

Effective Resource Scheduling and Control as an Indicator for Sustainable Competitive Advantage: Evidence from Selected Manufacturing Firms in Nigeria

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Abstract: *The study focused on the impact of resource scheduling and resource control approaches on the long-term competitiveness of a range of Nigerian manufacturing companies. The study rationale is to investigate the effect of resource scheduling and control on productivity and service quality of the selected firms. To achieve the specified goals, the survey research design was used. The study population comprises of all the staff of selected firms at their headquarters. The sample size was calculated using Taro Yamane's statistical technique. Multiple regressions were used to test the hypotheses. Because their p-values are less than 0.05, resource scheduling has a significant and positive impact on firm competitive advantage t- values ($t = 16.450$) while resource control has a significant and yet negative relationship with firm competitive advantage as the p- value is less than 0.05 significance with negative t- value ($t = -0.637$). Furthermore, the standardized beta coefficient (0.812) shows that resource scheduling has a strong impact on the firm competitive advantage while also the standardized beta coefficient (-0.028) shows that resource control has a weak impact on the firm competitive advantage. As a result, the null hypothesis is rejected, and it is determined that resource scheduling has a significant and positive link with firm competitive advantage, but resource control has a significant and negative relationship with firm competitive advantage. The study therefore concluded that the major priority of the firms should be on the effective and efficient deployment and controlling limited available resources is critical in achieving long-term competitive advantage.*

Keywords: Resource Scheduling, Resource Control, Firm Productivity, Service Quality, Competitive Advantage

1.0 INTRODUCTION

Nigeria's manufacturing industry is one of the most rapidly expanding in Sub-Saharan Africa. Presently, the manufacturing industry in Nigeria is one that can be described as self-aware and adapting steadily to the stark realities of competition; changing market trends, intense rivalry, regulatory uncertainties etc. To remain sustainable in the current industry, there is a general belief that there is a need to reinvent existing products through adequate resource planning for product innovations, effective resource scheduling for operational flexibility which could enhance organisational productivity, resource allocation to increase sales volume, and resource controlling in order to diversify into new areas for which their capabilities and resources are proximate, streamline general business procedures and handle the regulatory environment. Thus, this study attempts to investigate the influence of resource scheduling and resource control on competitive advantage of selected firms in Nigerian manufacturing industry.

1.1 STATEMENT OF THE PROBLEM

The high-energy cost of operation occasioned by national macro-economic imbalance is negatively impacting on profitability; As a result, resource management is necessary for businesses to remain competitive in the market. Moreover, high infrastructural costs mainly from gas supply, base plant installations and transport network is negatively affecting working capital requiring the employment of resources allocation-, to link service improvement with budget and expenditure, short-, medium-, and long-term resource planning is required. Because the majority of their resources are imported, rising exchange rates are a concern, vandalism of out-station equipment and hyper-inflationary trends in Nigeria has impacted heavily on production and service delivery costs requiring resource planning, scheduling, distribution, allocation and control to remain competitive. Moreover, reducing innovative capabilities coupled with regulated prices have quickly brought the industry to early saturation stage resulting in low productivity thereby making resource utilisation techniques very strategic in reversing these negative trends.

This research is an attempt to draw renewed interest in the utilization of scheduling, and control techniques as the basis for improved innovation, productivity, galloping sales volume and improving service quality. Secondly, the research is designed to proffer solutions to the stated managers are facing in merging their intangible internal resources to create a long-term competitive advantage for their companies. Furthermore, the study seeks to draw on the concept of resource scheduling and control techniques in proffering solutions to the severe competition in the Nigerian manufacturing industry

1.2 OBJECTIVE OF THE STUDY

The major purpose of this research is to investigate the impact of resource scheduling and resource control on the long-term competitiveness of selected Nigerian manufacturing enterprises.

1.3 RESEARCH HYPOTHESES

Ho: Resource scheduling and resource control has no significant effect on firm sustainable competitive advantage in Nigerian manufacturing industry.

1.4 SCOPE AND LIMITATION OF THE STUDY

The scope of the study is addressed in terms of the content and unit of analysis (institutional). Contextual: The research looked on the impact of resource scheduling and control techniques on long-term competitive advantage.

Unit of analysis: The study covered the Nigerian manufacturing industry, although, only the opinions of staff at the headquarters of The Dangote Group, Nigerian Flour Mills, Lafarge Cement, British American Tobacco, and Nexans Nigeria were investigated.

LITERATURE REVIEW

2.0 THEORETICAL REVIEW

2.1 DYNAMIC CAPABILITY THEORY

Teece, Pisano, and Shuen (1997) proposed the dynamic capability theory, which ushered in the resource base view's advancement. Firms must establish, develop, integrate, and reconfigure their internal and external skills to adapt to dynamic surroundings, according to the notion. Instead of focusing on possession, the dynamic capability approach focuses on resource usage with prospective rent production. The dynamic capability hypothesis assumes that a company can carve itself a niche in the market by developing capabilities that enable it to perform better in the face of environmental uncertainty, which its competitors may not be able to match (Teece, Pisano & Shuen, 1997). Dynamic capabilities, according to Grant (1996), are the pre-existing organizational and strategic routines by which managers change their resource base, acquire and lose resources, integrate and recombine them to create new value-creating strategies. In the dynamic capabilities approach, rather than possession, the focus is on the development of resources with rent-generating potential (Vinayan et al., 2012). Teece, Pisano, and Shuen (1997) also argued that in a rapidly changing and unpredictable market where the competitive landscape is shifting, the dynamic capabilities by which a firm's managers integrate, build, and reconfigure internal and external competencies to address rapidly changing environments becomes a source of sustainable competitive advantage.

According to Teece et al. (1997); Eisenhardt et al. (2000); Zollo and Winter (2002), the dynamic capability approach resembles the Schumpeterian theory and evolutionary economics (Nelson & Winter, 1982). Instead of fighting against powerful incumbent players who have the advantage of being industry pacesetters and have mastered the laws of the game, the Schumpeterian perspective promotes innovation and invention of new games (Christensen, 2000; Foster & Kaplan, 2001). Organizations with dynamic capacity potentials will use a flexible adaption strategy to constantly grow or maintain the value of current resources or market position in order to combat the dynamic competitive environment. The relevance of using dynamic capability theory in this study is that the fierce rivalry in the Nigerian manufacturing industry has necessitated the development of a new paradigm to lead businesses in attaining distinct advantages. The theory also helps the researcher in gaining access to both internal and external opportunities by creating, integrating, and reconfiguring competencies in order to maximize organizational resources and adapt to changing surroundings.

2.2 CONCEPT OF RESOURCE SCHEDULING

It is general economic knowledge that resources are scarce in supply; it becomes imperative therefore, to devise adequate measures and techniques to effectively and efficiently utilize resources. For this purpose, proper allocation and scheduling of resources or capabilities to ensure optimal productivity becomes crucial. According to the Project Management Institute (2013), resource scheduling is a project management process that entails a list of a project's milestones, activities, and deliverable, together with their expected start and end dates. They further, defined scheduling as a collection of techniques used to calculate the resources required in delivering the work and when they will be required. Scheduling is a management choice or collection of activities that involves allocating resources effectively to jobs, tasks, or projects that must be completed, as well as scheduling start and completion dates for each work or project depending on resource availability. People (either workers or independent contractors), equipment and machines (common in construction, manufacturing, and maintenance industries), and rooms and facilities are all examples of resources, depending on the industry. Consumable resources may also be required (for instance, materials and parts for manufacturing). Scheduling produces a time-phased plan, or activity schedule (Brucker, Drexler, Möhring, Neumann, & Pesch, 1999). The timetable lays out what has to be done, when it needs to be done, who will be doing it, and what equipment will be used. According to Silver, Pyke, and Peterson (1998), scheduling strives to successfully resolve multiple competing objectives, including: high efficiency, low inventories and good customer service. Scheduling can be classified by production process: line, batch and project. It is basically the management activity of allocating appropriate number of personnel to jobs at a period of time, determining when an activity should begin or end, depending on its time frame, predecessor activity (or activities), predecessor relationships, resource availability, and target completion date of the project (Barcelo, Błażewicz, Kubiak, & Rock, 1986). Whereas Weglarz (2010) provided insight to categories of resource viz: consumable and re-usable. Resource scheduling therefore ensure efficient and effective utilization; realistic scheduling; early detection of capacity bottlenecks and conflicts. International Project Management Association (IPMA) recommends that to properly schedule resources, it is very essential to administer a three resource scheduling procedure namely: allocation, aggregation and scheduling.

Resource scheduling could be very complex and complicated be it the scheduling of personnel, fleet of vehicles, batch processing, or even sporting events, may be quite difficult due to the multiple aspects that must be considered. The complexity of scheduling is growing in tandem with the financial and competitive pressures in the sector. Regardless, building effective scheduling systems is a critical component of lowering costs, enhancing safety, and increasing resource management efficiency. In project management, resource scheduling is critical. Project scheduling is complex due to finite resources and prioritization relationships between activities. In practice, the scheduling procedure is aided by specialized software. The cornerstone of such software is a formal model that permits a set of scheduling restrictions and an objective function to be used to describe the actual project. The Resource Constrained Project Scheduling Problem (RCPSP) has become a standard problem for project scheduling in most literatures during the last few decades. Several survey articles on resource scheduling have been published since the 1990s. The majority of papers, such as Hartmann and Kolisch (2000) and Kolisch and Hartmann (2006), focus on RCPSP methods, while a few common variants, such as Brucker (2002), Brucker, Drexel, Möhring, Neumann, and Pesch (1999), Herroelen, de Reyck, and Demeulemeester (1998), Herroelen (2005), Kolisch and Padman (2001), Zdmur and Ulusoy (19 (2002). Brucker, Drexel, Möhring, Neumann, and Pesch (1999) proposed a classification system for resource-constrained project scheduling issues. This notation is based on Graham, Lawler, Lenstra, and Rinnooy-Kan's three-field notation \parallel for machine scheduling problems (1979). Describes activities and provides resource attributes in the context of project scheduling (and can be assigned more than one value), and γ denotes the problem's objective.

2.3 CONCEPT OF RESOURCE CONTROL

Resource control is a process of ensuring that the organizational resources are properly utilized with the aim of achieving short and long-term strategic objectives. The formulation of organizational standards for aligning employees' behaviors with the organization's goals, as well as the monitoring and rewarding of the amount to which such standards are satisfied, are all part of organizational control (Flamholtz, Das, & Tsui, 1985; Snell, 1992). Various mixes of formal and informal controls can be used in control techniques. Informal controls are based on norms and are frequently enacted by peers, whereas formal controls are based on formally stated standards and are often enforced by managers (Baldauf, Cravens, & Piercy, 2005). In addition, there are different control targets. Outcome controls, for example, are concerned with achieving goals and results, whereas process controls are concerned with procedure compliance, and normative controls are concerned with employee value congruence (Kirsch, 1996; Weibel, Den Hartog, Gillespie, Searle, Six, & Skinner, 2016). The goal of control techniques is to guarantee that employees receive appropriate performance standards information, to remediate deviant behavior, and to encourage successful performance (Sitkin, Cardinal & Bijlsma-Frankema, 2010).

A management resource control system aids a company in achieving its strategic objectives, as it takes cognizance of all the important aspect of controls and ensures that they are deployed in a balanced manner (Strauss, Pasca, & Weber, 2013). For instance, the administrative control takes care of governance, structure and policy and procedures in firms. While on the other hand planning control gives detail guide on the firms strategic and operational planning (Malmi & Brown, 2008). It guarantees that a company's resources are used properly and efficiently. These sub-controls guide organization in achieving its goal by ensuring organization is directed in the best interest of the stakeholder thus, avoiding conflict of interest. Internal resource control system, which is created by management and implemented by management and employees, is a process; it is intended to provide reasonable certainty in the achievement of pre-determined goals (Doyrangöl, 2002). An insufficient internal control system often causes an inability to detect fraudulent activities and a decrease in the performance of an organization (Adeyemi & Adenugba, 2011). The primary purpose of control is to improve goal congruence or to prevent organizational participants from acting in ways that are incompatible with their goals (Herath, 2007). Thus, Control has being linked to strategy and this form the basis of organizational resource control as an achievement of strategy is the ultimate goal of an organization. Resource control helps the organisation to ensure that the institution complies with laws and regulations as well as plans, internal rules, processes, and policies to reduce the risk of unanticipated losses or reputation loss.

Only a few studies have examined the impact of control procedures on employee job performance, according to Verburg, Nienaber, Searle, Weibel, Den Hartog, and Rupp (2018). In essence, the HRM literature has portrayed formal control systems as the dysfunctional opposite of high commitment work systems, because control systems are thought to incur significant monitoring costs and are perceived to be less effective, flexible, and adaptive (e.g., Arthur, 1994; Guthrie, 2001). However, there are claims that controls can contribute to performance-related outcomes in a more meaningful way outside of the HRM literature (Sitkin, Cardinal, & Bijlsma-Frankema, 2010). Controls are essential components of feedback and learning processes (Adler & Borys, 1996), and the consistency they provide can be seen of as a type of procedural justice. Controls make coordination and communication easier within and between teams by defining crucial common goals and engagement norms (Gittell, 2001). Employees will be more aware of what is expected of them and what their own and other positions in the team involve, making it easier for them to do their work as planned. Furthermore, control techniques are likely to build citizenship among employees through fostering a feeling of common aims and experiences of cooperation. According to the literature, organizational controls have a more indirect effect on performance, as they enable collaboration, communication, common goals, feedback, and learning. Output control, according to Snell (1992), focuses on the outcomes, products, or services that personnel generate. Setting predefined formal aims and using information systems to monitor

whether targets are fulfilled, as well as whether rewards and sanctions are related to goal achievement, are examples of output control methods.

In contrast to the outcome-oriented approach, Snell (1992) contends that process controls influence how workers do their jobs (i.e., how standardized procedures are enacted). Outlining methods and regulations for how employees should conduct their task, monitoring how these processes and rules are carried out, and rewarding/sanctioning practices are all part of process control practices. Employee conduct is likely to be changed by normative rules enforced by the business, according to Sitkin and George (2005). This includes promoting corporate norms and values, as well as enforcing them when they are broken. As a result, normative controls should help organizational members align their values (Gillespie & Mann, 2004). In the control of organizational resources, managers results to:

a) **Transaction Cost Economizing:** In this context, Williamson (1975; 1985), an advocate of transaction cost economics (TCE), argues for the supremacy of internal audit for cost economizing and highlights the benefits, particularly for hierarchical firms. Internal audit, according to Williamson, offers managers with more meaningful cost-cutting knowledge than financial accounting information provided by external audit to owners and creditors. Williamson's thesis is based on the idea that internal audit can look into operational data as well as financial accounting data.

b) **Transfer Pricing Policy:** The internal value placed on a raw material, good, or service as it flows from one linked organizational entity to another inside a consolidated business group, according to Cravens (1997). When commodities and services are traded across autonomous segments within a decentralized organization, transfer price models aid in the logical distribution of shared costs. According to Cravens (1997) and Gupta and Gunasekaran (2004), the transfer-pricing mechanism can be misused by transferring earnings between businesses with different tax jurisdictions. Some even consider transfer pricing to be more of a strategy than a technique (Eccles, Spicer, as cited in Cravens, 1997).

c) **Budgeting as a Control Mechanism:** Traditional budgeting has acted as a means of highlighting boundary systems that focus on financial boundaries and diagnostic controls, according to Armesh, Salarzehi, and Kord (2010). Budgets set expenditure restrictions for specific categories, and variance reporting ensures that these spending limits are met. As a result, budgeting is used as a corporate governance instrument. Spending guidelines are established by top management. Individual and group evaluations are based on cost control and standard compliance. Budgets are used to stress the organization's basic ideas and essential interactive controls in order to better align personnel with the organization's strategic goals.

Building from the above, resource control could be seen as a process by which management set a code of conduct for the successful protection of business operations in order to enhance service quality of the firm. Resource controls are geared towards minimization of waste, asset disbursement and to enhance effectiveness and efficiency of the firm. Firms in the Nigeria manufacturing industry should be proactive in area of resource control so as to be able to detect and eliminate unethical behaviour in their various institutions with the aimed of achieving competitive advantage over other rivalry.

2.4 SUSTAINABLE COMPETITIVE ADVANTAGE

A firm's capacity to differentiate and increase the quality of its product through effective resource utilization is known as competitive advantage (Ugboko & Ehugbo, 2021). It is necessary to properly assess the dimensions of a firm's competitive advantage in order to understand the elements affecting competitive advantage. Sun, Fan, Zhou, and ve Shi (2010) made a unique change to Porter's diamond model, arguing that the fourth dimension of the diamond model, i.e. firm's strategy, structure, and rivalry, covers three of the diamond model's parameters (factor conditions, demand conditions, and related and supporting industries). The content validity of Sun et al (2010)'s model was confirmed by Bakan and Dogan (2012), who used the same model to determine the factors affecting competitiveness in a number of industries. As a result, the firm's strategy, structure, and rivalry gain an understanding of the toughness of domestic competition. To focus on effort and promote coordinating activity, a strategy is required. In global competitive environment, rivalry is very crucial. The rivalry pattern has an impact on the process of innovation, service quality, and, ultimately, international success. National differences in business practices and techniques such as management way and structure, link between work and management, and working morale, as highlighted by Bakan and Dogan (2012), generate benefits and disadvantages in competing in different industries. As a result, the diamond model was used to assess competitiveness based on the firm's strategy, structure, and competition.

It has been argued that achieving a position of competitive advantage is the precursor to the significant performance of a firm (Barney, 1991; Fahy, 2000). Operational efficiency, mergers and acquisitions, levels and types of diversification, organizational structures, composition and style of upper management, human resource management, manipulation of political and social influences in the market, conformity to various interpretations of socially responsible behavior, international expansion, cross-cultural adaptation, and various other or related factors all contribute to competitive advantage (Ma, 1999a; 1999b; Flint & Van Fleet, 2005; King, 2007). Bulankulama and Khatibi (2014) found that innovation is one of the most important sources of competitive advantage. Bulankulama and Khatibi (2014), for example, found that innovation had a beneficial impact on competitive advantage. Creating and retaining resources and capabilities that can enhance service quality and improve innovative strategies should be the concern of a firm in order to achieved competitive advantage. Product quality, on the other hand, has been shown to be a driver of competitive advantage (Sagheer, Yadav, & Deshmukh, 2009). It is also worth noting that there are considerable empirical studies, (Sagheer, Yadav, & Deshmukh, 2009; Voulgaris, Papadogonas, & Lemonakis, 2013), which measure productivity, profitability or efficiency with the intention of assessing competitiveness. Fischer and Schornberg (2007), on the other hand, suggest that profitability and

productivity are both determinants of competitiveness. Wijnands, Bremmers, van der Meulen, and Poppe (2008) acknowledge this notion and argue that worker productivity is a driver of competitiveness. Similarly, Latruffe (2010) suggests that the domestic resource cost ratio (DRC) can be used to calculate competitiveness and can also be viewed as a component of competitiveness. Price/cost, quality, delivery dependability, product innovation, and time to market are the five dimensions defined by Li, Nathan, Nathan, and Rao (2006) to measure competitive advantage build. Operational efficiency, cost effective, quality, marketing, and innovation are among the five dimensions aligned with the cost-based, product-based, and service-based models. This study employed productivity and service quality to measure competitive advantage at firm level in different sectors.

2.5 CONCEPT OF PRODUCTIVITY

The amount of output divided by the volume of inputs is frequently referred to as productivity. In other words, it assesses how effectively production inputs such as labor and capital are utilised in a given economy to generate a certain level of output (Krugman, 1997). Productivity is a crucial source of economic development and competitiveness, and it is used as the basis for many international comparisons and assessments of country performance. Productivity data, for example, is used to look into the effects of product and labor market laws on economic performance. Productivity growth is an important factor to consider when calculating an economy's productive potential. It also enables analysts to calculate capacity utilization, allowing them to assess the state of economies in the business cycle and forecast economic growth. Production capacity is also used to determine demand and inflationary pressures. According to Coelli, Rao and Battese (1998), productivity is a measure of the output produced per unit and it is a physical rather than financial measure, using data on physical quantities of inputs (labour, kilowatts of energy etc) and outputs (amount of air-time, megabytes of data etc). Note that productivity is different to profit. The latter would incorporate receipts (income) which take accounts of price and cost. Coelli, Rao and Battese (1998) argued further that the rate of productivity growth (usually the excess of output growth over input growth) is also an important indicator of economic viability of a telecom firm or the telecomm industry. For instance, if the productivity growth of Dangota Group far outstrips Lafarge then Dangota Group would win more of the existing and new markets on the basis of price per unit.

2.6 CONCEPT OF SERVICE QUALITY

Service quality is one of the major instruments used by an organization to differentiate its product from other competitors. Organizational service quality has an important bearing on its quest to achieve sustained competitive advantage. The customer's opinion of an organization's overall excellence or superiority is referred to as service quality (Zeithaml, Berry, & Parasuraman, 1988). According to Bitner and Hubbert (1994), quality is the overall impression of the organization's and its services' relative inferiority/superiority. Quality refers to the sum of products or service's traits and characteristics that influence its ability to meet customers' demands and desires (Haider, 2001). Thus, the quality is the ability of a product or services to continually fulfill, or even surpass the customer's expectations (Stevenson, 1993). Quality, according to Schroeder (2000), also entails meeting or exceeding customers' expectations now and in the future. To better understand the service quality we need to look into the three main characteristics of services: Invisible, consistent and diverse. Because services are not physical it is hard to determine, record, calculate or to test the service prior to the sale in order to protect the quality on its delivery (Zeithaml, Berry, & Parasuraman, 1988). It is also considered that because services are intangible, it is difficult for businesses to assess how customers perceive and evaluate the desired outcome of service quality (Zeithaml, 1981). The quality of a company's service determines whether a consumer stays with it or leaves (Zeithaml, Berry, & Parasuraman, 1996). The importance of service quality is highlighted in marketing management literature. It is commonly characterized as a customer's perception of the service provider's and its service's relative inferiority or superiority. It's also commonly compared to a customer's general attitude about a company.

It's also worth noting that organizations' rising interest in service quality is related to the fact that service quality has been shown to help them sustain their bottom line performance. Researchers frequently use the phrases "service quality" and "customer satisfaction" interchangeably (Sureshchandar, Chandrasekharan & Anantharaman, 2002). According to studies, a positive overall experience with service quality leads to client satisfaction, which in turn leads to customer loyalty. When the entire service quality (as perceived) is comprised of both core and relationship factors. The most essential characteristics of services, according to the literature, are core and relationship quality. Where "what is delivered" is defined as "what is delivered," and "how it is delivered" is defined as "how it is delivered" (McDougall & Levesque, 2000). However, service quality could be seen as a process of creating unique/superior product for an organisation that distinguishes them from other competitors.

2.7 EMPIRICAL REVIEW

Obegi and Kimutai (2017) conducted a study to explore the impact of resource scheduling and project performance of international not for profit organizations in Nairobi city county, Kenya. The study sampled 50% of the INGOs operating in Nairobi County using simple random sampling, resulting in a total of 94 INGOs covered by the study. The research used descriptive design; the nexus between the four independent variables and the dependent variable was determined using a multiple regression model. The major findings of the research included: Budget monitoring is done on a regular basis to ensure that expenditures are in line with the budget; Project staff complete their assignments as allocated; A number of project changes are made during implementation; Staff is assigned project equipment to use throughout project implementation; The organization measures its project performance

periodically and; There exists a supporting learning environment in the organization. The study concluded that majority of the INGOs studied had periodic budget monitoring in place to compare spending to budgets. As a result, project success was insured right from the outset. The study recommended that INGOs in Nairobi County should continue to follow best practices in scheduling and allocating resources to projects from the beginning to the finish. Good practices like this could serve as learning opportunities for people in other parts of society.

Umoh and Wokocha (2013) conducted a study to investigate the extent to which production scheduling had affected the corporate productivity performance of the Nigerian manufacturing industry. The Stock Exchange Fact Book 2009 provides data from eighty manufacturing firms out of a total of one hundred in the industry. The extent of the link was determined using simple linear regression analysis. The study included cost reduction, increased equity capital, and growth as measures of corporate productivity performance. According to the study's findings, production scheduling has a little impact on the Nigerian manufacturing industry's corporate productivity performance. This research suggests that production scheduling has little bearing on a firm's corporate productivity performance. The study therefore concluded that production scheduling has a moderate influence on operational efficiency but insignificant influence on equity capital and firm's growth of Nigeria manufacturing firms. The report suggests, among other things, that the Nigerian manufacturing industry be completely restructured, particularly in the areas of scheduling, in order to realign and save the industry from catastrophic collapse.

Ahmad and Mohamed (2018) explored a study on management control system and firm performance: Resource based view perspective. The intent of the study is to demonstrate how firms in developing countries can use management control system by to achieve better performance. The study was conceptual in nature, therefore it used empirical research to see how MCS, in conjunction with the resources available to organizations, may improve performance in poor countries. The study reveals that the firm with effective MCS in developing countries with abandons resources both tangible and intangible could have a sustained competitive advantage. This is because the goods MCS in collaboration with resources could give firm an edge by boosting it capability that would over time become imitable as such result in better performance. Thus, from MCS perspective-planning control can help in preserving resource through effective utilization and would as well lead to the achievement of firm short term and strategic initiative. The study therefore recommended that Administrative control should lay down the foundation for proper strategy implementation via governance, structure and policy and procedures would boost firms' capability. Cybernetic control would ensure the detection of any deviation from the planned course of action and actual action with a view of resolving the deviation. The cultural control would instill a viable behavioural value that would guard against conflict of interest. All these controls would be strengthened by the firms' rewarding system, which boosts staff morale. The concluded that adoption of good elements of management controls would enhance firms' ability in assessing both their internal and external environment in order to tap into underutilized resources that could be put to better use.

Dineshkumar and Kogulacumar (2018) conducted a study to explore the internal organizational control system and its impact on the performance of the Sri Lanka telecommunication limited in Jaffna district. The purpose of the study is to investigate the extent to which internal control systems influence the performance of the Sri Lankan Telecommunication limited. The sample for study was selected from staff of the Sri Lanka Telecom limited. Thus sixty (60) employees of the company were selected. Percentage, Correlation and SWOT analysis were the main tools used in the analysis. The study's findings suggest that there is a highly significant association between the Sri Lanka Telecommunications Limited's internal control system and organizational performance. The study therefore concluded that the internal resource control when effectively managed will lead to high organizational performance in the future.

Auzair (2011) investigated the application of Management Control Systems (MCS) in Malaysian hotels in a study. To describe management control bureaucracy, MCS was envisioned as Action/Results controls, Formal/Informal, Tight/Loose controls, Restricted/Flexible, Impersonal/Interpersonal controls, and Financial/Non Financial information. Business strategy and the external environment (perceived environmental uncertainty - PEU) are also elements in an organization's decision to use MCS, according to the framework. A survey methodology was employed. Questionnaires were administered to five hundred and twenty respondents including the top management of the hotels in Malaysia. The findings indicate that hotels pursuing cost leadership strategy were positively associated with a more bureaucratic MCS while hotels pursuing differentiation strategy was associated with less bureaucratic MCS. When the environment is thought to be uncertain, PEU is adversely associated with less bureaucratic MCS, indicating tighter control. Overall, the data shows that the type of MCS used by hotels is linked to the pursuit of a business plan and the PEU.

RESEARCH METHODOLOGY

3.1 Research Design

The survey research design was used to achieve the stated aims in this study. The choice of survey research method is premised on its value and feasibility in addressing the research problem raised in the study.

3.2 The Population of the Study

The study population comprises of all the staff of selected firms (Dangote Group (618), Flour Mills of Nigeria (350), Lafarge Cement (418), British American Tobacco (285) and Nexans Nigeria (175)) at their headquarters. The reason for concentration of the study population at the headquarters of the selected firms is because it is believed that organizational strategies are formulated at the

headquarters before being deployed to their various branches. This informed the suitability of headquarter staff to respond to the queries raised by the research instrument. The total population of the staff of selected firms was one thousand eight hundred and thirty six (1836) and was eligible for selection.

3.3 Sampling Procedures and Sample Size Determination

In the sample of selected manufacturing enterprises used for the study, one thousand eight hundred and thirty-eight employees covering the population of interest were located at the Headquarters. The sample size produced from this simple random sampling derived population was calculated statistically using the following Taro Yamane formula:

$$n = \frac{N}{1 + N(e)^2} \text{-----equ(1)}$$

Where;

n= sample size

N= population

1= constant

e= level of significant to be set at 5 percent or 0.05

$$n = \frac{1836}{1 + 1836(0.05)^2}$$

$$\frac{1836}{1 + 1836(0.0025)}$$

$$\frac{1836}{1 + 4.59}$$

$$\frac{1836}{5.59} = 328$$

$$n = 328$$

The distribution of this sample size was proportionately distributed across the selected manufacturing firms in Nigeria.

$$\text{Dangote Group-NG: } \frac{618}{1836} \times \frac{328}{1} = 110$$

$$\text{Flour Mills-NG: } \frac{350}{1836} \times \frac{328}{1} = 63$$

$$\text{Lafarge Cement-NG: } \frac{418}{1836} \times \frac{328}{1} = 74$$

$$\text{British American Tobacco-NG: } \frac{285}{1836} \times \frac{328}{1} = 50$$

$$\text{Nexans NG: } \frac{175}{1836} \times \frac{328}{1} = 31$$

3.4 Validity and Reliability of the Instrument

The technique used in gathering the primary data was a structured questionnaire. The coefficient of the construct ranged from .929 to .959, which shows that the instrument has a strong internal consistency, and is considered to be fit.

3.5 Method of Data Analysis

To test the presented hypotheses, multiple regressions were used. Multiple regression models allow researchers to investigate the relationship between multiple independent factors and a single dependent variable. Identification of the relationships between these various variables and each dependent variable will aid in producing considerably more powerful and accurate predictions about the hypotheses' result (dependent variable). The Statistical Package for Social Sciences was used to analyze the data that was collected (SPSS, Version 21.0).

Multiple regression statistics formula is represented as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon \text{-----eqn (2)}$$

Where:

Y is the dependent variable's predicted or expected value.

$X_1 \dots X_n$ = distinct independent or predictor variables

β_0 is the value of Y when all of the independent variables ($X_1 \dots X_n$) are equal to zero

$\beta_1 \dots \beta_n$ = the estimated regression coefficients

ε = Stochastic error term representing other possible factors not considered in the model that could influence the dependent variable

3.5.1 Model Specification

In line with the objectives and hypotheses of the study, the models are stated thus;

Model A

$$FCA = f(RS, RC) \dots \dots \dots \text{equ (3)}$$

$$FCA = \beta_0 + \beta_1 RS + \beta_2 RC + \varepsilon \dots \dots \dots \text{equ(4)}$$

Where,

FCA = Firm Competitive Advantage

RS= Resource Scheduling

RC= Resource Control

When all of the independent variables are zero, the value of the dependent variable is β_0 . β_1 --- β_4 = the estimated regression coefficients ε = Stochastic error term representing other possible factors not considered in the model that could influence the dependent variable

TABLE 4.1

Model summary for the effect of resource scheduling, and resource control on firm competitive advantage

Model	Model Summary			
	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.902 ^a	.814	.812	2.22441

dimension0

a. Predictors: (Constant), Resource scheduling, Resource control

Source: SPSS Output, 2021

TABLE 4.2

Analysis of variance for the effect of resource scheduling, resource control on firm competitive advantage

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6440.317	2	1610.079	325.401	.000 ^a
	Residual	1469.553	297	4.948		
	Total	7909.871	301			

a. Predictors: (Constant), Resource scheduling, Resource control

b. Dependent Variable: Firm Competitive Advantage

Source: SPSS output, 2021

TABLE 4.3

Regression coefficients for the effect of resource scheduling, resource control on firm competitive advantage

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.134	.480		4.444	.000
	Resource scheduling	.812	.049	.864	16.450	.000
	Resource control	-.028	.044	-.029	-.637	.025

a. Dependent Variable: Firm Competitive Advantage

Source: SPSS Output, 2021

4.1 INTERPRETATION OF TEST OF HYPOTHESES

The regression tables (Table 4.1, 4.2 and 4.3) show resource scheduling and resource control variables being evaluated for its ability to influence firm competitive advantage. Table 4.1 which are the model summary, reveals that the relationship between resource scheduling, resource control and firm competitive advantage is 90.2 percent (as seen in the *R* column) given an indication that there is a strong linear relationship between the independent and dependent variables. The adjusted R^2 value (0.812) signifies that up to 81.2 percent of firm competitive advantage is predicted by resource scheduling, and resource control.

The F-test, $f(4, 297=325.401, p<0.0005)$ of the relationship in Table 4.2 (ANOVA) indicates that the overall prediction of the independent variable to the dependent variable is statistically significant; therefore, the regression model is a good fit for the data and provides sufficient evidence to conclude that the resource scheduling and resource control has a significant influence on the firm competitive advantage.

Analysis of the regression model coefficients is shown in Table 4.3, the regression coefficient (B), the intercept (α), and the significance of coefficient in the model are subjected to the t-test to test the null hypothesis that the coefficient is zero. From the table it can be seen that resource scheduling has a significant and positive influence on firm competitive advantage as their p- values are less than 0.05 significance with positive t- values ($t = 16.450$) while resource control has a significant and yet negative relationship with firm competitive advantage as the p- value is less than 0.05 significance with negative t- value ($t = -0.637$). Furthermore, the standardized beta coefficient (0.812) shows that resource scheduling has a strong impact on the firm competitive advantage while also the standardized beta coefficient (-0.028) shows that resource control has a weak impact on the firm competitive advantage. As a result, the null hypothesis is rejected, and it is concluded that resource scheduling has a significant and positive link with firm competitive advantage, but resource control has a significant and negative relationship with firm competitive advantage.

4.2 DISCUSSION OF FINDINGS

The hypothesis's findings show that resource scheduling and productivity have a strong and positive link in the manufacturing enterprises studied. This supports the findings of Obegi and Kimutai (2017) who conducted a study to explore the impact of resource scheduling on multinational not-for-profit organizations' project performance in Nairobi city county, Kenya. The major findings of the research included: There exists periodic budget monitoring to measure expenditures against budget; Project staff complete their assignments as allocated; A number of project changes are made during implementation; Staff is assigned project equipment to use throughout project implementation; The organization measures its project performance periodically and; there exists a supporting learning environment in the organization. They came to the conclusion that the majority of the INGOs studied had budget monitoring in place on a regular basis to track spending against budget. This insured that projects will be successful from the outset. They also recommended that organisation should ensure that resources are scheduled and allocated from inception of the project in order to enhance project performance.

Umoh and Wokocha (2013), on the other hand, believe that production scheduling has no substantial impact on the Nigerian manufacturing industry's productivity. This finding implies that production scheduling had no major impact on business productivity. They further, argue that production scheduling has a moderate influence on operational efficiency but insignificant influence on equity capital and firm's growth of Nigeria manufacturing firms. The report suggests, among other things, that the Nigerian manufacturing industry be completely restructured, particularly in the areas of scheduling, in order to realign and save the industry from catastrophic collapse.

The finding from second hypothesis shows that there is a significant and negative relationship between resource control and service quality in the selected manufacturing firms. The finding was affirmed by a similar study by Ahmad and Mohamed (2018) in their investigation of management control system and firm performance: resource based view perspective. According to the findings, firms with effective MCS in emerging countries with abandoned tangible and intangible resources can maintain a competitive edge for a long time. They concluded that administrative control should lay down the foundation for proper strategy implementation via good governance; structure, policy and procedures that would boost firms' capability. They further recommended that adoption of good elements of management controls would enhance firms' ability in assessing both their internal and external environment in order to tap from the abandoned resources that could be used to achieve better performance. In additions, Dineshkumar and Kogulacumar (2018) also found that there is a strong significant relationship between internal control system and organizational performance of the Sri Lanka Telecommunication limited. The study recommended that the internal resource control when effectively managed, would lead to high organizational performance in the future. Furthermore, Auzair (2011) proposed that a cost leadership strategy is positively associated with a more bureaucratic MCS, whereas a differentiation strategy is associated with a less bureaucratic MCS, lending support to existing literature on the relationship between resource control and strategy.

5.1 CONCLUSIONS

The major priority of the firms should be on the effective and efficient deployment and control of limited available resources as this will play a vital role in the pursuit of sustained competitive advantage. Resource utilization techniques when applied appropriately in the organizational strategic plan will produce the desired result of competitive advantage.

5.2 RECOMMENDATIONS

1. To enhance effective resource scheduling, managers of the selected firms should ensure that resources are arranged in such a way that balances the available resources and limited time in order to achieve optimum productivity. In addition, managers should prepare the resource scheduling in an adjustable way that will allow operational flexibility in order to achieve sustained competitive advantage.
2. In order to enhance resource control system, Managers of the selected firms should ensure that thorough supervision, documentation of standardized operational procedure and appraisal of job performance are conducted in all the organisational processes. This will enhance minimization of resource wastage and also improve the quality of service rendered to their various customers.

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