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SUSTAINABILITY IN RETAIL BUILDINGS: A CASE STUDY OF SHOPPING MALLS IN LAGOS STATE

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Abstract

This study investigates with empirical data, the influence of supply chain management practices on building development projects undertaken by estate firms in Lagos State. Structured questionnaires were administered to principal officers of the 200 firms of estate surveying and valuation in the state while 136 were returned completed constituting 68.0% rate of response. Uni-variate analysis was performed to present the profile of the respondents while further analysis carried out with correlation regression analysis. Pearson correlation coefficient was used to establish the relationship among the aspects of SCM practices and efficiency of the firms while linear regression analysis was used to investigate the strength of the relationships. Results revealed that the p-value of the independent variables are all less than 0.05, signifying that these variables are all significant to SCM practices, hence the efficiency of the firms. Moreover, the correlation coefficient indicates a varying degree of positive and direct relationship between the SCM aspects and productivity. The results of the regression analysis showed among others that although the six integral components of the SCM practices are all significant, only the primary supply chain and human resource supply chain currently have the highest contributory capacity (61.8% and 54.4% respectively) to the firms' productivity while the ICT, finance and payment, mutual trust among stakeholders each had less or weak impact on the firms' productivity. The study concluded by suggesting that estate firms strengthen these aspects of the firms' SCM practices to improve productivity.

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1.0 INTRODUCTION

Research in supply chain management has gained attention in different fields in recent times, most especially in management science. The concept according to Kanchana and Sneha, (2018) was described as a web of corporate entities operating in the upstream and downstream sectors and engage in different tasks and activities that culminate in value-added services and products for the user. In the building industry, supply chain describes the interface among participants, that is, the client, professionals, contractors, suppliers, firms and consumers in a bid to deliver development projects in the most efficient manner. Thus the construction supply chain management (CSCM) is the efficient and effective management strategy engaged to improve the performance of the industry with respect to material, expertise, capital and equipment procurement and deployment. Due to the convoluted nature of construction projects and the multi-disciplinary perception of the concept, supply chain management has been evolving, while the past and current experiences continue to play major role in understanding the concept. The construction industry is a crucial economic sector in any nation that not just contributes, but also symbolizes the level of economic growth of a country. It is intricately connected with other sectors of the economy and provides job for all categories of labour. However, the industry is confronted with diverse challenges that have significantly impaired productivity of the sector.

Supply chain management practices was initially engaged in the manufacturing sector for managing production processes and to improve quality, save time and increase profit (Wisner, Leong and Tan, 2011). Although, manufacturing procedure differs significantly from building development process, Ojo, Mbohwa and Akinlabi (2014) concluded that supply chain management can be relevant in building construction. SCM was thus adopted to address the complexities of construction processes, delay in procurement, time and cost overruns and general lack-luster performance that characterize the industry. O'Brien (1998) averred that supply chain management was introduced in construction industry to reduce the fragmentation that plagues the industry and promote collaboration to achieve process effectiveness and efficiency. While studies on supply chain management have shown that there is increasing recognition of the influence of organization perception/approach on the success or failure of SCM implementation in construction industry (Hall 2001; Barratt 2004; Vrijhoef 2011; Alwerikat, 2017), little had been done to unravel in clear terms, the relationship between supply chain management practices and productivity recorded in building projects. Muya, Price and Thorpe (1999); Ojo et. al. (2014) identified three components of supply chain management in construction projects. These are:

- The primary supply chain which delivers the material used for the construction
- The support supply chain which provides equipment, expertise and materials that facilitate construction
- The human resource supply chain provide the labour force required for the construction

In addition to these, Lönngren, Rosenkranz, and Kolbe, (2010) listed devolved task management; information technology and mutual trust as important factors for efficient construction supply chain management practices. Corroborating the above, Crandall, Crandall and Chen, (2015) averred that planning effective supply chain management practices in construction industry

requires information flow, reliable finance and payments platform and functioning information and communication technology (ICT) infrastructure. Thus, the inability of majority of construction companies to achieve higher productivity and performances, despite the benefits that the construction supply chain management prompted the study. The study shed light on how supply chain management practices influenced or affected the processes and outcome of building construction projects undertaken by real estate firms in Lagos state.

II. LITERATURE REVIEW

Generally, the construction industry is often harshly critiqued for unsatisfactory output at almost every stage of its operation (Van den broeke, 2013). In Nigeria, a major problem of the industry is its inability to provide timely, durable and sustainable solution to the monumental infrastructure deficit that exists in the country. According to Adamu, Bioku and Kolawole (2015), most infrastructure projects have been affected by the ineptitude of the Nigerian construction industry. However, Adeagbo (2014) observed that despite the fact that the contribution of the sector to the country's Gross Domestic Product is improving, it still fall below the potential contribution of the sector. Corroborating this, the Nigeria Bureau of Statistics (2011) showed that the contribution of the construction sector to National GDP rose from 3.47 percent to 3.61 percent between 2008 and 2009. This slipped to 3.18 percent in the 3rd quarter of 2010 but rose steadily to 3.59 percent in the 3rd quarter of 2013, though still below the 5.0 percent projected for the sector within the same period. The construction industry is confronted with numerous challenges that have greatly affected the optimization of resources and output of the sector. Construction industry according to Yeo and Ning (2002) is bedeviled with budget overruns, delays, low profit margin and wastages. Cox, Ireland and Townsend (2006) classified construction issues into demand and supply related. Accordingly, demand related challenges include incorrect selection conditions, low demand, inappropriate risk allocation and changes in specifications while the supply concerns include discouraging public perception, ineffective development approach and substandard quality. Moreover, issues of highly segmented industry structure, antagonistic culture, lack of training and poor management have all contributed to the lack-luster performance of the industry (Al-Werikat, 2017), thereby necessitating the adoption of innovative tools such as the supply chain management to improve business processes and industry practices.

The importance of supply chain management (SCM) is enormous, particularly in the context of improving companies' performance (Butković, Kaurić and Mikulić 2016). The study further affirmed that a small but growing list of development companies have begun to adopt SCM policies to improve results in recent times. In Nigeria, apart from the relatively few numbers of construction companies that engage SCM practices, it has also been observed that the level of awareness of supply chain management in construction industry is quite low (Saka and Mudi, 2007), while insufficient investment in information and communication technology infrastructure constituted a significant barrier to productive adoption of SCM practices. According to Chan and Lee (2005), an effective SCM is an important strategy for reducing operating cost by eradicating all non-value added events in the movement of different kinds of materials from suppliers to end users. Aside the constraints of limited studies on SCM practices in Nigerian construction industry (Olaniyan et. al., 2015; Ojo et. al., 2014), research into the relationship between the SCM practices

and construction industry performances is scanty compared to other areas of applications of SCM in construction industry. Studies have examined diverse aspects of construction supply chain management such as industry preparedness for SCM adoption (Abah and Adamu, 2017), awareness and understanding of SCM concept (Amade, Akpan, Ubani and Amaeshi 2016; Aje, Aderibole and Ogunsina 2015), construction supply chain management characteristics, challenges and benefits (Al-Werikat, 2017), literature review on construction supply chain management (Butković, Kaurić and Mikulić 2016; Kanchana and Sneha, 2018), supply chain management and lean concept in construction (Boateng, 2019) as well as success factors for construction supply chain management (Lönngren, Rosenkranz, and Kolbe, 2010). In addition to this, the performance of supply chain management has also caught the attention of researchers such as Cai, Liu, Xiao and Liu (2009) and Thoo, Huam, Yusoff, Rasli and Abd Hamid (2011) who examined the concept to sustain competitive advantages and relationships with stakeholders, business processes and industry practices. Research efforts and findings on diverse areas of construction supply chain management are further expounded in the empirical studies in the following section.

Amukanga and Otuya (2021) carried out a study on the influence of information communication technology on supply chain management performance in Kenya. The study affirmed that the ICT plays a leading role among the various factors that drive supply chain management performance and equally assist corporate and construction organizations to maintain their competitive edge in the industry. Through critical review of literatures that are relevant to the study, different benefits of ICT to supply chain management were identified and this include cost reduction, improved customer satisfaction, reduced paper work and increase in overall employee and organization productivity. The study concluded that ICT enhances operational efficiency and innovation processes and greatly enhances SCM performances in an organization

Boateng (2019) studied supply chain management and lean concept in Ghanaian building construction industry. The study examined the benefits of supply chain management to Ghanaian building construction industry with the use of lean concept. Using survey and case study, data was gathered with structured questionnaires, interviews and direct observations of on-going projects. One sample t-test was used for data analysis. Respondents were mainly built environment professionals, Works and Physical Development Directorate, Kwame Nkrumah University of Science and Technology. Interview was conducted on ten construction professionals while eighty questionnaires were administered out of which sixty-three were returned. A 5-Point Likert scale was used to rank the identified sources of waste while one-sample t-test was used to compare the mean of sample data and also used to verify the statement of null hypothesis. The mean score and standard deviation were equally determined using the SPSS application. Results were presented in tables and explained. The study established amongst others that stakeholders have very cordial relationship among themselves and this was also corroborated by the interviewee. Result also confirmed that parties relate very well with respect to communication and information sharing. As regards the understanding and adoption of lean concept in construction, the study revealed that majority of respondents was not familiar with the concept but are willing to adopt it after educating them. It was concluded that proper identification of waste in construction project will enable the

contractors/builders to engage innovative waste reduction techniques and improve project productivity.

Abah and Adamu (2017) examined the preparedness of the Nigerian construction to adopt supply chain management. Questionnaires were administered to 385 registered construction firms (based on the register of the Federal Inland Revenue Service, 2016) out of which 200 were returned. Data was collected on the level of awareness, level of involvement, benefits and limitations to the adoption of supply chain management. Data obtained were analysed with basic descriptive statistics tools of frequency, percentage and mean score and presented in tables. The assessment model "VERDICT" was adopted to determine the level of preparation of the Nigerian construction companies for supply chain management practices and the results presented in graphical and text forms. The study found amongst others that, while the respondents (professionals) are ready to adopt and implement supply chain, the industry is yet attain full readiness for the adoption of supply chain management in the areas of management, people and technology. The study therefore concluded that necessary tools and equipment as well as adequate training to boost industry preparedness for full adoption of supply chain management.

Al-Werikat (2017) examined supply chain management in the Jordanian construction industry. The paper was basically a theoretical review of different aspects of supply chain management as it relates to construction in Jordan. Areas covered include the roles of supply chain management in construction, characteristics of construction chain management, construction industry problems as it affects supply chain management, benefits of supply chain management to construction as well as supply chain management integration. The study made use of information obtained from secondary sources such as journal materials, conference proceedings and published books and reports on supply chain management and related literatures. The author concluded that supply chain management enables construction industry to have more control on projects execution, earn more profits, reduce waste, cost and time. The study revealed amongst others that construction supply chain consists of many groups and faced with various challenges such as poor logistic planning, lack of partnership, resistance to change and communication issues. Long term partnership, transparency, good communication and quick adaptation are therefore suggested for effective integration of supply chain management with construction processes.

Moneke and Echeme (2016) carried out an appraisal of supply chain management in Nigerian construction industry. Questionnaires were administered to ninety-five industry practitioners in private and public sector while only sixty-five were returned and analyzed. Average mean score and relative importance index were used to analysis data on challenges facing construction stakeholders in the application of supply chain management and supply chain management practices in construction industry. The study observed that inadequate information technology infrastructure and ineffective communication topped the chart of challenges confronting effective engagement of supply chain management by construction stakeholders. This is followed by inadequate knowledge, multiple contracting and subcontracting and fear of loss of control.

Moreover, with respect to the practices, trust based relationship; information cum strong financial flow ranked first, followed by dedication to common goal and human supply chain. The study recommended that stakeholders embrace construction supply chain management and professional bodies have a duty to enlighten members on supply chain management through workshop, seminars and conferences. This if heeded will not only improve the construction project delivery and company performances in Imo state but all over Nigeria.

Chang, Tsai and Hsu (2013) studied the connection between e-procurement and supply chain performance in Taiwan. Focus was on the supply chain practices of case companies selected from different sectors of the Taiwan economy such as textiles, medicine and food, biochemistry, metal, environment, health, machinery, transportation, computers, electronics, steel etc. Interview was conducted with managers whilst empirical data were collected by means of questionnaires mailed to 700 firms randomly chosen. Only 108 of the questionnaires returned were found usable for subsequent analysis. Different hypothesis were also developed to investigate the correlation of e-procurement, partners relationship, information sharing among others. The dependent variables of the research construct were assessed on a seven-point Likert scale. Background information were analysed with frequency and presented in Tables and structural equation modeling was conducted using Amos 4.0 software. The model was thereafter estimated to test the hypothesis. Results of these analyses were summarily presented in different tables. Chi-square, correlation, Sample t-test and analysis of variance were some of the inferential statistical tools used for the analysis. The study concluded that supply chain integration has the highest standardized total effect on supply chain performance while partner relationships, information sharing, supply chain integration are processes through which e-procurement affect supply chain performance.

Evident from the multitude of previous studies reviewed above is the fact that no study had looked into the activities of real estate firms in building construction projects, an aspect in which the professionals are major player in the process and which the firms undertake numerous building construction projects for different clients within and outside the study area. It was also observed that not much is known about the adoption or engagement of supply chain management strategy in building project processes and how it had affected the efficiency of these firms in the areas of building construction and overall project management.

III RESEARCH METHODS

The study population was the 387 estate firms listed in the Lagos State Directory of the Nigeria Institution of Estate Surveyors and Valuers, 2021. Lagos state was selected to carry out the research because it has the highest concentration of estate firms in Nigeria and active building construction projects. The sample size of 200 was determined with the (Asika, 2004) formula:

$$Sample\ size\ or\ n = \frac{N}{1 + N(e)^2}$$

Where e = 0.05 and represents the margin of error accepted.

This actually gave 197 and was rounded up to 200.

Questionnaires were distributed based on the number of estate firms in different locations/zones across the state. Nevertheless, a total of 136 was returned, duly completed, constituting 68.0% rate of response. Pearson correlation coefficient was engaged to establish the relationship between the dependent variable which is the output of the estate firms and the independent variables which are the integral components of construction supply chain management. These include primary, support, human resources and success factors (decentralized task management, information & communication technology, mutual trust, finance and payment). Multiple regression analysis was used to investigate the strength of relationship between industry performance and the aspects of construction supply chain management practices, thereby identifying the variables that need be strengthened to improve the performance.

IV DATA PRESENTATION

A Response rate analysis

The total number of questionnaires administered and the number returned were presented in Table 1.

Table 1: Analysis of response

Questionnaire	Frequency	Percentage
Total No. Administered	200	100%
Total No. returned	136	68%
No. not returned	64	32%

Questionnaires were administered to respondents who are principal officers in the organization and are directly involved with development projects. The total number of questionnaires administered and retrieved is as presented in Table 1. The number of questionnaires duly completed and useful for the analysis was 136 which constituted 68.0% rate of response. The rate of response was achieved through persistent follow-up over a period of three months.

B. Respondent's Profile

The characteristics of the respondents was analysed and presented in Table 2.

Table 2: Characteristics of the respondents

Category	Variables	No.	Percentage

Qualification	HND	16	11.8%
	B.Sc	93	68.4%
	M.Sc	27	19.9%
	Total	136	100%
Background Profession	Architecture	21	15.4%
	Building Tech. Estate Mgt.	14	10.3%
	Qty Surveying	68	50.0%
	Total	33	24.3%
		136	100%
Work experience	< 5years	35	25.7%
	5 – 10years	52	38.2%
	11 – 15years	32	23.5%
	< 16years	17	12.5%
	Total	136	100%
Responsibility	Project manager	25	18.4%
	Property manager	45	33.1%
	HoD		
	Partner	47	34.6%
	Total	19	14.0%
		136	100%

Table 2 showed the academic qualification of respondents and it was seen that about 11.8% of the respondents have Higher National Diploma while the remaining have minimum of first degree. This affirms the credibility of the respondents' literacy and information supplied to issues in the questionnaire. In the same vein, the Table showed that professionals with Architecture, Building Technology and Quantity Surveying background have 50.0% of the total respondents while the remaining 50/0% were professionals with background in Estate Management. Moreover, 63.9% of respondents have up to 10 years' work experience and only 12.5% had above 15 years work experience. Thus, majority of the respondents have acquired sufficient work experience to provide

reliable response to questions in the questionnaires. Finally on the Table, the capacity of the respondents was unveiled. The trio of the project manager, property manager and head of department had the bigger chunk of 18.4%, 33.1% and 34.6% respectively while partners constituted 14.0% of the spread. The capacity of the respondents not only qualified them to be important partaker in project implementation but also put them in direct interface with other stakeholders such as contractors, suppliers and end users of development projects.

C. Relationship between Productivity and Supply Chain Management Practices in Estate Firms

The interaction of supply chain management practices of estate firms involved in the research was analysed with Pearson moment correlation and presented in Table 3. The strength of the relationship was further analysed with multiple regression analysis and presented in Table 4 and 5. Correlation is a statistical tool that measures the extent to which two or more variables fluctuate together. It depicts the linear dependence between two variables A and B, which could be positive, negative or nil, albeit at varying degree. Table 3 showed the relationship as indicated by the correlation coefficient as well as the level of confidence for each component.

Table 3: Correlation analysis of supply chain management practices

Supply Chain Management (SCM) Practices			
	N	Pearson Correlation	Sig. (2-tailed)
Primary supply chain	136	0.732	0.001
Support supply chain	136	0.646	0.002
Human resources supply chain	136	0.211	0.000
Task management	136	0.410	0.003
ICT infrastructure	136	0.570	0.015
Finance and payment	136	0.693	0.003
Mutual trust	136	0.186	0.000

Level of Significance at 5% ($p<0.05$)

The correlation analysis in the Table above showed that the primary supply chain has significant influence on SCM practices as indicated by the significance value of 0.001 while the correlation coefficient of 0.732 indicates a strong positive relationship. This implies that an improvement in primary supply chain will cause significant improvement to the effectiveness of supply chain management practices of real estate firms. Also, the Sig. value of 0.002 established that there actually exists a relationship between the support supply chain and supply chain management practices. The correlation coefficient of 0.646 shows that the relationship is relatively strong positive which means that enhancements in the support supply chain enhances the effectiveness of supply chain management practices of the organizations.

The correlation coefficient of 0.211 though positive, indicates a weak relationship between the human resources supply chain and supply chain management practices. The Sig. value of 0.000 affirms the fact that the human resources supply chain affects the effectiveness of the supply chain management practices of the firms. This suggests that an improvement in human resource supply chain will culminate in the advancement of the effectiveness of the supply chain management strategy. However, the weak relationship suggests a slight positive impact of human resource supply on the supply chain management practices of the firm. The correlation analysis in the Table further revealed that the supply chain management has a significant relationship with the task management approach in the company with a Sig. value of 0.003. A correlation coefficient of 0.410 indicates a below average positive relationship between the two variables. Hence, advancement in task management will definitely lead to improvement in the supply chain management strategy of the firm.

The Table also explained the relationship that exists between ICT infrastructures and supply chain management practices of construction companies. Whilst the Sig. value of 0.015 indicates the existence of a definite relationship, the correlation coefficient of 0.570 showed that the relationship is strong and positive. This implies that an improvement in the information and communication technology infrastructure of estate firms causes significant boost in the overall supply chain management practices of the firms. The results of the correlation analysis also showed that finance and payment has significant connection to the supply chain management practices. The Sig. value of 0.003 establishes this fact whilst the correlation coefficient 0f 0.693 indicates a strong positive relationship between finance and payment strategy and the supply chain management practices of the firms. This signifies that that an improvement in finance and payment approach will lead to significant boost in the supply chain management practices of the estate firms.

Finally, the Table showed the relationships between the supply chain management practices of estate firms and mutual trust among stakeholders. The Sig. value of 0.000 attested to the existence of relationship between the variables while the coefficient of correlation of 0.186 showed a rather weak positive relationship. By implication, the level of trust in the industry is low and

improvement in mutual trust among stakeholders will boost the supply chain management practices of the organizations. In sum, all aspects of supply chain management practices are not only related but exert different levels of positive impact on the productivity of the estate firms.

D. Regression Analysis

Table 4: Regression analysis

Coefficient[a]					
Models	Unstandardized Coefficients	Std. Error	Standardized Coefficients	T	Sig.
	Beta		Beta		
(Constant)	3.010	.326		4.110	.002
Primary SCM	.573	.114	.132	1.212	.015
Support SCM	.365	.140	.221	3.337	.005
Labour SCM	.490	.163	.316	3.217	.016
ICT Infrastructure	.389	.074	.099	1.082	.034
Finance and Payment	.201	.100	.248	2.538	.015
Mutual trust	.098	.042	.116	0.827	.012

a. Dependent Variable: Estate Firm Productivity

Table 5: Model Summary

Model	R	R Square	Adjusted. R Square	Std. Error of Estimate
1	.679[a]	.428	.388	.21345

a. Predictors: (Constant), Primary SCM, Support SCM, Labour SCM, ICT Infrastructure, Finance and Payment, Mutual trust

Multiple regression analysis was carried out to develop a model that shows the strength of the relationships between the dependent variable, i.e. firms productivity and the supply chain management practices. The result of the regression analysis is summarized in Table 4. However, as shown in Table 5, the model accounted for 38.8% of the Variance (Adjusted $R^2 = 0.388$). The analysis established the relevance of each aspect of the supply chain management practices as indicated by the level of significance (*p*-value) and the strength of relationship (level of impact/ contribution) with the organization efficiency as indicated by the regression coefficient. The performance model generated from the regression analysis is presented below:

$$Y = 3.010 + 0.573X_1 + 0.365X_2 + 0.490X_3 + 0.389X_4 + 0.201X_5 + 0.036X_6$$

Where

Y = Construction company performance

X_1 = Primary supply chain

X_2 = Support supply chain

X_3 = Human resources supply chain

X_4 = ICT infrastructure

X_5 = Finance and Payment

X_6 = Mutual trust

The primary supply chain (X_1) indicated a regression *(Beta)* coefficient of 0.573 and a *p*-value of 0.015, thus establishing the fact that the primary supply chain has significant relationship with the productivity of the firm. The beta coefficient further revealed that the primary supply chain has the highest positive impact among the independent variables. The X_2 which represents the support supply chain has a regression coefficient of 0.365 and a *p*-value of 0.005 and as such, strongly related to the output of the firms. The human resources (labour) supply chain, denoted as (X_3) has a regression coefficient of 0.490 and *p*-value of 0.016, which indicates significant relationship between the variable and the performance of estate firms. The beta coefficient also showed it has the second highest contribution among the SCM components. In the same vein, the ICT

infrastructure (ICT) denoted as (X_4) has a regression coefficient of 0.389 and *p*-value of 0.034. This also established a definite relationship and significant impact of the variable on the overall productivity of the firms. Likewise, the finance and payment practice of the firm represented by (X_5) has a regression coefficient of 0.201 and *p*-value of 0.015. The beta coefficient however that the independent variable is second to the lowest in terms of contribution, though the *p*-value which is less than 0.05 confirms the existence of definite relationship with performance of the firms. Finally, the mutual trust (X_6) indicated a regression coefficient of 0.098 and significance value of 0.012. This variable has the lowest positive impact as indicated by the regression coefficient.

V. DISCUSSION OF RESULTS

The SCM strategy and implementation affects the efficiency of estate firms. The supply chain management is a bundle of specific industry practices, otherwise categorized as the independent variables in the preceding analytical sections. Findings from the analysis therefore showed that all the independent variables are important as indicated by their respective level of significance (*p*-value) which is less than 0.05. This implied that the six components of supply chain management are relevant, having significant influence on productivity of the firms. The regression coefficient on the other hand indicates the extent of the influence. As shown by the model, the aspects of primary supply chain and human resources supply chain exhibited the greatest impact (57.3% and 49.0% respectively) on estate firms' productivity while others contributed below average to the overall firms' output. The regression coefficient of the ICT infrastructure (0.389) though below average, indicated a better performance compared to that of mutual trust (0.098), finance and payment (0.201) and support supply chain (0.365). Whilst all are yet to achieve optimal impact factor, it could be inferred that strengthening the primary and human resources supply chains would have significant boost on the productivity, whilst improving other independent variables (i.e. support supply chain, ICT infrastructure, finance and payment as well as mutual trust) would drastically improve the overall performance of the construction companies, thus corroborating the position of Thoo, et. al., (2011).

In the analysis, the relevance of the independent variables was established. The *p-value* of each of these components is less than 0.05, it follows that all the integral components of supply chain management are relevant to the effectiveness of the strategy and consequently, the overall efficiency of the organizations. The strength of the relationship is shown by the correlation coefficient of each component and this ranged between the strong positive correlation of 0.732 of the primary supply chain to a weak positive correlation of 0.186 of human resources supply chain. This finding agreed with Thoo, et. al., (2011) that upheld the hypotheses that there are significant positive relationship between suppliers, customers, information and communication technology, material supply chain as well as task management and overall performance of construction companies.

VI. CONCLUSION

The study recognized the potential benefits of effective engagement of supply chain management as a strategy to improve the processes and outputs of development projects undertaken by real estate firms. The study therefore perused the relationship and contribution of the components to the effectiveness of the practices and productivity of the estate firms. The integration of supply chain management practices into the operation of property development firms in Lagos State was examined. The results emphasized the importance of building a comprehensive SCM plan that address each component of the practice in order to ensure smooth and effective contribution of various parties and increase the success rate of the supply chain management in building industry. This corroborates the findings of Abah and Adamu (2017) who found and recommended that the aspects of task management, human resource supply chain as well as ICT infrastructure requires urgent attention for optimal performance. Also, Vrijhoef (2011) opined that engaging all parties in the supply chain management engenders construction cost effectiveness in the long-run. In addition, Al-Werikat (2017) emphasized the integration of organization processes involving all participants together with long term commitment and trust. Thus the successful engagement of construction supply chain management depends largely on the effectiveness of implementation of each aspect of the SCM practices. The study thus conclude by recommending immediate efforts towards improving on each integral component of the construction supply chain management practices to achieve the desired output of property development firms in the industry.

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