

ICONSPADU 2021**International Conference on Sustainable Practices, Development and Urbanisation****THE IMPORTANCE OF LOGISTIC PROGRAMS AND
COMPETENCY IN LOGISTIC EDUCATION IN MALAYSIA**

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aqmaljamil@gmail.com**Abstract**

This research discusses the role of competency in Malaysian logistics education. Local logistics practitioners make up the industry. Logistics management is the process of planning, implementing, and controlling the flow of goods, services, and information from the point of origin to the point of use. One of the study's main goals is to obtain local logistics practitioners' perspectives on supply chain management. Despite the government's full support, Malaysia's logistics industry lags behind developed nations. The industry's involvement of logistics graduates has fallen short of practitioners' expectations. The study's goals were to develop the local logistics industry and produce more globally competitive graduates. In order to develop a globally competitive logistics industry, it is necessary to identify critical knowledge. The study needs to look into the courses offered by Malaysian universities. This component defines the skills required of Malaysian undergraduate students. The study's findings should help make the global logistics industry more competitive and sustainable by increasing value-added activities, expanding the industry's player base, and meeting practitioners' needs. To meet future education needs, academic logistics must be more proactive.

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1. Introduction

Malaysia's logistics industry's goal is to improve its overall competitiveness by learning about logistics. Studying logistics encompasses both logistics companies and those that support the logistics industry. Logistics companies in the United States number 1,346. (MIDA, 2018). In 2018, the logistics sector in Malaysia employed nearly 710,000 people and contributed nearly RM 30 billion to the country's GDP. Logistical management is a supply chain process that focuses on ensuring that goods, services, and information flow efficiently and selectively to meet customers' needs (Helmold & Terry, 2021). Additionally, CLM defined logistics management as the planning and framework that facilitates the movement of goods and information across enterprises, focusing on domestic transportation management.

Supply chain management, global resource management, and the need for large-scale manufacturing necessitate including a wide range of products and services in the global supply chain management (Futgate & Davis-Sramek, 2012). With this obstacle, stakeholders are compelled by the necessity of resolving logistics issues. A variety of practical methods must be used to identify dynamic and unstable market performance logistics weaknesses in order for businesses to effectively address issues and challenges (Hua et al., 2020). So many companies believe it is critical to concentrate on logistics because it is an area to improve and optimize their operations (Burger, 2013). In order to best serve industrial clients, logistics professionals must ensure that their logistics division is running at peak efficiency.

In addition, the management channel and logistics are both seen as interdependent disciplines in the business flow. Shipping and processing raw materials into finished products are part of it. When goods, materials, and labour are used in manufacturing, the logistics industry is created. An efficient supply chain involves eight different types of operations: customer service, product development and commercialization, order fulfilment, manufacturing flow, supplier relations, and reverse logistics (MS Ab Talib & ABA Hamid, 2014). Data analysis necessitates knowledge, skills, and attitudes often lacking, professional development is essential (Bolhuis, 2017).

If consumption is not reduced, the industry will face difficulties. The problem with logistics is that the industry's efficiency does not match the needs of today's logistics practitioners. Corporate logistics in Malaysia have become more complex and critical due to the country's evolving commercial landscape. A well-trained logistics workforce is needed to maintain the company's high level of competitiveness. Economic diversification and modernization have helped Malaysia open its economy to the rest of the world for more than four decades (Zhang et al., 2017).

2. Problem Statement

HEIs provide a range of logistics-related courses at various levels of study. This course offering is intended to meet the industry's requirements. However, HEIs largely disregard the growing demand for qualified and trained workers in industries such as supply and logistics networks. If this trend continues, it will have a negative impact on the logistics and supply chain industries. As a result, it is critical to have a firm grasp on logistics education.

According to previous research, there has been increased criticism of logistics graduates' capabilities from practitioners and academics. This indicates that logistics graduates are still unable to adapt to the real world of work; which casts doubt on the ability of HEIs to supply the industry with good logistics graduates. Dazmin (2016) conducted a comparative study and concluded that there is a need for logistics education. If this issue is not addressed, it will negatively affect the growing logistics industry's needs.

This study discovered that current programmes are incapable of meeting the needs of the entire logistics industry. The logistics industry's primary challenge is a lack of competence and skills among logistics managers. Thus, they discovered through the experience of logistics practitioners that working graduates were unable to meet industry requirements, thereby impeding the logistics industry.

The logistics practitioners in Malaysia face the following challenges, based on current industry conditions:

- i. Logistics education must assist and focus on the industry's skill shortage.
- ii. The inability of logistics graduates to adapt to the actual work environment, which indirectly calls into question the capacity of HEIs to produce sufficient logistics graduates, has hampered the growth of this industry in Malaysia.

3. Research Questions

- i. Does the logistics programme in Malaysia effective in fulfilling the logistics education requirement?

4. Purpose of the Study

The purpose of this study is to evaluate the effectiveness of logistics programme in Malaysia higher education institution in fulfilling the logistics education requirement.

5. Research Methods

There are several different types of research methods. Pilot testing, sample size determination, sampling technique, and overall research framework are some of the methods used in this study. This research method uses "analytic techniques," which refers to the scientific procedures and tools used to carry it out. Quantitative research is limited in conducting statistical analyses beyond correlations and regressions; these include ANOVA. The researcher chose SEM because of the large number of variables and sub-constructs in this study. Complex multivariate analysis is better served by SEM techniques (Tabachnick & Fidell, 2013).

Structural Equation Modelling (SEM) is a type of multivariate data analysis in its second generation. Numerous social science researchers frequently employ it to analyse complex relationships between various variables (Hair et al., 2017). The SEM procedure is divided into two stages. The first stage validated the measurement model using validity and reliability tests. The relationship between hypothetical latent constructs and sub-constructs evaluated the measurement model. The relationship

between constructs and sub-constructs could be quantified in two distinct ways. The first is referred to as reflective measurement, whereas the second is formative measurement.

The arrows indicate a causal (predictive) relationship between the indicator variables and the informative construct measurement. This implies that the construct is responsible for the measurement (or, more precisely, the covariation) of the indicator variables, since the direction of the arrows in reflective indicators is from the construct to the indicator variables.

5.1. Quantitative Research Design

This study used a quantitative method because of the research ideology. In a number of previous studies, additional quantitative methods were used to examine the impact of innovation on needs, particularly in logistics (Gunday et al., 2011; Intarakumnerd et al., 2012). In light of the preceding, the research questions were addressed using the positivism paradigm and deductive reasoning, and a quantitative research method.

6. Findings

The first section of the research findings concentrated on the descriptive analysis and background of the survey respondents. First, fundamental information about logistics practitioners was presented, including their ownership structure, the type of logistics practitioners who participated in the research, and the type of market in which they operate. Second, descriptive analysis, such as frequency and percentage tests, was performed. Additionally, the descriptive analysis demonstrates which tiers require government intervention and which strategies significantly impact requirement fulfilment. The following sections go into greater detail about descriptive analysis.

The descriptive statistics of the respondents are crucial because the researcher must first ensure that the data validity is within acceptable ranges before conducting any statistical analysis. SPSS version 25.0 was used to calculate each indicator's mean, standard deviation, variance, and minimum and maximum values.

6.1. Logistic Programme

Nearly a decade ago, logistics and supply chain research began. Logistics and supply chain management is now a part of every economy and business. Manufacturing, distribution, and fulfilment of sales orders (Stevens & Johnson, 2016). Logistics and supply chain management research encompasses a variety of functions. Today's academic world is perceived to be more difficult. Graduates of logistics must innovate to advance and maintain a competitive edge (Dazmin, 2016). It is critical to understand the current logistics education trend.

For instance, the IR 4.0 concept of logistics 4.0 has imposed substantial demands on the educational process. Experts and operators will immediately begin carrying out the organization's responsibilities. This necessitates the process of educational digitization (Wrobel-Lachowska & Polak-Sopinska, 2018). Market expansion necessitates developing novel solutions, such as logistics programmes (Witkowski, 2017). Logistics graduates must be proactive in order to address current logistical issues.

Supply chain management professionals must collaborate to develop highly skilled logistics professionals in developing countries (De Almeida Vilela et al., 2018).

Learning about logistics is essential. Trust, hard work, and dedication are all necessary for success. According to Dazmin (2016), Malaysian higher education institutions need to be able to adapt both academically and logistically. In order to improve the quality of the workforce, it is necessary to invest in education and training (Tenth Malaysia Plan 2011-2015, 2010; Third Industrial Master Plan 2006-2020, 2014). To avoid mistakes, increase productivity, and reduce the risk of failure, organisations must share knowledge (Ni et al., 2018).

A more vital undergraduate logistics programme would result in more knowledge, skill, and competence in logistics. According to Dazmin (2016), practitioners and academics continue to have doubts about the capabilities of logistics graduates. These findings cast doubt on HEIs' ability to produce a sufficient number of logistics graduates for the industry. Thus, in addition to meeting the needs of logistics education, the curriculum must be of the highest quality (Dazmin, 2016; Tam, 2014).

To compete, the business must hire logistics professionals. Regional trade agreements such as the EU and AFTA have facilitated the expansion of open trade zones (Mangan et al., 2020). This demonstrates the critical role of logistics in international commerce. By producing analysts, universities' logistics programmes may indirectly address transportation and logistics issues. Globalization requires an increase in the efficiency of transportation and logistics systems across industries. Competitive organizations require more efficient and knowledgeable (Afiouni, 2007; Dazmin, 2011). Both parties must cooperate in developing logistics courses (Lutz & Birou, 2013).

According to the research cited above, HEI logistics programmes continue to fall short of meeting demand. Businesses expressed concern about graduates' capacity to manage logistics, transportation, and supply chains. Local practitioners must research Malaysia's logistics education needs. Malaysian higher education educators must collaborate with logistics practitioners to develop more effective logistics programmes. This ensures that both parties develop programmes that produce logistics professionals for the twenty-first century. Education and human resource quality must be improved to boost economic development and global competitiveness. Curriculum development should involve educators at all levels of education and industry (Haridza & Irving, 2017). Graduates in logistics require knowledge and skills to improve their efficiency and effectiveness.

Failure to meet logistics education requirements has a detrimental effect on overall performance and productivity. Marzo-Navarro (2007), asserts that skill disparities can result in workplace inequalities. Insufficient logistics professionals will stymie economic growth (Daud, 2012). Higher education's logistics programmes must evolve. Malaysia is a relative newcomer to this industry, particularly in logistics, IWMS, and information technology. They pay a pittance and provide scant training. Malaysia's government has also begun developing strategic plans as part of the Third Industrial Master Plan (IMP3) for 2006-2020 (Industri, 2006). According to Esteban et al. (2014) a more efficient transportation and logistics system can boost future productivity. Along with assisting all economic sectors, logistics helps to reduce operating costs and boosts productivity and economic efficiency.

Transportation and storage will be bolstered as part of the Third Industrial Master Plan (IMP3). Millions of dollars more. By 2020, it will be 880 million tonnes, an annual growth rate of 8%. It will also

create 146,000 jobs by 2020, most of which will be in the skilled sector. Manufacturing, service, and logistics sector transformation are additional IMP3 goals. Many companies are turning to logistics to cut costs and increase profits. LPMS is in high demand (Thai et al., 2011). Logistics management is the subject of numerous studies, including investigations into the skills of logistics professionals (Dubey et al., 2018).

The only skills required are those in business, logistics, and management. Education is a high priority in Malaysia. Local logistics experts can address supply chain management issues. Strong ties to the logistics industry continue to benefit training in this field. Strong industry ties continue to help logistics training. These five skills were assessed in 42 courses and teaching methods.

6.2. Competency

A person's ability to learn and produce results is a skill (Curran et al., 2012). Logistics competitiveness in the twenty-first century will be determined by a company's ability to leverage its knowledge base. There is a pressing need for new skills and knowledge (Crook et al., 2008). Logistics skills are highly sought after in the workplace. Required logistics skills can be distinguished from those of current logistics practitioners using research, according to Kovács et al. (2012), two distinct types of skills are referred to by the terms "knowledge and management skills" and "business knowledge and logistics" (Dazmin, 2011).

One of Malaysia's biggest challenges is to build a workforce with logistics expertise (Tenth Malaysia Plan 2011-2015, 2010; Third Industrial Master Plan 2006-2020, 2006). Most developed countries have seen a rise in the demand for highly skilled workers. Our biggest challenge, according to IMP3, has to do with developing highly skilled logisticians. Knowledge of supply chain management and coordination is needed in addition to knowledge of material management, metrics, and marketing activities (Crook et al., 2008; Dazmin, 2011) Logistics education and recruitment are concerned with efficiency. An organization's employees are well-trained in all aspects of their duties to ensure performing at the highest possible level (Dazmin, 2011).

In the logistics life cycle, employee benefits are critical indicators of success (Mazidi et al., 2014). This demonstrates an inverse relationship between employee attitudes, customer records, and revenue growth. Supply chain strategy may be necessary to alter the business unit's strategy, context, or environment (Perez-Franco et al., 2016). Existing businesses' performance appraisal systems must be reviewed immediately. Individual and collective performance is assessed in this review. According to Post, managing modern logistics requires logistical and business management expertise (Dazmin, 2011). According to Ngamvichaikit (2017), logisticians must be knowledgeable and technically savvy. Another study evaluated three variables: logistics capabilities, industry knowledge, and logistics programmes, as well as creativity (Dazmin, 2011).

Logistics practitioners must have a firm grasp of logistics competencies to create a logistics curriculum and workforce (Dazmin, 2011). A skilled logistician can establish a link between logistics companies and environmental conditions. Higher education institutions must consider logistics modules and programmes to ensure that logistics graduates possess management, business, and logistics skills (Dazmin, 2011). This will facilitate the application of logistics graduates' knowledge. According to

Dazmin (2011), higher education institutions must develop curricula that expose students to management, logistics, and business concepts. Without a thorough implementation of human resource planning by logistics stakeholders, future logistics practitioners may lack reliability.

Employers can use this study to recruit and develop logistics personnel. Employers can assess candidates' management, logistics, and business knowledge and abilities, according to Dazmin (2011). This is to ensure that they hire only the most qualified individuals. Employers will receive a list of audits to conduct to assess employee efficiency due to the findings of this study. Additionally, this study examines the impact on Malaysian higher education institutions of logistics training programme knowledge, skills, and talents. The purpose of this training is to foster the development of professional competencies and personal values and competencies (Beck & Halim, 2008). By interacting, connecting, and modelling professional behaviour for their mentees, mentors can assist in developing soft skills. (1918) Woodard's industrial training programme will include more interactive activities that will better prepare students for the real world of work (Hoyle & Deschaine, 2016). This approach assists students in resolving issues. According to Koehn and Utto (2017) collaborating on education and assessment can boost students' confidence, conceptual understanding, social skills, knowledge, experience, training, and readiness. Students should be able to develop new skills, particularly personal skills, due to their university education.

Even after graduation, some graduates demonstrate a lack of mastery of their skills. Increased service quality and production capacity require an efficient human resource development strategy. Malaysia's government should enhance its master's programme in logistics while also producing knowledgeable, skilled, and efficient graduates (Industri, 2006). Additional research and development are required to develop cutting-edge technology that meets industry needs. Supply chain changes may be required by a business unit's strategy, context, or environment (Perez-Franco et al., 2016).

To be successful in supply chain management, the following skills are required: analytical and problem-solving abilities, interpersonal abilities, general management abilities, computer/information technology abilities, as well as knowledge and experience (SCM) Regardless of technological advancements, the demand for skilled workers, will continue to grow. Unskilled labour will inevitably stymie logistics industry growth in the future. The importance of SCM problem-solving knowledge and skills is three times that of general management skills (Flöthmann et al., 2018). Logistics expertise is critical for career advancement and employment. In the field of logistics, training and education programmes should be investigated. Technology, business, and logistics programmes are required (Dazmin, 2014). Additionally, managers in logistics firms can use the study's findings to develop and implement training programmes to help their employees improve their skills and knowledge (Thai et al., 2011). Researchers have observed that logistics skills have evolved since the early 1990s.

Collaboration, strategic focus, and consulting abilities are just a few of the learning outcomes associated with logistics programmes offered by higher education institutions (Dazmin, 2014). Logistics graduates must compete and thrive in the 21st-century academic world. As a result, graduates of higher education institutions' logistics programmes will be more competitive and innovative. Businesses can assess candidates' management, logistics, and business knowledge and skills (Dazmin, 2014). Without integrity, diligence, commitment, and self-discipline, an employee cannot succeed. Other dimensions,

such as knowledge and skills, should be included in logistics competency models (Dazmin, 2014). Malaysian higher educational institutions must tailor their services to academic and logistical requirements. They argue that managers must have a firm grasp of supply chain strategy to manage competitive pressures effectively. Concentrating on logistics training is critical. • Working knowledge of non-logistics functions; • Work experience; Apart from focusing on logistics education needs, other factors that contribute to the success of logistics graduates include providing a high-quality logistics curriculum and ensuring higher-quality logistics graduates (Dazmin, 2016). Logistics skills are one of the most critical areas of education for logistics professionals.

6.3. Logistic Education Requirement

Logistics programmes benefit from a combination of logistical and non-logistics knowledge, college logistics courses, and practitioner competency. Logistics training is critical to the success of practitioners. External relationships provide invaluable insight into logistics programmes for logistics practitioners unfamiliar with internal logistics programmes (Bellingkrodt & Wallenburg, 2013). Logistics programmes are critical for businesses to remain competitive in today's global marketplace (Carmona et al., 2012). This demonstrates how knowledge can help employees perform tasks more efficiently. For a logistics programme to be effective, HEI must maintain a high curriculum efficiency (Merangin et al., 2018) This is because logistics graduates are assumed to know both logistics and non-logistics.

The study will examine the courses available to logistics students and the knowledge and skills required of them. Institutions of higher learning must collaborate with logistics professionals to enhance their logistics programmes. A logistics curriculum can be developed if both parties collaborate to develop courses or subjects to produce competent logistics practitioners for the twenty-first century. Oliva emphasises the importance of curriculum design, evaluation, and feedback from various source (Lewis, 2014).

In the long run, the logistics programme will enhance the knowledge and skills of logistics professionals. Malaysian HEIs have developed logistics programmes to contribute to the logistics industry's long-term success. Logistics degree programmes distinguish between logistics and non-logistics courses. Logistics courses incorporate real-world logistics activities. Logistics activities in Malaysia encompass both logistics and transportation services. Business law, management, communication, marketing, and economics are non-logistics courses. Most importantly, regional higher education institutions must develop programmes and courses that adhere to national educational standards.

6.4. Descriptive Data

The required sample size was 260 respondents, but the total number of respondents received from three logistics practitioners' associations was 300. The respondents are listed in Table 1 by association. The majority of respondents in the survey were from third-party logistics (3PL). Selangor Freight Forwarders and Logistics Association (SFFLA) serves as the primary association for third-party logistics providers in Malaysia.

Table 1. Sample Size

Respondents	Frequency	Percentage
SFFLA	156	66.4
Snowball	79	33.6
Total	235	100.0

At the beginning of the study, simple random sampling was used to collect data, followed by convenient sampling. Convenience sampling was employed because of the low response rate. An advantage of this method is that it allows the researcher to collect data from readily available members. Such as when he went to Shah Alam's FMSDC (Federation of Malaysian Skills Development Centres). Non-probability samples were used, and the degree of sampling bias is unknown, but when used correctly, they are a good approximation for probability sampling (Mukesh et al., 2013).

6.5. Descriptive Statistic

As illustrated in Table 2, the descriptive statistics for all indicators are summarised, as are the sources from which the questionnaire was adapted. Table 3 showing T-Value. T-Value measures the size of the differences relative of the variation in sample data.

Table 2. Descriptive Statistic for All Items (N=172)

Construct	Item	Min	Max	Mean	Standard Deviation	Adapted from
Competency	COM1	3	5	3.897	0.633	(Daud et al., 2014)
	COM2	2	5	3.737	0.789	
	COM3	2	5	3.723	0.785	
	COM4	2	5	3.980	0.818	
	COM5	2	5	4.153	0.725	
	COM6	1	5	4.060	1.016	
	COM7	2	5	4.060	0.863	
	COM8	1	5	4.007	0.873	
Logistics education requirement	LER1	2	5	3.793	0.872	
	LER2	3	5	3.883	0.710	
	LER3	3	5	4.060	0.715	
	LER4	2	5	3.933	0.733	
	LER5	2	5	3.520	0.706	
	LER6	2	5	3.847	0.682	
	LER7	2	5	3.870	0.758	
	LER8	1	5	3.567	0.796	
Logistic Programme	LP1	2	5	3.680	0.748	
	LP2	2	5	3.707	0.732	
	LP3	2	5	3.760	0.661	
	LP4	1	5	3.233	1.053	
	LP5	1	5	3.627	0.877	

Table 3. Finding for Structural Model/T-Value

No	Relationship	T-Value	Decision
H1	LP – COMP	9.651	SUPPORTED
	COMP – LER	12.063	

6.6. Hypothesis

Hypothesis is one of the most important processes for measuring the validity and reliability of outcome in any systematic investigation. Table 4 shows the Hypothesis of this study.

Table 4. Hypothesis

No	Hypothesis	Proposed Relationship	Decision
1	H1	There is an interaction between logistics programme and Competency (H3)	Supported
2	H2	There is no interaction between logistics programme and logistics education requirement. It found there is less significant. (H1)	Not Supported

7. Conclusion

Logistics knowledge is an essential mediator between logistics programmes and required logistics education, and this need prompted this study. For the past five years, Malaysia's logistics industry has failed to meet all of its goals. As previously stated, logistics has long been used by a wide variety of countries worldwide. However, the logistics industry has been the subject of numerous studies, each of which has produced a different result. Logistics and competence are intertwined. According to experts, the academic world today is considered more complicated than it was twenty years ago.

Research thus contributes to Malaysian government requirements for enhancing the undergraduate logistics programme while also producing skilled and competent graduates for the job market. According to previous research, logistics professionals must possess a wide range of skills (Dubey et al., 2018). As previously discussed, the importance of competency in logistics programmes and educational requirements cannot be overstated. Logistics decision-makers should take the author's suggestions into account. Academics involved in the development of logistics programme requirements for practitioners and the types of programmes that best meet those needs. This study's findings add significant empirical evidence to the growing body of knowledge about logistics education requirements. On the other hand, this study provides empirical evidence and insights from the perspective of logistics practitioners to the decision-maker in the logistics industry.

Although local logistics vendors are experiencing decreased sales and difficulties in maintaining their business operations, this study contributes to Malaysian logistical analysis because it examines the development of the Malaysian logistics industry during this period. We wanted to learn more about how a company's ability to meet its logistical needs could be improved or enhanced in this study.

To summarise, the research successfully determined the perceptions of Malaysian logistics practitioners regarding the implementation of Malaysian logistics in the study. The logistics maker will make future logistics decisions by recommending which strategy is more critical and significant for logistics practitioners. As a result, future logistics must be examined in greater detail before determining

the exact nature of the problem. In order to be ready for the fourth or, more likely, fifth industrial revolution, logistics must be re-evaluated. Logistics academics are expected to use the findings and recommendations from this study to design a logistics system that can compete with those in developed countries.

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