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Resource fluidity and competitiveness of Aluminium manufacturing firms in Nigeria

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Abstract
This study examined the influence of resource fluidity on the competitiveness of aluminium manufacturing firms in Nigeria. The study review extant literature on the construct: resource fluidity, and the measures of competitiveness: product quality, delivery reliability. The study adopted the analytic expo facto survey design. The population of the study was consists of 56 managers and directors of the head offices of the seven (7) major aluminium manufacturing firms that has operational presence in the three geographic regional market: Western (Lagos), Northern (Abuja) and Eastern Market (Port Harcourt/Enugu). There was no sampling technique; the census approach was employed in the study while primary data was elicits from the 56 respondents using structured questionnaire. The study used descriptive and inferential statistics such as mean, standard deviation and regression techniques to analyze the response rate and test the research hypotheses with help of statistical package for social sciences. The study revealed a significant influence on the aluminium manufacturing firms in Nigeria. The findings of the study established that resource fluidity as a strategic tool has a strong influence on competitiveness. The study therefore, concluded that resource fluidity as strategic tool influences competiveness in the aluminium manufacturing firms in Nigeria. The study recommended that aluminium manufacturing firms in Nigeria should focus on resource fluidity as a strategic tool to improve firm competitive capacity in the local industry. Furthermore, corporate managers should strategically re-allocate organizations resources, both human capital; knowledge mobility and materials resources across appropriate units to improve firm competitiveness in the study area.

Keywords: Resource fluidity, Competitiveness: Product quality, Delivery reliability

Introduction
The recent increase in learn technologies in the 21st century has brought new challenges for firms, industries and countries coupled with the red sea competitive strategies of the corporate world, scholars has observed that it is no longer the fittest firm with long-term strategic plan that last longer, but firms with superior level of disruptive innovation in the industry (Bayo & Red-well, 2020) [9]. However, the success of any business organization is created at the individual firm's level and comes from the sophistication and flexibility of business activities and the environment where the firms are in operation (Porter, 2003; Solvell, 2015) [29]. Companies are the micro units where competition actually takes place and they form competitiveness for nations at an aggregate level (Cetindamar & Kilitcioglu, 2013) [12].

Competitiveness refers to the ability of a company to perform better than similar companies in terms of sales, profitability, quality, efficiency, among others (Lall, 2001 cited in Red-well & Hamilton, 2020) [25, 31]. Furthermore, competitiveness is the firm's capability to fulfill its dual purposes; meeting customer requirements at a profit. This capability is realized through offering tangible and intangible goods and services in the market which customers value higher than those offered by competitors. Thus, intellectual and knowledge based resources and capabilities are some of the basis of firm's competitiveness in present day markets (Prahalad & Hamel, 1990) [30]. The key to establish sustainable competitiveness takes a shift from business process to value creation and the use of strategic tools like resources fluidity and environmental sensitivity application to improve sales force and productivity (Akinbola & Adegbuyi, 2014) [4].

These shifts require a constant change in methods and practices of management (planning for a change), allocation of resources resource fluidity and the overall organizational behaviour which are considered as the agility enablers (Sajdak, 2015). However, Red-well and Hamilton (2020) [31] posits that the changing business environment has increase the practices, of dynamic capabilities, flexibility, agile practices, speed and adaptability in the strategic management literature and it has identify as

significant sources of competitiveness. Resource fluidity involves the internal capability to reconfigure business systems and redeploy resources speedily, supported businesses processes for operations and resource allocation, people management approaches, mechanisms and incentives for collaboration that make business models and activity system transformation quicker and easier (Doz & Kosonen, 2008) [17]. Therefore, the concept resource fluidity refers to the practices of flexible capital resource utilization and resource reallocation, as well as people and knowledge mobility in the organization at large.

The study of Doz & Kosonen (2010) [16] cited in Red-well & Hamilton (2020) [31] posits that business models become less rigid and open to modifications and reinvention with increasing resource fluidity given that resource such as financial resources, personnel, and other basic competencies are highly mobile within the firm, the firm gains greater flexibility in reorganizing itself or

redeploying its resources to support its new strategic agenda or to meet evolving market needs that may call for new product/service offerings, new customer/market segmentations, and/or alternative channels to reach customers. Scholars have studied resource fluidity in different perspectives and in different context using different methodology and construct in the strategic management literature. Rotich, & Okello (2019) [32] carried out a study to determine the effects of resource fluidity on agility among universities in Kenya. The results from the study showed that holding other resource fluidity variables constant, the odds for high agility category embracing mobility of people and knowledge, institutional job rotation, flexible budgeting, continuous change in changing environment and management embracing knowledge sharing' were 10.692 times more than those with low agility.

However, most firms in Nigeria have been slow in adapting to change due to lack of knowledge in agile practices. The rivalry between firms in the Nigerian aluminium manufacturing industry is very stiff as they compete for the small number of customers in the sector. They operate in a very intense competitive market trying very hard to outsmart each other to maintain a top position in the sector and also improve their financial performance and market share (Miano, 2010) [26]. Also, according to Red-well & Hamilton (2020) [31] posit that the quest for delivering high quality products and services, in the increasing global competition and the continuous changing market conditions have caused the rigid approach and long term strategic planning process of doing business to become almost obsolete, thereby forcing corporate managers and strategist to adapt and change to modern and agile techniques of surviving in the turbulent corporate world today. Therefore, having identified this gap in the strategic management and policy literature; this study aims to explore resource fluidity as a strategic tool for competitiveness in the aluminum manufacturing sector in Nigeria. Hence, study seek to determines the extent resource fluidity influence delivery reliability and how does resource fluidity influence product quality in the aluminum manufacturing sector, Nigeria?

Literature Review

As a deduction study, the theoretical foundation of resource fluidity and competitiveness was draw from existing social base line theories within the social science. Dynamic capability theory was adopted as a social base line theory to build the scientific enquiry of the social phenomenon. The dynamic capability theory describes how firm's ability to integrate, recombine and reconfigure its existing resources and capabilities to facilitate the competitive levels of firms in the study area. Teece, Pisano and Shuen (1997) [34] defined dynamic capability theory as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments and it examines how firms address or bring about changes in their turbulent business environment through reconfiguration of their firm-specific resources and competencies into new competencies (Teece, 2007) [35]. The theory explained the mechanism that links resources and product markets to competitive advantage and firm survival in competitive and turbulent business environments in several ways. The theory of dynamic capability is used in this study to draw up substantial requirements needed to build up resources re-integration and competitiveness.

Resource Fluidity

Resource fluidity means being able to flexibly reallocate and reconfigure available resources (5Ms) from one place to another as needed in the organizations subsystems and units (Doz & Kosonen, 2008) [17]. In other words resources fluidity is the ability of an organization to cooperate with customers and partners of its business network in quick and continuous reconfiguration of the mixture of capabilities to form an innovative movement with relative facility. This strategic fit can be met through organizational structures that enhance resources fluidity, governance that incentives alignment and controls for malfeasance as well as processes that astutely manage knowledge and integrate co-specialization assets (Teece, 2007) [35]. Agile oriented companies can reorganize and even reconfigure its resources to invest in immediate and maybe temporary opportunities in the market gain competitive edge (Bernardes and Hanna, 2009) [10].

The speed and cost of resource's redeployment are the traditional parameters used to select between strategic opportunities. Fluidizing resources can then allow a company to entertain more options. Obviously, all resources do not have the same level of fluidity. The ability to allocate and reallocate resources is fundamental to firms' initiatives toward new developments and offerings (Achtenhagen, Melin and Naldi, 2013) [2]. However, mobility and re-allocation of people improves agile practices, and according to Doz and Kosonen (2008) [17] it can be fostered by the following ways; it a means of job rotation; it provide an open job market to identify talents; providing visibility for individual career development potential and opportunities; considering moving teams instead of

just moving individuals because people tend to anchor their self-esteem to a professional community or a team; it also pay attention to fairness and track record in personnel evaluation because people do not want to take personal risks in terms of applying for a new job inside the same organization if they cannot be sure that they will be fairly and transparently evaluated; and having a pool of senior managers as corporate resources (Doz & Kosonen, 2008) [17].

Competitiveness

Competitiveness is the skill, technical or outstanding resource, that allows the organization to produce values and benefits to customers more than what is provided by their competitors, and confirms its difference from those of

competitors from the customers view who accept this difference and excellence, which will bring them more benefits and values that are superior to what competitors offer (Al-Salmi, 2011) [6]. The term competitiveness can be seen as the ability of a given firm to successfully outsmart its competitors in a given business environment in terms of cost and price minimization, quality products. Its concept development cannot be separated from (Porter, 1990) [29] researches that focus on the 5Cs: competition, competitive strategy, competitive advantage, competitiveness, cluster, and creating shared value in an industry (Red-well & Hamilton, 2020) [31].

However, firm level competitiveness could be achieve through the effective configuration and utilization of resources using firm-specific assets in order to deliver value that is perceived by customers as significant and superior to that of its competitors. The level of competitiveness is the source which strengthens the position of the organization, including the economic profits, and through its concession over competitors in the areas of product, price, cost, and the production processes (Betlis, 2010) [11]. Competitiveness is an abstract concept and is difficult for many firms to directly measure the construct. However, for the purpose of this study, firm competitiveness was measured with sales growth, product quality and delivery reliability as it was identified by (Ateke & Nwiepe, 2017) [7] and (Kavitha, Karthikeyan, & Devi, 2013) [21].

Delivery Reliability

Delivery reliability is the ability of the firm to effectively and rapidly respond to customer requirements on time, support and quality service to satisfy the needs and wants (Zhang, 2002 as cited in Red-well & Hamilton, 2020) [31]. Furthermore, delivery process takes care of a fluent material flow through manufacturing and a rapidly delivery to the customers. As levels of supply chain integration increased and inventory levels have been reduced, reliable, on-time deliveries have

become increasingly critical for success. Large inventories and production capacities were traditionally required to ensure on-time delivery. However, with advanced information systems, deregulation, agile manufacturing organizations with flexible equipment and tooling, and sophisticated delivery systems, integrated supply chains no longer need large, costly inventory buffers to respond to unexpected events and variations in demand.

Delivery flexibility deals with delivering products which are desired by the customer to the market as quickly as possible to outsmart their rivals competitors in the industry. The higher the flexibility, the better is the responsiveness of a competitive action is effective. More so, if the delivery process is highly flexible, it would continually meet the changing needs of customers and help customers to view the supply chain favorably (Beamon, 1999; Gunasekaran *et al*., 2001) [9]. The construct of delivery flexibility is operationalized in terms of ability of supply chain to change or deliver orders according to fluctuations in demands of customers (Das and Abdel-Malek, 2003; Neely *et al*., 1995; Sanchez & Perez, 2005; V. Kumar., Fantazy, U. Kumar & Boyle, 2006) [14, 27, 33, 24].

Product Quality

Kotler & Armstrong (2012) [23] described product as anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a want or need, while Aaker (1994) [1], quoted Ehsani (2015) [18] said that quality of product is the customer's perception of the overall quality or superiority of the product or service, with respect to its intended purpose, relative to alternatives. According to Lupiyoadi and Hamdani (2013) [26] product quality is the extent to which the characteristic or service meets its specifications. The consistency of the quality of a product or service can contribute to the competitiveness of a company reviewed from customer satisfaction, employee satisfaction, and company profitability. Kotler and Amstrong (2012) [23] posit that product quality is the characteristic of a product or service that bear on its ability to satisfy stated or implied customer needs. Therefore, quality is the degree to meet the standards and characteristics and match them to customer requirements, and gives an additional competitive attractiveness to be useful to customers, which is significantly associated with the current and future needs and desires (Darwish, 2009) [15].

Rotich, & Okello (2019) [32] carried out a study to determine the effects of resource fluidity on agility among universities in Kenya. The study targeted 70 officers comprising the University's Deputy.

Vices Chancellors, heads of department, deans and directors of academic programmes, registrars, medical department, procurement department and director of planning. Data were analyzed using descriptive statistics. The results from the study indicated that agility was significantly associated with resource fluidity. Holding other resource fluidity variables constant, the odds for high agility category embracing the statement ‘the mobility of people and knowledge, institutional job rotation, and management embracing knowledge sharing’ were 10.692 times more than those with low agility. Holding other resource fluidity variables constant, the odds for high agility people embracing flexible budgeting and continuous change in changing environment was 3.88 times more than for low agility category. Holding other resource fluidity variables constant, the odds of someone with high agility agreeing with the statement ‘the size of the university was being adaptable to the needs that arise’ were 8.11 times more than the one with low agility.

Ouma and Kilonzo (2013) [28] investigated how resource fluidity planning influences performance in public financial institutions in Kenya. The study focused on the procurement departments of these institutions revealing that resource fluidity significantly affects performance in the financial institutions. It did not show how the balance of overall resource fluidity and allocation of funds to specific departments can improve the overall performance from low level to corporate-wide unit.

Red-well & Hamilton, (2020) [31] carried out a study on how strategic sensitivity affects competitiveness of aluminium manufacturing firms in Rivers State, Nigeria. The study is explanatory in nature while the quasi-experimental research design was adopted. The target population of the study was 56 respondents from seven (7) functional aluminium manufacturing firms that has operational based in the three geographic regional market: Western (Lagos), Northern (Abuja) and Eastern Market (Port Harcourt) listed in the Rivers State yellow pages directory 2013/2014 edition. The findings of the study established high degree of significant influence in the aluminium manufacturing firms in Nigeria. The findings of the study revealed that strategic sensitivity has a strong influence on the measures of competitiveness.

Gaya, Struwig & Smith (2013) [19] in his assessment of the determinants of strategy resource implementation at the Kenya Sugar Board found out that lack of proper strategy planning affected resource allocation at the Board. This was manifested by planning several strategies at once, which caused a strain in allocated resources leading to poor implementation of strategies. The study also revealed that the Board focused much on allocation of financial resources at the strategy planning stage, neglecting the role of non-financial resources such as human resources in strategy implementation resulting to under performance of the organization. Based on the aforementioned review of extant empirical literatures, the study proposes the following research hypotheses:

Ho1: Resource fluidity has no significant influence on delivery reliability in the aluminium manufacturing firms' in Nigeria.

Ho2: Resource fluidity has no significant influence on product quality in the aluminium manufacturing firms' in Nigeria.

Methodology

The study employed survey research design in a non-contrive setting which is explanatory in nature. The population of the study was consists of 56 managers and directors of the head offices of the seven (7) major aluminium manufacturing firms that has operational presence in the three geographic regional market: Western (Lagos), Northern (Abuja) and Eastern Market (Port Harcourt/Enugu) that represents the relevant zone delineated by the Manufacturing Sector of the Nigerian economy. The study takes a census of the population as a sample size while the questionnaire instrument was structured to capture quantitative data on the variables of the study. Furthermore, the literature of the study was built from studies already conducted by other researchers relating to the present study. The research instrument was subject to content and face validity which were presented to three experts in the industry and the academics field for face validity. Content validity reflects the extent to which the researcher captured the items that covers the variable being studied. The Cronbach alpha coefficient was used to test internal consistency on the instruments in line with related items on the same constructs. The Cronbach's Alpha Coefficients results showed resource fluidity has a value of 0.95 which implies that the items in the constructs were found reliable. Similarly, the measure of the criterion variable and the results of Cronbach's Alpha coefficients value range from 0.90-0.95 and this was found reliable for data analysis and making generalization to the study area. The analysis of the data for this study, given its adoption of the quantitative methodology, comprise of the two forms of statistical analysis: the descriptive and the inferential statistical analysis. The multiple correlation statistics was used to determine the probability value and the t-statistic to test all the stated hypotheses at 0.05% level of significance with the aid of Statistical Package for the Social Sciences (SPSS 25.0).

Data analysis and results model summary 1

Table 1: Model Summary on the effect of Resource Fluidity as a Strategic tool for Delivery

Model R		R Square	Adjusted R Square	Std. Error of the Estimate
1	.879a	.759	.957	.74246

a. Predictors: (Constant), Resource Fluidity

The coefficients of determination (R2 =.759) establish the predictive power of the study model and the result found that 75.9% change in delivery reliability in the aluminium firms was affected by resource fluidity while the unexplained 24.1% could be due to the effect of variables that were not included in the present study. Furthermore, the regression model indicates the summary of regression analysis with (R-values =.879) which seeks to establish the influence of the predictor variable: resource fluidity on delivery reliability that was analyzed and the result showed that both measures of the predictor variable has a strong effect on delivery reliability in the aluminium manufacturing firms under study in Nigeria.

Table 2: ANOVAa of the Regression on Resource Fluidity as a Strategic tool for Delivery

Model Sum of Squares		df	Mean Square	F	Sig.
1 Regression	608.130	3	202.710	367.727	.000b
Residual	25.909	47	.551		
Total	634.039	50			

a. Dependent Variable: Delivery Reliability b. Predictors: (Constant), Resource Fluidity

The significance value of (0.000 < 0.05%) and the F-value of 367.727 indicates that the influence of the explanatory variable in the regression model has a strong influence; hence it has some explanatory value. This indicates that there is a significant effect of the explanatory variables: resource fluidity on delivery reliability in the aluminium manufacturing companies in, Nigeria.

Table 3: Multiple Correlation Coefficientsa of Resource Fluidity as a Strategic tool for Delivery Reliability

Unstandardized Coefficients			Standardized Coefficients Beta	t	Sig.
Model B		Std. Error			
1 (Constant)	.874	.343		2.550	.014
Resource Fluidity	.546	.174	.532	3.146	.003

a. Dependent Variable: Delivery Reliability

Ho1: Resource fluidity has no significant influence on delivery reliability of aluminium manufacturing firms' in Rivers State, Nigeria

Table 3 above indicates that a unit change (β= 0.546) in resource fluidity as a predictor variable explains 0.54%

change in delivery reliability in the aluminium firms under study. Similarly, the regression correlation coefficient results with a (t-cal. = 3.146 > t-crit. =1.96) at significance level of (P-v= 0.003 < 0.05%) observed that; resource fluidity has a strong positive and significant influence on delivery reliability; therefore, the null hypothesis is hereby rejected and restated that resource fluidity has a strong and significant influence on delivery reliability in the aluminium manufacturing firms in Nigeria.

Model Summary 2

Table 4: Model Summary on Resource fluidity influence on delivery reliability of aluminium manufacturing firms' in Rivers State, Nigeria.

Model R		R Square	Adjusted R Square	Std. Error of the Estimate
1	.878a	.856	.954	.67918

The coefficients of determination (R2 =.856) establish the predictive power of the study model and the result found that 85.6% change in product quality in the aluminium firms was as a results of change in resource fluidity while the unexplained 14.4% could be due to the effect of variables that were not included in the present study. Furthermore, the regression model indicates the summary of regression analysis with (R-values =.878) which seeks to establish the influence of the predictor variable: resource fluidity on product quality that was analyzed and the result showed the predictor variable has a very strong effect on product quality in the aluminium manufacturing companies in Nigeria.

Table 5: ANOVAa of the Regression on Resource Fluidity as a Strategic tool for Product Quality

Model Sum of Squares		Df	Mean Square	F	Sig.
1 Regression	474.829	3	158.276	343.121	.000b
Residual	21.680	47	.461		
Total	496.510	50			

a. Dependent Variable: Product Quality
b. Predictors: (Constant), Resource Fluidity

The significance value of (0.000 < 0.05%) and the F value of 343.121 indicates that the influence of the variable in the regression model was highly significant; hence it has some explanatory value. This indicates that there is a significant effect of the explanatory variables: resource fluidity on product quality in the aluminium manufacturing companies in, Nigeria.

Table 6: Multiple Correlation Coefficientsa of Strategic Agility (Strategic sensitivity, Resource fluidity, Flexible leadership) and Product Quality

Unstandardized Coefficients			Standardized Coefficients Beta	t	Sig.
Model B		Std. Error			
1 (Constant)	.711	.313		2.267	.028
Resource Fluidity	.714	.159	.786	4.496	.000

a. Dependent Variable: Product Quality

Ho2: Resource Fluidity has no significant influence on product quality of aluminium manufacturing firms' in Rivers State, Nigeria

Table 6 above indicates that a unit change (β= 0.714) in resource fluidity as a predictor variable explains 0.71% change in product quality in the aluminium firms under study. Similarly, the regression result of correlation coefficient with a (t-cal. = 4.496 > t-crit. =1.96) at significance level of (P-v= 0.000 < 0.05%) observed that; resource fluidity has a strong positive and significant influence on product quality; therefore, the null hypothesis is hereby rejected and restated that resource fluidity has a strong positive and significant influence on product quality in the aluminium manufacturing companies in Nigeria.

Discussion of Findings

The results in table 3 revealed that resource fluidity has a positive and significant influence on delivery reliability in the aluminium manufacturing firms' in Nigeria. Similarly, the result in table 6 indicates that resource fluidity has a strong positive and significant influence on product quality of aluminium manufacturing firms' in Nigeria. The findings in line with the conclusion of Rotich, & Okello (2019) [32] the results from their study also indicates that agility was significantly associated with resource fluidity. Holding other resource fluidity variables constant, the odds for high agility category embracing the statement 'the mobility of people and knowledge, institutional job rotation, and management embracing knowledge sharing' were 10.692 times more than those with low agility. Holding other resource fluidity variables constant, the odds for high agility people embracing flexible budgeting and continuous change in changing environment was 3.88 times more than for low agility category. Holding other resource fluidity variables constant, the odds of someone with high agility agreeing with the statement 'the size of the university was being adaptable to the needs that arise' were 8.11 times more than the one with low agility. Ouma and Kilonzo (2013) [28] conclude that resource fluidity planning influences performance in public financial institutions in Kenya. The study of Gaya, Struwig & Smith (2013) [19] also found out that lack of proper strategy planning affected resource allocation at the Board. The study also revealed that the Board focused much on allocation of financial resources at the strategy planning stage, neglecting the role of non-financial resources such as human resources in strategy implementation resulting to under performance of the organization.

Conclusion

The study aims to explore resource fluidity as a key strategic tool for competitiveness in aluminium manufacturing firms in Nigeria. Going by the results and the related findings; the study therefore concluded that: resource fluidity has a strong influence on two manifest variables: product quality and delivery reliability as manifest variables of competitiveness in the aluminium manufacturing firms in Nigeria. The study further concluded that in the aluminium firms taking the explanatory variable constant; a unit change in resource fluidity strongly explained strong variation of delivery reliability. Furthermore, a unit change in resource fluidity strongly explained the variation of product quality in the aluminium manufacturing firms under study in Rivers State, Nigeria. Theoretically, this study has validates the significant correlation of the extant literature on strategic agility models and theories in strategic management practices and significantly explained the behaviour of aluminium manufacturing firms' level of competitiveness. The findings

of this study also maintained the position of dynamic capability theory and affirm to its generalization within the context of aluminium manufacturing firms in Nigeria on how to describe firm's ability to integrate, recombine and reconfigure its existing resources and capabilities to facilitate the competitive levels of firms in the study area.

Recommendations

The following recommendations are made to improve resource fluidity in the aluminium manufacturing firms operating in the three regional markets: Western (Lagos), Northern (Abuja) and Eastern (Port- Harcourt/Enugu):

1. The study recommends that corporate managers should strategically re-allocate organizations resources, both human capital; knowledge mobility and materials resources across appropriate units to improve firm competitiveness in the study area.
2. They should reconfigure business systems and redeploy resources speedily, support businesses processes for operations and people management approaches, mechanisms and incentives for collaboration that make business models and activity system transformation quicker and easier to improve competitiveness in the sector.

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