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Impact of Problems associated with Supply Chain Management Practices of Wholesalers on their Business Performance in the Coconut Industry in Sri Lanka with special reference to Kurunegala District

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Abstract

Plantation sector plays a major role in the export sector in Sri Lanka where Tea, Rubber and Coconut have been the major agricultural export commodities. According to the Export Development Board (2018), coconut accounts for approximately 12% of all agricultural products. As an agricultural commodity, coconut must undergo a series of operations before they reach to the market. It can be observed that in every operation, practices of supply chain management (SCM) are involved. In developing countries, especially in country like Sri Lanka, traditional supply chain (SC)s are usually involved by many players and they exercise many practices. A wholesaler is a vital player in the SC for a coconut industry. They exercise many practices when they work with the SC, especially with manufacturers and other intermediaries as well as face with many problems in performing these practices. Still whether these problems will have an impact on their business performance is a question that should be answered. However, a comprehensive search of various local and international literature revealed that the impact of problems of SCM practices of wholesalers in the coconut industry on business performance have not been studied in depth in Sri Lankan context. Therefore, this study is designed to examine the impact of problems associated with SCM practices of coconut wholesalers on their business performance with special reference to Kurunegala district, Sri Lanka.

A questionnaire was distributed to a sample of 60 wholesalers in the coconut industry in Kurunegala district, Sri Lanka. Problems cited in the literature were condensed into eight practices of SCM, namely human resource management, technology, facilities, supplier relationship management, customer relationship management, regulatory factors, geographic proximity and logistics and transportation. The collected data were analyzed by using descriptive statistics and discriminant analysis. The results show that these problems discriminate the business performance of the coconut wholesalers.

Keywords

Supply chain Management Practices; problem in supply chain management practices; Wholesalers; Business Performance.

Introduction

Plantation sector plays as the key export owner in Sri Lanka where Tea, Rubber and Coconut has been the major agricultural export produces (Rajakaruna et al 2016). Out of these agricultural products, the coconut industry is an important part of the Sri Lankan economy in terms of land utilization, government revenue and export earnings as well as coconut serve an essential food item. Coconut which had been first consumed by the rural society in Sri Lanka is linked with the life styles of the whole Sri Lankan population today and it is not an overemphasis to mention that coconut has increasingly become "Kapruka" of the entire Sri Lankan Nation (Coconut Development Authority 2016). Nearly 56% of the total land scope under coconut have prorogated in the districts of Kurunegala, Puttalam and Gampaha which belong to the coconut triangle and a greater part of coconut and coconut-based productions have established centering the coconut triangle.

In the present-day business environment, it is not very much easy to pay no attention to the concepts of volatility and turbulence in the market. It could be debated that the adoption and application of more topical and efficient business finest practices could be part of the solutions to neutralizing the burdens facing the coconut industry. Among such business routines, supply chain management has evolved as a key business activity that cause to business performance through different industries. Traditional supply chains in developing countries typically involve many players (Somashekhar, Raju & Hemapatil 2014), such as coconut producers, wholesalers, exporters etc. The wholesalers buy the raw products from the coconut producers and sell the raw product, or processed product to the next level. The wholesalers perform many supply chain management practices in playing these roles.

Over the few decades, a lot of research work on the concerns in SCM have been carried out in manufacturing and service sectors but little consideration given to agriculture sector and the offhand side agriculture sector supporting major part of human livelihood in a country and raw material for other industry (Ganeshkumar, et al. 2017). 2017). In Sri Lanka as Jayewardena (2018) points out that though a substantial demand for coconut based products in both domestic and international markets exists, the industry cannot meet raw material demand for these products mainly due to the current issues faced by the Sri Lankan coconut cultivation and processing industry such as the fluctuating coconut prices and the cost of production, scarcity of skilled labor, concerns associated with supply chain practices, and poor access to markets & market

intelligence. The existence of these problems may create the challenge for the middlemen in meeting the needs of customers and the rapidly fluctuating demand of world of business and may disturb their business performance. However, an in-depth search of a number of local and international research databases revealed that literature on the problems associated with the practices of SCM of intermediaries in the Coconut industry and their impact on the business performance has been dearth (Jayewardena2018; Ganeshkumar et al. 2017). Therefore, the purpose of this study is to examine the impact of problems associated with supply chain management practices of coconut wholesalers on their business performance in Kurunegala district, Sri Lanka.

The rest of the study has been organized in terms of literature review, methodology, normality, validation of measurement properties, analysis and discussion of results, and recommendation.

Literature Review

Supply Chain Management (SCM)

SCM can be viewed as both an emergent field of practice and an emerging academic domain (John Story et al 2006). SCM exists in, marketing, planning, manufacturing, purchasing, distribution within and beyond the firm (Patel & Deshpande 2015). SCM is the management of the entire set of production, distribution, and marketing processes by which a consumer is supplied with a desired product (Somashekhar**,** Raju & HemaPatil 2014). It is a set of activities that promotes an effective management of supplier partnership, meeting customer demands, movement of goods and information sharing throughout the supply network of an industry (Mor et al 2015).

The SCM concepts are widely used in manufacturing and service fields, but not applied in the agriculture sector even though the agriculture commodities are the raw materials for most of the industries and also major part of world economy (Prabhu et al 2018). Further, they mention that food and agriculture SCM is complicated when compared with other SCMs because it carries items which are perishable in nature, short shelf life, demand and price fluctuations, dependence on climate conditions, and consumer concerns for food safety (Prabhu et al 2018).

Intermediaries in the SC

Within the distribution and marketing channel, several actors are involved (Gadde 2014). According to Alderson (1965), intermediaries are the firms that work between the original source and the end consumer (Borker and Nastl 2018). Marketing channel researchers identified members of the channel based on who takes part in the various marketing flows, including product, title, payment, information, and promotion flows (Lambert, Cooper & Pagh 1998). Kotler and Keller (2014) point out that marketing intermediaries, also known as distribution intermediaries, are firms hired by the product manufacturer to promote, sell and distribute the products to the final consumer.

Agricultural SCM engulfs a set of value activities resulting in transforming agricultural commodities from their raw stage to consumption phase (Ganeshkumar, et al. 2017). Important agencies partaking in this process are agriculturists and consumers, suppliers of raw inputs (farmers), processors and human resources engaged in transporting and storage activities, etc. The coconut products are many; the raw materials originate from the farmer, who usually handles the raw products like the nuts, the wine, brooms, and coco wood, through the middlemen or brokers who from the second level of the segmental pattern taking the raw products from the farmer to the processor (Mwachiro & Gakure 2011). Considering about the coconut collectors they are identified in Wholesaler category within those kinds of intermediates. It would identify that they purchase nuts in bulk and sell them to other intermediaries, usually retailers and food processors, for a profit.

SCM Practices

SCM practices are defined as the set of activities undertaken by an organization to promote effective management of its supply chain (Li et al 2005,2006; Koh et al. 2007; Jabbour et al. 2011), as tangible activities/technologies that have a relevant role in the collaboration of a focal firm with its suppliers and/or clients (Vaart & Donk 2008; Jabbour et al. 2011) and, as the approach to involve suppliers in decision making, encouraging information, sharing and looking for new ways to integrate upstream activities (Jabbour et al 2011). The study condensed into eight SCM practices after an in-depth search of literature.

Customer Relationship Management (CRM): All those practices which are employed by an organization for improvement in customer satisfaction, building a long-term relationship and handling customer complaints efficiently come under customer relationship (Kumar and Kushwaha 2018). Organizations realize that they don't just focus on transactions; they turn them towards opportunity to sell products with good service experiences to established long term one to one relationship with each customer (Shafique et al. 2015). Further, they mentioned that CRM was the key to increase revenue and profit by making a strong and long term relation between company and customer.

Supplier Relationship Management (SRM): the relationship that exists between the organization and its vendors within the organization hierarchy. It explains how the firms engage and relate with their suppliers of their key resources (Chesaro 2016). The short-term objectives of SRM are primarily to increase productivity and reduce inventory and cycle time, while long-term objectives are to increase market share and profits for all members of the supply chain (Maraka et al. 2015). SRM is very important for small scale enterprises as it can ensure the supply of reliable and frequent deliveries in today's dynamic and competitive environment (Mumelo et al. 2017).

Human Resources Management (HRM): A major contributory area to organizational success is the management of workers in organizations (Igwe, Onwumere & Egbo 2014). The concept of HRM refers to the business practices dealing with elements that include the recruitment, motivation, training and management of its workforce (Zhang, Wan & Jia 2009; Nguegan & Mafini 2017). Schuler and Hummer (1993) and Igwe et al. (2014) refer to HRM as the use of several activities to ensure that human resources are managed effectively for the benefit of the individual, society and the business. The main idea behind the HRM-performance presumption is that HR practices affect the employees' attitudes and behavior, which further affects the operational performance, such as productivity, quality and innovation, which in turn have a positive on effect on the financial and market performance (Byremo 2015).

Logistics and Transportation (LT): Transport process design is needed to support decisions on inventory level and transportation costs (Cigolini, Cozzi & Perona 2004). Logistics will have an impact on costs and profit. The influence

of organization of logistics on costs will depend on the industry in which the entity operates (Grzegorz & Dominik 2015). Firms total factor productivity could be affected by the wider economic benefits of transport (Graham 2007, Gibbons et al 2012). Compared to the other logistics costs, transportation cost is the largest cost component often comprising half of the total logistics cost (Thomas and Griffin 1996; Sambracos & Ramfou 2010). Reducing transport costs can promote trade, substantially increase income and improve welfare, particularly in the developing world (Amjadi & Yeats 1995; Frankel & Romer 1999; Hummels & 1999; Limao & Venables 2001; Obstfeld & Rogo 2001; Atkin and Donaldson 2012; Sequeira 2013).

Geographic Proximity (GP): Location is an indispensable factor that shapes and determines the success or failure of entrepreneurial development and business activities (Minai & Lucky 2011). Proximity between supplier and its customer is vital to reinforce relationship, allowing the supplier to have preference in terms of volumes, product mix and new developments (Vanalle, 2012) Further,Vanalle, (2012) mentioned proximity as a key factor to narrow the relationship between supplier and its customer. A study found the positive relation between the geographic proximity and inventory management level: and that the greater the geography proximity of customers, the lower the proportion of inventory, and the higher the inventory turnover rate (Minai & Lucky 2011).

Facility: refers the extent of availability of the storage, health and safety standards, and other facilities which enable the SCM to deal with customer order fluctuations.

Technology and Information Sharing: refers to the extent to which the computer technology is adopted to the critical & proprietary information which is communicated to one's supply chain partner to the other (Monczka et al. 1998; Ferry, Kevin & Rodney 2007). Information serves to bridge the existing gaps in supply chains by ensuring that at all levels there is an information system that serves to disseminate crucial information on demand management, stock re-order levels, safety stock management and material resource planning (Chesaro 2016).

Regulatory Factors: refer to extent to which the action taken by the government and other regulatory institutes influence the SCM activities (Nguegan and Mafani 2017)**.**

Problems associated with SCM Practices

Similar to any other business practice, SCM faces problems that originate either from uncertainties or the inability to coordinate several activities and partners (Otchere, Annan & Anin 2013; Nguegan & Mafini 2017). Each SC has its own unique set of market demands and operating challenges and yet the issues remain essentially the same in every case (Hugos 2003). Agricultural commodity producers have to undergo a series of operations such as harvesting, threshing, winnowing, bagging, transportation, storage, processing and exchange before they reach the market, and as evident from several studies across the country, there are considerable losses in crop output at all these stages (Somashekhar, Raju & HemaPatil 2014). Perishability of agricultural produces creates uncertainties within the supply chain in respect to product quality, safety and reliability (Ruteri & Xu 2009). A study has revealed that human components (processors, government, producers, etc.) and non-human components (governing setup, food quality, etc.) significantly influence SCM competence (Ganeshkumar, C. et al. 2017).). The six most common issues identified by APICS Supply Chain Council were: Capacity/resource availability, Talent, Complexity, Threats/challenges, Compliance, Cost/purchasing issues. A study analyzed the vegetables SCM practices in Bangalore and identified that intermediaries encounter complexities such as lack of warehousing, grading and homogeneity, poor quality and highly perishable nature of agricultural produce, lack of consistency in demand and supply for agricultural produce and knowledge about prevalent consumer price (Ganeshkumar, C. et al. 2017).

Business Performance (BP)

BP may be perceived as the ability of an enterprise to meet its predetermined goals (Coltman, Devinney & Midgley 2011, Nguegan & Mafini 2017). Many studies examine the relationship among the business performance, organizational practices and processes to affect the “bottom line”, and vice versa (Wall et al 2004, Zulkiffli & Perera 2011). Today, organizations are striving to improve their BP in response to turbulent business markets and the need to

efficiently control their business activities (Mumelo 2017). A number of scholars acknowledge that BP is increasingly associated with SCM, because this leads to improvements in the flows of information, either products or services and finances (Andersen & Rask 2013, Revilla & Sáenz 2014, Nguegan & Mafini 2017).

Method

Wholesalers engaged in coconut whole selling in Kurunegala district are considered as the population for this study. A sample of sixty coconut wholesalers was drawn conveniently representing all the divisional secretariats in Kurunegla district. The convenience sample method was used since the registered list of wholesalers is not available and the elements of the population are homogeneous. A structured questionnaire was administered to collect information. The questionnaire was translated by using the back translation method, where the questionnaire was first translated into Sinhala Language and then this version was translated back into the English Language. Before administering the questionnaire for the main sample, ten elements from the sample reviewed the questionnaire. They were asked to complete the questionnaire, verify any ambiguity and other difficulties they experienced in completing it, propose any suggestions to improve the same or provide any comments on the developed measurement items. Based on the feedback received on the questionnaire some indicators were added and amended. The amended questionnaire consists of two parts-A and B. Part A includes all indicators which were used for operationalizing the respective variables. Three indicators each (Nguegan & Mafini 2017) were developed for capturing HRM, Technnology, and Regulatory factor related problems, five indicators each (Nguegan & Mafini 2017: Githue 2014) for, CRM, SRM and Facility related problems, four items for LT related problems, and two items for GP related problems. All items were estimated through perceptual evaluation of the respondents on a five point Likert scale; the response categories for each indicator were anchored by 5 = strongly agree, 3 = neutral and 1 = strongly disagree. And, business performance was captured through an indicator (Min and Mentzer, 2004) and is measured by a scale where 1 = low, 2 = moderate and 3 = high. Part B includes the questions eliciting the details of the respondents and the business.

Discriminant analysis was performed to analyze the data. Discriminant Analysis was selected for this study because the independent variables are measured through the interval scale and the dependent variable through ordinal scale. To perform the discriminant analysis, the sample was divided into two parts – the analysis (estimation) sample, which is used for estimation of the discriminant function, and the validation (holdout) sample, which is reserved for validating the discriminant function, (Malhothre and Dash 2014). The analysis sample, forty-eight elements, and the validation sample, twelve elements are included.

Data Presentation and Analysis

Sample Profile

The derived outcome of the sampling profile is organized in terms of the employment period, business size and education level. For the purpose of the research, respondents were categorized into five employment periods - under 2 years, between 2 to 5 years, between 6 to 10 years and above 10 years. The highest percentage, 65% of respondents, is from the employment period of above 10 years. Five categories of business size were created by taking the number of employees into account. About 45% of the respondents belong to the "20 or above" category. Education level was categorized into three. The highest percentage, 96.7% respondents are having the secondary education.

Normality and Validation of Measurement Properties

Before analyzing data, basic statistical analysis of the gathered date was performed such as mode, median, mean, standard deviation, and normality test (Shapiro-Wilk Statistic, skewness and kurtosis. Serious violation of univariate normality was not found (Results of entire analysis are available on request*)

As Multi-item scale was used for measuring the indicators related to the variables, measurement properties should be validated. The minimally important properties are unidimensionality, reliability and validity. The exploratory factor analysis was performed to examine the unidimensionality*. The results of Kaiser Meyer Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity indicate that the data set is appropriate for the factor analysis. The Cronbach 's alpha examined the internal consistency. The alpha

value should be equal or greater than 0.7 in order to be internally consistent (Churchill 1979). The results reveal that the Cronbatch alpha value of all variables are greater than 0.7. Approach for assessing validity includes content validity and construct validity only. The content validity of the measurements was established through rigorous literature survey. The construct validity was ensured by examining the convergent validity and discriminant validity.

The conditions for satisfying convergent validity are (a) the value of Average Variance Extracted (AVE) should be greater than 0.5 and (b) the value of Composite Reliability (CR) should be greater than 0.7 (Hair et al. (201). The results show that AVE and CR values of respective variables exceed the recommended cutoff value of 0.5 and 0.7 respectively. And, "Geographic proximity" GEOP) has only two indicators, thus correlation analysis was used to test the convergent validity. Results of Correlation analysis shows that the indicators of geographic proximity have a strong positive correlation. Therefore, convergent validity of the "geographic proximity" was satisfied.

Discriminant Validity is established through Fornell and Larker (1981) method. The results show that respective AVE values exceed the squared correlation with another construct. It clearly indicates that the discriminant validity of the variables is established.

Research Findings

The objective of this study is to examine the impact of the problems related to the practices of SC practices on the BP. Table 1 records the Means and Std. Deviations of the problems associated with SCM Practices in terms of BP levels. It shows that means of problems associated with SCM practices are considerably different among growth of sales levels.

Table 1: Means & Std. Deviations by Business Performance

10		HRMP	TECP	SRMP	CRMP	LTP	FACP	GEOP	REGEP
Low	Mean	3.56	4.49	4.01	4.17	3.16	3.1	2.46	4.56
	SD	0.295	0.38	0.2	0.224	0.25	0.528	0.56	0.408
Average									
	Mean	2.67	4.08	3.6	3.5	3.0	3.05	3.13	4.25
	SD	0.667	0.5	0.8	0.6	0.0	0.7	0.25	0.833
High									
	Mean	2.43	3.46	2.92	2.73	2.36	2.53	3.47	3.24
	SD	0.603	0.801	0.383	0.228	0.38	0.388	0.40	1.071

To examine whether the BP varies in terms of the problems associated with SCM practices, the Discriminant Analysis was performed. Results are recorded in Table .2, 3, 4, 5, 6 and 7.

Table 2: Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
HRMP	.401	33.605	2	45	.000
TECP	.578	16.435	2	45	.000
SRMP	.301	52.145	2	45	.000
CRMP	.128	153.630	2	45	.000
LTP	.374	37.704	2	45	.000
FACP	.757	7.228	2	45	.002
GEOP	.495	22.932	2	45	.000
REGEP	.578	16.431	2	45	.000

Accordingly, Table 2 records the results of the tests of equality of group means. Wilks' λ for each predicator variable is the ratio of the within-group sum of squares to the total sum of squares (Malhotra & Dash 2016). Its value varies

between 0 and 1. Large values of Wilks' λ (near to1) indicate that the group means do not seem to be different. Small values of λ (near to 0) indicate that group means seem to be different. Results (Table 2) show that Wilks' λ for the above predictor variables are varied between 0 and 1 and none of them are closer to the extremes. Furthermore, the significance level (equal or less than 0.05) of the univariate F ratio for all variables indicates that when the predictors are considered individually, all of the above variables significantly differentiate between the three groups.

Table 3: Eigen Values and Canonical Discriminant Function

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation	Test of Functions	Wilks' Lambda	Chi – square	df	Sig
1	21.044[a]	99.4	99.4	.977	1 through 2	0.40	133.212	16	0.000
2	.124[a]	.6	100.0	.332	2	0.89	4.851	7	0.678

Since three groups exist, a maximum of two functions were extracted. Results of the Eigen values and discriminant functions (Table 3) show that the Eigen- value associated with the first function is 21.044, and this function account for 99.4% of the explained variance. Because the Eigen- value is large, the first function is likely to be superior. However, the second function indicates a small Eigen value of 0.124 and accounts for only 0.6% of the explained variance. To achieve the objective of the study of equal group centroids, both the functions must be considered simultaneously. When no function has been removed, the value of Wilks' λ is 0.040. This transforms to a Chi-square of 133.212, with 16 degrees of freedom, which is significant at 0.00 level. Thus, the two functions together significantly discriminate among the three groups. However, when the first function is removed, the Wilks' λ associated with the second function is 0.890, which is not significant. Therefore, the second function does not contribute significantly to group differences.

Table 4: Standardized Canonical Discriminant Function Coefficients

	Function	
	1	2
HRMP	0.025	0.781
TECP	0.105	0.650
SRMP	0.217	0.628
CRMP	1.073	0.179
LTP	1.011	0.149
FACP	0.411	0.034
GEOP	0.424	0.035
REGEP	0.397	0.039

It is possible to obtain some idea of the relative importance of the variables by examining the absolute magnitude of the standardized discriminant function coefficients (SDFC). The results of the SDFC (Table 4) show that standardized coefficients indicate a large coefficient for HRMP, TECP, and SRMP on function 2 whereas function 1 has relatively larger coefficients for CRMP, LTP, FACP, GEOP and REGEP. Similarly, an examination of structure matrix (Table 5) clearly shows that CRMP, SRMP, and TECP variables are grouped together on function one, while HRMP, GEOP, LTP, FACP, and REGFP are predominantly associated with function 2. The variables with large coefficient for a particular function are grouped together and they are shown by asterisks.

Table 5: Structure Correlations

	Function	
	1	2
CRMP	0.569*	-0.287
SRMP	0.332*	0.062
TECP	0.186*	0.008

HRMP	0.260	0.772*
GEOP	0.218	0.427*
LTP	0.280	0.421*
FACP	0.122	0.290*
REGFP	0.185	0.231*

As the results of the discriminant analysis show business performance varies in term of the problem associated with the practices of SCM. The wholesalers whose business performance are low perceive that HRMP, TECP, FACM, CRMP, SRMP, REGP, and LTP are severer than those of wholesalers whose business performance are average and high. However, all wholesalers perceive that REGP and GEOP are sever burden for running their business (Table 1 and 2).

Since the sample was divided into two parts for performing the discriminant function, cross validation should be carried out (Malhothra and Dash 2014). Classification matrix, which contains the number of correctly classified and misclassified cases was performed for this purpose.

Table 6: Classification Results

				Predicted Group Membership			
			Business Performance	Low	Average	High	Total
Cases Selected	Original	Count	Low	26	0	0	26
			Average	0	3	1	4
			High	0	0	18	18
		%	Low	100.0	.0	.0	100.0
			Average	.0	75.0	25.0	100.0
			High	.0	.0	100.0	100.0
Cases Not	Original	Count	Low	4	0	0	4

Selected		Average	0	3	1	4
		High	0	0	4	4
	%	Low	100.0	.0	.0	100.0
		Average	.0	75.0	25.0	100.0
		High	.0	.0	100.0	100.0

The classification matrix (Table 6) shows that the classification results based on the analysis sample indicate that 26+3+18)/48 = 97.9% of the cases are correctly classified. When the classification analysis is conducted on the independent holdout set of data, a hit ratio of 4+3+4/12 = 91.7% is obtained. Given three groups of equal size, by chance alone one would expect a hit ration of 1/3 = 33.3%. No general guidelines are available, although classification accuracy achieved by discriminant analysis should be at least 25% greater than that obtained by chance (Malhotra & Dash 2016). Thus, the improvement over chance is greater than 25% for the study, the validity of the discriminant analysis is judged as satisfactory.

Discussion

The objective of the study is to examine the impact of problems associated with SCM practices on the BP of coconut wholesalers in Sri Lankan context. The problems were identified in terms of eight SCM practices through the literature. The discussion part is based on the results of test of Equality of Group Means (F ratio, Significant Level, and Wilks' Lambda) in Table 4. At the outset, the problems associated with HRM and their impact on BP are considered, results indicate that the problems associated with HRM significantly differentiate the three groups of BP. Many studies support this finding. A study suggests that a major contributory area to organizational success is the management of workers in organizations (Igwe et al. 2014) and human resource-related problems increase, business performance will decrease, and vice versa (Nguegan & Mafini 2017). Paul and Anantharaman (2003) concluded that increasing

problems in HRM can negatively affect BP across different industries. Wright et al. (2003) state that businesses which manage employees with more progressive HR practices can expect to see higher operational performance as a result. Moreover, study of Van de Voorde et al. (2010) conclude that there is a negative relationship between HR problems and BP. In addition, human resource-related problems may lead to poor-quality work, which may trigger customer dissatisfaction, legal disputes and decreasing profits, (Jackson, Schuler & Jiang 2014).

Moreover, the impact of TECPs on BP of the coconut wholesalers are considered, the results indicate that the TECPs do impact the BP of a coconut wholesale business. Many studies are consistent with this finding. Lewis et al. (2012) state that businesses must be aware of technological developments within their industries if they are to be effectively involved in new process, product and service improvements. Technology is accelerating its ability to help businesses do more with less and provide better results (Wilburn & Wilburn 2018). The adoption of technology can enable the business to transform its internal capabilities by making the business more adaptive and aligned with current or future innovations to increase market share and enhance competitiveness (Chebrolu & Ness 2013, Nguegan and Mafini 2017). Nguegan and Mafini (2017) showed that a weak negative correlation existed between TECPs and BP. In support, Tavitiyaman, Zhang and Qu (2011) and Forsman and Temel (2011) showed a strong negative relationship occurring between TECPs and BP.

However, the results revealed that the adoption of new technologies is not fast among the coconut wholesalers. According to the common idea of them, this is because most of the inventions available in the marketplace/ introduced by the government authorities are failed to address the specific requirements of their production process. And also, as mentioned by the respondents although such innovations can be considered as a possible solution for labor relation challenges, they are occurred an additional cost when it compared with their traditional production methods. And most of the technologies can't be adopted to the coconut wholesaling activities.

When the impact of SRM related problems on BP are considered**,** results indicate that the SRM related problems do impact the BP of the coconut wholesale business. Myriad of literature are consistent with this finding. Nguegan & Mafini (2017) showed that the SRM problems were significant in

predicting BP. Further they mention that a weak negative correlation existed between the SRM problems and BP. The need to improve supplier–buyer relationships has become more apparent in the pursuit to achieve operational excellence (Lockström et al 2010). Any organizational initiative, including SRM, should ultimately lead to enhanced organizational performance (KiIpatrick 2000, Maraka, Kibet, and Mike 2011). SRM is very important for Small and Medium Enterprises as it can ensure the supply of reliable and frequent deliveries in today's dynamic and competitive environment (Mumelo, Selfano & Onditi 2017).

As far as the impact of CRM related problems on BP is considered**,** the results indicate that the impact of CRM problems on BP of the coconut wholesalers is visible. This finding is consistent with myriad of the literature. Bettencourt et al. (2015), and Quynh and Huy (2018) claimed that success in market place demand going beyond satisfactory exchanges with customers, therefore firms should build close relationship with their customers. And, Dutu and Halmajan (2011) stressed that businesses adopting CRM as a core strategy are likely to grow at a faster speed than other businesses in the same industry that have not done so. Nguegan and Mafini (2017) show that CRM problems were statistically significant in predicting BP. Moreover, Shwu and Chien (2012) highlight that businesses focusing on CRM exceed customer expectations and increase the level of customers' satisfaction, leading to customer loyalty as shown through repeat sales. Wang and Feng (2012) further suggest that CRM indirectly affects BP by increasing efficiency and cutting costs.

And, the results indicate that the LTPs have an impact on the BP of the coconut wholesale business. Many studies are consistent with the finding. Chinomona (2013) advocates that the management of transportation and logistics has been a critical concern for manufacturers, distributors and third-party logistics industries in their search for achieving a lean, agile and efficient supply chain. Since transportation costs can be as much as one third of the operating cost of a supply chain, decisions made with respect to transport are very important (Matta 2014). At the firm level, transport improvements could affect the performance of firms (Gibbonsab et al 2012). Nguegan and Mafini (2017) claimed that the problems associated with logistics and transportation were statistically significant in predicting business performance. Sukati et al. (2013), state the performance of logistics and transportation processes has an impact on customer service, inventory levels and cost optimization that lead to

better business performance. Logistics and transportation strategies support integration of business processes such as purchasing, manufacturing, selling and logistics throughout the chain to provide optimum value to the ultimate customer (Kamel, Vinod & Uma 2010). Furthermore, better accessibility to consumers increases customer base and allows firms to expand production and exploit economies of scale (Gibbonsab et al. 2012). Thus, efforts aimed at lessening problems related to the logistics and transportation function in the coconut wholesaling industry should lead to better BP.

The results show that the FACPs have an impact on the BP of coconut wholesale business. A vast array of literature supports this claim. As White (2013) suggests, the facilities manager holds the key to organizational performance. There is the potential to add value by facilitating increased productivity from a satisfied and comfortable workforce, enhancing customer experience and, controlling costs through the efficient management of the accommodation, and improving overall operational performance (White 2013). Nguegan and Mafini (2017) claim that the facility-related problems were significant in predicting BP. Scupola (2012) reiterates that facilities are considered to be among the crucial linkages between a business and its markets, which can have the potential to impact on the business' revenues and overall effectiveness. Ineffective management of waste within facilities can lead to occupational accidents and censure by regulatory authorities (Collins & Junghans 2015). Generally, the lack of state-of-the-art facilities at organizational level contributes to poor business performance and could hamper the sourcing and supply processes of a business (Tucker & Pitt 2009).

The results indicate that the GEOPs have an impact on the BP of the coconut wholesale business. Many studies support this claim. Accordingly, Orloff (2002) cited by Minai & Lucky (2011) provided the evidence on the effect of location on emergence of entrepreneurs and consequently their performance. They examined the current situation of inventory management of domestic retail enterprises and found that the greater the geography proximity of customers, the lower the proportion of inventory, and the higher the inventory turnover rate (Minai & Lucky (2011). The real motivation of the supplier to create proximity with one of its most important customers was to straighten the long-term relationship generating strategic advantages to better position the supplier to augment its integration and business volumes with customer (Vanalle et al. 2012). Further, Kala et al. (2010), and Minai and Lucky (2011)

reported that the strategic location of the domestic firms assisted them in achieve a positive performance.

The results imply that the REGEPs have an impact on the BP of the coconut wholesale business. The conventional view of business lobby groups, politicians, academics and the media is that regulation is a burden, cost or constraint on businesses (Kitching et al 2013). Regulation is a dynamic force shaping business activity and performance, creating opportunities and enabling activities that might improve performance as well as imposing burdens, costs and constraints on small firms (Kitching et al 2013). Nguegan and Mafini (2017) stress that there was a small negative correlation between REGEPs and BP. This result implies that if problems related to regulatory factors increase, business performance decreases. Direct and indirect regulatory influences, operating through small firms themselves and through their relations with a wide range of stakeholders, combine to generate the variety of small business performance effects.

However, Kitching et al. (2013) indicate that the influence of regulation critically depends on how small business agents, and the stakeholders with whom they interact – including actual and prospective customers, suppliers, competitors, infrastructure providers and regulatory authorities – adapt to regulation.

Conclusion and Managerial Implications

The results of the study have several theoretical and managerial implications. Theoretically, it presents further evidence of the significance of SCM practices of intermediaries as a driver of their business performance in the coconut industry within developing countries. On the other hand, a broad search of different research databases disclosed that literature on SCM problems of intermediaries is very limited. Thus, the study performs a critical role in bridging such gaps, specifically in the coconut industry. Further, the study supports the view that part of the answer to solving business performance barriers in the coconut industry involves streamlining SCM by resolving its recognizable problems.

The overall administrative implication of this study is that business performance in the coconut industry may be improved by, among other things, decreasing the concentration of SCM problems. Thus, the coconut wholesaling

activities are not safe to the unfavorable effects of such problems, and relevant actions have to be taken to assure that their effects are lessened.

In terms of human resources, labor relations challenges such as absenteeism and turnover of skilled personnel are high among coconut wholesale businesses. Thus, there is a need to focus more on alternative options like technological substitutions or initiation of interesting remunerations. Wholesalers are very slow in adopting new technologies because of the comparative benefits are low. Thus, there is a need for innovations which are perfectly matching with the industry requirements at a reasonable price.

As a natural industry, most of the time there could be nut shortages. As a result, farmers may not be able to deliver materials on time. This is because poor agricultural practices of farmers, lack of governmental support and adverse effects of urbanization. Thus, government should take the responsibility of finding viable solutions for such concerns. In terms of regulatory factors, they have to adopt effective environmental practices due to the inevitable by products in the coconut industry such as charcoal and fiber. Thus, there is a need to focus more on such government policies and to take prescribed actions for ensuring the zero social effects. Otherwise regulations may feel like an extra burden. Practically, the study enables professionals and regulatory bodies in the coconut industry to understand the sources of problems and use this information to develop solutions for the improvement of business performance.

Similar studies could be conducted at a wider scope with the aim of studying other SCM drawbacks that were omitted in this study. And, studies can also be conducted in different locations or regions in North Western province or in Sri Lanka because the viewpoints of wholesalers may leap to be different depending on their environment. Finally, the study can also be reproduced in other industry which holds a historical value among the Sri Lankan export commodities apart from the coconut industry.

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