THE EFFECT OF RESOURCES RELATING TO FACTORS OF LOGISTICS ACTIVITIES ON PERFORMANCE BENEFITS: EMPIRICAL STUDY OF GARMENT INDUSTRY IN MYANMAR

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Abstract: *This paper aims to analyse the effect of firm resources which relate to factors affecting logistics activities on performance benefits. It is concerned with the links between resource-based view theory and logistics management practices. The population is private manufacturing firms in the garment industry. The sample frame is a list of managers from the functional departments of those garment factories. This research conducts a questionnaire survey concerning firm resources, critical factors of logistic activities and performance benefits. The sample consists of 353 managers from 122 private manufacturing factories in garment industry, Myanmar. Data analysis was carried out using the structural equation model through LISREL version 8.72. The three hypotheses were tested based on the data. The relationship between the three main variables was also identified. The research findings showed that firm resources have a direct and significant effect on the factors of logistics activities. Then, the critical factors of logistics activities directly and significantly affect performance benefits. However, firm resources have an indirect and significant effect on the performance benefits. This study implies that firms need to integrate internal resources and capabilities with logistics management practices. It also indicates the importance of emphasizing the critical factors of logistics activities in order to achieve performance benefits.*

Keywords*: Resource-Based View Model, Factors of Logistics Activities, Performance Benefits, CMP Garment Industry*

INTRODUCTION

Manufacturing firms rely on global sources and markets for the sourcing of raw materials and the provision of finished goods. Firms, especially in Myanmar, have

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depended on imported raw materials and the export of finished goods to global markets. In order to have an efficient and effective flow of materials and information, logistics brings together the geographical distance, sources and markets. Subsequently, manufacturing firms from the Myanmar garment industry have been encountering challenges to the production and distribution of their products, in the right quantity, right quality and the right condition, to the right place at the right time, for the right customer at the right price (Bheda, 2010; Kudo, 2010). To overcome these challenges, it is necessary to have an operational strategy which is well managed and follows integrated logistics practices. Therefore, the logistics practices are an important component of a nation's economy since it affects their business performance. Business firms are traditionally organized around the production and marketing departments. The majority of logistics activities are performed by these functional departments, however, those factories that do not have special logistics departments, still have to perform logistics functions (Ballou, 2004; Bowersox et al., 2002). In addition, these logistics activities are influenced by various factors and they affect these activities by means of enhancing benefits like reducing lead time, increasing productivity, reducing costs, improving quality, improving information sharing and the deepening of the relationship between buyers and suppliers, etc. For these reasons, it is of particular interest to study how the resources and critical factors of logistics activities affect the performance benefits of private manufacturing firms in the garment industry.

The role of the garment industry in the economy is very important for the earning of foreign exchange and the creation of employment opportunities. In recent years, private garment firms in Myanmar have faced numerous problems viz the industry has been under growing pressure to enhance competitiveness, to maintain market share, to attract foreign investment and to support local economic development (Soe, 2012). Although the industry has huge potential to contribute to the country's economic growth as a foreign exchange earner (e.g. US$ 408.2 million of garments exported to Japan, 2012), providing employment opportunities (labour force 32.5 million in 2013), enhancing GSP status (April 2012) and the phasing out of United States sanctions (November 2012), it still has insufficient experience of supply chain logistics practices (Kudo, 2013; Gugnani and Yadav, 2013; Soe, 2012). The industry suffers from under-developed logistics infrastructure and insufficient physical resources. These obstacles negatively influence the industry's performance in terms of low productivity, long lead times and high transaction processing costs. Therefore, to overcome these obstacles, the industry needs to consider adopting logistics management practices and understand their effects on firm performance, investigate the link between firm resources, determinants of logistics activities and performance.

There have been productivity gaps (Bheda *et al.*, 2003; Kudo, 2010; Berg *et al.*, 2011; Myint and Rasiah, 2012), knowledge gaps in the field of logistics and supply chain practices (Wysokinska, 2003), gaps in understanding of the relationship between supply chain performance measurement and organizational performance measurement (Deshpande, 2012). In addition, there are gaps between overseas buyer demands and local manufacturer capabilities (Fonseka, 2002; Berg et al., 2011). These gaps are concerned with manufacturers specific to the Myanmar garment industry. Therefore, it is necessary to conduct empirical research in order to establish the necessary procedures to bridge the gaps associated with the private garment manufacturing firms in Myanmar.

Barney's Resource-based view theory and factors of logistics activities are critical issues for private garment manufacturers. Private garment manufacturing firms have useful internal resources, including human resources, technology resources, financial resources, physical resources, as well as others; however, they need to use these resources in an efficient and effective manner. Many manufacturers have weaknesses which they need to address. These weaknesses include, among others, under skilled personnel, including management with inadequate knowledge of logistics and supply chain. Therefore, it is necessary to conduct research in the field of logistics and supply chain management linking with resource-based view theory, in order to find possible solutions to the weaknesses.

OBJECTIVES

The main objective of this research is to analyse the effect of firm resources relating to the critical factors of logistics activities on performance benefits. The supported objectives are;

i)   To analyse the effect of firm resources on critical factors of logistics activities

ii) To explore the effect of critical factors of logistics activities on performance benefits

iii) To investigate the effect of firm resources on the performance benefits.

2.   THEORETICAL ANALYSIS

Review of the related literature is grounded in resource-based view theory of strategic management linking with the concepts of logistics and supply chain management. The review deals with three main themes: (a) firm resources and performance benefits, (b) critical factors of logistics activities and (c) the relationship between those variables.

2.1. Firm Resources and Performance Benefits

This research project uses the resource-based view theory that has the potential to be applied to various areas of logistics research. The resource-based view of firms is a model of firm performance that focuses on the resources and capabilities controlled by a firm that may result in superior performance and competitive advantage. These resources and capabilities include human resources, technology resources, financial resources, physical resources, organizational capital, social capital, information capital, innovation and creativity, intellectual property and the company reputation (Barney, 1991, 2001; Barney and Hesterly, 2006; Dess *et al.,* 2005; Kamasak, 2011; Roxas and Chadee, 2011).

The resource-based view of firms makes two assumptions of resources and capabilities; the assumption of resource heterogeneity and the assumption of resource immobility. These two assumptions are used by firms to enhance competitive advantages by exploiting their resources, however, the resources and capabilities controlled by the firms have to be valuable, rare, inimitable and non-substitutable in order to maximize advantages. As a consequence, firms can achieve a competitive advantage and sustain these advantages over time, which in turn, may improve performance (Barney, 1991). Firms cannot create sustained competitive advantages and superior performance simply by exploiting environmental opportunities and neutralizing threats, or conducting business only in high opportunity, low threat environments. Competitive advantages depend on the firm's unique resources and capabilities to compete with other firms in its environment. Therefore, managers have to look inside their firms for valuable, rare and costly factors and then exploit these as resources through organization (Barney, 1995).

The resource-based view theory focuses on internal firm-specific factors and their effects on superior performance. Internal business functions play a key role in generating firm-sustainable competitive advantages and superior performance (Barney, 2001), however, not all resources and capabilities are equally important in achieving competitive advantages and superior performance. Those differences are attributed mainly to the questions of value, rarity, imitation and the ability of organization. If firms cannot create resources and capabilities with those VIRO attributes, they can cooperate with and use hierarchical and non-hierarchical form of governance. Firms have to cooperate with other firms through the market or intermediate forms of governance because those firms possess certain resources and capabilities that cannot be accessed in any other cost effective way (Barney and Clark, 2007).

Resource-based view theory contributes to, and has links with the following five themes: It has inter-links with the perspectives of strategic management, marketing, organizational identity, the process of resources acquisition and

development, and it relates to the financial resources necessary to acquire resources for development. Resource endowments influence international business enterprises and links with international business entrepreneurs. In order to achieve sustained competitive advantages, resource-based views have links not only with economic motives (profits) but also with corporate social responsibility (Barney *et al.*, 2011). With respect to better links between the resource-based view theory and the measurement of intangibles, Mollory *et al.*, 2011 (cited in Barney *et al.,* 2011) discussed the multidisciplinary assessment process approach which investigates the complementary perspective of economics and psychology. Finally, this theory focuses on the challenges relating to measuring resources, specifically intangible resources. It indicates the need to develop qualitative and quantitative methods to measure tangible and intangible resources. In this project, mixed methods have been used combining qualitative and quantitative approaches.

To summarize, resource-based theory (RBT) is potentially applicable to the field of logistics research because logistics related assets and capabilities are most likely to be sources of superior performance and may be valuable to the firm both from a customer service, and a productivity perspective (Olavarrieta and Ellinger, 1997). This theory may also be used to examine the interface between logistics and other areas of business, specifically the garment manufacturing industry. Traditionally, the garment manufacturing industry focuses on those areas of RBT that affect performance, achieving sustained competitive advantage and superior performance (Kapelko, 2009). Regarding firm performance, benefits are the measurable improvements resulting from outcomes. This outcome is perceived as an advantage by one or more stake holders in terms of lower costs, high quality, on-time delivery, reduced lead time, improved productivity and better financial performances (Bradley *et al.,* 2007).

2.2. Factors of Logistics Activities

Logistics management is widely accepted in every business organization regardless whether it is manufacturing or service organization, private or public, profit or non-profit organization. It is defined as a part of the supply chain process that plans, implements and controls the efficient, effective flow and storage of goods and services and related information from the point of origin to the point of consumption to meet customers' requirements (Lambert *et al.*, 1998). To satisfy customers' requirements, logistics aims to ensure the availability of the right product, with right quality and right condition, to the right place, at the right time, for the right customer, at the right price. Particularly, it is concerned with the efficient flow and storage of goods from the point of origin to the point of consumption. It starts with the initial shipment of raw material from a supplier,

through the manufacturing or processing, to the final delivery to customers. It is impossible to produce and distribute large amount of products to the global market without logistics activities (Ballou, 1999).

Logistics activities support firm performance in order to achieve superior benefits, and include a series of related activities from procurement at the beginning of operations to physical distribution at the end. It varies from firm to firm depending on particular organizational structure, management opinion about what constitutes logistics and the importance of individual activities to its operations (Bowersox and Closs, 1996 and Eryuruk *et al.*, 2011). These logistics activities are influenced by several factors such as cost, quality, delivery and time related factors, process related factors, assets related factors, product related factors and organizational factors. Other factors namely information, communication and technology (ICT) related factors, research and development activities, demand and capacity related factors, and geographical distance factors also play a key role in influencing these activities. Among them, some factors have a critical influence on logistics activities (Fawcett, 1990; Bowersox and Closs, 1996; waters, 2003; Coyle *et al.*, 2003; Hausman and Haytko, 2004; Parvini, 2011; Mwikali and Kavale, 2012; Basaran, 2013). This study focuses on human related factors; ICT related factors; geographical distance factors; cost related factors and asset related factors. These factors are specific to the garment industry and the influences drive the Myanmar garment manufacturing firms that are entering the global market. According to some research papers (Hausoman and Haytko, 2004; Kudo, 2010; Alim and Hasan, 2010; Myint and Rasiah, 2012; Soe, 2012; Samsul, 2012; Wang, 2013), these are critical factors that affect the logistics activities specific to garment industry.

2.3. Relationship of firm resources, factors of logistics activities and performance benefits

There are links between resources and critical factors of logistics activities. Human resources training and development relates to human factors in terms of knowledge, skill and ability (Okeudo, 2012). Human resource management practices affect human factors which influence improvements in firm performance (Barney *et al.*, 2011). Without human factors, information technology is just equipment. To enhance the value added to performance, it is necessary to combine human and information & communication technology resources. Investment in information technology and the application of computer software packages lead to improvements in human resource performance, greater cooperation with buyers and suppliers (Fonseka, 2002 and Endean, 2005).

Then, technology resources and capabilities contribute to the logistics and supply chain practices through connecting points of procurement to points of

production, to the points of delivery. According to Li *et al.*, 2006, capability upgrading in IT knowledge, IT operation and IT objectives are significantly related to information sharing, and support the integration of human factors and information technology resources. Investment in technology resources also support information & communication technology related factors which, in turn, contribute to performance benefits which include: information flow as concerned with order status, product availability, delivery schedules and invoice settlement, inventory planning and human resource planning (Okeudo, 2012). It benefits firm performance through information accessibility, data interchange and improved buyer-supplier relationships. In addition, investment in technology resources and the application of technology contribute to asset related factors in terms of inventory turnover (Quesada *et al.*, 2012). Regarding physical resources, the availability of raw materials and the location of suppliers affect cost related factors (low cost material), geographic distance factors (lead time) and asset related factors (inventory turnover) (Quesada *et al.*, 2012). From the literature review, it may be noted in the hypothesis:

H1: Firm resources have significant and direct effect on the factors of logistics activities

The second relationship concerns factors of logistics activities and performance benefits. Human resource training and development affect the productivity and performance of labour (Koch and McGrath, 1996). However, David (2009) argued that human factors such as high absenteeism and turnover rate, poor production quality and quantity rates, low employee satisfaction, negatively affect productivity and delivery performance. Tanvir and Mugaddim (2013) stated that the production of high quality products and the productivity of a firm depend on human factors such as education, training, experience and the willingness to work. With respect to information and communication technology (ICT) related factors, previous studies (Fonseka, 2002; Prasad and Sounderpandian, 2003; Matopoulous et al., 2009; Nuruzzaman *et al.*, 2010) suggest that investment in, and the application of, ICT contributed to firm performance benefits including reduced costs, reduced lead time and improvements in labour productivity.

Then, inventory turnover under asset related factors are associated with returns on assets. A reduction in inventory costs benefits both buyers and sellers (Coyle *et al.*, 2003). Boute *et al.* (2007) found that inventory ratios are strongly correlated with the firm's capital intensity or asset returns. Lower inventory ratios generally lead to good financial results and a negative relationship between inventory turnovers and assets returns. However, very low inventory ratios cause the risk of stock outs, delays in delivery, possible lost sales and higher costs from urgent

purchases. In addition, Cannon (2008) found that inventory performance has been significantly associated with returns on assets. But the relationship has been negative and it can be interpreted that inventory turnovers negatively affected the return on assets. Then, the more quality of inventory in hand, the more inventory carrying costs including tax, insurance, rent and utilities charges and physical counting charges for the relevant parties. Thus, inventory controls under assets related factors impact on performance in cost and profitability for an organization.

Cost related factors directly affect profit margins which are key objectives in material management and in business operation. According to Parvini (2011), manufacturers try to find cheaper raw materials to reduce production costs in order to increase profitability. They consider cost criteria with regard to logistics activities and human resource development, therefore, firms can increase profits by reducing manufacturing and logistics costs. Geographical distance factors affect lead time performance, particularly for manufacturing industries that import raw materials and export finished goods to global markets. According to Fonseka (2002), lead time distance factors include the importing of raw materials, especially when the raw materials come from the buyers' country. Basaran (2013) found that geographical distance caused supply fluctuations that negatively affected operational performance in terms of procurement lead time which in turn causes production and delivery delays.

Investment in technology resources and the application of ICT help to improve cooperation between buyers and suppliers. The improved communication between the parties has intangible performance benefits. This buyer-supplier relationship enhances greater levels of information sharing that helps to achieve organizational goals by removing unnecessary steps in supply chain, speeding up information and material flow, and creating long term partnerships between major customers and suppliers (Zailani and Rajagopal, 2005). This relationship is one of the most important elements of supply chain performance and has become a perquisite aspect of business success because of fluctuations in customer demand, unpredictable market trends and uncertainty in the global business environment. Marwah *et al.* (2012) stated that firms have achieved these benefits by being willing to share the risks and rewards, and maintaining long term close relationships with supply chain partners.

According to Kaplan and Norton (2004), human capital and quality of human resources are capable of knowledge sharing with each other, of using new technology for problem solving and of providing new ideas for performance improvement. In addition to ICT, information sharing may be face to face communication between partners in the communication process. Trainees may be sent from the country of manufacture to the country of buyer or vice versa, in

order to exchange information regarding production processes and quality control procedures, and other related matters. This knowledge flow in supply chain plays a key role in maintaining the relationship between manufacturers and buyers, and bridging the gaps in their expectations (Machikita and Ueki, 2013). Human capital and corporate reputation are unique resources that can create sustainable competitive advantages. Employees' knowledge and managerial capabilities contribute to firm performance in conjunction with corporate reputation that reflects the benefits of increased revenues, brand loyalty and greater advantages over competitors. From these theoretical and empirical reviews, the following hypothesis is proposed:

H2: Factors of logistics activities directly and significantly affect performance benefits

Human resources are an important source of superior performance which can lead to sustained competitive advantages for a firm. Human resource training and development, along with internal promotion provide performance benefits in terms of labour productivity (Koch and McGrath, 1996; Bheda *et al.*, 2003; Okeudo, 2012). IT resources support the relationship between external partners and internal business units of the organization through improved interpersonal communication. As a consequence, it can be reduced long lead times and contributed to value chain activities (buyer confirmation of sample items, product design, raw material supply, arranging production and delivery schedules) in an effective and efficient manner. Shang and Marlow (2005) found that IT based capabilities did not have a direct impact on financial performance, but affected financial performance through logistics performance. Lee *et al.* (2014) stated that technological capabilities contributed to the firm by reducing costs, production lead time and minimizing inventory level.

Financial resources, like business finance, have a positive impact on performance benefits, generating returns by funding fixed assets and raw material assets (Inmyxai and Takashi, 2010). The availability of physical resources such as raw materials and the location of foreign buyers affect the lead time performance negatively, because outsourcing from foreign countries leads to increased time consumption in the supply chain process. A domestic sourcing of raw materials would reduce the distances involved, and have the effect of reducing lead time over which materials can be shipped to the manufacturer. This would enable manufacturers to meet order demands on time. Human capital and managerial capabilities along with the perceived organizational reputation have been shown to contribute to organizational performance (Cravens and Oliver, 2005). Technological resources assist in developing the corporate reputation as it enables

the corporation to disseminate information and to respond timely to buyer queries. Skilled and competent human resources are able to impart accurate and relevant information to inquirers. This helps to improve organizational public relations and build its reputation. Thus, information technology resources and capabilities enable to improved information sharing, buyer-supplier relationships and the corporate reputation enhances (Li *et al.*, 2006). From this, a research hypothesis may be constructed.

H3: Firm resources significantly and directly affect the performance benefits

The proposed conceptual framework shows the relationships between dependent and independent variable and can be seen in the following figure 1.

Figure 1: Proposed Conceptual Framework
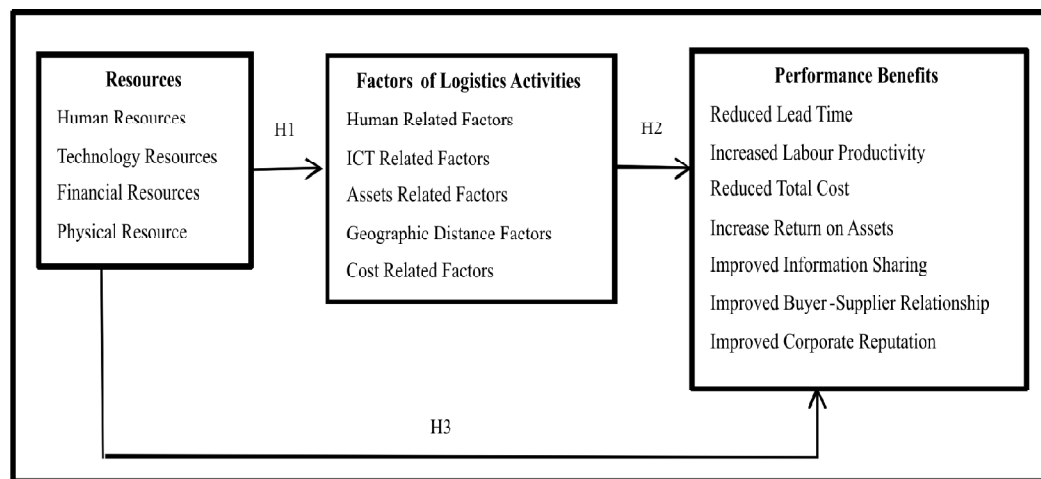
The conceptual model has described as the interaction between independent variable and dependent variables. The single independent variable is the firm resources. Independent observed variables are human resources, technology resources, financial resources and physical resources. Then, there are two dependent latent variables: critical factors of logistics activities and performance benefits. The dependent observed variables include human related factors, ICT related factors, geographical distance factors, cost related factors and asset related factors. Dependent observed variables also include the reduced lead time, increased labour productivity, reduced total cost, increased return on assets, improved information sharing, improved buyer-supplier relationship and improved corporate reputations.

3. MATERIALS AND METHODS

3.1. Survey materials

The field survey was designed to cover all export oriented private garment manufacturing firms using the cut, make and packing (CMP) system. The target population was managers from functional departments in private manufacturing firms located in Yangon industrial zones, listed with Myanmar Garment Manufacturers' Associations (MGMA) for the year 2013-2014. Populations of 134 garment firms were identified as operating firms and 670 managers from the functional departments of those factories were approached. From the total population of managers, a sample 385 managers resulted (Cochran, 1953, 1977; Hill, 1998; Bartlett *et al.*, 2001; Kline, 2011). Using simple random sampling, a group of sample was generated based on the list of managers in the Myanmar Garment Manufacturers' Association (MGMA) annual report for the year (2013-2014). However, the actual survey has been conducted with only 122 firms as 12 firms refused to answer the questionnaire and the total number of managers that responded was 353. The private garment firms in this field survey were large size enterprises and all factories employed more than 100 workers, according to Myanmar classification criteria (Ministry of Industry, 1990).

3.2. Methodology

This study applied mix method approaches. Primarily, this study employed a questionnaire survey method to test the hypothesized relationships between variables. Primary data were collected through sample surveys with managers and owner manufacturers from the Myanmar garment industry. In-person survey interviews were conducted with a sample of 353 managers from respective functional departments. In order to get an in depth understanding of the gathered data, qualitative research was done through personal interviews of managers and owner manufacturers.

Concerning the data analysis, this project used various methods of ascertaining the relationships between variables on the basis of the collected questionnaires. First, validity was checked using Item Objective Congruency Index (IOC) technique by a panel of academics and industry experts, and the result from IOC was on average (0.8). Reliability was checked using Cronbach's alpha coefficient through an exploratory factor analysis. The result showed that the alpha value was within 0.5 and 0.6. According to Nunally, 1978 (cited in Conroy, 2013 researchgate.net) and Schmitt (1996), the alpha value was acceptable for this study. Second, the causal links between variables were checked using the analysis of a structural equation model. The software used was SPSS version 22 and LISREL version 8.72 for analysing the gathered data.

4. ANALYSIS AND RESULTS

As the descriptive statistics, Pearson correlation analysis showed the relationship between human related factors and ICT related factors has the highest positive value (0.513**) but the correlation between financial resources and performance in reduced lead time has the lowest positive value (0.104*) among the pair of variables. However, the relationship between technology resources and physical resources were negative with the highest value (-0.223**) and the relationship between physical resources and geographic distance factors was the lowest negative value (-0.112*). Then, the correlation between latent variables showed that factors of logistics activities and performance benefits were positively correlated with the highest coefficient value (0.442**). The correlation between firm resources and performance benefits was positive lowest value (0.186**). In general, it could be interpreted that latent variables and observed variables are significantly correlated with each other Table 1, Table 2.

Table 1
Associated Latent and Observed Variables

Latent variables (independent, dependent)	Observed Variables	Abbreviations
Firm Resources (RES)	Human Resources	HR
	Technology Resources	TR
	Financial Resources	FR
	Physical Resources	PR
Critical Factors of Logistics Activities (FAC)	Human Related Factors	HRF
	ICT Related Factors	ICTRF
	Assets Related Factors	ARF
	Geographic Distance Factors	GDF
	Cost Related Factors	CRF
Performance Benefits (PB)	Reduce Lead Time	RLT
	Increased Labour Productivity	ILP
	Reduced Total Cost	RTC
	Increased Return on Assets	IROA
	Improved Information Sharing	IIS
	Improved Buyer-Supplier Relationship	IBSR
	Improved Corporate Reputation	ICR

Table 2
Correlation Matrix of Observed Variables

	HR	TR	FR	PR	HRF	ICTRF	ARF	GDF	CRF	RLT	ILP	RTC	IROA	IIS	IBSR	ICR
HR	1.00															
TR	.018	1.00														
FR	.052	.005	1.00													
PR	-.041	**-.223****	.021	1.00												
HRF	.046	.296**	-.045	-.055	1.00											
ICTRF	.162**	.291**	-.119*	-.094	**.513****	1.00										
ARF	.031	.035	.131*	.027	-.038	-.033	1.00									
GDF	.030	.114*	.149**	**-.112***	-.028	-.063	.130*	1.00								
CRF	-.129*	-.032	.112*	-.081	-.090	.002	-.151	-.035	1.00							
RLT	.138**	.020	**.104***	-.009	.215**	.217**	-.010	.023	-.015	1.00						
ILP	.131*	-.115*	.022	.095	.133*	.084	.082	.042	-.071	.114*	1.00					
RTC	.068	.123*	-.002	-.014	.412**	.392**	.044	-.023	-.146**	.189**	.010	1.00				
IROA	.115*	.218**	-.044	-.099	.319**	.333	.023	-.002	-.007	.185**	.264**	.349**	1.00			
IIS	.221**	.190**	.037	.004	.338	.487**	.000	.031	.006	.073	.121*	.197**	.271**	1.00		
IBSR	-.026	.051	-.009	-.081	.303**	.378**	-.123*	-.026	.009	.133*	.046	.199**	.223**	.318**	1.00	
ICR	.198**	.091	-.027	-.058	.173**	.264**	.072	.136*	.078	.134*	.157**	.114*	.223**	.329**	.180**	1.00

** Correlation is significant at the 0.01 level (2-tailed) *Correlation is significant at the 0.05 level (2- tailed)

Correlation Matrix of Latent Variables

	RES	FAC	PB
RES	1.00		
FAC	.294**	1.00	
PB	**.186****	**.442****	1.00

** Correlation is significant at the 0.01 level (2-tailed)

Result from SEM Analysis

Data analysis using SEM programs was conducted in order to answer the research question "how did the firm resources and critical factors of logistics activities affect the performance benefits?"

Figure 2: Result from SEM Analysis
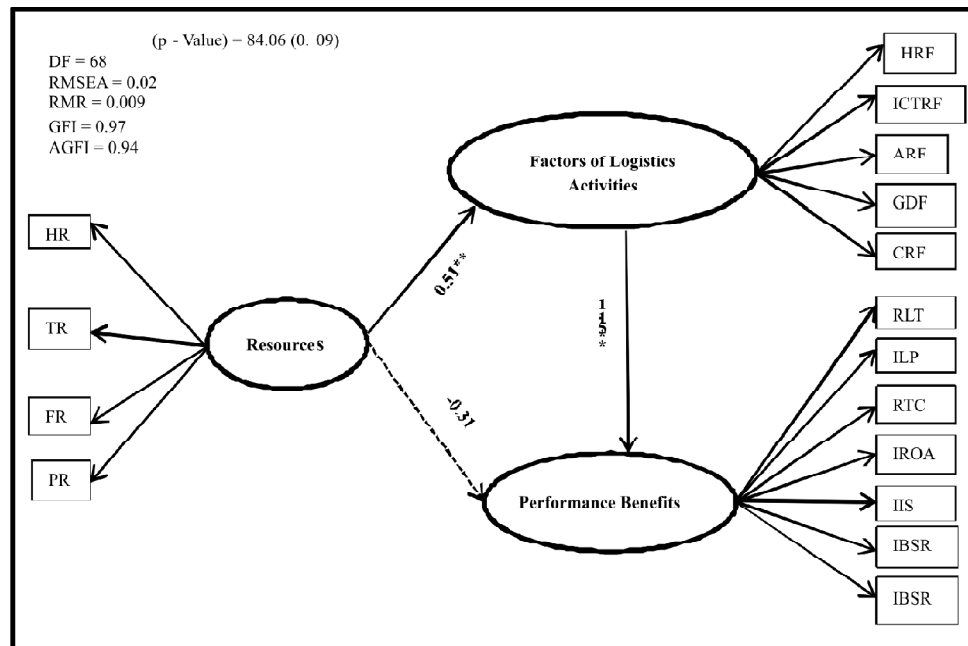
First, it investigated the assessment of goodness of fit for SEM model. A good fit for the whole model is judged according to five measures overall fit; chi-square measure and its associated degree of freedom, root mean square error of approximations (RMSEA), root mean square residual (RMR), goodness of fit (GFI) and adjusted goodness of fit(AGFI).

Table 3
Fitness Indices of SEM Model

Index	Suggested Value	Fitness Indices of SEM model
Chi-Square (p -value)	$0 \leq x^2 \leq 2df$	84.06 (0.09)
Degree of Freedom (DF)		68
Root Mean Square Error of Approximation (RMSEA)	≤ 0.05	0.02
Root Mean Square Residual (RMR)	≤ 0.08	0.008
Goodness of Fit Index (GFI)	≥ 0.95	0.97
Adjusted Goodness of Fit Index (AGFI)	≤ 0.95	0.94

The above table shows that the chi-square valued = 84.06 is a measure of minimum value of the fitting for structural models and its degree of freedom is 68. The other two measures of overall fit are the goodness of fit indices (GFI) = 0.97 and Adjusted GFI = 0.94. The value of RMSEA and RMR were 0.02 and 0.008. Referring to the measures of fit indices criteria, it could be said that the goodness of fit indices is high in the acceptable range. Therefore, it may be considered that this study has received an ideal overall models fit for the same data. Second, the significant structural relationship to the study variables illustrated with indirect effect and direct effects. The summary findings are as follows:

Table 4
Effect of Variables

No	Type of Variable Effects	Total Effects	Indirect Effects	Direct Effects
1	RES— — — — FAC	0.51**	-	0.51**
		(0.14)		(0.14)
		3.51		3.51
2	FAC — — — PB	1.15**	-	1.15**
		(0.26)		(0.26)
		4.35		4.35
3	RES— — — PB	0.28*	0.59*	-0.31
		(0.11)	(0.24)	(0.17)
		2.43	2.42	-1.84

** Variable significant at t value > 2.68 *Variable significant at t value > 1.96

The firm resources directly and significantly affect the critical factors of logistics activities with positive value (0.51**). Factors of logistics activities influenced directly and significantly on the performance benefit with the positive value (1.15**). Although firm resources directly affected the performance with negative value (-0.31), it affected the performance benefits indirectly and significantly with positive value (0.59*). These direct and indirect effects could be described by comparing them according to the research hypotheses, see table 5 below.

Table 5
Summarize observations from Model Analysis

Hypothesis	Effects Value	Conclusion	Justification
H1= Firm resources directly and significantly affect the factors of logistics activities.	0.51**	Support	Reject null hypothesis
H2= Factors of logistics activities directly and significantly affect performance benefits.	1.15**	Support	Reject null hypothesis
H3= Firm resources directly and significantly affect performance benefits	- 0.31	Not-support	Accept null hypothesis

According to the table, the result shows that firm resources affected directly the critical factors of logistics activities, since positive coefficient value was (0.51**). The result is significant and direct effect; therefore it supports the proposed hypothesis that firm resources affect the critical factors of logistics activities. Then, the result shows that the critical factors of logistics activities directly affect the performance benefits. Since the positive coefficient value was (1.15**), it is significant. This result supports proposed hypothesis two: critical factors of logistics activities directly and significantly affect performance benefits. Since a negative coefficient value (-0.31) was achieved, the results show that firm resources do not directly affect performance benefits. The negative coefficient result indicates that proposed hypothesis three: firm resources directly and significantly affect performance benefits, is unsupported. Although the result does not support the proposed hypothesis, it could still be accepted because firm resources have an indirect effect on the performance benefits. A positive value of (0.59*) and a significant value "t" value > 1.96 were achieved on statistical tests, indicating the possibility of indirect support.

5. DISCUSSION

This study is based on resource-based view theory linking with logistics and supply chain practices. It considers the following aspects: how do firm resources and factors of logistics activities affect performance benefits? Subsequently, three hypotheses were drawn up: (1) firm resources have a significant and direct effect on factors of logistics activities, (2) factors of logistics activities directly and significantly affect the performance benefits, (3) firm resources directly and significantly affect the performance benefits. Different statistical tests (validity and reliability test and structural equation model as statistical method), were employed to analyse these hypotheses.

Hypothesis 1 was based on previous studies (Fonseka, 2002; Endean, 2005; Li *et al.*, 2006; Barney *et al.*, 2011; Okendo, 2012; Quesada *et al.*, 2012) which indicate that, in general human resources, technological resources and physical resources affect the factors of logistics activities. However, this study adds financial resources as one of the firm resources. Hypothesis 1 was supported since overall firm resources directly and significantly affect the critical factors of logistics activities.

Hypothesis 2 was based on studies by Koch and McGrath (1996), Fonseka (2002), Coyle *et al.* (2003), Prasad and Sounderpandian (2003), Kaplan and Norton (2004), Zailani and Rajagopal (2005), Boute *et al.* (2007), Cannon (2008), David (2009), Matopoulous *et al.* (2009), Nuruzzaman *et al.* (2010), Parvini (2011), Marwah *et al.* (2012), Basaran (2013), Machikita and Ueki (2013), Tanvir and Muqaddim (2013) who indicated that factors of logistics activities are associated with performance

benefits. The hypothesis was supported and it was ascertained that overall factors of logistics activities directly and significantly affect the performance benefits.

Hypothesis 3 was proposed based on the previous studies by Koch and McGrath (1996), Bheda *et al.* (2003), Cravens and Oliver (2005), Shang and Marlow (2005), Li *et al.* (2006), Inmyaxi and Takashi (2010), Okeudo (2012), Lee *et al.* (2014) which indicate that, in general, firm resources impact on performance benefits. However, this hypothesis was not supported statistically. The reason is probably due to the fact that respondent factories in this study operated their business with their own funds, rather than receiving loans from any other sources. Their financial resources, including business finance, have not had a positive impact on performance benefits. They cannot generate returns by funding fixed assets and raw material assets.

Myanmar garment factories are totally dependent on the imported raw materials particularly fabrics and accessories; there are no acceptable local sources of raw materials available. For this reason, there are difficulties in reducing lead time and improving delivery times. Workers may need to work overtime to enable deliveries to be made on time. Overtime work may cost factories more as workers need to be paid overtime money. Inadequate technological resources and under-developed managerial skills in logistics and supply chain also happen in surveyed garment factories.

The result shows that overall firms' resources have a negative direct effect on performance benefits. But it has a significant, indirect effect on performance benefits through the factors of logistics activities. If private garment manufacturing firms want to increase performance benefits, they need to focus the importance of factors of logistics activities. According to resource –based view theory, internal firm-specific resources should increase performance, however statistical tests do not necessarily support this result. For example, as a labour intensive industry, they need to focus on human related factors which are concerned with managerial knowledge, experience and qualifications in the field of logistics & supply chain and ICT application programs. Employee turnover and absenteeism are also important considerations with regard to productivity improvement. These human factors relate to external factors like governmental issues that the industry needs to address. Government support, promulgation of labour law and regulation affect the performance benefits because relaxing of government controls and provision of the right to form labour unions has resulted in frequent strikes over wages and working conditions. Frequent job hopping is a problem as it results in unstable labour. It also results in difficulties in maintaining a skilled work force. This instability has a negative impact on the ability to deliver goods on time and the ability to produce quality products. Logistics and related infrastructure are major obstacles to the growth of Myanmar garment industry. The lack of adequately

trained logistics and supply chain managers is a critical issue that adversely affects the improvement of logistics activities. So the more a firm is integrated with its upstream and downstream supply chain partners, the more they can respond to consumer demands, enabling them to gain a competitive advantage over rival firms. If an industry has sufficient backward linkages, it can reduce long lead times. Lead time problem can be solved by means of improving the areas of logistics infrastructure namely, communication, port management and transport management in supply chain.

6. CONCLUSION

This paper attempts to investigate the effect of resources relating to factors of logistics activities on performance benefits. There have been a limited number of studies dealing with private manufacturing firms in garment industry. This study links the resource-based view model and logistics management concepts. Some findings fall outside the scope of the hypothesis that provides further insight to the inquiry. It is an empirically based investigation that has two implications. 1) As theoretical review of the resource-based model, it is necessary to extend the focus to include institutional capital and external resources. Empirical evidence, based on interviews of industry practitioners, suggests that the industry should recognize the importance of governmental programs and managerial relations to achieve superior performance in the global market. 2) The Myanmar garment industry should attend to the critical determinants of logistics activities and upgrade managerial capabilities in the field of logistics and supply chain practices. Since the results show that firm resources affect performance benefits through critical determinants of logistics activities. Therefore, in order to achieve performance benefits, it is essential to strengthen and upgrade resources and capabilities and link with logistics and supply chain practices.

Regarding the research limitation, it is important to note that this research emphasizes only basic mass production processes and does not deal with "fashion garment manufacturing firms" because there are no firms producing and exporting fashion garments in Myanmar. These findings are oriented to private garment manufacturing firms using CMP system which is a form of production in consignments. The results of this study are limited to export oriented garment manufacturing firms using the FOB (free on board) system as well as manufacturing firms using original design and own branding systems.

It is necessary to investigate the interrelationship of firm resources and the factors that influence the logistics activities of firms. Future research needs to be extended to include human factors and external factors specific to links between government, private ownership foreign ownership and foreign investment in the garment industry.

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