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Adoption of Circular Economy by Construction Industry SMEs: Organisational Growth Transition Study

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Abstract: A megatrend in the business environment poised at practically entrenching sustainability while ensuring global business competitiveness is viewed as a circular economy. At the firm level, circular economy practices distinguish firms for excellent product and service delivery, thus ensuring competitive advantage. The construction firm of the future will practice circular economy while adopting sustainable technology. This study is focused on assessing organisational growth transition among small and medium construction enterprises. A quantitative approach was adopted and structured questionnaires were administered among SME construction firms. The findings reveal the critical factors affecting organisational growth and transition in achieving a circular economy include availability of logistics infrastructure and firm's market share, among others. Factor analysis indicated PCA extractions showing the component's rotation indicating four structure components in the variables. The study named the four clusters required for achieving organisational growth transition as: firm positioning for competitive advantage, personnel management, service delivery and government policy and support. The study provides a foundation for other organisational growth transition studies stemming from circular economy adoption among construction industry SMEs.

Keywords: circular economy; competitive advantage; construction firms; developing countries; organisational growth transition; SMEs

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1. Introduction

The global human population exceeded 8 billion in 2022 with half of the global population constituting urban population [1]. With this knowledge, there is an urgent need for a planned increase in affordable housing in urban areas. The Architecture, Engineering and Construction (AEC) industry is the world's largest consumer of raw [2], and it is currently experiencing rising costs. With the rising demand for affordable housing amidst depleting raw materials, there is a need for small, medium and enterprise (SME) construction firms involved in the provision of housing to develop, adopt and deploy ingenious circular economy approaches to ensure sustainable construction and organisational growth transitions as an incentive to adopting circular economy principles in construction processes. The creativity which flows through a circular economy provides a basis for sustainable construction among SMEs. Through creative reuse and recycling of construction waste, the circular economy etches towards sustainable construction. Further, deploying circular economy in transforming the massive municipal waste generated in urban centres to useful construction materials can possibly ease construction costs.

The construction industry is responsible for the functionality of the entire lifecycle of buildings. [3] buttressed that the construction industry is responsible for constructing or adapting buildings to the changing needs of building users while ensuring the sustainability of construction materials. The reality of diminishing resources, therefore, places a demand

on the construction industry to engage in responsible sourcing of construction materials to construct and maintain buildings through their life cycle with sustainable practices. The circular economy provides an avenue to responsibly source construction materials and achieve sustainable building through their life cycle.

The majority of construction industry actors in Africa operate as SMEs. The SME construction firms are largely responsible for the majority of developments in the housing, infrastructural and industrial sectors. The large size of European SMEs, being over 99% of European firms, is a precursor to the importance of assessing SMEs adoption of CE [4]. Hence, most of the issues around EU transition are focused on SMEs as detailed in EU directives and recommendations by the European Commission [4–12]). The practices of SME construction firms cannot be relegated to the background because their sheer size in number and cumulative impact affects the sustainability of the construction industry relative to large construction firms' practices of circular economy. There is a paucity of research on business practices of circular economy [13,14], particularly relating to SME construction firms in developing countries. This paper aims to provide insight into the organisational adoption of circular economy. The study objectives are to explore and identify the critical factors necessary to achieve organisational growth transition among SME construction firms specifically adopting a circular economy in developing economies.

2. Circular Economy

The concept of circular economy was initially introduced by British environmental economists David W. Pearce and Kerry R. Turner in 1989 [15]. Prior to the introduction of circular economy, the linear economy model held sway with high consumption of non-renewable resources and high wastage or by-products of production. The linear economy is unsustainable [16] and does not bear in mind the demands of the future. Circular economy ensures efficient [17] and responsible use of resources.

CE has been described as a system aimed at eliminating waste and pollution while reducing the use of resources [18]. This definition of CE is focused on the negatives that CE removes from the system. CE is defined as a development strategy for a sustainable pattern aimed at resource efficiency [19]. Their viewpoint looks at the positives of CE towards resource efficiency. The transition towards CE using the 3R system of reduce, reuse and recycle influences the environment, the economy and society [20], however, there is need to pay particular attention on the impact of transition to CE on organisations' growth. The circulation of resources in the circular economy comes from a cycle of taking, transforming, using and returning. However, the circular economy process can only be deployed at the firm level and agglomerated to the industry and national levels. It becomes imperative to conduct a sectorial study of circular economy practices among firms in the construction industry to evaluate the ensuing growth transition.

Circular economy contributes to the economic growth of nations, measurable in terms of GDP (gross domestic product) and GNP (gross national product). By implication, CE provides opportunities for industries, businesses, governments (policymakers) and society in the form of cost savings, job creation, modernisation, renewal and innovations.

Europe will be able to save EUR 1.8 trillion by 2030 just by transitioning from a linear economy to a circular economy [21]. In contrast, keeping up with the current economic path may bring EUR 0.9 trillion less. A 7% increase in GDP growth and improvement in the employment rate will be possible if a circular economy is deployed. The transition to the circular economy will create enormous opportunities for transitioning to sustainable futures in a circular economy system.

2.1. SMEs Transition to Circular Economy in the Construction Industry

Organisations exist primarily to make profit while providing services and adding value to society. The adoption of CE can be meaningful to organisations only if they perceive that the transition to CE business models can visibly result in organisations' growth and proffer value-driven competitiveness. In addition to economic growth, the environmental

protection and social inclusion impact of CE at the macroeconomic level is imperative to decipher CE's unit, firm level and industry-level drivers.

European commission posits that a third of SMEs struggle with complex administrative and legal procedures further compounded by climate change, environmental issues and the dynamic nature of consumer preferences [12]. With less institutional support, this ratio could be much higher in the global south. The growth transition of construction SME's towards circular economy practices is a precursor to sustainable competitiveness and growth. The ability to adopt the principle of circularity will enable firms transit to a circular economy business model [22,23]. Construction SME's require the strategic infusion of circularity in their operations, processes and business models. This will require rethinking the value they offer clients while deploying circular business models.

A circular economy is beneficial for sustainable development [24]. However, the obstacles to adopting a circular economy among construction SME firms have not been largely explored. Macro-level support [25], environmental [26] and support initiatives [27] are required by SMEs to overcome the obstacles to adopting a circular economy.

The study by Levický el. al. [28] involving 169 micro-enterprises in Slovakia to assess the implementation of circular economy found that over 26% of SMEs do not implement any form of circular economy principles in their business process. However, over 46% of medium-sized enterprises carry out 3 to 5 activities associated with a circular economy, which are basic and with little or no cost implication to implement.

It was observed that SMEs in the AEC sector of Europe face several obstacles in transitioning from linear to circular economy [18]. However, efficient transition of AEC SMEs will require the infusion of CE principles into the design of construction products. The specification of CE-compliant materials in the AEC sector will enhance the transition to CE particularly for SMEs in the construction sector for reusing and regenerating materials. As a knowledge-intensive sector, it is essential to ensure knowledge action based on CE principles.

There were five drivers of CE transition among the construction SME of Colombus, including green teams, management commitment, identification of valuable materials, fertile ecosystem and CE Intermediaries [14]. The study further found that the adoption of CE among SME construction firms is dependent on the commitment of management, particularly their willingness to invest time and money in the implementation of CE practices. Although most studies focus on the transition to the implementation of CE among construction industry SMEs, there is a paucity of knowledge on the ensuing growth transition in the CE implementation process, which this study focuses on.

2.2. Benefits of Circular Economy to Construction Industry SMEs'

A report sponsored by SUN Institute argued that a circular economy could result in a reduction of primary material consumption by 32% by 2030 and 53% by 2050 [29] in comparison with the linear economy with today. It was corroborated that circular economy could increase the efficiency of primary resource consumption in Europe and the world [30], with efficiency in primary resource consumption resulting in a reduction of raw materials. Reduction of demand for primary raw materials in the construction industry will enhance resource efficiency and sustainability. Circular economy system increases product life [29] and reuse optimisation. Circular systems also encourage nutrients to re-enter the biosphere as safely as possible through decomposition and naturally undergoing the process of formulating new raw material for future cycles. Further, circular economy creates an additional utility from waste products by recycling and reusing such waste products as raw materials in various applications. Circular economy in the built environment has an estimated annual savings of primary resource inputs of 600 million in Europe by 2030 [31]. It is perceived that a circular economy will ultimately mitigate the importation of construction resources and improve the replenishment of natural resources.

2.3. Economic Benefits of Circular Economy among Construction SMEs

It has been deduced that the use of renewable materials could increase firms' profit [29]. The efficiency on the use of raw materials, the reduction of waste, and the recycling of used materials is capable of reducing costs of construction materials used by SME construction firms, thus, maximising profit. Circular economy will give companies new profit possibilities [32], increase competitive advantage, build resilience against several strategic challenges, enhance innovation and competitive advantage, provide additional revenue streams, initiate long-term contracts, ensure customer loyalty and feedback, increase multiple benefits of internal resource management, and create beneficial partnerships throughout the value chain. The adoption of a circular economy among construction SMEs could create additional economic value from using or reusing raw resources and other secondary products required in construction processes. The economic benefit of circular economy could significantly reduce construction costs while enhancing the opportunity of further economic benefits for construction firms.

2.4. Environmental Benefits of Circular Economy among Construction SME

Circular economy offers the possibility to improve the environment. Circular economy could help control water and air pollution, climate change [29], urbanisation, land use, affordable housing and net zero emission, particularly in the construction industry, where its carbon emission is significant and its impact on land and water bodies is significant. Circular economy promises to reduce carbon dioxide emissions by 48% by 2030 and by 83% by 2050 in Europe and reduce 7.4 million tonnes of greenhouse gas emissions by not allowing organic waste to permeate into landfills [29] as landfill areas can be used for future construction work. Further, circular economy will make replenishment with additional nutrients much more necessary. Organic waste can help regenerate the soil and reduce chemical infusion in the soil. It is estimated that different combinations of more ambitious targets for recycling municipal and packaging waste and reducing landfill could reduce greenhouse gas emissions of around a million tonnes of carbon dioxide [33]. Reduction in landfills will provide more land available for development and construction. A circular economy tends to mitigate landfill to 10% of waste resources [33], including the waste generate from construction activities. Therefore, a circular economy could reduce greenhouse gas emissions generated by the construction industry by keeping construction materials in the loop. Further, a circular economy will reduce the environmental impacts of mining construction raw materials while maintaining responsible sourcing of construction materials.

2.5. Social Benefits: Sustainable Consumer Behaviour and Job Opportunities

Social innovation associated with eco-design, recycling and other developments can result in more sustainable consumer behaviour [34] while contributing to improving human health and safety in the built environment. The European Commission revealed that, according to the European Commission's impact assessment on a legislative proposal on waste, the adoption of circular economy could create up to 178,000 new direct jobs by 2030 [6]. The construction industry is a huge employer of labour. Where circular economy principles are deployed, the construction industry will create more decent job that could result in livelihood enhancement. The development of circular value chains might have significantly greater potential for social sustainability [31]. The European Commission argued that estimates for the United Kingdom suggested that around 500,000 jobs could be created in a circular economy [6]. It has been deduced that the development of circular economy is an important measure to promote industrialisation [30]. Deploying of circular economy into the construction process will solve environment problems resulting from waste generation. With an increase in the world's population and an increase in the demand for affordable housing, circular economy practices among construction SMEs could reduce the negative environmental pressure on our society today.

3. Research Methodology

This study was embarked upon to unearth the impact of circular economy on organisations' growth transition among SMEs in the construction industry. Survey design was adopted as a quantitative approach was used; this informed the adoption of the structured questionnaire survey. The structured questionnaire used closed-ended questions tailored to solicit responses on growth transition patterns of construction industry SME's. The study population are construction professionals working with different SME organisations in the Nigerian construction industry. SME construction firms in Nigeria are diversified, numerous and highly competitive. They constitute a large number of actors in the construction industry. The study adopted random sampling and a snowball sampling approach to achieve data collection among the study population to achieve broader coverage. A hundred and one data were collected over a period of July 2021 to November 2022 d in order to gather adequate data, and all were vetted for suitability for analysis. Using Cronbach's alpha, the reliability of the research instrument was determined. A value of 0.953 was achieved, confirming the reliability of the research instrument for the study (Figure 1).

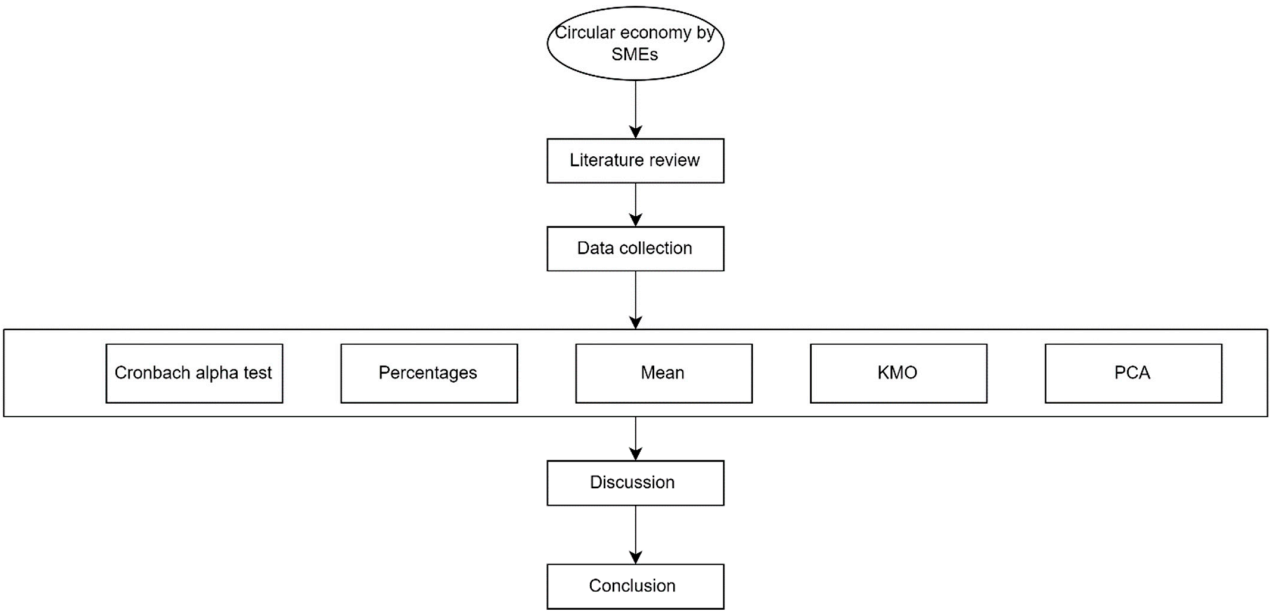

Figure 1. Method flowchart.

3.1. Respondents information

The respondents for this study were drawn from diverse professions and experience levels in the industry. Table 1 presents the respondents' background information; the results reveal that the respondents of the study are mainly Quantity surveyors (38.3%), followed by Engineers (21.30%). Most of the respondents are B.Sc. holders (66%), followed by Higher national degree (HND) holders and M.Sc. holders (13.8%). 38.30% of respondents have between 1-5years of experience, 26.6% possess 6-10years of experience, while 19.10% have 16-20 years of experience. It is worth mentioning that respondents are members of different professional bodies in the Nigerian construction industry.

Table 1. Respondent demographic information.

Demographic Information		Frequency	%
Profession of respondent	Engineer	20	21.30%
	Urban and regional planner	3	3.20%
	Builder	13	13.80%
	Estate surveyor	7	7.40%
	Quantity surveyor	36	38.30%
	Architect	12	12.80%
	Others	3	3.20%
Qualification	Ph.D.	3	3.20%
	M.Sc.	13	13.80%
	B.Sc/B.Tech/B.Eng.	62	66.00%
	HND	16	17.00%
	NIESV	8	8.50%
Professional membership	NIA	13	13.80%
	NIOB	13	13.80%
	NIQS	35	37.20%
	Others	25	26.60%
Years of experience	16–20	18	19.10%
	11–15	15	16.00%
	6–10 years	25	26.60%
	1–5 years	36	38.30%

This result shows that respondents possess suitable educational background, professional membership, years of experience, and a good mix of professional expertise in the various fields represented by professionals in the construction industry. Thus a heterogeneous respondent base is considered qualified for the study as they can provide the necessary information required for achieving the study objectives.

3.2. Impact of Circular Economy on the Sustainable Growth of SME Construction Firms

Table 2 revealed a list of critical factors for organisational growth and transition of construction SMEs to achieve a circular economy. Respondents were asked to rank the critical factors on a 5-point Likert scale. The result reveals that all the factors were loaded above 3.0, except stable political and social conditions. This might be attributed to the fact that this factor is worded in a positive form. The loading indicates the affirmation by respondents that the identified factors are significant [35]. These impacts were arranged according to their degree of significance using the mean. Availability of logistics infrastructure (m = 3.35) was ranked first, firm's market share (m = 3.33) ranked second, customs duties on imported capital goods and intermediary goods (m = 3.32) ranked third, clients' patronage of the firm (m = 3.31) ranked forth, standardisation of the firm's services (m = 3.27) ranked fifth, senior/junior staffs' relationship in firm (m = 3.26) ranked sixth, managing director/staffs' relationship i firm (m = 3.25) ranked seventh, nature of the area of specialisation in the construction industry (m = 3.25) ranked eighth, administrative and operational costs (m = 3.24) ranked ninth, and board of directors decision (m = 3.24) ranked tenth. The findings indicate the plethora of positive impact offered by circular economy to SMEs.

Furthermore, the study analysed the factors using the principal component extraction method. This was conducted to understand the structure of the correlation of the factors. Firstly, the study tested the factorability of the data through the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. According to Pallant [36], these two tests are required, and the KMO index is significant at 0.6 for good factor analysis, and the Bartlett's test of sphericity is significant at <0.05. The study achieved a KMO index of 0.886 and a Bartlett's test of sphericity significant at 0.000. Communalities (Table 3) for each factor were analysed to explore the amount of variance conducted, and it was observed that all the factors shared a level of variance with others as they all had values more than 0.3.

Table 2. Circular economy factors required for sustainable growth of SMEs construction firms.

Factors	Mean	Std. Deviation	Rank
Availability of logistics infrastructure	3.35	1.03	1st
Firm's market share	3.33	1.04	2nd
Customs duties on imported capital goods and intermediary goods	3.32	1.17	3rd
Clients' patronage of the firm	3.31	1.19	4th
Standardisation of the firm's services	3.27	1.05	5th
Senior/junior staffs' relationship in your firm	3.26	0.98	6th
Managing director/staffs' relationship in your firm	3.25	1.10	7th
Nature of the area of specialisation in the construction industry	3.25	1.10	8th
Administrative and operational costs	3.24	1.11	9th
Board of director decision	3.24	1.21	10th
Staff satisfaction with your firm laid down rule and regulation	3.23	1.02	11th
Years of existence of the firm	3.22	1.19	12th
Tax burdens, i.e., corporate taxes and transfer pricing taxes	3.19	1.06	13th
Competitive strengths of your firm in the market	3.19	1.22	14th
Insufficient cash flow necessary for business scale expansion	3.17	1.22	15th
Competition advantage of the firm	3.17	1.09	16th
Efficient use of other construction resources	3.15	1.17	17th
Level of competition in construction industry	3.15	1.28	18th
Firm's market penetration	3.15	0.99	19th
Firm's management expertise	3.13	1.16	20th
Level of technical know-how	3.13	1.38	21st
Staff propensity to resign	3.10	1.03	22nd
Availability of integrated research	3.05	1.28	23rd
Tax incentives given to the SME's construction firms	3.04	1.07	24th
Stable political and social conditions	2.95	1.11	25th

Table 3. Communalities of factors.

Communalities	Initial	Extraction
Level of competition in construction industry	1.000	0.765
Competition advantage of the firm	1.000	0.758
Clients' patronage of the firm	1.000	0.739
Administrative and operational costs	1.000	0.630
Customs duties on imported capital goods and intermediary goods	1.000	0.720
Availability of logistics infrastructure	1.000	0.536
Tax burdens, i.e., corporate taxes and transfer pricing taxes	1.000	0.624
Firm's market penetration	1.000	0.703
Insufficient cash flow necessary for business scale expansion	1.000	0.681
Firm's market share	1.000	0.612
Level of technical know-how	1.000	0.775
Availability of integrated research	1.000	0.655
Firm's management expertise	1.000	0.702
Standardisation of the firm's services	1.000	0.755
Efficient use of other construction resources	1.000	0.595
Stable political and social conditions	1.000	0.466
Tax incentives given to the SMEs construction firms	1.000	0.769
Years of existence of the firm	1.000	0.526
Competitive strengths of your firm in the market	1.000	0.727
Nature of the area of specialisation in the construction industry	1.000	0.707
Managing director/staffs' relationship in your firm	1.000	0.687
Senior/junior staffs' relationship in your firm	1.000	0.817
Board of directors decision	1.000	0.719
Staff satisfaction with your firm laid down rule and regulation	1.000	0.627
Staff propensity to resign	1.000	0.796

Extraction method: principal component analysis.

The Oblinim rotation was adopted for the PCA; Figure 2 presents the scree plot showing the steep slope and reveals the four components above 1.00 and others that were below 1.00 breaking out. The results reveal that the four components explain 68.364% of the identified variables for the study.

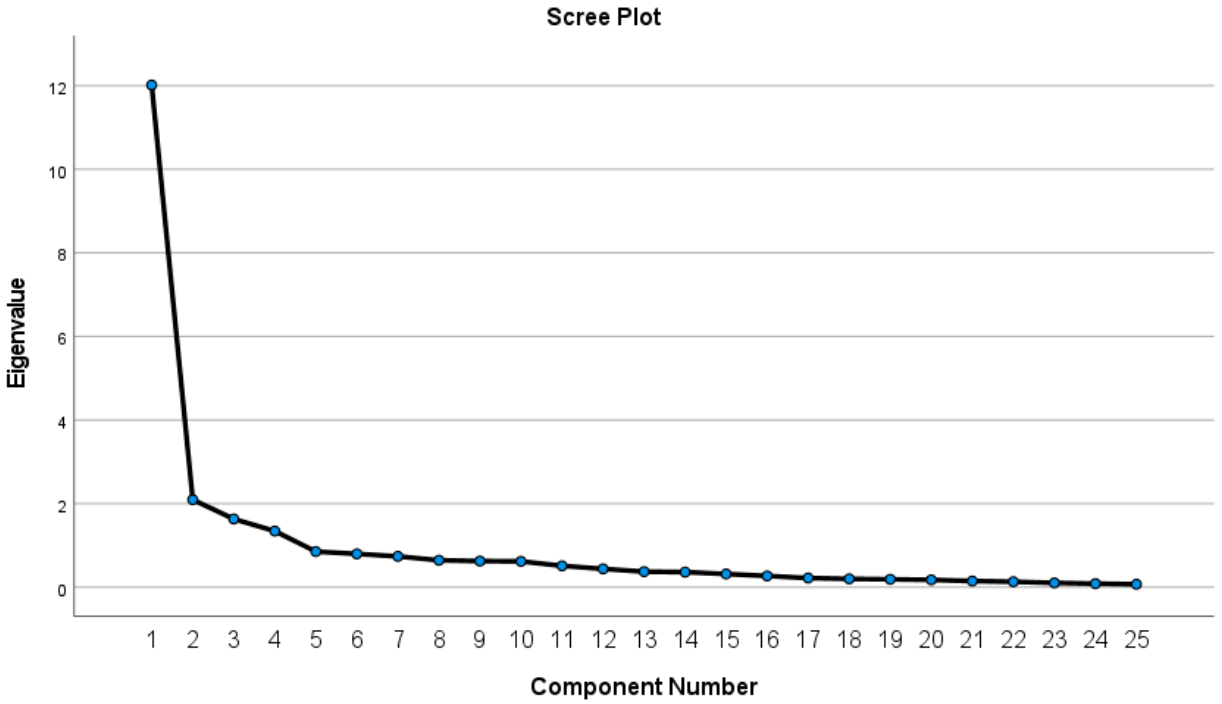

Figure 2. Scree plot for PCS extraction. Kaiser-Meyer-Olkin measure of sampling adequacy = 0.886; Bartlett's test of sphericity = 0.000.

Table 4 presents the factors and the component structure. It consists of the different clusters, components and the variance.

Table 4. Analysis of factors through PCA extraction.

Impacts	Component				
	1	2	3	4	% of Variance
Competition advantage of the firm	0.833				
Level of technical know-how	0.807				
Level of competition in construction industry	0.806				
Availability of integrated research	0.759				
Efficient use of other construction resources	0.758				48.061
Years of existence of the firm	0.686				
Nature of the area of specialisation in the construction industry	0.648				
Competitive strengths of your firm in the market	0.580				
Firm's management expertise	0.537				
Board of directors decision		0.763			
Staff propensity to resign		0.757			
Senior/junior staffs' relationship in your firm		0.720			8.386
Staff satisfaction with your firm laid down rule and regulation		0.693			
Managing director/staffs' relationship in your firm		0.572			
Tax incentives given to the SMEs construction firms			0.803		
Standardisation of the firm's services			0.531		6.536
Clients' patronage of the firm			0.522		
Customs duties on imported capital goods and intermediary goods				−0.937	
Insufficient cash flow necessary for business scale expansion				−0.799	
Tax burdens, i.e., corporate taxes and transfer pricing taxes				−0.725	
Firm's market share				−0.679	5.381
Administrative and operational costs				−0.667	
Firm's market penetration				−0.578	
Stable political and social conditions				−0.561	
Availability of logistics infrastructure				−0.560	

Extraction method: principal component analysis. Rotation method: Oblimin with kaiser normalisation. Rotation converged in 13 iterations.

4. Discussion

The results section presented the PCA analysis, among others. A critical study of the PCA extractions showing the components rotation reveals four structure components in the variables. These four components are termed clusters and are explained in the following sections. The four clusters were named appropriately based on the component factors.

4.1. Cluster One—Firm Positioning for Competitive Advantage

This cluster consists of the following factors: "competition advantage of the firm" (83.3%), "level of technical know-how" (80.7%), "level of competition in construction industry" (80.6%), "availability of integrated research" (75.9%), "efficient use of other construction resources" (75.8%), "years of existence of the firm" (68.6%), "nature of the area of specialisation in the construction industry" (64.8%), "competitive strengths of your firm in the market" (58%) and "firm's management expertise" (53.7%). This cluster is considered important according to Teece [37,38] as firms must be strategically positioned to achieve competitive advantage through sensing and seizing, among others. This is necessary to achieve dynamic capabilities required in the ever-changing world of business. Similarly, Aghimien et al. [39] explored this and identified the dynamic capabilities required for digitisation in the construction industry. Adopting digitisation and innovation in the construction industry is considered critical to the transformation of the construction industry [40]. Construction firms must be strategic and achieve the dynamic capabilities for a circular economy. In addition, this must be supported by acquiring the right skill and expertise for staff and management. There is also a need for proper allocation and efficient use of firms' resources to achieve the adoption of circular economy principles.

4.2. Cluster Two—Personnel Management

Five factors make this cluster, including: "board of directors decision" (76.3%), "staff propensity to resign" (75.7%), "senior/junior staffs' relationship in your firm" (72%), "staff satisfaction with your firm laid down rule and regulation" (69.3%) and "managing director/staffs' relationship in your firm" (57.2%). Ensuring a harmonious work environment is important for productivity. Beyond this, construction organisations are required to incorporate strategies to improve the work-life balance of employees [39,41,42]. Personnel management must not be ignored as it is a critical aspect of organisations transitioning to achieving the current technologies and innovations in the construction industry.

4.3. Cluster Three—Service Delivery

Three factors make up this cluster, including: "tax incentives given to the SMEs construction firms" (80.3%), "standardisation of the firm's services" (53.1%) and "clients' patronage of the firm" (52.2%). In implementing circular economy, there is the need to have a conducive business environment and a well-tailored service delivery process. SMEs require a well-standardised service tailored circular economy principles achievement and to deliver value to the client. The standardisation of organisational processes has been identified as a constraint to the adoption of emerging technologies and innovations in the construction industry [43]. In achieving the required transition, SMEs must pay more attention to value delivery and achieving client objectives. It is key to mention the government input through the provision of tax incentives to SMEs in the construction industry to assist in providing a conducive business environment to support circular economy adoption.

4.4. Cluster Four—Government Policy and Support

A total of eight variables are in this cluster: "customs duties on imported capital goods and intermediary goods" (93.7%), "insufficient cash flow necessary for business scale expansion" (79.9%), "tax burdens, i.e., corporate taxes and transfer pricing taxes" (72.5%), "firm's market share" (67.9%), "administrative and operational costs" (66.7%), "firm's market penetration" (57.8%), "stable political and social conditions" (56.1%) and "availability

of logistics infrastructure" (56%). Achieving the required transition by construction SMEs will not be possible without government support. Government policies on the sourcing of construction materials and its availability are considered critical; hence, construction SMEs must have a supportive business environment. Furthermore, providing a conducive political and social environment is considered critical because a hostile environment will greatly impact the efficiency and productivity of the construction industry.

4.5. Implication of Findings

The study findings reveal that achieving the required transition and implementing circular economy is possible by construction SMEs; however, they must be ready to go through some changes. These changes are both internal and external to the construction SMEs. The internal-external obstacles impeding the growth of circular economy in Africa is hotly debated [44]. For the internal changes required, construction SMEs must be flexible and forward looking. Additionally, there is a need to be strategic and achieve dynamic capabilities for a competitive advantage. This requires the management to be forward looking, be able to sense innovations and identify the required skills and expertise required. Lack of technical expertise and a skills shortage have been identified as critical barriers to achieving the adoption of technology and innovations [39,43,45]. This requires a strategic process and framework to acquire the skills and review the existing workflow and appropriate personnel management, among others. On the other hand, the external aspect involves the availability of a supportive business environment that ensures a conducive cost of doing business by SMEs.

5. Conclusions

The study focused on the adoption of circular economy by construction SMEs. The focus is, however, novel because it is based on identifying the required factors necessary to achieve growth transition by SMEs. The study identified and ranked the required factors for the sustainable growth of construction SMEs. Furthermore, the study identified that for construction SMEs to transition and achieve circular economy there are four classifications: (1) firm positioning for competitive advantage, (2) personnel management (3), service delivery and (4) government policy and support. These identified classifications are critical to achieving the required growth transitions by construction SMEs. These will ensure faster achievement of the transition required as these factors are both internal and external to SME construction firms. Synergy between the internal and external stakeholders to achieve circular economy in SMEs is inevitable. The findings offer insight into organisational growth transitioning by construction SMEs that deploy a circular economy. The perspective is novel, providing a fresh addition to the circular economy research. In addition, the study provides a foundation for future studies on organisational transition in achieving circular economy from developing countries.

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