A STUDY OF LOGISTICS DEVELOPMENT IN THE MALAYSIA EASTERN REGION: A DESCRIPTIVE ANALYSIS

Abdul Aziz Zuraimi
Faculty of Entrepreneurship and Business,
Universiti Malaysia Kelantan,
Malaysia

Yaacob Mohd Rafi
Faculty of Entrepreneurship and Business,
Universiti Malaysia Kelantan,
Malaysia

Ibrahim Mohammed Dahlan
Faculty of Entrepreneurship and Business,
Universiti Malaysia Kelantan,
Malaysia

Mohd Zawawi Nur Fadiah
Faculty of Entrepreneurship and Business,
Universiti Malaysia Kelantan,
Malaysia

ABSTRACT

This study investigated the current logistics development in The East Coast Region of Pennisular Malaysia. Logistics development is paramount important to the country in supporting economic and growth and enhancing competitiveness. Malaysia as well as many developing countries are still at the moderate stage in developing logistics systems and often face considerable challenges and constraints to provide efficient and effective logistics service. The respondents were from the different logistics players and there were 41 usable questionnaires were analyzed. This study found that the existing logistics infrastructures at the average level in this region. Amongst the constraints and challenges were professionalism in supporting the development, skill of manpower and financial issues in organization. Albeit all the constraints, most respondents were satisfied with the services rendered by logistics service providers.

Keywords: Logistics Development, Logistics Service Providers, Capability, Infrastructure, Malaysia

Introduction

Logistics has assumed a very prominent role as it provides the backbone economic growth and to facilitate international trade. It is one of the key service offerings required in the business environment today and a driver of growth in developing economies. As it has one of the catalysts for the development of industrialization in Malaysia, the performance of this industry will have an impact of the nation's industrialization and its competitiveness in international trade. Logistics is not only consists the physical movement of goods but it has to be efficient in the facilitation of the movement through documents processing, coordination, monitoring and financing activities. Thus, logistics development covers the infrastructure, systems and the stakeholder development.

Malaysia government has established the East Coast Economic Region (ECER) as one of Malaysia economic corridors within the East Coast Region. ECER will transform the region into a major international and local tourism destination; an exporter of resource based and manufactured products, a vibrant trading centre, and an infrastructure and logistics hub. Geographically near to booming areas of Vietnam, Thailand, Cambodia as well as China, the ECER has the potential become the main gateway for trade and industry within the Asia Pacific region.

The ECER covers the states of Kelantan, Terengganu and Pahang**,** as well as the district of Mersing in Johor**.** With an area measuring more than 66,000 sq km, the ECER covers more than half of Peninsular Malaysia. The ECER's population of about 3.9 million represents 14.5% of the total population of Malaysia. Five economic cluster have been identified as key focal points for development in the ECER such as i) Tourism, ii) Oil, gas and petrochemical, iii) Manufacturing, iv) Agriculture and v) Education. In order to fast track the setting up of ECER Master Plan, the East Coast Economic Region Special Economic Zone (ECER SEZ) has been launched which covers the 6 key economics drivers such as high-value manufacturing; agro-based industry; oil, gas and petrochemical; tourism/real estate; knowledge/education & information, communication and technology (ICT); and logistics (ECERDC, 2011).

Despite the remarkable expansion of the industry; particularly in ECER and other economic corridors in Malaysia, there has been very little published research in the area of logistics, resulting very limited information on the patterns of logistics development in recent years because logistics will be expanding. Improving logistics system has become an important catalyst in the logistics development objective as the logistics have a major impact on economic activity. The importance of efficient logistics for trade and growth is now widely acknowledged. The improvement of logistics systems in ECER can provide a foundation for further economic integration. Therefore, in light of the above, the objectives i) to examine the current logistics infrastructures in the ECR, ii) to find out the constraint and challenges in logistics development and iii) to identify the capability of logistics service providers (LSPs) in delivering the services were established for this research.

Literature review

Logistics infrastructure

Logistics infrastructures are important to a country in terms of attracting the investor from both domestic and international to set up new or expand its business activities. The development of logistics infrastructures has been a key factor in trade integration. To support this complex process, integration of maritime, air and land transport mode has become a fundamental factor in the operation of this network. In developed countries, ports, especially the logistics platform development has played an important role in the face of these challenges. This is because most of global trade involves maritime traffic and it requires integration between maritime and road traffic as well as rail transport. Germany as reported by (Germany Trade & Invest, 2010) was most attractive location for distribution centers. Germany has some of Europe’s most advanced transportation networks. Germany has an excellent road, waterways and rail networks, an extensive network of freight villages and intermodal facilities includes rail-road, water-road, water-rail-road equipped with rolling road terminals; airports, seaports and inland ports.

In contrary, the developing countries are still struggling in providing the sufficient logistics infrastructure. Although strong exports in past decades have stimulated the infrastructural development in China important coastal regions, infrastructure capacity in China was unbalanced (Li

& Fung Research Centre, 2008). Despite the increase in highway length in China, the rate of increase in highway length is generally much slower than the rate of increase in highway freight volume (Goh & Ling, 2003). In Malaysia, study done by Sgouridis (2003) found that major Malaysian ports have both road and rail access but the quality of the connectors need to be improved.

In the ECER context, the most developed industrial areas are Pahang and Terengganu. This is supported by two ports (Kuantan Port and Kertih Terminal) and one supply base (Kemaman Supply Base (KSB)). In these areas, logistics system plays a very crucial role to ensure that the businesses run smoothly, especially for import and export activities. However, Kelantan is now developing the industrial areas as the supply base and soon to be port operation i.e. Portokbali was launched in March 2012. In term of road transport network, second phase of East Coast Expressway to connect Kuala Terengganu, Terengganu and Kuantan, Pahang is being implemented and will follow with the third phase. However, Kuantan is already connected to Kuala Lumpur through the first phase of this project (ECERDC, 2011). Railway operations in this region are majority cater for passengers but there is also cargo services provided by Keretapi Tanah Melayu Berhad (KTMB) in the small volume (KTM KARGO, 2010). As for airport, there are three airports in each state. Nevertheless, small volumes of cargo services are handled as compared to the passengers. In addition, there are warehousing facilities offered by the both Kuantan port and KSB for the logistics player in this region.

Logistics Constraints

Several constraints were found by the study of Ali, Jaafar and Mohammad (2008) which includes lack of follow up actions after certain meetings or issues raised, lack of sophisticated management techniques among the supply chain companies, problems in information technology (IT) system with regard to the costly Electronic Data Interchange (EDI) pricing and charges due to in transparent marks-up by freight forwarders and overall performance and functionality of the system, lack of skilled and trained manpower, no single established source of logistics data and information including lack of information of the industry players, facilities, services and capabilities of the sectors, lack of research and development of the industry, lack of regulatory forms to facilitate the industry, lack of dissemination of information with regard to the development and expansion of the logistics industry. In term of LSP, Thong (2007) found that the main problem is the inability to participate at the international logistics level as a result of limited IT linkage, overseas corporate network and capital investment.

In China, human resource is one of the constraints where the demand for talent outstripped supply in the logistics industry (Li & Fung Research Centre, 2008). Logistics cost also the constraints as the proportion of the logistics cost to total production cost is estimated at 20-30% in China, compared to only 10% in the developed countries (Dekker, 2002). Other major logistics barriers in China include the lack of responsiveness and dependability of local suppliers, inadequate communications infrastructure, complicated and time-consuming customs procedures and the unavailability of logistics consulting services (Carter, Person & Peng 1997).

Study by Siew (2002) in the Singapore's transport and logistics industry, this country faced some constraints in term of high cost of operations (especially land rental and wedges), small geographic space and domestic market, industry was fragmented and lacks scale with very few global players with global aspirations, instances of lack of logistics clusters, lack of responsiveness of customers need, shortage of skilled, experienced and entrepreneurial logistics professionals and inadequate technological capabilities to carry out wide range of logistics and supply chain management.

Logistics Challenges

A study by McKinsey and Company (2011) highlighted unclear communication between LSPs and users lead to business interruption is one of the challenges. Both LSP and shipper have to form the partnership to create more value for both parties. This is because both parties have their own objective to resolve the problem whereby LSP are now experiencing unstable growth and shippers are facing pressure to lower their cost and increase efficiency and effectiveness. On the other hand, Thomaz (2009) reported in the fifth state of logistics survey that the increasing logistics cost in South Africa continue to be constraints and challenges to expand market into international trade. The survey reported this country's logistics cost were 14% higher compared to the other countries with the reason of being far away from all sources of imports, and relying heavily on road transport rather than rail transportation.

Even the industry in China grows year of year, there were also some major challenges that interrupt the development like rising cost, financing bottlenecks, in-house mindsets to handle logistics, localized services, lack of unified top level institutional coordination and imbalance transport infrastructure development (Li & Fung Research Centre, 2008). Other challenges in China as reported by Armstrong and Associates (2004) were poor infrastructure, regulation, bureaucracy and culture, poor training, ICT, undeveloped domestic industry, high transport costs, poor warehousing and storage, regional imbalance and domestic trade barriers. In addition, Pomlett (2006) mentioned the recruiting and retaining good staff can be big challenges as there is a considerable lack of skill.

Logistics Service Provider's capabilities

With the increase of the global competition and the rapid progress of the IT, the logistics industry has become one the most influential subjects of the 21st century. The scope and role of logistics have changed dramatically over recent years. In the past, logistics has played a supportive role to primary functions such as marketing and manufacturing. Now the scope of logistics has expended beyond its traditional coverage of transportation and warehousing activities to include purchasing, distribution, inventory management, packaging, manufacturing and even customer service (Chin, Bae & Kim, 2010).

The use of logistics providers allows companies to concentrate more closely on their core business. Other key drivers for the use of logistics providers include globalization of businesses and implementation of just-in-time (JIT) principles. A study by Ali et al. (2008) mentioned that since the outsourcing of the production function has led to the outsourcing of logistics activities, many multinational companies, such as automobile, electronic and electrical companies have outsourced their logistics activities to LSPs in order to enable the companies to focus on their core business.

Based on a survey on 177 companies of LSPs conducted by Chin et al. (2010) in Shanghai, it was found that the respondent companies generally possess well capability of performing traditional logistics services such as freight forwarding, direct transportation service, customs clearance, shipment consolidation, tracking and tracing shipment information and warehousing. They are also capable of performing logistics services involving the use of basic logistics information technology. These services include receiving and sending shipment notices using EDI and logistics information systems. The results suggest that logistics companies in Shanghai had been investing in basic IT to enhance their service capability. Nevertheless, they appear to lack the capability to provide advance logistics services such as purchasing services which requires relatively large investments in human and physical assets and IT infrastructures. One plausible reason for their lack of service capability in these "value-added" services is that most of the respondent companies are of small and medium size.

Research method

The primary data were obtained through a survey using self-administered questionnaire. The survey questionnaire consists of three sections with the five-point Likert-scale questions to provide numerical data on the dimensions of variables. The respondents were able to choose answers ranging from "1" describing "Strongly Disagree" to "5" being "Strongly Agree".

Section one covered the demographic part, section two emphasized the current logistics infrastructures owned by the organization and infrastructures provided by the government like road, airport, port, etc. Section three discussed about the constraints and challenges faced by the respondents in order to develop with the goodness of logistics development. In the last section of the questionnaire, the respondents were asked about the capability of LSPs in providing the different types of services. The classification of organization respondents were local authority, manufacturer, LSPs, port operator and other logistics users.

From the analysis, it was identified that the Cronbach alpha of all constructs were between 0.79-0.93. Generally, the reliability coefficient indicates that there was a high level of consistency in the responses given by the respondents (Cronbach, 1990). According to (Nunnally & Bernstein, 2008), a reliability coefficient of 0.70 and above levels considered more than acceptable for most behavioral science applications. This reliability test is important because it is related to the validity concept, which is to prove that the instrument used is consistent, stable, and predictable and will yield correct results without room for doubt (Hair, Anderson, Tatham & Black, 1998). Thus, the instrument used in this study showed a good level in terms of reliability. However, there was one construct (the capability of service provider on the provider perspective) shows 0.23 on the reliability test as there were only 7 respondents involved in this survey that considered as small number of respondents.

Altogether, 132 respondents were conveniently sampled from the company located within the ECR of Peninsular Malaysia. Only 41 or 31.07% of the survey questionnaires were returned and used for the final analysis. The data were analyzed using SPSS Version 19.

Finding and discussion

Profiles of organizations

The profiles of respondents' organization and characteristics are reported in Table 1. More than three-quarter of the total organization respondents (87.8%) were established in the minimum of 6 to more than 10 years and 12.2% had been operating between 2 to 5 years. There was none of the organization established less than 1 year. The result shows that most of the participated organizations in this region are well established in logistics industry.

Table 1 also shows the classification of the organizations. As explained earlier, the respondents consist of five clusters. Nearly 49% of the respondents were from manufacturer cluster. About 22% were from other logistics users. LSP cluster recorded 17.1% and 7.3% of the respondents were from local authority cluster. Only 4.9% of the total respondents were from port operator cluster. This findings show that both manufacturer and other logistics users such as the organization from SME industry are great contribution to the logistics industry. It was in line with the result of number of employees where analysis of responses revealed that 73.2% of respondent's organization employed below than 100 employees; and 9.8% and 17.1% employed between 101 to 300 employees and more than 300 employees respectively.

In term of the type of organizations were local company (63.4%), government-link companies (17.1%), foreign company (14.6%) and foreign-local joint venture company (4.9%). Most of the respondents either have direct or indirect involvement in logistics service including distribution and warehousing activities except the local authorities who in-charge in the planning, development as well as the implementation of the policy.

Table 1: Profile of Organizations

Characteristics	Frequency	Percentage
Years of establishment		
Less than 1 year	0	0
2-5 years	5	12.2
6-10 years	4	9.8
More than 10 years	32	78
Classification of organization		
Local authority	3	7.3
Manufacturer	20	48.8
Logistics service providers	7	17.1
Port operator	2	4.9
Other logistics users	9	22
Number of employees		
Less than 50	23	56.1
51-100	7	17.1
101-300	4	9.8
More than 300	7	17.1
Type of organization		
Government-link company	7	17.1
Foreign-local joint venture	2	4.9
Foreign company	6	14.6
Local company	26	63.4

Profile of Respondents

The demographic statistics of the respondents profile are shown in Table 2. Each organization involved in this study, only one representative was needed to answer the distributed questionnaire. Among the 41 respondents, 65.9% hold bachelor degree in the academic qualification, 17.1% hold a diploma qualification, 9.7% were certificate holders, and 7.3% those with the master degree. The result shows that most of respondents furthered their study at the tertiary level.

The respondents hold various job titles, ranging non-executive, senior executive to senior manager and above. Most of the respondents (34.1%) involved in this study were managers and followed by the junior executives (22%). About 17% were from the position of senior managers and above, and the same percentage (17.1%) was senior executives. The lowest score recorded for respondent position was non-executives. In general, the senior positions were actively involved in this study.

In terms of years in the current position, more than half of the total organization (51.2%) had held their position for more than 10 years, 26.8% of the respondents worked for 2-5 years, whereas 17.1% and 4.9% of the respondent years in the current position were between 6-10 years and less than 1 year respectively. Therefore, majority of respondents are seen as experienced enough and sufficiently knowledgeable about the logistics industry.

Table 2: Profile of Respondents

Characteristics	**Frequency**	**Percentage**
Academic qualification		
SPM	3	7.3
STPM	1	2.4
Diploma	7	17.1
Bachelor Degree	27	65.9
Master	4	7.3
Position		
Non-Executive	4	9.8
Junior Executive	9	22
Senior Executive	7	17.1
Manager	14	34.1
Senior Manager & above	7	17.1
Years in current job		
Less than I year	2	4.9
2-5 years	11	26.8
6-10 years	17	17.1
More than 10 years	21	51.2
Years in organization		
Less than 1 year	2	4.9
2-5 years	13	31.7
6-10 years	4	9.8
More than 10 years	22	53.7

Current logistics infrastructure

The descriptive statistics of current logistics infrastructure (CLA) are shown in Table 3. Altogether, there were nine items under the variable of current logistics infrastructure i.e. well maintain (WM), infrastructure distribution (ID), smooth deliver (SD), road access (RA1), rail access (RA2), sea access (SA), warehousing access (WA), road good condition (GD) and traffic condition (TD).

All respondents (N=41) answered the items in the variable. The result shows the two highest mean were for ID and RA1 item which was 3.54. It means that ECER has good infrastructure. The logistics industry and the logistics players get easy access of road transportation in this region to deliver and receive their goods timely. Meanwhile, means of other current logistics infrastructure were close to 3.5 except for SA (2.83) and RA2 (2.29).

Among these current logistics infrastructure, the three highest standard deviations were observed for SA (1.34), RA2 (1.23) and GD (1.05) of which showed more deviation among respondents than other items. This finding shows that respondents were still uncertain on the infrastructure of seaport transportation, rail network and road condition. In contrast, SD showed the lowest standard deviation, 0.78, indicates less deviation among respondents in their responses to the question.

Table 3: Descriptive Statistics of Current Logistics Infrastructure

	Descriptive statistics					
CLA	N	Mean	Median	Mode	Min	Max	Std. Dev.
ID	41	3.54	4.0	4	2	5	0.81
RA1	41	3.54	4.0	4	1	5	0.87
WM	41	3.51	4.0	4	1	5	0.93
SD	41	3.46	4.0	4	2	5	0.78
GD	41	3.44	4.0	4	1	5	1.05
TD	41	3.37	3.0	3	1	5	0.94
WA	41	3.27	3	4	1	5	0.90
SA	41	2.83	3	2	1	5	1.34
RA2	41	2.29	2	1	1	5	1.23

Constraints of logistics industry

Table 4 shows the constraints in the logistics industry (CLI), there were five items under the variable i.e. lack of infrastructure (LI), lack of research (LR), lack of professionalism (LP), lack of access to financial (LF) and government policy (GP). All items were answered by all respondents (N=41). Results indicated that main constraints for CLI as perceived by respondents were LI, LR and LP (their mean scores were over 3.40). Most respondents agreed that lack of logistics infrastructures would be affected the logistics development, lack of research in the logistics would be slower down the logistics development and lack of professionalism in logistic industry were among the top logistics constraint in this region. This result supports the study by (Ali et al., 2008).

In contrast, the least critical constraints in the logistics industry were LF and GP (their means score below 3.35). This shows that the country provides the financial resources but might be with some limited provisions and most respondents were satisfied with the current government policy in developing the logistics industry.

In terms of deviation among items, the highest standard deviation of 0.95 was observed for LI. This finding showed the highest variation in the respondent's responses among the other items. On the contrary, the lowest variation was observed for item LP (0.83).

Table 4: Descriptive Statistics of Constraints of Logistics Industry

	Descriptive statistics						
CLI	N	Mean	Median	Mode	Min	Max	Std. Dev.
LI	41	3.58	4.0	3	1	5	0.95
LR	41	3.49	3.0	3	2	5	0.84
LP	41	3.44	3.0	3	2	5	0.83
LF	41	3.30	3.0	3	1	5	0.90
GP	41	3.10	3.0	3	1	5	0.89

Challenges of logistics industry

Table 5 shows the descriptive statistics of the challenges in the logistics industry (CHA). Altogether, there were five items under this variable i.e. cost of logistics (COS), unclear communication (COM), manpower skill (MAN), user's attitude (ATT) and small market (MKT). The result shows that the mean score above 3.90 were for MAN and COS item - 3.95 and 3.90 respectively. Skilled manpower and logistics cost are among top items were found from the previous study as the challenges in the logistics development (Ali et al., 2008; Dekker, 2002; Siew, 2002; Thomaz, 2009; Armstrong & Associates, 2004; Li & Fung Research Centre, 2008; Pomlett, 2006).

The other three items for mean score of MKT, ATT and COM were within 3.50 – 3.89. Among the items under this variable, the two highest standard deviations were observed for MAN (1.00) and COM (0.97). In contrast, the lowest standard deviation was for item COS (0.83). It shows that high variation in responses among respondents in term of this item.

Table 5: Descriptive Statistics of challenges in the logistics industry

	Descriptive statistics						
CHA	N	Mean	Median	Mode	Min	Max	Std. Dev.
MAN	41	3.95	4.0	4	1	5	1.00
COS	41	3.90	4.0	4	1	5	0.83
MKT	41	3.68	4.0	4	1	5	0.88
ATT	41	3.61	4.0	3	2	5	0.89
COM	41	3.58	4.0	4	1	5	0.97

Logistics service provider's capability from the user's perspective

The descriptive statistics of logistics service provider's capability from the user's perspective (SPU) are shown in Table 6. There were ten items under this variable i.e. able to solve cargo (SOL), making effort (EFF), pre-alert notice (ALT), flexible manner (FLX), handling complaint (COP), adjust operation (ADJ), claim insurance (INS), advice customer (ADV), value analysis (ALS) and performance report (RPT). All items were answered by the respondents.

Analysis of the data showed that on average of the ten items in this variable, there were four items indicated mean score of range from 3.5 to 3.8, COP, EFF, FLX and ADJ. Most respondents were agreed with the capability of LSP in handling customers' complaints, making effort to help customers in emergencies, responding to customer's request in a flexible manner and adjusting the operations in flexible manner to avoid problems arise. All the mentioned capabilities were expected by users and the LSPs were required to deliver their service effectively in order to compete in the market competition. As mentioned by Chin et al. (2010), the scopes of LSPs were expanded beyond its traditional coverage.

Meanwhile, means for the rest of the items were below 3.5, with the lowest mean recorded for the RPT (3.06). These show that the companies gave less attention to provide performance report periodically as measured by the users.

In terms of deviation among items, the highest standard deviation of 0.96 was observed for ADJ which showed high variation in response among respondents in terms of these items. Although, ADJ was one of the first priorities to the LSPs in delivering its service, there was high variation among the items. On the contrary, the lowest variation was observed for the item of SOL (0.79).

Table 6: Descriptive Statistics of Logistics service provider's capability from the user's perspective

	Descriptive statistics						
SPU	N	Mean	Median	Mode	Min	Max	Std. Dev.
COP	34	3.74	4.0	4	1	5	0.86
EFF	34	3.71	4.0	4	1	5	0.80
FLX	34	3.68	4.0	3	2	5	0.84
ADJ	34	3.56	3.5	3	1	5	0.96
ADV	34	3.47	4.0	4	1	5	0.86
SOL	34	3.44	4.0	4	1	4	0.79
ALT	34	3.41	4.0	4	1	5	0.92
ALS	34	3.21	3.0	3	1	5	0.95
INS	34	3.15	3.0	4	1	5	0.89
RPT	34	3.06	3.0	3	1	5	0.90

Logistics service provider's perspective on their capability

The descriptive statistics for the logistics service provider's perspective on their capability (SPC) are reported in Table 7. There were nine items under this variable i.e. offering one type of service (ONE), offering more than one service (MTO), planning for more service (MOR), able to accommodate customer's requirement (ACC), skill of manpower (SMP), training for employees (TRN), receiving more than one comments (CMN), good response from customer (RES) and satisfying of the performance (SAT). Unlike previous variables, not all respondents were qualified to answer the items under this variable as those respondents from logistics service providers could only answer questions relevant to their capabilities.

All respondent (N=7) answered related to logistics service provider's capabilities. Among the items in this variable, respondents rated their companies highly on items TRN, SMP, RES, MTO, CMN and SAT. Mean, median and mode of these items were varied in between 3.5 to 5. Other items, which were moderately offered (means in between 3 to 3.49) related to the company's capability, were MOR and ACC. The least capability offered by the logistics services providers were ONE (mean score of 2.71). The finding shows that training was the highest items among others as the LSPs able to organize in-house training to upgrade their employees' skill. On top of that, LSPs focused on the manpower skill as it plays significant role in delivering efficient and effective services. Other than that, LSPs were also receiving good response from the users on their services delivered to the customers, capable in offering more than two logistics services and users were satisfied with its performance.

Comparing individual items in the variable, there were some differences among respondent's answer. The four highest standard deviations were for items CMN (1.50), MTO (1.38), MOR (1.11) and ACC (1.07) which showed the highest variation in the respondents' responses of all of the items offered by logistics service providers companies. This was in contrast with the TRN and SAT, its low standard deviation (0.53) showed that the companies widely capable in organizing training for its employees to upgrade the skills and the companies satisfied on their service performance.

Table 7: Descriptive Statistics of Logistics service provider's perspective on their capability

	Descriptive statistics					
SPC	N	Mean	Median	Mode	Min	Max	Std. Dev.
TRN	7	4.43	4.0	4	4	5	0.53
SMP	7	4.29	4.0	4	3	5	0.76
RES	7	4.00	4.0	4	3	5	0.58
MTO	7	3.71	4.0	4	1	5	1.38
CMN	7	3.71	4.0	5	1	5	1.50
SAT	7	3.57	4.0	4	3	4	0.53
MOR	7	3.29	4.0	4	1	4	1.11
ACC	7	3.14	3.0	3	1	4	1.07
ONE	7	2.71	3.0	3	1	4	0.95

Conclusion

This study evaluated logistics development which includes the logistic infrastructure, constraints and challenges, and the LSPs' capability in Peninsular Malaysia Eastern Region. Most respondent were satisfied with current logistic infrastructure in the region except for the access to the seaport and rail network as they are still unhappy with the infrastructure of seaport transportation, rail network and road condition. The road condition was not acceptable as there were holes and dust which would risk to the logistics players and public users.

Although they satisfied with the facilities, majority the logistics players faced the bunch of constraints in developing the logistics in this region as there are still lacking in logistics infrastructures, research, professionalism which involved the mind setting of the people and financial issues. It was similar to the causes of lack of manpower skill as most of the professional would not prefer to move from the big city to this region and the demand for talent outstripped supply. As result, the shortage of manpower will be main constraint and challenge in developing the logistics in this region. In addition, the increasing logistics cost continue to be constraint and challenge to develop the logistics industry.

In the case of logistics service providers, most users were satisfied with the service rendered by LSPs whereby the most of the functions meet the user's expectation. However, there are still rooms for LSPs to improve their services in helping the customer to find solution on cost reduction and be a good problem solver. Handling insurance claim and provide performance report are the other main items the LSPs should look into. From the LSPs perspective, they are able to train their employees lead to produce the skilled manpower. LSPs in this region are always received good responses from the customer on their services and they claimed that the customers were satisfied with their performance. LSPs capabilities were to offer more than one logistics services to the customers and provide room for other services which deemed appropriate for further expansion.

References

Ali, R., Jaafar, H. S., & Mohamad, S. (2008). Logistics and Supply Chain in Malaysia : Issues and Challenges. In proceeding of the EASTS International Symposium on Sustainable Transportation incorporating Malaysian Universities Transport Research Forum Conference 2008 (MUTRFC08). Universiti Teknologi Malaysia. August, 12-13, 2008, 1-11.

Armstrong & Associates (2004). Ten key challenges for the Chinese logistics industry. Retrieved January 5, 2012, from http://www.globalautoindustry.com/article.php?id=175&jaar=2005&maand=10&target=China

Bookbinder, J. H., & Tan, C. S. (2002). Comparison of Asean and Eropean logistics systems. *International Journal of Physical Distribution & Logistics Management*, 33(1), 36-58.

Carter, J. R., Person, J. N., & Peng, L. (1997). Logistics barriers to international operations: the case of the People's Republic of China. *Journal of Business Logistics*, 18(2), 129-145.

Chin, F. C., Bae, J. H., & Kim, G. O. (2010). A Survey on the logistics service providers in Shanghai. Retrieved December 30, 2011, from http://rightsite.asia/en/article/survey-logistics-providers-shanghai

Cronbach, L. J. (1990). *Essentials of Psychological Testing*, 5th Ed, New York, Harper Collings Publishing.

Dekker, N. (2002), Gold rush!, Containerisation International, 35(1), 29-31.

East Coast Economic Region Development Council (ECERDC) (2011). Retrieved July 05, 2012, from http://www.ecerdc.com.my/ecerdc/

Germany Trade & Invest (2010), Germany: Europe Logistics Hub. Retrieved March 5, 2012, from http://www.gtai.de/GTAI/Content/.../germany-europe-s-logistics-hub.pdf

Goh, M., & Ling, C. (2003). Logistics development in China, *International Journal of Physical Distribution & Logistics Management*, 33(10), 886-917.

Hair, J. F., Anderson, R. E., Tatham, R. I., & Black, W. C. (1998). *Multivariate Data Analysis*, 5th Ed. Prentice Hall International Incorporations, Upper Saddle river, New Jersey. USA.

KTM KARGO (2010). Retrieved September 19, 2011, from http://www.ktmkargo.com/#/our-service

Li & Fung Research Centre (2008). China's logistics industry, 2007-2008, China Distribution & Trading, issue 53, July. Retrieved December 31, 2011, from http://www.lifunggroup.com/eng/knowledge/research/china_dis_issue53.pdf

McKinsey & Company (2011). Logistics industry challenges, McKinsey Solutions. Retrieved December 28, 2011, from http://solutions.mckinsey.com/logos/default/en-us/about/challenges.aspx

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory*, 3rd Ed, Mc Graw-Hill, New York.

Pomlett, L. (2006), The challenge of the east. Retrieved September 15, 2011, from http://www.supplychainstandard.com/liChannelID/12/Articles/225/The+challenge+of+the+E`ast.html

Razzaque, M. A. (1996). Challenges to logistics development: the case of a Third World Country – Bangladesh. *International Journal of Physical Distribution & Logistics Management*, 27(1), 18-38.

Sgouridis, S. P. (2003). Freight transportation in Malaysia: Technological and Organizational issuees from an ITS perspective, AY 2002/2003 Spring Inception Report, June 30.

Siew, W. K. (2002), Developing Singapore into a global integrated logistics hub, report on the working group on logistics.

Thomaz, C. (2009).Growing logistics costs as constraint to trade, viewed December, 29, 2011, http://www.engineeringnews.co.za/article/logistics-the-bread-and-bane-of-southern-africa-trade-2009-06-05

Thong, Y. C. (2007), Overview the logistics industry in the Northern Region & the need to enhance its effectivemness and competitiveness, Penang, July 5.