

Assessing the Impact of Sourcing Flexibility on Service Quality: A B2B Study in The Construction Industry of Sri Lanka

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INTRODUCTION

The turbulence of the modern business environment is well documented (Christopher, Perk & Towill 2006). Agus (2011) states that to survive in the intense market place, supply chain flexibility is a vital tool. And also, according to Ketchen and Hult (2007), the best value supply chains should strive to excel on competitive priorities. Quality remains the top most competitive priority on which the firm's need to concentrate to gain competitive advantage. (Naqshbandi and Idris 2012).

The main objective of the study is to address an untapped area of focus in literature as identified by Borhanazad and Tran (2012). That is to investigate the degree at which the sourcing flexibility can influence service quality of the firm where the quality is patriated as the top most competitive priority in the construction industry of Sri Lanka. This study is vastly significant since it is contributing new knowledge to the existing literature gap as identified by Borhanazad and Tran (2012); Forsythe (2016); Junnonen et al. (2009); Suresh et al.(2012). This study would be the preliminary study in Sri Lankan construction industry related to the intended objectives. The significance is further ensured by the future implications on the efficient and effective functional decision making regarding the requirement of making the sourcing function flexible expecting an improvement in the service quality of the work done. The findings of the study suggest that product flexibility, volume flexibility and delivery flexibility positively impact the service quality in the construction industry of Sri Lanka while the structure flexibility fails to significantly influence the service quality.

LITERATURE REVIEW

Ahmad and Schroeder (2011) identified that to remain competitive in the turmoil environment, the organization must concentrate on objectives for operations which are known as competitive priorities. As per Naqshbandi and Idris (2012) competitive priorities are hardly been studied and quality remains the top most priority in the service industry. The concept of quality is not a modern concept and has been alternatively defined. However, with the recognition of construction as a service industry (Kärnä et al. 2009), service quality is still in its infancy as a topic of study.

Service quality has been particularly important for business to business services and broadly studied by Parasuraman et al. (1988); Ullrich (2002); Woo and Ennew (2005); Forsythe (2016) etc. As per Gounaris (2005), service quality is the extent to which a company is aligned to potential quality, hard process quality, soft process quality and output quality.

According to Ketchen and Hult (2007), the best value supply chains strive to excel on competitive priorities. Based on the existing literature, the sourcing function remains as a strategic contributor due to the growing importance of purchasing as a means to improve the supply chain. Nevertheless, it has been identified that it would be beneficial to recognize the degree at which the sourcing flexibility can influence the competitive priorities of an organization (Borhanazad & Tran 2012) (Hypothesis 1).

Sourcing flexibility has been defined diversely with different models by Sanchez and Perez (2005); Swafford et al. (2006); Borhanazad and Tran (2012) etc. Borhanazad and Tran (2012) defines sourcing flexibility as a combination of supply chain structure flexibility, product flexibility, volume flexibility and delivery flexibility and this is considered as the basis for definition in this study.

Supply chain structure flexibility is the ability of the focal company to change the structure of supply chain economically and in a timely manner for the changes in the environment. (Hagström & Selmosson 2015; Swift 1995). How structure flexibility influence the sourcing flexibility and supplier retention has been comprehensively addressed (Tachizawa and Thomsen,2007; Borhanazad & Tran; Winkler (2008). However, how structure flexibility influences the service quality is an untapped research area. (Hypothesis 2)

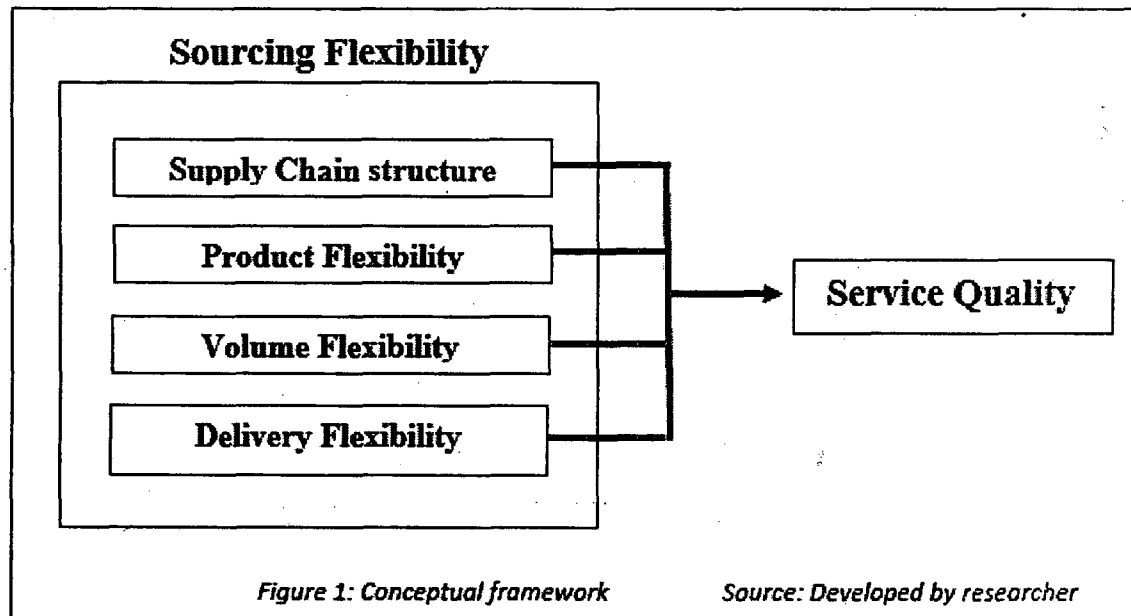
Product flexibility is the ability of the focal firm's suppliers to deal with variations due to customer requirement changes by conforming to specifications economically and promptly with durable and reliable products/ supplies. (Curkovic et al. 2000; Ghosh et al. 2010). How internal collaboration enables product flexibility is assessed by Sánchez & Pérez, 2005. And also means the service quality enabled through product flexibility has been identified by Boyer and Lewis (2002); Pujawan (2004); Önköl and Aktas (2011) but fails to address the impact of product flexibility on the service quality. (Hypothesis 3)

Volume flexibility is the ability of the firm's suppliers to respond to changes in the volume requirements by controlling the supply levels of raw materials and components by changing the supply and capacity level in an efficient and effective manner. (Hagström & Selmosson 2015). Though how volume flexibility positively impact on the firm's performance and on internal capabilities is assessed, the literature fails to address how volume flexibility affects the service quality. (Hypothesis 4)

The organization's ability to change planned deliveries with the flexibility and the capabilities of the suppliers in respect to both rushed and delayed orders is defined as the delivery flexibility by Hagström and Selmosson 2015. Beamon 1999 only identifies the delivery flexibility as a separate construct. Delivery flexibility in relation to customer concentration and business performance through customer retention has been profoundly analyzed (Kumar et al. 2006; Roll 2010). However, fails to identify any possibility of delivery flexibility impacting the service quality. (Hypothesis 5)

METHODOLOGY

The study is survey-based empirical research which is quantitative in nature and primarily concerned with testing of hypothesis. Figure 1 illustrates the conceptual framework for the study.



The sourcing flexibility variable is defined as the flexibility enabled through a combination of supply chain structure flexibility, product flexibility, volume flexibility and delivery flexibility which is primarily based on Borhanazad and Tran (2012). INDSERV scale defined by Gounaris (2005) is used as the basis for measuring the service quality which is the extent to which the construction company is aligned to potential quality, hard process quality, soft process quality and output quality. A self-administered questionnaire was developed with a demographic profile, 7 point Likert scale to measure the INDSERV scale (23 items measured in ratio scale) and a 5 point Likert to measure the sourcing flexibility (18 items measured in ratio scale). The unit of analysis for the study is a building and civil construction project by a registered contractor above the grading C2. (De Silva & Wimalaratne 2012). Sample framework for the study is the registered C2 contractor list for building and civil construction projects of CIDASL as at June, 2016. As per CIDASL June, 2016 update, the population for the study is 275 construction projects. Thus, convenience sampling was adopted to collect required 205 responses. With 83% response rate, the researcher managed to collect 170 complete responses through the project managers and the collected data was analyzed through IBM SPSS 23.

ANALYSIS/RESULTS

Data analysis was initiated with data purification with mean substitution for missing data followed by descriptive data analysis. Total of 170 construction projects were analyzed and accordingly (75.9%) of the projects had a duration of less than 24 months. Considering the estimated cost of the projects (68.2%) of the projects were with less than Rs.500 million cost. (34%) of the projects owned 11 to 20 qualified suppliers.

Kaiser –Mayer-Olkin measure and Cronbach α measure is used to measure the validity and reliability of data. All variables were acceptable in terms of reliability and validity except for a single variable. Accordingly, the potential quality variable of INDSERV scale was removed due to an unacceptable score. (reliability score of 0.565 which is below acceptable 0.6). Multivariate assumptions were satisfied and multiple regression analysis was used to further analyze the results with both independent variable (sourcing flexibility) and dependent variable (service quality) measured in ratio scale. Table 1 depicts the results of the multiple regression analysis used for hypothesis testing.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.637 ^a	.406	.396	.30236

a. Predictors: (Constant), DF, PF, VF

Table 1: Model Summary

Source: Survey data - SPSS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.495	.411		6.069	.000
	SCSF	-.067	.093	-.051	-.724	.470
	PF	.117	.053	.135	2.212	.028
	VF	.353	.092	.307	3.838	.000
	DF	.469	.085	.396	5.488	.000

a. Dependent Variable: Service quality

Table 2: Coefficient Summary

Source: Survey data - SPSS

Accordingly, the overall model is significant ($0 < 0.05$ confidence level) with a R square of 40.6% which is acceptable in social science researches. Further the hypotheses stating sourcing flexibility has an impact on the service quality(H1), product flexibility has an impact on the service quality(H3), volume flexibility has an impact on the service

quality(H4), and delivery flexibility has an impact on the service quality(H5) are accepted showing that the any flexibility in the sourcing function, , any flexibility in the supply portfolio, a flexibility in the volume and a flexibility in the delivery mechanism does significantly impact on any rise in the service quality (beta values of 0.117,0.353,0.469 respectively with all the individual sig values are below 0.05). Only the supply chain structure flexibility doesn't significantly impact the service quality which rejects the hypothesis 2.

The analysis demonstrates that in the Sri Lankan context, the service quality can be only measured in terms of hard process quality, soft process quality and output quality and the study not overseeing the potential quality (Galahitiyawe & Musa 2016) must be due to the inherent characteristics of Sri Lankan construction industry. Sri Lanka being a developing country with high labour intensity in the construction sector must have led to the difference. And also, rigid internal structure of firms of developing countries together with the under-developed infrastructural facilities must have limited the creation of an impact from structure flexibility on the service quality.

CONCLUSION

Sourcing flexibility and quality are vital tools to combat competition. Analysis based on random sample depicts that flexibility in the supply portfolio, delivery flexibility and volume flexibility can make an impact on boosting the service quality in the construction industry of Sri Lanka. The results of the study assist in filling the literature gap identified and determining the significance and the requirement of making the sourcing function flexible expecting an improvement in the service quality in the construction sector. However, narrow categorization of sourcing flexibility should have hindered the true strength of flexibility and the generalization could have been limited due to usage of a moderate value category of projects. Therefore, as further research areas, it is recommended to analyze more samples of diverse project categories with multiple elements in defining the sourcing flexibility and to assess the impact of sourcing flexibility on the service quality for better results.

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