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Modeling the Key Antecedents of Open Market Concept in Haulage Industry

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Abstract: The haulage industry in Malaysia at present are exposed to some problems. The most critical problem that exists in the industry is commercializing the business which is exposed to price under cutting and trade liberalization. As a result, the profit margin for the industry is very marginal. Both private and government establishments are finding it difficult to sustain their business in the liberalized market. The objective of this research is to identify a model which can accommodate in the liberalized market. A research was conducted to 170 respondents who are stakeholders in the haulage industry. The findings show that business strategy, administrative activity and operation activity are the key antecedents for modeling an open market concept in haulage industry. Hence, the model identified for the open market concept in haulage industry assists in increasing the revenue of both public and private companies in the haulage industry.
Keywords: Open Market, Haulage Industry, Antecedent, Business Strategy, Administrative and Operation Activities.

INTRODUCTION

Haulage industry is one of the Logistics companies that focus on planning, executing, control of the procurement and material movement [1,2]. In most of the daily activities, the haulage companies involved in transporting laden and empty containers for import and exports of goods. The government in some of the developing countries had proposed to liberalize the haulage industry or so called open market concepts which will ensure that the permits or haulage licenses are opened to the public without limitation [2]. Therefore, the new participating companies are given the alternative in securing their own customers with respect to the haulage rates within their capacities.

Furthermore, some of the stakeholders have suggested that government should have some control over the haulage industry and encouraged more competitiveness in the businesses. These would be resulted in further development in the haulage transport and related industry. The present supply of prime movers was more than demand which caused further sluggishness for the haulage companies [3]. Besides that, majority of haulage operators were experiencing losses and difficulties in the maintenance due to the huge initiated in capital investment. Previous studies have revealed that there were numerous complaints from customers who expressed their dissatisfaction with the efficiency of the haulage industry. On the other hand, there was less growth in haulage markets, while increasing fuel, vehicle parts and operational costs make more difficult for the haulage industry to grow.

Notwithstanding, haulage industry faces competitive markets or liberalization at present as launched by the government through local media. The perfect competition describes a market in which no buyer or seller has market power. In economics, competition is the rivalry among sellers trying to achieve such goals as increasing profits, market share and sales volume by varying the elements of the marketing. The effort of two or more parties acting independently to secure the business of a third party by offering the most favorable terms has been described as market liberalization [4]. Though, it is the common believe that government has less control towards haulage industry and depends on the players competing in the market. There should be need for the government to focus more on the impacts of liberalization for the country and the haulage operators which require appropriate planning before implementing the concept, specifically on the government preparation and the present situation of haulage industry [5]. Hence, there is a need to investigate the market generation and ratio on the present capacity of haulage industry before proposing the open concept businesses.

In addition, giving permits approval to new companies has allowed competition and provides customers benefits with lower prices which have affected transportation costs service strategy. This has

helped in making economy more competitive and allows competitors to do more businesses maturely [2]. However, it soon became apparent that establishing a phenomena and encourage competing activities as the oversupply prime movers, trailers, container yards, warehouse due to many players. This issue has traced to lack of addressing the major causes of determinant factors that could help in establishing the open market in the context of haulage companies. The oversupplies of machineries had occurred due to the less of haulage market and caused difficulties for haulage operators in the cause of competitive domain [5].

Moreover, opening of new markets requires additional regulation to ensure that haulage services to be continued and consumer is not adversely affected [5]. Indeed, researchers have argued that the relationships between the exact determinants of open market concept such as business strategy, administrative activity and operation activity (BAO) should be studied. Other than this, there should be appropriate planning before implementing the concept especially on the government preparation and the present situation of haulage activity. Hence, this research intends to establish the factors that determine the open market concept in haulage industry through modeling of its antecedents.

LITERATURE REVIEW

The haulage business was not that easy due to high cost of entry. It is a high capital intensive business, as such a new good brand prime mover cost about RM300, 000 each (Yu, 2011). It is not profitable to operate a fleet of five to 10 trucks and it needs the economy of scale to sustain the business. It also cost approximation of 5 Million open haulage business. Yu [4] further contended that if a company has a large fleet with a good management system, it can easily enjoy a 5% to 10% margin. Since the global economic crisis in 2008, the number of new players had reduced due to incapacitation of pascar haulage vehicles. On the container yards depot, the issue was suggested that rather than having depots away from the port; the container depot should be placed inside the port area [4]. Thus, vehicle is acceptable but several containers were established due to the limited space and the higher rented value of land that consider in the company's business strategy.

The strategy used in different transportation company makes the activities to be easier and cheaper if all containers go back to the port and not productive to have container like 10km away from the port [2]. Although some of the ports in Malaysia have on-dock-depot at the port, it was still not efficient as there was only one gate for the trucks to collect and send the containers [4]. Besides the location, some container depot operators should improve on their efficiency [1]. It is higher cost for us if taking half a day to collect a container and the matter had been brought up to the relevant authority but it had yet to react to the issue. This inefficiency would take a toll on the country's competitiveness to attract more multinationals into the country. Through this, the haulage also impacted with the slower from deports and ports despite the increasing in number of fleets in the market.

Besides, open market is planning to help its members in inspiring business change. Due to the increased of costs planning to have a central purchasing centre where we can team up to buy spare parts such as tyres and lubricants at competitive prices. AMH has also implemented a consolidated Puspakom and located it at Konsortium Logistik Bhd. These will save smaller players time and cost for their vehicle inspection as opposed to queuing at centralized Puspakom centres. This also can mitigate the queuing time as experienced by the haulage operators and this is able to reduce the costs of queuing.

The freight forwarding is also related to haulage industry in Malaysia was reported that the Malaysian logistics industry has grown to 9.5% at the total of RM139.74bil by value this year compared with RM127.66bil in 2012, due to strong sustainable economic growth in the country and strong intra-Asian trade, said business consulting firm Frost & Sullivan. Nevertheless, the growth is less than overall capacity of haulage fleets. The overall was less than 70% as targeted by the haulage company. With this result, the overall performance of the haulage is still lower than the expected.

The term open market is generally refers to free trade and usually in such area of businesses and economic. It also subjects to a reduction of government restriction or less participation from regulatory bodies in implementing the line of businesses, policy and regulation in economy exchange for greater participation of private entities [1]. In a broad term is the removal or reduction of restrictions or barriers on the free exchange of goods between nations [6]. Perego, Perotti and Mangiaracina [7] stresses further that, in principle, an open market is a completely free market in which all economic actors can trade without any external constraint. Some other contexts the open market is referred to as deregulation will lead to a raised level of competitiveness, therefore higher productivity, more efficiency and lower prices in overall [8].

On the other hand the open market is also refers to demand for an item (such as goods or services) the market pressure from stakeholders [9]. According to De Rosa et al. [10], an open market refers to a market

which is accessible to all economic actors and a space or place where anyone wishing to trade physical goods may do so free of selling charges and taxes. An open market so defined, all economic actors have an equal opportunity of entry in that market [11]. It considers an ongoing program to review regulations with a view to minimizing, simplifying, and making them more cost effective [3]. Griffis et al. [12] stressed that a free market is a market economy in which the forces of supply and demand are free of intervention by a government and price-setting monopolies.

Furthermore, an open market is characterized by the absence of tariffs, taxes, licensing requirements, subsidies, unionization and any other regulations or practices that interfere with the natural functioning of the free market [13]. This shows that anyone can participate in an open market [4]. Thus, there may be competitive barriers to entry, but there are no regulatory barriers to entry [13]. In the haulage contexts open market means there was no restriction for the haulage operators in getting up their business and compete with each others.

Previous studies have shown that government had further liberalized the services sector to attract more foreign investments and bring more professionals and technology as well as strengthen competitiveness of the sector [14]. Recognizing the growth potential in the services sector, the Government has decided to immediately liberalize the 27 services subsectors in adequate with no equity condition imposed [4]. These sub-sectors are in the areas of health and social services, tourism, transport, business services and computer and related services [6].

Complementing the growth and development in the manufacturing sector, the Government is intensifying its efforts to promote and develop the services sector [5]. Stressing further, the Government will be progressively undertaking liberalization of the other services sub-sector on an on-going basis. Again the haulage on open market should be first established among the stakeholders.

The growth in haulage market is needed yearly, the significant expansion in trade was recorded over the past three months of the 2012 with ASEAN, an increase of 8.6% or RM6.89 billion; the People Republic of China, increases 10.9% or RM4.05 billion; Japan, increases 8% or RM2.78 billion and Australia, increased 27.9% or RM2.29 billion [5]. Intra-regional trade continued to support strong growth with ASEAN, which expanded to RM87.09 billion or 27.4% of Malaysia's total trade. Exports increased by 9.1% to RM45.36 billion and imports grew by 8.1% to RM41.73 billion. Higher exports of refined petroleum products, electrical and electronic (E & E) products, crude petroleum, petroleum products as well as chemicals and chemical products contributed to the increase. Singapore was the largest export destination for this quarter. On the other hand the growths on the haulage market have small package as compared to the increase on the haulage fleets [14].

Besides the increase in liquefied natural gas (LNG), increases were recorded in exports of plywood by RM166 million, telephone for cellular network, RM209 million; microprocessor of hybrid integrated circuits, RM175 million; and computer storage units, RM73 million. Due to the weak economic development in the Euro zone where several Euro zone countries are now technically in recession, trade with the EU increased by 0.7% to RM30.78 billion. Exports to the EU contracted by 10.4% to RM15.89 billion while imports expanded by 16.2% to RM14.9 billion. Lower exports was seen for E&E products which decreased by 11.5% or RM929.9 million, crude rubber (decreased 29% or RM308.5 million), refined petroleum products (decreased 78.1% or RM251.9 million) and manufactures of metal (decreased 40.2% or RM206.1 million) [5].

The increase in exports in the first quarter 2012 was largely contributed by higher exports of LNG, refined petroleum products and crude petroleum, brought about by higher prices of these products [2]. In addition, there were higher exports of machinery, appliances, parts, rubber products, optical and scientific equipment, iron and steel products as well as chemicals and chemical products. Significant increases in exports were recorded for microprocessor of the hybrid integrated circuits by RM2.1 billion; computer storage unit, increases RM1.98 billion; telephone for cellular network, increases RM745.5 million and parts and accessories for oscilloscope, spectrum analyser and other measuring instruments and apparatus, increases RM317.8 million [7]. A little has been improved based on the demand in haulage industry and mitigate lose in operational activities.

METHODOLOGY

Geographically, this study covers Penang, Port Klang/ Kuala Lumpur, Johor Bahru and public researchers. The list of the respondents was taken from the Association of Malaysian Haulage (AMH) and also the Association of Logistics Operators in Malaysia. This research considers the quantitative research approach through the demographic analysis and analysis of the research model that reveals the perception of respondents.

MEASUREMENT

The entire demographic question on the details of the respondents was taken into consideration while trying to model the key antecedents (factors) of open market concept in haulage industry. Therefore, the business strategy, administrative activity and operation activity as shown in Figure 1 are found as the three main factors for modeling and achieving open market concept in haulage industry. The items in the construct were measured by using 5 point Likert scale survey questionnaire, ranging from strongly disagree (1) to strongly agree (5). The modeled construct were measured based on the perspectives of individual stakeholders who are haulage operators, customers, government and regulatory body, general public and researchers.

Based on the opinions of previous researchers as highlighted in the literature review section, the following hypotheses were drawn for further analysis in this research:

H_1: There is significant relationship between business strategy and open market concept in haulage industry.
H_2: There is significant relationship between administrative activity and open market concept in haulage industry.
H_3: There is significant relationship between operation activity and open market concept in haulage industry.

Location, Respondents and Data Collection Technique

This research was conducted at the Pulau Penang, Port Klan, Johor Baru and some other public places, shown in Table 1.

Besides that, 170 respondents were involved in the data collection exercise as revealed in Table 2. They represent the respondents of the structured surveyed questionnaire during the data collection.

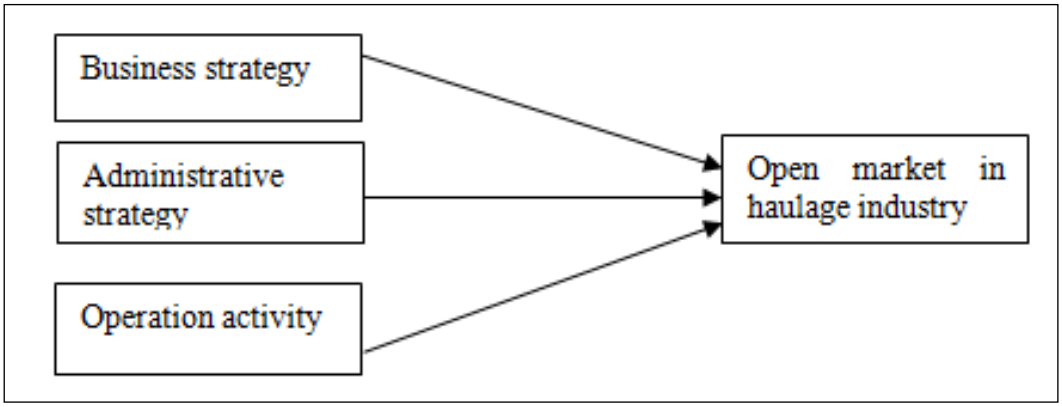

Fig-1: Research Model

Table 1: Statistics of Sampling Location

Location	Samples	Respondents	%
Penang	Haulage industry	50	27.93
Port Klang /Kuala Lumpur	Customers	50	27.93
Johor Bahru	Government and regulatory	50	27.93
Others	Public and researchers	20	11.76
Total	**4 groups**	**170**	**170**

Table 2: Statistics of the Respondents during Data Collection

No.	Characteristics	Number	Relative frequency (%)
a.	Haulage Operators	15	8.82
	Shareholders/owners	20	11.76
	Professional staff	15	8.82
b.	Customers		
	1. Experience in haulage industry 5 -10 years	15	8.82
	2. Experience with transport industry 10 -15 years	20	11.76
	3. Frequency using haulage services 15 -20 years.	15	8.82
c.	Government and regulatory bodies		
	1. Direct haulage agencies.	15	8.82
	2. Indirect haulage agencies.	5	2.94
d.	General		
	1. Civilian, Teachers and Student.	15	8.82
	2. Engineers, mechanics and drivers.	20	11.76
	3. Safety and health workers.	15	8.82
	Total	**170**	**100**

Meanwhile, the distribution and collection of questionnaires were conducted at the strategic locations as shown in Table 2. The sample of respondents during the data collection was based on probability sampling approach, which was performed on a randomized basis. Although, over 200 stakeholders that have adequate knowledge in haulage industry were invited for data collection process, however, only 170 were selected through simple random sampling and were finally given questionnaires to administer. Indeed, the collected data is capable of achieving the set objective for this research since the respondents during the data collection process represents the unit of analysis that can be found in the haulage set up.

DATA ANALYSIS AND RESULTS

The data analysis commences with the treatment of missing data as one of the data preparation and cleaning. Thus, the result shows that there was no missing data in the data-set while coding into the IBM SPSS version 20. Besides, the data was further screened and found that 31 cases out of 170 questionnaires as outliers. This leads to the deletion of all the 31 cases from the returned questionnaires as they cannot be used as the opinions of the respondents of the stake holders in haulage industry, due to its tendency of the model fitness.

BACKGROUND OF THE RESPONDENTS

The statistical frequency distribution of respondents in the data collection towards modeling the key antecedents of open market concept in haulage industry is shown in Figures 2-6 for 139 cases after the cleaning and preparation of data. Indeed, the descriptive analysis of the respondents in Figures 2-6 denote respondents in terms of their race, gender, age distribution, educational background and status in haulage industry.

The result in figure 2 reveals that Chinese race are the dominant participants in the data collection exercise, while some participants that are probably from other nationals were involved in the data collection. The Malay race was the least of the participant during the data collection as shown in Figure 2.

As shown in Figure 3, higher participant of gender in the data collection are female with 63%, while male took 37% of the respondents.

The age of the respondents that ranges from 18-30 years were 31 (22.3%), respondents' ages between 31-40 years were 29 (20.9%), while 58 (41.7%) of the respondents were found between 41-50 years and 21 (15.1%) were in the range of 51 years and above. Hence, the outcome of the analysis vis-à-vis age ranges shows that elderly people between the ages of 41-50 years are the major players in the haulage business and reveals in Figure 4.

It shows in Figure 5 that 7 (5%) of the respondents have their educational status at SPM and below, 27 (19.4%) of the respondents possess STPM and diploma certificate. Indeed, 67 (48.2%) of the respondents have degree certificates and 38 (27.3%) of the respondents possess master degree and above. This reveals that the major players in the open market of haulage industry are found among the degree holders in Malaysia.

Besides, the analysis shows in Figure 6 that 68 (48.9%) of the respondents are owner of their haulage industry, 39 (28.1%) are co-owners, 12 (8.6%) are staffs in the haulage industry and 20 (14.4%) of the respondents belong to the other members of the haulage industry.

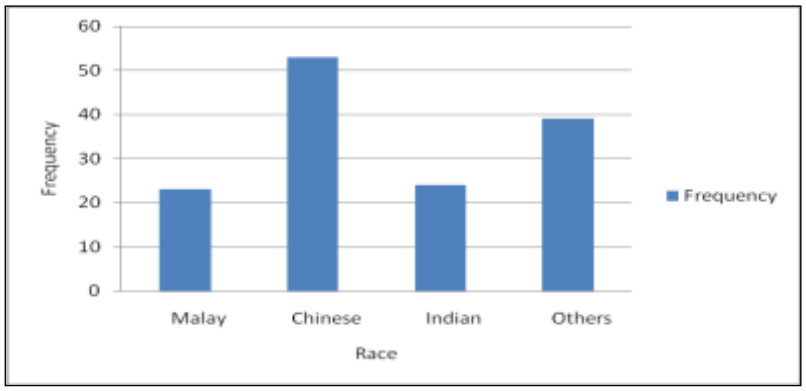

Fig-2: Racial Distribution of the Respondent

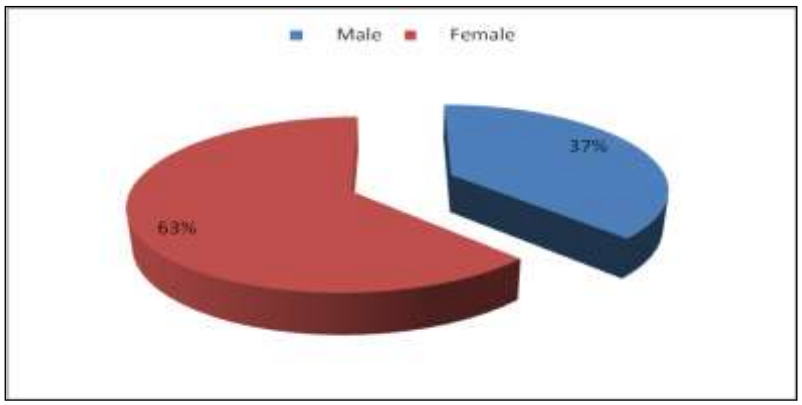

Fig-3: Gender Distribution of the Respondents

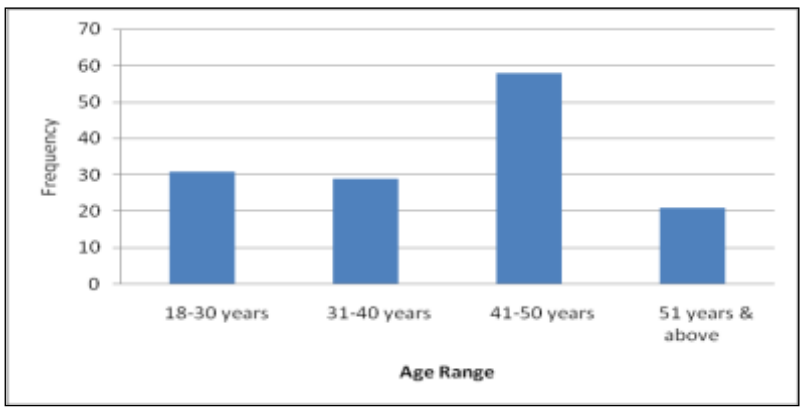

Fig-4: Age Distribution of Respondents

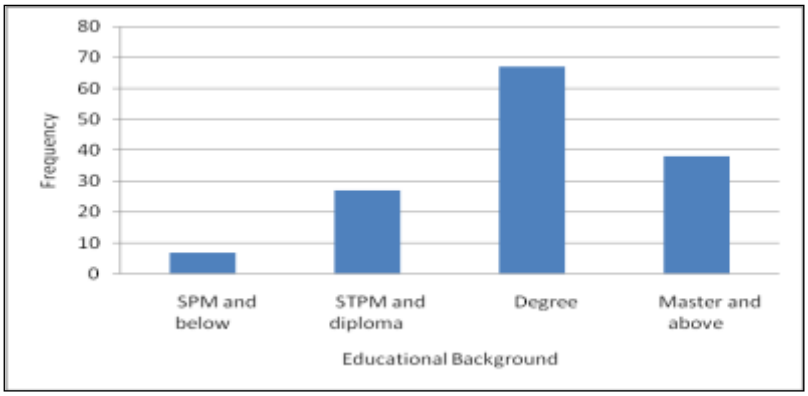

Fig-5: Educational Background of Respondents

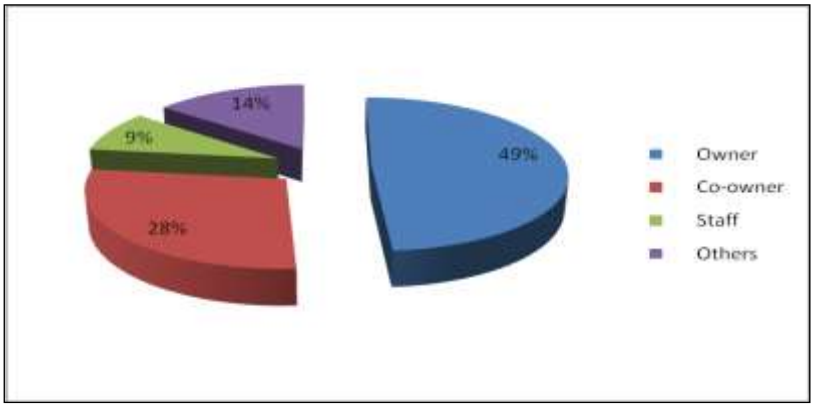

Fig-6: Status in Haulage Industry

ANALYSIS OF THE MODEL

Structural equation modeling (SEM) is a methodological technique to ease the analytical complex model. Thus, SEM is a statistical technique for addressing a confirmatory approach of a structural theory that generates observation on multiple variables [15,16]. Moreover, researches have shown that there are two types of SEM named as the Covariance-Based SEM (CB-SEM) and Partial Least Square SEM (PLS-SEM). The CB-SEM is purposely for estimation of the parameters of the model order to reduce the variation between the sample covariance and those predicted by the theoretical model. However, CB-SEM cannot be used to reduce the effort to predict existence of the dependent variables through the maximization of the variance explained (R^2) of the dependent variable [15,16]. Moreover, PLS-SEM is capable of making use of both normal and non-normal dataset. Hence, this research uses PLS-SEM to analyze the collected data from the stakeholders in haulage industry.

Table 3: Reliability of the Constructs

Constructs	AVE	R^2	C.R
Business Strategy	0.548	-	0.827
Administration activity	0.5374	-	0.852
Operational Activity	0.538		0.853
Open market	0.5016	0.218	0.727

From the Table 3, Average Variance Extracted (AVE), Fitness of the model (R^2) and Composite Reliability (C.R) were analyzed to test the reliability of the collected data and strength of the model that used in modeling the key antecedents of open market concept in haulage industry. The results show that that all the constructs to model the open market concept in haulage industry have their C.R greater than 0.7. Besides, the AVEs of the construct satisfy the benchmark values of 0.5. Indeed, the fitness of model is acceptable with the variance explanation of 0.218 which is common in transportation research and shown in Figure 7.

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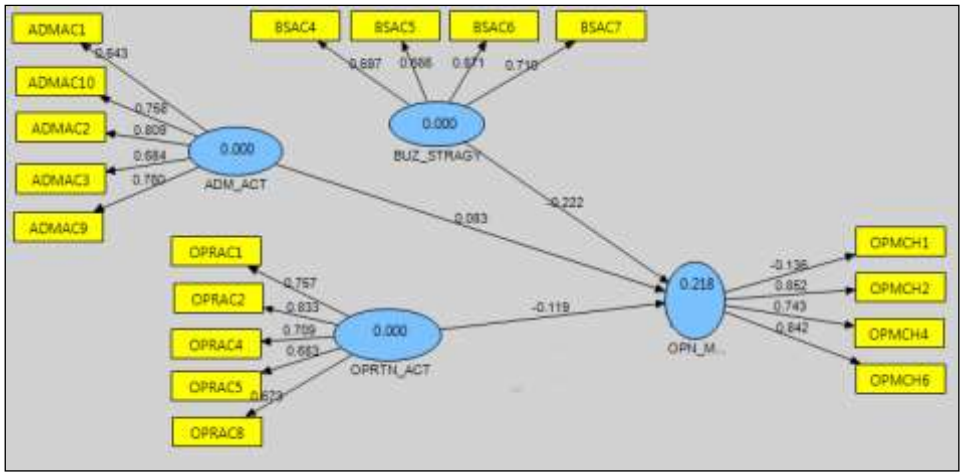

Fig-7: Construct and Loading Items

EVALUATION OF HYPOTHESIS TESTING

After examining the appropriateness of the measurement of the model, the hypothesis was tested with their results shown in Table 4. All the set hypotheses supported by the result of the analysis which was done through the bootstrapping technique in the PLS-SEM.

Table 4: Result of Hypotheses Testing on the Open Market Concept in Haulage Industry

CONSTRUCTS	Hypotheses	Original Sample (O)	T Statistics (|O/STERR|)	Remarks
Business Strategy -> Open Market	H_1	-0.2218	2.0856	Supported
Administration Activity -> Open Market	H_2	0.0827	2.6776	Supported
Operational Activity -> Open Market	H_3	-0.1193	2.158	Supported

Table 4 shows the results of the hypotheses with all the three set hypotheses supported after the analysis. This implies that to achieve the open market concept in haulage industry, business strategy, administrative activities and operation activities of haulage industry have to be taken into consideration.

DISCUSSION

The obtained results from the reliability and validity of the research model reveal that AVE for the both endogenous and exogenous variables are above 0.5 which is an indication of strength of the endogenous variables to be accepted as antecedent for modeling open market concept in haulage industry. The power of variance explanation R^2 of the model is also accepted as the basis for modeling open concept in haulage industry. This implies that privatization or commercialization of haulage industry could be achieved through the business strategy adopted by individual companies in haulage market, their administrative activities and operation activities. As shown in Table 4, the hypothesis H_1 is supported which is the relationship between business strategy and open market concept in haulage industry. This implies that whichever the strategy to be adopted or adapted in haulage industry has to be flexible in order to accommodate the commercialization act. In commercialization or privatization of company, previous studies have shown that strategy of company matters most in welcoming people's ideas. Moreover, the administrative activity, H_2 of the haulage industry is suggested to be considered as important in order to achieve open market concept. This means that the policy makers in the transportation and logistics industries have vital roles to play while intends to go into commercialization of their companies. Ultimately, the type of operation that individual haulage industry performs should be put into consideration so as to achieve open market, thus, leads to the support of hypothesis H_3. The operation they perform in haulage industry should be the type that will allow people to exercise their rights in performing their logistics business.

CONCLUSION

One of the major issues in going into the open market in haulage and transportation industries is the issue of factors that should be taken into consideration. Among the factors that could be regarded as the determinant issue in joining the open market vis-a-vis

open market in haulage industry are business strategy, administrative activities and operation activities of the haulage industries. Hence, this research establishes the key antecedents for modeling the open market concept in haulage industry, while the empirical results validate their acceptability. The future research would be taken longitudinal approach into consideration other than the used cross sectional approach for the research design.

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