that there was sampling adequacy for each variable in the model. Bartlett's Test of Sphericity was 0.000 for both dimensions at <.001 level. It confirmed that the data were valid for factor analysis and had equal variance across populations, thus called homoscedasticity of variance.

Factor analysis was done on the twenty seven items, used to measure **supply chain management practice** constructs. Table 3 and 4 show the results of factor analysis on **supply chain management practices**. A total of five factors were extracted by using the principle component analysis method through varimax rotation with Kaiser Normalisation criteria i.e, Eigen value more than one. For organisation's performance only one factor was extracted with eigen value of more than one. For the SCM practices a total of five factors or components emerged and 5 items, out of 27 measurement indicators got eliminated. **(Table 3)** The cut off point for factor loading was 0.60 [55]. All the eliminated measurement indicators had corrected item total correlation (CITC) below 0.50. As a result, 22 measurement indicators of SCM practices were retained.

Table 3: Rotated Factor Loading for supply chain management practices

Item Number	**Questionnaires**	**Components**				
		1	**2**	**3**	**4**	**5**
IT	**Information Technology**					
IT4	Our It in SCM is satisfactory	.874				
IT2	IT enabled and automated	.800				
IT3	IT based reply to suppliers and customers	.796				
IT1	IT in our university is up to date	.779				
IT5	Our campus is IT WIFI friendly	.606				
SCP	**Strategic Customer Partnership**					
SCP1	Frequently measure and evaluate customer satisfaction		.864			
SCP3	Provide easy access for customer to seek programme information		.845			
SCP5	We react to customer complaint frequently		.823			
SCP4	We involving customers in programme development/design		.691			
SCP2	We frequently evaluate future customer expectation		.668			
SSP	**Strategic Supplier partnership**					
SSP5	Establish long term relationship with suppliers			.844		
SSP3	Involving suppliers in new programme development			.801		
SSP2	We include key suppliers in achieving university vision			.757		
SSP6	Quality as number one criteria in selecting			.678		

	suppliers					
SSP4	Help key suppliers to improve their course quality			.657		
IN	**Innovation**					
IN3	We provide up to date facilities in teaching and learning				.880	
IN1	We pay attention on innovation and creativity as a competitive advantage				.851	
IN6	We introduce courses with marketable features				.803	
IN4	We use latest technology for new programme development				.707	
IS	**Information Sharing**					
IS4	Our trading partners share their organisations information with us					.865
IS5	We and trading partners exchange information for collective success					.852
IS3	Our trading keep inform us about issues					.841
	Total Eigenvalue					8.164
	Percentage of variance explained					68.101
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.					.724
	Bartlett's Test of Sphericity					1398.632
	Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a]					
	a. Rotation converged in 5 iterations.					

Table 4: Rotated factor loading for Organization Performance

Item No	Questionnaires	1 Component
OP	**Organization Performances (University)**	
OP1	Market share has increased	.921
OP2	Overall operating cost reduced	.921
OP3	Profit margin on sales increased	.860
OP4	Positive growth in sales	.852
	Eigenvalue	3.162
	Percentage variance explained	79.048
	Kaiser-Meyer-Olkin Measure of SamplingAdequacy	.828
	Bartlett's Test of Sphericity- Approx. Chi-Square	362.695

Table 5: Cronbach's Alpha

Construct	Factors	Number of items Retain	Cronbach's alpha
Supply Chain Management Practices	Information technology	5	.899
	Strategic Customer Partnership	5	.881
	Strategic Supplier Partnership	5	.877
	Innovation	4	.929
	Information Sharing	3	.925
University (Organization) Performance	University Performance	4	.942

4.4. Re liability Analysis

Reliability analysis was conducted in this analysis to measure consistency of each factor through Cronbach Alpha. Items that did not significantly contribute to the reliability were eliminated for parsimony purpose. The Cronbach's alpha measures for the five SCM practices constructs exceeded 0.7, i.e, between 0.881 and 0.942, as suggested [47]. This shows a very strong and positive internal consistency among the variables. The results of the reliability analysis summarized in table 5.

4.4. Multiple Regression Analysis

Regression analysis predicts the mean value of a dependent variable Y from known values of one or more independent variables Xi. In this study, SCM practices were the independent variables to predict the university performance, i.e, dependent variable. R^2 of the model 0.298, indicates 29.8% of the variance in university performance was explained by SCM practices. Moreover the results further justified that the model was significant.

In addition, two of the five components in SCM practices had high beta coefficient correlation and significantly influenced university performance. Overall the result explains and supported the hypothesis, that there was a positive relationship between SCM practices and university performance

Table 6: Multiple Regressions: Supply Chain Management Practices and University Performance (Beta Coefficient

Variables	University (Organization) Performance
Strategic supplier Partnership	-.181
Strategic Customer Partnership	-.016
Information Sharing	.426**
Information technology	-.047
Innovation	.218**
R^2	.298
Adjusted R^2	.267
F Change	9.591***

Level of Significant: p<0.10, **p<0.05, ***p<0.000

The results confirmed that information sharing had the highest significant effect on university performance (β = .426, p<0.000), followed by innovation (β= 0.218, p<0.011), supplier partnership (β = -.181, p<0.024), customer partnership (β = -0.016, p<0.850), and information technology (β = -0.047, p<0.581). Overall the regression showed that the loadings are significant for information sharing of 0.343 and innovation of 0.198.

H1, hypnotized SCM practices have significant and positive impact on university performance. The result with high beta correlation implied that SCM practices had a significant effect on university performance.

H1a: it is hypothesized that Supplier partnerships have a significant and positive impact on university performance. The results showed that H1a had a significant impact on university performance.

In H1b: it is hypothesized that customer partnership has a significant and positive impact on university

performance. The results showed that H1b is not significantly impact the university performance.

In H1c, it is hypothesized that information sharing has a significant and positive impact on university performance. The results show that H1c is supported and information sharing has significant impact to the university performance.

In H1d, it is hypothesized that information technology has a significant and positive impact on university performance. The results show that H1d is not significantly impact the university performance.

In H1e, it is hypothesized that innovation has a significant and positive impact on university performance. The results show that H1e is supported and innovation has significant impact on the university performance.

5.0. Conclusion

The purpose of this study was to analyse the impact of SCM practices on universities performance. From the results obtained it can be inferred that there is a significant relationship between SCM practices and university performance.

Information sharing and innovation displayed a high degree impact on the university performance. It shows that information sharing and innovation are fundamental aspects to the success of Malaysian private universities.

On the other hand, Strategic supplier partnership, Strategic customer partnership and Information technology were not at high priority to university performance. The possible reason for management not focusing on supplier and customer relationship may be due to their focus on information sharing. Perhaps the management assumes that supplier and customer relationship are embedded in information sharing. However, it appears that effective and efficient integration of suppliers and customers into supply chain may serve as key factor for organizations to gain competitive advantage [57]. Besides that, any organization must bear in mind that each component of SCM practices has unidimensional strength.

This study has provided empirical justification for a framework that recognizes five variables of supply chain management practices and defines the relationship between SCM practices and university performance within the context of education, in Malaysian private universities. Previous studies supporting the importance of SCM practices mostly related to the manufacturing industry and its performance. However, the present study is focused on the development of the education industry as there is limited literature in the area of education supply chain management.

In summary the empirical research has brought in a number of managerial implications. First, it provides an avenue to the universities senior management team with appropriate principles for evaluating the effectiveness of their supply chain performance. Moreover, a new dimension of supply chain management practices was developed through factor analysis. The results also indicate that supply chain management practices have direct influence on supply chain performance effectiveness.

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