Strategic sourcing: An empirical study among Indian construction retailers

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ABSTRACT

The Indian retail industry is an emerging sector particularly in the construction segment. Retailers play a major role in sourcing of construction materials. This paper aims to identify the factors responsible for strategic sourcing and to find the influence between them for effective business transactions among construction material retailers in India. Primary data was collected using a structured questionnaire and an adequate sample of 330 responses were obtained from the targeted respondents using convenient sampling method. Following statistical tests for validity and reliability, Structural Equation Model was used to analyse the data. Based on previous studies, five variables were identified: unstructured buying, retailer evaluation, retailer disengagement, retailer relationship management and strategic sourcing and 21 key items were considered for the survey. With the factors, a conceptual model was formulated, and hypotheses were framed and tested. Among the five hypotheses, four hypotheses were supported in the study. All variables except unstructured buying have a strong positive influence on strategic sourcing. The study's implications include creating a long-term relationship with retailers and enhancing strategic sourcing practices in the Indian construction sector. This study serves as a literature resource in strategic sourcing and adds value to construction supply chains.

KEYWORDS: Business transactions, Construction materials, Sourcing, India, Retailers.

INTRODUCTION

Today's Indian consumers demand high quality, a pleasant environment, and competitive pricing for better purchase experience. But due to constantly changing lifestyles, greater expectations and increased income, the retail industry not able to meet the needs of customers. The Indian retail business is a growing and dynamic sector with a GDP growth rate of 10% and an employability rate of 8%. It was ranked first in the Global Retail Development Index in 2017 and is regarded as an excellent country for global retailers (IBEF, 2018). According to Global Construction and Oxford Economics research, India is one of the leading markets with a growing retail business and construction sector (Neale & Birst, 2017).

The Indian construction sector is growing by the day, and a large volume of materials is required for construction at the appropriate time. Materials are vital in the construction industry and handling them is a time-consuming operation that comprises procurement, assembly, and inventory management. The material procurement starts after the design of the project (Sarode & Bhangale, 2020). Retailers are the primary suppliers of materials to contractors or to the construction site. But due to its weight and high price, the distribution of construction materials is complex, heavy, and costly. Interruption in supply of materials leads to delay of the project and other processes in construction. Project cost, labour cost will increase and thereby total cost of the project will be affected (Nyoni & Bonga, 2017). Mostly, the material deterioration and high maintenance cost are due to unplanned changes in project (Subramani & Prabhu, 2018). The construction sector has not found a proper platform for purchasing and procuring of construction materials as cost is a major factor (Chinda, 2020). But in manufacturing companies, advanced technologies have been used, yet the construction sector relies on traditional methods such as retailers and other stakeholders for material sourcing and procurement. Retailers act as a middleman between wholesaler or manufacturer and consumers. They store the inventory for an efficient supply chain process (Waller, *et al.,* 1999) and are skilled enough to distribute quality and huge products to customers from large production and manufacturing units (Tamilia, 2016). Retailers play a vital role in the supply of materials and the main aim is to minimize the cost for entire process of procurement and distribution (Patil & Chavan, 2017). They can improve procurement efficiency from small scale farmers through mutual discussion, increasing more flexible franchise stores, long-term commitment, accessibility, and providing more technically and with interest-free loans. Inadequate communication, low commitment, lack of technical support, (Kabra *et al.*, 2015; Moktadir *et al.,* 2018) lack of infrastructure and insufficient developments in supply chain (Tsiroyiannis, 2015) are the challenges faced by the Indian retail sector. These issues affect the retailers on the activities for serving the end consumers from the point of manufacturing to consumption. In today's world, the challenges faced by Indian retailers are change in formats, difficulty to manage complex problems instantly, excess expectations and choices of consumer, innovations in technology, quality, price (Tsiroyiannis, 2015) and lack of sourcing platform. Indian retail industry is growing tremendously, but the retailers are still reluctant to adopt new technologies in sourcing for construction materials. This has resulted in the construction retail being pulled down by 2.8% compared to 2017 (Jones, 2017). The success and survival of retailers depends on marketers and business partners innovation techniques and developments (Yeo *et al.,* 2017; Verhoef *et al.,* 2015).

The current study aims to analyse the strategic sourcing of construction materials among India's retailers and identify the factors responsible for it. Subsequently, this study presents the research question: does strategic sourcing influence Indian construction retailers. The objectives of the study are as follows:

- To identify the factors responsible for strategic sourcing and find the influence between each factor in Indian construction material retailers to increase profit and retain competitive advantage.

- Develop a conceptual framework to improve strategic sourcing among retailers with the identified factors.

This study contains an empirical data and contribute valuable information to literature on strategic sourcing for construction material retailers. This study also provides an insight to

professionals in construction sector, decision makers and suppliers in India about the strategic sourcing of materials through retailers. The organisation of study is as follows: a few reviews of literature show strategic sourcing and factors influencing strategic sourcing in order to present the hypotheses. The research methodology is presented, and findings are outlined followed by discussion. conclusion, limitations and future research work are drawn finally.

LITERATURE REVIEW

These days, the overall supply chain management emphasises strategic decision for purchasing (Biazzin, 2019; Hsu, 2016; Nair *et al.,* 2015). Strategic sourcing is defined as a complete process of obtaining inputs and managing supplier relationships to achieve the organisation's long-term goals (Biazzin, 2019). Satir and Sislian (2000) defined it as a model that facilitates managers in making buying decisions whereas, Anderson and Katz (1998) defined it as a framework of procurement that helps the firm to add value and enhance competitive advantage. Strategic sourcing makes advantage of supplier capability in the design and manufacturing processes to help the firm achieve crucial goals. The combination of purchasing and strategic sourcing promotes supplier development and the development of relationships between buyer and supplier (Kim & Chai, 2017). Better strategic sourcing can be achieved in a company by maintaining supplier relationship management, evaluating long-term goals, and communicating effectively with buyers and suppliers (Forkmann *et al.,* 2016; Ghadimi *et al.,* 2018; Kwofie, 2019). The dimensions of strategic sourcing are strategic purchasing role, sharing of information with suppliers and supplier relationship management (Kim & Chai, 2017).

Construction involves variety of activities and risks depending on the sourcing practices employed in the sector (Chatterjee *et al*., 2018). The products required for construction projects are mostly local and volatile as the projects have long completion time (Segerstedt & Olofsson, 2010). The strategic sourcing of construction materials is adopted in developed countries such as in US, UK, Malaysia and still in nascent stages in developing countries such as Nigeria and India. However, in the US construction industry, the sourcing of construction materials was done online, which benefits both buyer and supplier (Barraket, 2020). In Nigerian construction industry sourcing policies was rigid and clear for project performance (Muhammad *et al.,* 2015). Neale and Birst, 2017 explained that the construction retail market has been growing continuously in the UK construction sector. Similarly, portals for the public procurement of materials have been introduced by Indian government to avoid ambiguity and increase efficiency (ChiPS, 2019). Traditional sourcing methods are used in the Indian construction sector because project sites are geographically dispersed, and other reasons include different languages in each state, shortage of skilled professionals in some areas, and a single manufacturer for a product. Strategic sourcing helps in consolidating the number of suppliers (many brands with single supplier) and increases competition among small and large businesses (Basu, n.d.). It helps to maintain long term coordination of buyer-supplier and increase the customer service level (Waller, *et al*., 1999) in controlled, planned and effective manner. Strategic sourcing also aids in group buying decision rather than unstructured buying behaviour. Problems faced in unstructured buying behaviour are conflict and disengagement between retailer and customer whereas, group buying improves information sharing within the group during transaction of goods and materials (Jing & Xie, 2011). There are several initiatives taken by Indian government and construction consortium to promote structured buying and strategic sourcing. INAM Pro+ is one such example initiated by the government for sourcing of building materials to the construction industry (INAM Pro+, 2017).

An exhaustive literature analysis revealed that the theoretical consideration for the study includes organisational buying behaviour, which argues that complex communication and strategic decisions are required for the selection and sourcing of commodities. This study supports the organisational decision-making theory, which claims that decisions help alter existing conditions (Joseph-Williams *et al.,* 2017). Also is the resource-based perspective of firm theory, that claims that the firm's resources lead to competitive advantage and performance (Collins, 2021; Mweru & Maina, 2016).

There are many studies related to procurement of materials in construction sector, however limited studies are available on strategic sourcing among construction material retailers. Based on previous literature, the factors identified for efficient strategic sourcing are unstructured buying, retailer evaluation, retailer relationship management and retailer disengagement. Each identified factor is explained in brief with the hypothesis.

Conceptual Framework

Figure 1 presents the relationships among the variables of the study. However brief explanation about the variables and hypotheses of the study are given below based on the objective of the study and existing literature related to strategic sourcing.
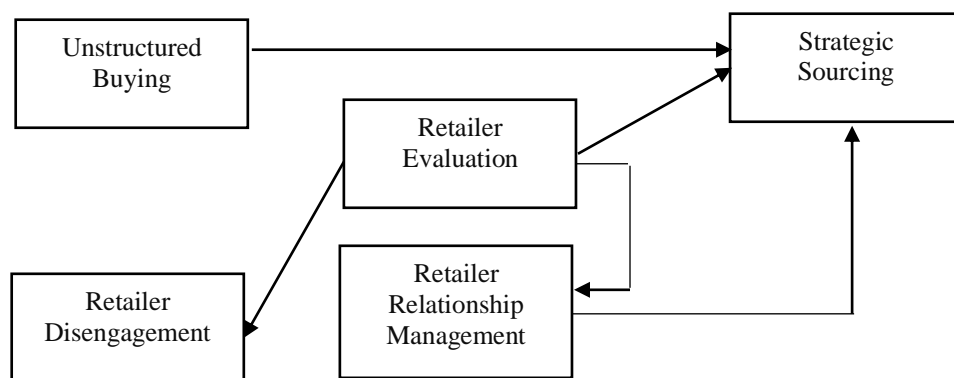

Figure 1: Conceptual framework

Strategic Sourcing

Strategic sourcing is a process of planned and joint approach of selected suppliers to utilize the commodities to build value and knowledge for the organisation and industry (Nudurupati, 2015) for maintaining better quality, on time delivery, price and profit ("Strategic sourcing"). It is an effective tool of supply chain for firms (Kim & Chai, 2017). In the real estate retail supply chain, strategic sourcing plays a vital role in reducing cost significantly (Patil & Chavan, 2017). In this study strategic sourcing is a procurement activity to improve the purchasing power and looks for long term relationship between buyer and supplier. It is a dependent variable for efficient sourcing practice among construction material retailers.

Unstructured Buying

Unstructured buying means the decision of procuring goods in an unstructured manner (Shrivastava & Lanjewar, 2011). The unstructured buying creates problems such as mistrust

and conflicts. Strategic sourcing creates better relationship, trust and helps to lower the cost of a product (Kim & Chai, 2017; Mugurusi & De Boer, 2019; Nudurupati, 2015).

H1: Unstructured buying has a significant positive influence on strategic sourcing.

Retailer Evaluation

Retailer evaluation means selection of proper retailer in the supply chain. For product to be sold in market frequent evaluation and judgment has to be done for procured products (Olsson *et al.,* 2013). Retailers are evaluated based on the type of product, the sort of supplier that understands market trends (Leinonen, 2017), and business policies, which vary from one company to the next. The possible supplier is chosen to improve the sourcing process based on the pre-qualification criteria and request for quotation. Evaluation of retailer provides superior sourcing characteristics and accumulates information for material procurement in supply chain management.

Patil and Chavan (2017) studied that the retailers should work in a team in supply chain for competence and success. Sourcing and purchasing a product maintain a close relationship between the supplier and buyer, which aids in increasing the partners competitiveness. The possible provider should be familiar with the characteristics of the construction material products and their use and durability. The retailers' ability to source and their readiness to check the product information increases the benefits and profits in the business.

H2: Retailer evaluation has a significant positive influence on strategic sourcing.

H3: Retailer evaluation has a significant positive influence on retailer relationship management.

Retailer Disengagement

Retailer disengagement is the action where the retailers are dissatisfied during the distribution of products. Misunderstanding, disagreement and cultural difference among the business partners create problems with the middlemen (Grynaviski, 2018). The retailer disengagement has a moderating effect on the efficiency of distribution channel (Singh, 2014) and the retailer's selection. Assessment of supplier and middlemen reduces the conflicts (Bowden *et al.,* 2015). Adequate relationship provides disengagement among the retailers.

H4: Retailer Evaluation has a significant positive influence on Retailer disengagement

Retailer Relationship Management

Relationship management is a policy maintained in an organisation between two business parties or between a business party and a customer to better business transactions. Suppliers depend on middlemen to sell their products to their respective customers. The risk of high cost and low demand is recognised due to direct interaction (eNotes, 2021). Solberg (2006) suggests that the relationship in trading is more complex in the international market than in the domestic market and difficult to interpret the information in the domestic market. Strategic sourcing improves long-term relationships with partners and helps select the right supplier with high quantity and quality products at low price (Basu, n.d.; Ghadimi *et al.,* 2018). The competitiveness of the firm increases due to selection of right middlemen and

long-term relationship (Ghadim *et al.,* 2018). Supply chain improves the better relationship between the suppliers leading to cost reduction (Kavale & Olendo, 2016). The relation with the business partners makes the business smooth and more contented. In construction sector, adequate relationship with retailers enhances sourcing practices.

H5: Retailer relationship management has a significant positive influence on strategic sourcing.

RESEARCH METHODOLOGY

This study aimed to enquire about the sourcing practices of retailers selling construction materials. The study is descriptive in nature. Both primary and secondary data sources are used in this study. The development of instrument for strategic sourcing includes pilot study and data analysis. Statistical analysis was used to determine the reliability and validity of instruments. The conceptual framework in Figure 1 and the hypotheses were tested using Structural Equation Modelling (SEM).

Instrument and Data Collection

Many literature from retailing, procurement, and strategic sourcing were reviewed for the development of model. The questionnaire consists of five variables with 21 items. for Unstructured buying has five items and other variables have four items each. Instruments that measure strategic sourcing, unstructured buying, retailer evaluation, retailer disengagement and retailer relationship management has been adopted from Patil and Chavan (2017); Leinonen (2017); and Singh (2014). Convenience sampling method was used to collect the samples. A five-point Likert scale is used to measure the questions with 1- strongly disagree and 5- strongly agree. Questionnaires were given to 700 retailers selling construction materials such as cement, hardware items, plumbing, interior items, tiles, paints from Chennai, Tamil Nadu. Based on their convenience the respondents are asked to tick on the respective questions. A total of 330 valid responses were collected and used for analysis. A pilot study was done to know the reliability and validity of the scale and to understand retailers' perception of current sourcing practices in the industry. The variables and items were taken from previous literatures with small modifications. The questionnaire was also sent to expert for their advice and review before it was given to respondents.

ANALYSIS AND INTERPRETATION

The model was tested for its validity and reliability. Cronbach's Alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE) and Average Loadings (AL) were used to test reliability and validity of instruments. The model was then tested using Structural Equation Modelling with Confirmatory Factor Analysis (SEM with CFA) to know the fitness of the model and to estimate the interrelationship between the dependent and independent variable (Hooper *et al.,* 2008). To test the data, statistical package for social science (SPSS v.20) and Analysis of moment structure (AMOS v.20) were used.

Content Validity

The framed questionnaire was measured using content validity to measure the contents of a factor (Churchill, 1979). For this purpose, comprehensive literature review and interview with

academicians and practitioners were conducted. These items were reviewed by two academicians and three practitioners through structure interview and asked to observe on the suitability of the factors. Based on their feedback, ambiguous and redundant items were modified.

Reliability, Convergent and Confirmatory Factor Analysis

Reliability of the scale is used to test the internal consistency of the questions. From Table 1 the reliability of scale has exceeded the standard value of cronbach's alpha (0.7) (Nunnally, 1978) and for composite reliability (CR) except retailer disengagement (0.523) all variables are above the standard value of 0.6 (Bagozzi & Yi, 1988). All items are significant ($p < 0.01$) and the standard and average loadings are above threshold value of 0.5 (Fornell & Larcker, 1981; Kline, 2016), hence satisfies convergent validity. From Table 1 the extracted average variance (AVE) is above the standard value of 0.5 for all variables (Fornell & Larcker, 1981). Thus, the reliability and validity of the scale are satisfied.

Table 1: Reliability and Convergent Validity of Model

Variables and Items		1	2	3	4	5	CFA	AVE	CR	CA
Unstructured Buying	UB1	0.752	0.568	0.868	0.526	0.523	0.711			
	UB2	0.523	0.251	0.681	0.541	0.514	0.582			
	UB3	0.632	0.632	0.636	0.852	0.569	0.856	0.771	0.621	0.825
	UB4	0.562	0.965	0.968	0.895	0.578	0.756			
	UB5	0.241	0.854	0.827	0.658	0.585	0.625			
Retailer Disengagement	MD1	0.253	0.265	0.668	0.695	0.658	0.698			
	MD2	0.235	0.958	0.915	0.582	0.562	0.695	0.756	0.523	0.856
	MD3	0.632	0.845	0.888	0.365	0.625	0.963			
	MD4	0.521	0.845	0.758	0.582	0.741	0.951			
Retailer Evaluation	MRE1	0.235	0.695	0.698	0.952	0.523	0.958			
	MRE2	0.256	0.584	0.811	0.854	0.852	0.863	0.851	0.658	0.821
	MRE3	0.236	0.685	0.688	0.854	0.952	0.841			
	MRE4	0.251	0.958	0.988	0.695	0.852	0.852			
Retailer Relationship Management	MRM1	0.362	0.854	0.818	0.589	0.625	0.856			
	MRM2	0.235	0.589	0.889	0.547	0.521	0.862	0.746	0.711	0.862
	MRM3	0.253	0.584	0.711	0.523	0.569	0.841			
	MRM4	0.251	0.658	0.688	0.521	0.521	0.869			
Strategic Sourcing	SS1	0.598	0.598	0.758	0.568	0.362	0.874			
	SS2	0.845	0.852	0.562	0.523	0.521	0.954	0.746	0.896	0.851
	SS3	0.963	0.625	0.668	0.521	0.596	0.974			
	SS4	0.589	0.425	0.868	0.569	0.528	0.922			

$\chi^2/df = 5.623$; GFI =.977; AGFI =.801; NFI =.956; IFI =.936; CFI =.911; and RMSEA =.0411.

Confirmatory factor analysis (CFA) was conducted to test the validity of the instrument. CFA was conducted on the model to assess multiple items' validity and drive relationship with dependent and independent variables in the questionnaire (Hafiz & Shaari, 2013). All CFA values were above 0.5 and variables achieved the standard value of goodness of fit index (GFI) = 0.977; Adjusted goodness of fit (AGFI) = 0.801; Normal fit index (NFI) = 0.956;

Incremental fit index (IFI) = 0.936; comparative fit index (CFI) = 0.911; and root mean square error (RMSEA) = 0.0411 (From Table 1). Hence all the 21 items are considered for SEM analysis.

Discriminant Validity

The correlation matrix to prove the discriminant validity are shown in Table 2. It is tested using the square root of extracted average variance (AVE) (Fornell & Larcker, 1981) and found that all the values are above the threshold value of 0.7 (Anderson & Gerbing, 1988). Skewness, kurtosis, linearity and multi collinearity were also checked and the model satisfies with significance.

Table 2: Validity check of model—Discriminant validity

	UB	MD	MRE	MRM	SS
UB	**0.752**				
MD	0.231	**0.811**			
MRE	0.256	0.136	**0.756**		
MRM	0.125	0.265	0.288	**0.789**	
SS	0.145	0.321	0.025	0.211	**0.741**

Note: Figures in bold indicate square root of extracted average variance (AVE) and the factors below the diagonal denote the variables correlation.

Structural Equation Modelling

After validity and reliability test, the model was tested through SEM. The indices of model fit were found to be satisfactory by using SEM. It was found that all variables achieved the standard value of $\chi2/df$ = 3.603, GFI = 0.998, AGFI = 0.911, IFI = 0.954, CFI = 0.922 and RMSEA = 0.082 hence the model found to be valid and reliable to measure the relationship among the variables. The modification indices did not show any further changes hence the path is simple and did not include any further variables between them.

Table: 3 Structural Equation Modelling

	Hypothesis		Standardized Path Coefficient	Robust t-value	Result
H1	Unstructured Buying	Strategic Sourcing	0.251	-5.623	Not Supported
H2	Retailer Evaluation	Strategic Sourcing	0.632**	4.523	Supported
H3	Retailer Evaluation	Retailer Relationship Management	0.635**	6.362	Supported
H4	Retailer Evaluation	Retailer Disengagement	0.695*	7.521	Supported
H5	Retailer Relationship Management	Strategic Sourcing	0.856**	5.236	Supported

$\chi2/df$ =3.603; GFI =0.998; AGFI =0.911; NFI =0.987; IFI =0.954; CFI =0.922; and RMSEA =0.082

Note: ** represent p value is less than .001, * represent p value is less than 0.01 and no star represent p value is less than 0.05.

The results of SEM presented in Table 3 indicate all variables have a positive relationship at a confidence level of 95% except the relationship between unstructured buying and strategic sourcing. The robust t-values from the Table 3 show that there is a significant relationship between the variables. It is also found that strategic sourcing for the procurement of materials by the retailer depends on variables retailer relationship management (β=0.856, p < 0.01), retailer evaluation (β= 0.632, p < 0.01), Unstructured buying (β= 0.251, p < 0.05). Likewise, retailer evaluation towards the procurement preference depends on strategic sourcing (β=0.632, p < 0.01), retailer relationship management (β= 0.635, p < 0.01), retailer disengagement (β= 0.695, P < 0.05).

FINDINGS AND DISCUSSION

This section presents the findings of the current study. It is found that model tested using confirmatory factor analysis was confirmed for all 21 items. The reliability test using Cronbach's alpha for the items are above the standard value of 0.7. Composite reliability for all variables (unstructured buying, retailer evaluation, retailer relationship management, strategic sourcing) except for retailer disengagement (0.523) is above the threshold value. Extracted average variance and discriminant validity for all variables are above the standard value.

From the study, out of five hypotheses, four hypotheses support the study. The path analysis, unstructured buying and strategic sourcing does not support the hypothesis (p > 0.05). It states that unstructured buying has a negative influence on strategic sourcing. The unstructured decision of buying a material leads to misunderstanding and conflict. For better procurement of materials, the decision and buying behaviour should be structured thus cost can be reduced (Bellini *et al.,* 2017; Suki, 2016). Improper buying behaviour leads to problems in the procurement of materials.

The path showing retailer evaluation and strategic sourcing have confirmed the analysis at 1% significance. Hence the retailer evaluation has a positive influence on strategic sourcing. The retailers have proper and adequate information about the materials to avoid misunderstanding. Information gathered by the retailers improves strategic sourcing and procurement (Patil & Chavan, 2017).

The path showing retailer evaluation has a positive influence on retailer relationship management at 1% significant level. The retailer distributing specialized products of construction materials have better knowledge about the product thereby, quality of products can be assured to the customer. Teamwork in supply chain leads to success. Patil & Chavan (2017) supported that success is assured in the teamwork of the retailers in distributing the products.

The retailer evaluation has a positive influence on retailer's disengagement at 5% significance level. A good relationship reduces conflict among the retailers. Better co-ordination among the members and right evaluation of retailers increases the profit share and reduces conflict in the industry (Yan, 2011). Conflicts among the suppliers, stakeholders and customers can be avoided to a large extent by better relationship with them (Patil & Chavan, 2017) by providing offers, discounts and an increase in the volume of products (Chandar, 2018). Proper discussion and communication regarding the purchase of construction materials

systematically, avoids conflict and misunderstanding among the business partners and retailers.

The path showing retailer relationship management and strategic sourcing have positive influence at 1% significant level. The findings of this study have agreed with the finding of Burke Jr (2005) that there is a positive relationship between retailer relationship and strategic sourcing. Major benefits of better supplier relationships are adequate quality and better performance (Segerstedt & Olofsson, 2010).

CONCLUSION AND RECOMMENDATIONS

The current study aims to identify the factors responsible for strategic sourcing among construction material retailers. The Indian construction industry has a positive association with the retail industry. The studies found that strategic sourcing of retailers depend on many factors such as retailer evaluation, retailer relationship management, retailer disengagement and, strategic sourcing. Based on the factors a conceptual framework was developed and tested. It was found that out of five, four hypotheses support the study. The factors, retailer relationship management, retailer disengagement, and retailer evaluation positively influence strategic sourcing whereas unstructured buying has a negative influence. The retailer evaluation has a positive influence on retailer relationship management and retailer disengagement. The retailers and construction companies should be provided proper education and training to use web portal to improve strategic sourcing as they play a crucial role in sourcing. Small and medium companies should encourage retailers to implement e-procurement.

Dynamic pricing and malpractices can be avoided to an extent if construction material retailers use web portals to sell their products in India. Strategic sourcing can be improved by using online procurement (e-procurement). E-procurement helps the contractor to track the status of ordered products, reduces the uncertainties and rapid procurement can be made within fraction of time. It also reduces time and cost of inventory with better quality and communication. E-procurement helps to keep a record. Speedy actions can be taken once the order has been placed but needs an approved supply base for the suppliers to receive orders and transactions builds relationship with buyer. Better results and decisions can be delivered if everyone works on the same data as a team in retail construction industry. The productivity of future retailing can be improved by using big data system. In recent years e-commerce has made significant growth in retailing and many retailers moved to online platforms.

The model created can be used to find the long-term relationship with the retailers and enhances the strategic sourcing practices in Indian construction sector is the major contribution. The companies can also use it for better organisational performance. This study is one of the contributions to strategic sourcing literature and also add value to supply chain. For academics, this model can be used for further studies in other sectors.

Limitations and Future Study

The main limitation found in the study was that it is confined to one state in India. Limited time was another constraint, and a few respondents were not willing to participate in the study. This study adopted quantitative methodology. In the future, mixed methodology with probability sampling methods can be employed. The study considered all type of construction

material retailers. In future, one specific construction material retailers can be chosen for the study. Future research could be done on this model for other sectors and in different states. The model contains only limited factors and in future moderating variables can be incorporated.

REFERENCES

Anderson, J.C., & Gerbing, D.W. (1988). Structural Equation Modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411–423. https://doi.org/10.1037/0033-2909.103.3.411.

Anderson, M.G., & Katz, P.B. (1998). Strategic sourcing. *International Journal of Logistics Management*, *9*(1), 1–13. Retrieved from http://cf.lcchina.org.cn/docbak/8/2/b/3848_4f5b02570982b.pdf.

Bagozzi, R., & Yi, Y. (1988). On the evaluation of Structural Equation Models. *Journal of the Academy of Marketing Sciences*, *16*, 74-94. http://dx.doi.org/10.1007/BF02723327.

Barraket, J. (2020). The role of intermediaries in social innovation: the case of social procurement in Australia. *Journal of Social Entrepreneurship*, *11*(2), 194-214. https://doi.org/10.1080/19420676.2019.1624272.

Basu, C. (n.d.). *Importance of Strategic Sourcing Skills*. Chron Newsletters. Available from https://smallbusiness.chron.com/importance-strategic-sourcing-skills-38123.html.

Bellini, S., Cardinali, M.G., & Grandi, B. (2017). A structural equation model of impulse buying behaviour in grocery retailing. *Journal of Retailing and Consumer Services*, *36*, 164-171. https://doi.org/10.1016/j.jretconser.2017.02.001

Biazzin, C. (2019). The Role of Strategic Sourcing in Global Supply Chain Competitiveness. In *Managing Operations Throughout Global Supply Chains* (pp. 159-180). IGI Global. https://doi.org/10.4018/978-1-5225-8157-4.ch008

Bowden, J.L.H., Gabbott, M., & Naumann, K. (2014). Service relationships and the customer disengagement – engagement conundrum. *Journal of Marketing Management*, *31*, 774–806. https://doi.org/10.1080/0267257x.2014.983143.

Burke, G.J. (2005). Sourcing strategies in a supply chain. *Doctoral dissertation*, University of Florida.

Chandar, A., (2018). *Will e-commerce sites for construction material work in India*. Quora. Retrieved from https://www.quora.com/Will-e-commerce-sites-for-construction-material-work-in-India.

Chatterjee, K., Zavadskas, E.K., Tamosaitiene, J., Adhikary, K., & Kar, S. (2018). A hybrid MCDM technique for risk management in construction projects. *Symmetry*, *10*(2), 46. https://doi.org/10.3390/sym10020046

Chinda, T. (2020). Factors affecting construction costs in Thailand: A Structural Equation Modelling approach. *International Journal of Construction Supply Chain Management, 10*(3), 115-140. https://doi.org/10.14424/ijcscm100320-115-140.

ChiPS. (2019). Chhattisgarh Infotech Promotion Society (ChiPS). Retrieved from http://www.chips.gov.in/projects/eprocurement,21Mar2019

Churchill, G.A., (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Studies, 16*, 64-73. http://www.jstor.org/stable/3150876

Collins, C.J. (2021). Expanding the resource-based view model of strategic human resource management. *The International Journal of Human Resource Management*, *32*(2), 331-358. https://doi.org/10.1080/09585192.2019.1711442.

eNotes. (2021). *Why do suppliers of goods and services still rely on the services of middlemen*. e-Notes. Retrieved from https://www.enotes.com/homework-help/why-suppliers-goods-services-rely-middlemen-733204.

Forkmann, S., Henneberg, S.C., Naude, P., & Mitrega, M. (2016). Supplier relationship management capability: A qualification and extension. *Industrial Marketing Management*, *57*, 185-200. https://doi.org/10.1016/j.indmarman.2016.02.003.

Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39. https://doi.org/10.2307/3151312

Ghadimi, P., Toosi, F.G., & Heavey, C. (2018). A multi-agent systems approach for sustainable supplier selection and order allocation in a partnership supply chain. *European Journal of Operational Research,* 269(1), 286-301. https://doi.org/10.1016/j.ejor.2017.07.014

Grynaviski, E. (2018). America's Middlemen: Power at the Edge of Empire. Cambridge University Press. https://doi.org/10.1017/9781316676950.

Hafiz, B., & Shaari, J.A.N. (2013). Confirmatory factor analysis (CFA) of first order factor measurement model-ICT empowerment in Nigeria. *International Journal of Business Management and Administration*. *2*(5), 81-88. Retrieved from http://academeresearchjournals.org/journal/ijbma

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural Equation Modelling. Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(1), 53-60. Available from https://arrow.dit.ie/cgi/viewcontent.cgi?referer=https://scholar.google.co.in/&httpsredir=1&article=1001&context=buschmanart.

Hsu, C.C., Tan, K.C., & Zailani, S.H.M. (2016). Strategic orientations, sustainable supply chain initiatives, and reverse logistics. *International Journal of Operations & Production Management*, *36*(1), 86–110. https://doi.org/10.1108/ijopm-06-2014-0252.

IBEF. (2018). India Brand Equity Foundation IBEF. On Indian Real Estate Industry, updated on December 2018. Retrieved from https://www.ibef.org/industry/real-estate-india.aspx.

INAM Pro + (2017). Ministry of Road transport and Highways. Retrieved (30/3/2020), from https://www.inampro.nic.in/

Jing, X., & Xie, J. (2011). Group buying: A new mechanism for selling through social interactions. *Management Science*, *57*(8), 1354–1372. https://doi.org/10.1287/mnsc.1110.1366

Jones, K. (2017). *2018 Construction Industry Economic Outlook*. Construct connect. Updated on November 30, 2017. Available from https://www.constructconnect.com/blog/construction-news/2018-construction-industry-economic-outlook/.

Joseph-Williams, N., Lloyd, A., Edwards, A., Stobbart, L., Tomson, D., Macphail, S., & Thomson, R. (2017). Implementing shared decision making in the NHS: Lessons from the MAGIC programme. *BMJ, 357*, j1744. https://doi.org/10.1136/bmj.j1744

Kabra, G., Ramesh, A., & Arshinder, K. (2015). Identification and prioritization of coordination barriers in humanitarian supply chain management. *International Journal of Disaster Risk Reduction*, *13*, 128-138. https://doi.org/10.1016/j.ijdrr.2015.01.011.

Kavale, S., & Olendo, J.A. (2016). Effects of Supplier Relationship Management on Supply Chain Performance at Bamburi Cement Mombasa, Kenya. *The International Journal of Business & Management*, *4*(7), 436-452. Retrieved from https://www.researchgate.net/publication/313468674.

Kim, M., & Chai, S. (2017). The impact of supplier innovativeness, information sharing and strategic sourcing on improving supply chain agility: Global supply chain perspective. *International Journal of Production Economics*, *187*, 42-52. https://doi.org/10.1016/j.ijpe.2017.02.007

Kline, R.B. (2016). Methodology in the Social Sciences. Principles and Practice of Structural Equation Modelling (4th ed). New York, NY, US: Guilford Press. Retrieved from https://psycnet.apa.org/record/2015-56948-000.

Kwofie, T.E., Aigbavboa, C.O. and Matsane, Z.S-S. (2019). Key drivers of effective collaborative working in construction supply chain in South Africa. *International Journal of Construction Supply Chain Management, 9*(2), 81-93. https://doi.org/10.14424/ijcscm902019-81-93

Leinonen. O. (2017). *Strategic &* Global Sourcing Case Company X, Sourcing Small Home Electronics from China. Bachelor's Thesis in International Business. Lahti University of Applied Sciences. Retrieved from: https://www.theseus.fi/bitstream/handle/10024/130190/Leinonen_Oona.pdf?sequence=2&isAllowed=y

Moktadir, M.A., Ali, S.M., Rajesh, R., & Paul, S.K. (2018). Modeling the interrelationships among barriers to sustainable supply chain management in leather industry. *Journal of Cleaner Production*, *181*, 631-651. https://doi.org/10.1016/j.jclepro.2018.01.245

Muhammad, B.A., Adamu, T., & Ladi, B.D. (2015). Appraisal of Construction Project Procurement Policies in Nigeria. *American Journal of Engineering Research*. 4(3), 19-24. Retrieved from e-ISSN : 2320-0847 p-ISSN : 2320-0936

Mugurusi, G., & De Boer, L. (2019). Are you receiving me? A viable system model (VSM) analysis of purchasing coordination in a firm engaged in offshoring of manufacturing activities. *Systemic Practice and Action Research*, *32*(3), 239-272. https://doi.org/10.1007/s11213-019-09483-y

Mweru, M.C., & Maina, T.M. (2016). Features of resource-based view theory: An effective strategy in outsourcing. *International Journal of Management and Commerce Innovations*, *3*(2), 215-218 http://repository.mut.ac.ke:8080/xmlui/bitstream/handle/123456789/165/Features%20of%20Resource-2403.pdf?sequence=1&isAllowed=y.

Nair, A., Jayaram, J., & Das, A. (2015). Strategic purchasing participation, supplier selection, supplier evaluation and purchasing performance. *International Journal of Production Research*, *53*(20), 6263-6278. https://doi.org/10.1080/00207543.2015.1047983.

Neale, R., & Birst., (2017). Making retail pay: what is the future for retail construction, analytics and development? Global construction. Updated on June 5, 2017. Retrieved from https://www.constructionglobal.com/facilities-management/making-retail-pay-what-future-retail-construction-analytics-and-development.

Nudurupati, S.S., Bhattacharya, A., Lascelles, D., & Caton, N. (2015). Strategic sourcing with multi-stakeholders through value co-creation: An evidence from global health care company. *International Journal of Production Economics*, 166, 248-257. https://doi.org/10.1016/j.ijpe.2015.01.008.

Nunnally, J.C. (1978). Psychometric Theory (2nd ed). New York: McGraw-Hill. Retrieved from https://www.scirp.org/(S(czeh2tfqyw2orz553k1w0r45))/reference/ReferencesPapers.aspx?ReferenceID=354354.

Nyoni, T., & Bonga, W.G. (2017). Towards factors affecting delays in construction projects: A case of Zimbabwe. *Dynamic Research Journals' Journal of Economics and Finance (DRJ-JEF)*, *2*(1), 12-28. https://ssrn.com/abstract=2908932.

Olsson, R., Gadde, L.E., & Hulthén, K. (2013). The changing role of middlemen- Strategic responses to distribution dynamics. *Industrial Marketing Management*, *42*(7), 1131–1140. https://doi.org/10.1016/j.indmarman.2013.06.006

Patil, S., & Chavan, C.R. (2017). Role of strategic sourcing for supply chain efficiency and responsiveness in organized retail sector. *International Journal of Interdisciplinary and Multidisciplinary Studies*, *4*(3), 312-319. Available from http://www.ijims.com.

Sarode, A.S., & Bhangale, P.P. (2020). Comparison of Material Procurement Methods of a Construction Projects-Case Study, *International Research Journal of Engineering and Technology*, *7*(6), 4947-4951. https://www.irjet.net/archives/V7/i6/IRJET-V7I6929.pdf.

Satir, A., & Sislian, E. (2000). Strategic sourcing: A framework and a case study. *Journal of Supply Chain Management*, *36*, 4-11. https://doi.org/10.1111/j.1745-493X.2000.tb00246.x

Segerstedt, A., & Olofsson, T. (2010). Supply chains in the construction industry. *Supply Chain Management, 15*(5), 347-353. https://doi.org/10.1108/13598541011068260

Shrivastava, A., & Lanjewar, U. (2011). Behavioural business intelligence framework based on online buying behaviour in Indian context: A knowledge management approach. *International Journal of Computer Technology Application. 2*(6), 3066-3078. https://pdfs.semanticscholar.org/548c/e43a33088365b2a10e65acef3f47a24ec93a.pdf.

Singh, R. (2014). Assessment of the impact of distribution channel conflict on channel efficiency - Few improvised conceptual models for various conflict resolution strategies. *Proceedings of the 2007 Academy of Marketing Science (AMS) Annual Conference*, 78–78. https://doi.org/10.1007/978-3-319-11806-2_39

Solberg, C.A. (2006). Relational drivers, controls and relationship quality in exporter–foreign middleman relations. *Advances in International Marketing*, *16,* 81–105. https://doi.org/10.1016/s1474-7979(05)16004-9

Subramani, T. & Prabhu, A. (2018). Material procurement in construction industry: Problems and solutions. *International Journal of Engineering & Technology, 7*(1), 31-35. https://doi.org/10.14419/ijet.v7i3.10.15624.

Suki, N.M. (2016). Consumer environmental concern and green product purchase in Malaysia: structural effects of consumption values. *Journal of Cleaner Production,* 132, 204-214. *https://doi.org/10.1016/j.jclepro.2015.09.087*

Tamilia, R.D. (2016). History of Channels of Distribution (pp. 173-202). London: Routledge. *https://doi.org/10.4324/9781315882857-10.*

Tsiroyiannis, N. (2015). Top five issues facing retail supply chains. Guest Editorial, *Sourcing Journal*. Retrieved from https://sourcingjournal.com/topics/business-news/top-five-issues-facing-retail-supply-chains-cbx-29423/.

Verhoef, P.C., Kannan, P.K., & Inman, J.J. (2015). From multi-channel retailing to omni-channel retailing. *Journal of Retailing*, *91*(2), 174–181. https://doi.org/10.1016/j.jretai.2015.02.005.

Waller, M., Johnson, M.E., & Davis, T. (1999). Vendor-managed inventory in the retail supply chain. *Journal of business logistics*, 20, 183-204. Retrieved from https://s3.amazonaws.com/academia.edu.documents/35303753.

Yan, R. (2011). Managing channel coordination in a multi-channel manufacturer–retailer supply chain. *Industrial Marketing Management,* 40(4), 636–642. https://doi.org/10.1016/j.indmarman.2010.12.019.

Yeo, V.C.S., Goh, S.K., & Rezaei, S. (2017). Consumer experiences, attitude and behavioural intention toward online food delivery (OFD) services. *Journal of Retailing and Consumer Services*, *35*, 150–162. https://doi.org/10.1016/j.jretconser.2016.12.013.