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Raw Material Sustainability And The Performance Of Beverage Companies In Nigeria: A Study Of Intafact Beverages Onitsha

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ABSTRACT

This study examined the Effect of Raw Material Resource Sustainability on the Viability of Organizations. The study adopted survey research approach in its design and covered a population of 236 members of staff while its sample size was 182 members of staff. The data used in this study were generated from both primary and secondary sources. The Spearman rank correlation coefficient (r) was used to calculate the reliability index which yielded a 94% output. The statistical tools used for data analysis were simple percentage (%) and Pearson Product Moment Correlation (PPMC) using the 20.0 version of statistical package for social sciences (SPSS). The study analyzed empirical data generated from a well structured valid and consistent questionnaire and posited that the viability of manufacturing organizations especially those in the beverage industry is significantly influenced by raw material resource sustainability. Moreover, the strength of the effect of raw material resource sustainability appears to be felt more on financial viability and less on management model viability. It was recommended among others that Organizations that must be viable must consciously develop sustainable raw material resources that will facilitate through backward integration cost and time efficiency in their raw material resource value chain, which is a significant impetus for the financial viability of organizations and that integrating the value chain of the organization can enhance the sustainability of raw material resource of manufacturing firms.

KEYWORDS: Competitiveness, Eco-efficiency, Recycling, Reuse, Sustainability

INTRODUCTION

In today's Nigerian economy where the cost of doing business is "skyrocketing" everyday, government economic policies are becoming increasingly unstable and unpredictable and the market is becoming increasingly competitive due to pressure from imported products. The competitiveness of businesses in Nigeria has come under serious questioning. Whenever business performance is threatened, it is common to look towards reducing staff strength as an efficiency measure. However, considering the public outcry that follows downsizing and its impact on the image of the organization, it has become expedient for organizations to re-strategize and develop sustainable internal capabilities that can support their competitiveness. One of the ways through which organizations can develop this internal capability is to look towards resources/materials management. Big manufacturing firms like intafact breweries plc are known for the use of variety of materials/resources (both disposables and non-disposables). It has become expedient for them to rethink their resource/material

management strategy in order to enhance and sustain their competitiveness. Another interesting way to refer to this material/resource sustainability is "corporate waste to wealth programme" Becoming sustainable has become central to many aspects of everyday life. Not only does this relate to environmental decisions, but many products, services, production systems and developments now claim to be sustainable. However, sustainability has become a buzzword in the media, and is widely used in diverse contexts with disparate meanings. Sustainability is derived from two Latin words, *sus* which means up and *tenere*, which means to hold (Theis and Tomkin 2012).

In recent past, the concept of sustainability has found its way into business and management lexicon. According to the Chartered Institute of Personnel and Development (CIPD, 2012), the essence of sustainability in an organizational context is "the principle of enhancing the societal, environmental and economic systems within which a business operates". This introduces the concept of a three-way focus for organizations striving for sustainability. This is reflected also by Colbert and Kurucz (2007), who state that sustainability "implies a simultaneous focus on economic, social, and environmental performance". This notion may of course relate to the growth of so called "Triple bottom line accounting". One of the major advocates of resource sustainability is the organization for economic cooperation and development (OECD). Furthermore, the global movement for a green economy is compelling government of nations across the globe to initiate and drive the process of making private organizations become eco-friendly in their operations. This has led to the establishment of agencies like Nigeria environmental standard regulation and enforcement agency (NESREA) which has been replicated in many states. It is therefore note worthy that in response to this government policy, eco-efficiency has become one of the prime indices for organizational performance especially for large and multi-national manufacturing firms. The Nigerian beverage industry is becoming more competitive as new entrants are leveraging on the abundance of raw materials, cheap labour and cutting-edge technology to produce low cost products that are competing with the arrays of products already in the market. However, both old and new beverage firms in Nigeria appears not to give considerable but required attention to the issues of raw material sustainability and its effect on non-financial indices of performance like eco-efficiency and competitiveness

Statement of the Problem

Organizations in Nigeria today are operating in one of the most turbulent times considering the increasing inflation rate, high cost of capital, depreciating naira value security challenges and the tightening regulatory activities of government agencies. This has combined to increase the volatility of the environment. To remain competitive therefore, organizations are resorting to developing and adopting resource sustainability measures. However, the paucity of required technology has hindered many organizations from maximizing the benefits of recycling and reuse of materials. This has increased their cost of operations thereby affecting both their market potential and social performance. Again, organizations do not operate in a vacuum; they exist within the space provided by the society. It then follows that the changing social and climatic trends like insecurity, corruption, demand for work-life balance by employees and depleting climatic conditions are taking a toll on the ability of organizations to survive and grow. The problem of this study is therefore to examine the effect raw material sustainability has on the performance of organizations.

Objectives of the Study

The general objective of this study is to examine the effect of resource sustainability on organizational viability. Its specific objectives include;

i. Examine the effect of resource recycling on the competitiveness of beverage firms

ii. Examine the effect of resource re-use on the eco-efficiency of beverage firms

Research Questions

This study was guided by the following research questions;

i. What are the effects of resource recycling on the competitiveness of beverage firms?
ii. What are the effects of resource re-use on the eco-efficiency of beverage firms?

Hypotheses

The following hypotheses are raised for this study;

H_{O1}: Resource recycling does not have significant effect on the competitiveness of beverage firms

H_{O2}: Resource re-use does not have significant effect on the eco-efficiency of beverage firms

REVIEW OF RELATED LITERATURE

Meaning/Definitions of Resource Sustainability

According to Daly (1991), there is no single distinct definition for sustainability, but everyone should concur that it is both morally and economically wrong to treat the world as a business in liquidation, in other words, to treat the planet and its resources simply as something that comes and goes in the struggles of the economy. Nonetheless, Gro Harlem (1987) definition of the concept of sustainability is widely used. Sustainability in this context is defined as development that meets the needs of the present without compromising the needs of future generations to meet their own needs. Any organization that fully satisfies the terms of this statement truly adheres to what the foundation of sustainability should be all about, as it is an outlook that not only completely disregards present-time selflessness, and satisfaction without gluttony, but it ensures that upcoming prospectors can be given at the minimum equal opportunities from the pool of resources. A definition hardly anyone, if any at all, would have a disagreement with, which is why it was chosen as the model definition of sustainability for this study. A sustainable company should in fact operate with this philosophy while balancing economical, social and environmental aspects.

The Dimensions of Sustainability

Ever since the UN report "Our common future" was released in 1987, sustainable development has been a widely accepted concept and a generally strived for state for society. One of the most long-lived accomplishments of the Brundtland report was defining that sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (United Nations, 1987). Emphasizing the concept of sustainability from economic and policy perspectives, Stavins et al. (2003) propose that dynamic efficiency and intergenerational equity are two demanding yet necessary conditions in the talks for sustainability. Although constant consumption at a mere subsistence level would fulfill the Brundtland definition of sustainability, a socially desirable level of consumption (broadly interpreted) would be one in which the economy is at the Pareto frontier. At this point of dynamic efficiency, the economy is maximizing social utility by exerting "non-wastefulness" and thus has the potential of becoming sustainable. To assure that the economy is actually made sustainable, inter-generational transfers can fulfill the intergenerational equity condition that the total welfare function is non-declining over time. Today, the understanding of the concept of sustainability in policy and academia is multidimensional; not only does it encompass environmental sustainability but also at least economic and social sustainability. Other dimensions that have been considered include cultural, historical and institutional sustainability (Botta, 2005). Within the international policy framework, Raworth (2012) has suggested an analytical framework in which the planet's

natural resources set the environmental boundaries, a ceiling for all human activity to take place within. This includes the pursuit of a just space, free from critical human deprivation. Sustainable development requires living within ecological as well as social boundaries to avoid ecological and social crisis. These boundaries are based on norms and guided by research, but it must be remembered that local as well as global scale matters, for all systems are interconnected. Building a social foundation and staying within ecological boundaries creates a conceptual framework in shape of a "doughnut" that can be seen in. The doughnut approach thus in some sense puts stricter demands on human activity in that it doesn't tolerate tradeoffs between dimensions that risk crossing tipping points of Earth-system processes. At the same time, the dual aim it proposes is to move back to a safe environmental space and to move forward *all* human population into a just space.

- *Environmental* (or ecological) *sustainability* is the most commonly assumed dimension out of the three pillars. The dimension refers to a development that does not endanger natural resources, species and ecosystems (Anan & Sen, 2000). Raworth (2012) proposes quantitative indicators including buffer zones for nine critical Earth-system processes to provide a 'safe operating space for humanity'. Due to current human activity, the boundaries of climate change, biodiversity loss and nitrogen use have all been crossed already.
- *Social sustainability* is the least well-defined of the three dimensions and it can even be argued that everything about sustainable development has a social dimension (Littig & Grießler, 2005). Two commonly used approaches to assess social sustainability are through capabilities (of people to convert economic wealth into desirable outcomes) and social capital (in the form of norms, trust and reciprocity that improves the efficiency of society), and others include economic equity, livability, health equity, community development, social support, human rights, labor rights, social responsibility, social justice, cultural competence, community resilience, and human adaptation (Adams, 2006). Some of these aspects are also included by Raworth (2012). She notes that within the international relations framework, social priorities from governments are that people are well, productive and empowered and she also acknowledges that we have never had a state of social sustainability for all humanity but argues that reaching such a state should be top priority for policy makers.
- *Economic sustainability* can be defined as maintenance of capital, for continuous generation of income (Stern, 1997). A more useful definition for governments, firms and households need to account for private as well as social costs and benefits; benefit-cost analysis may thus be one useful application. By assigning monetary values to social costs and benefits and using a life-cycle economic (LCE) approach, government and firms may account for different types of future consequences using a financial framework. Minimized life-cycle costs (LCC) and non-declining capital (real estate) values are possible interpretations of the term economic sustainability (Stavins *et al.,* 2003). Although the LCC approach can be criticized for oversimplifying and for not properly assessing environmental risks, it still provides a methodology that permits taking into account environmental impact over time and comparing them in a uniform framework (Gluch & Baumann, 2004). To complement these monetary assessments with qualitative concerns, a balanced scorecard may also be used (Figge, 2002).

Resource Sustainability and Business Performance

Sustainability and Competitiveness: Stahel (2001), states that the drivers of sustainability on a company level will be found increasingly in the use of technology to create returns, rather than in the pursuit of environmental thinking. This way the interest of the economic community will be sufficient to cross what has been determined as the first borderline to a

sustainable economy: shifting from protecting the environment to increasing economic competitiveness. The goal is to break the link between corporate success and resource consumption in order to create more wealth with fewer resources. Stahel emphasizes the role of the service economy in this transfer, since the de-materialization of production processes is a step in the right direction towards a sustainable economy, but not enough to guarantee sustainability in the long run. He also points to life-cycle assessment (LCA) and innovation in product development as the key tools, and encourages the move away from regulatory control and command in order to encourage a more proactive approach to product development. Stahel claims that sufficiency solutions are of interest only to economic actors in a service economy where they enable an income without resource consumption, hence by using eco-efficient means. Here, the legal framework should in Stahel's opinion provide conditions that promote performance and results instead of means. This can be stated as an overly simplistic way presenting the problem, overlooking the large potential for use of loopholes in the law, and therefore can be considered ambiguous. This is further demonstrated when Stahel adds that the key tools of the consumer side are the sustainability values that are appealing to people who will apply them only to increase their own quality of life. Cynically seen, this might lead to a way of thinking that follows the norms of ethical egoism instead of utilitarianism; consumers not caring about knowing how goods or services are produced beyond their own actions, i.e. how much and what they buy, and how they use and recycle these goods from the purchase onwards. Even if social innovation is plentiful, the needed emphasis on economic innovation might be neglected.

Resource Sustainability and Eco-efficiency: The concept of eco-efficiency comprises the mutual goal of corporations, governments and social communities to enhance their activities in the kind of way that reduces inputs and negative environmental effects, such as waste production and pollution, and at the same time increases the economic value of goods, services and entire supply chains. In other words, it points to improved efficiency from both ecological and economical point of view. The concept has been shaped to its current form mostly by the World Business Council for Sustainable Development (WBCSD) which promotes it through its Eco-efficiency Metrics & Reporting and the European Eco-efficiency Initiative (EEEI) programs. As defined in the first eco-efficiency workshop held by WBCSD in 1993, Eco-efficiency is achieved by the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the earth's estimated carrying capacity (WBCSD, 2000)

Other ways of defining eco-efficiency have been presented by business practitioners as "creating more value with less impact‟ or "doing more with less‟, or even "more welfare from less nature" by the European Environment Agency (EEA), when applied on the macro-level of economic and sustainable development. On the business side, eco-efficiency is concerned with three broad objectives:

1. *Reducing the consumption of resources:* This includes minimizing the use of energy, materials, water and land, enhancing recyclability and product durability, and closing material loops.
2. *Reducing the impact on nature:* This includes minimizing air emissions, water discharges, waste disposal and the dispersion of toxic substances, as well as fostering the sustainable use of renewable resources.
3. *Increasing product or service value:* This means providing more benefits to customers through product functionality, flexibility and modularity, providing additional services and focusing on selling the functional needs that customers actually want. This raises

the possibility of the customer receiving the same functional need with fewer materials and less resources. Within companies, eco-efficiency can be put into practice through various operational and commercial strategies. The main shift behind all the operational strategies involves the transition from traditional supply chain structure, which is focused on efficient forward-oriented flows and high throughput, to one that includes channels for reverse flows of goods and for re-integrating products, parts and materials back into the forward channel, and increased resource productivity.

This transition has been depicted by Stahel (2001) as moving from the linear structure of the "river" economy to one that closes the material loops and forms a self-replenishing "lake" economy. Incorporating the same basic idea as the closed-loop supply chain models, which have been presented in relation to various other concepts (Srivastava, 2008), also this one tackles the issue of reducing overall resource consumption through re-use, repair, refurbishing and remanufacturing of goods.

Factors Militating against Resource Sustainability

Rao and Brownhill, (2001), noted that factors militating against resource sustainability are as follows:

I. The real or perceived financial cost and risks which include the problem of the upfront cost and the ongoing costs usually coming from separate budgets.
II. The lack of information and training of designers, contractors, and clients.
III. Lack of demand from the clients.
V. Regulation

All these factors are more of organizational related issues. An organization is subjected to both internal and external factors which influence the organizational environment and how the management of such organizations responds to it. Internal factors relate to the strength within the organization system which indicates its readiness and capability to pursue or practice sustainable organization system. This indicates its readiness and capability to pursue or practice sustainable by employing sustainable materials and processes. The challenges within organizations according to Abidin (2010) are:

I. Lack of awareness and knowledge
II. Size of developers organization
III. Interest, direction and commitment of top management
IV. Cost versus economic viability
V. Target buyers
VI. Passive culture

External challenges refer to challenges not within the organization, beyond the direct control of the organizations that impose certain restrictions or limitation towards the development of sustainable material usage implementation in the organization. Abidin (2010) highlighted the challenges as:

I. Local authority's and government's involvement
II. Public interest and Buyers demand
III. Status quo in rules and regulations
IV. Availability of green materials
V. Learning period
VI. Associating sustainable concept with luxury living

METHODOLOGY

The research approach for this study is the survey research design. The population for the

study consists of all middle-level and senior employees of Intafact Beverages Onitsha plant which is given as 236. The major instrument for data collection was a five point likert scale questionnaire titled raw material sustainability and organizational performance questionnaire (RMSandOPQ). Face to face approach was adopted in administering the questionnaires, hence; the researchers gave the questionnaire to the respondents physically and retrieve the completed copies of questionnaire using the same approach. The statistical tool used for data analysis in this study is the Pearson Product Moment Coefficient (PPMC) using the 20.0 version of statistical package for social sciences (SPSS)

RESULTS AND DISCUSSIONS

Test of Hypotheses

The hypotheses stated in this work were tested using the PPMC statistical method with the aid of 20.0 versions of SPSS

Hypothesis One

H_{O1}: resource recycling does not have significant effect on the competitiveness of firms

From the output of the SPSS software analysis, we have the following outputs

Model Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1901.796	1	1901.796	66.091	.000[b]
	Residual	230.204	8	28.775		
	Total	2132.000	9			

a. Dependent Variable: CoF

b. Predictors: (Constant), RR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.949	2.422		1.218	.258
	RR	.827	.102	.944	8.130	.000

a. Dependent Variable: CoF

Since the p-value or sig. (0.000) < the alpha level (0.05), we reject the null hypothesis and conclude that resource recycling has significant effect on the competitiveness of beverage companies in Nigeria

Hypothesis Two

H_{O2}: Resource re-use does not have significant effect on the eco-efficiency of the organization

From the output of the SPSS software analysis, we have the following output;

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.870[a]	.757	.726	6.36784	.757	24.859	1	8	.001

a. Predictors: (Constant), RR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1008.005	1	1008.005	24.859	.001[b]
	Residual	324.395	8	40.549		
	Total	1332.400	9			

a. Dependent Variable: EE
b. Predictors: (Constant), RR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.119	2.610		3.110	.014
	RR	.499	.100	.870	4.986	.001

a. Dependent Variable: EE

Since the p-value or sig. (0.001) < the alpha level (0.05), we reject the null hypothesis and conclude that resource re-use has significant effect on the eco-efficiency of beverage firms in Nigeria

FINDINGS

i. The outcome of hypothesis one shows a p-value or sig. (0.000) which is < the alpha level (0.05), it was found that resource recycling has significant effect on the competitiveness of beverage companies in Nigeria
ii. The p-value or sig. for hypothesis two showed (0.001) which is < the alpha level (0.05), it was found that resource re-use has significant effect on the eco-efficiency of beverage firms in Nigeria

CONCLUSION

In Nigeria today, the state of the economy calls for new strategic leaps by organizations. Part of strategic options been explored by organizations is to pursue efficiency in production in order to enhance their performance, hence this study. Having analyzed empirical data generated from a well structured, valid and consistent questionnaire, the study concludes that the performance of manufacturing firms especially those in the beverage sector can significantly be influenced by raw material sustainability practices. Moreover, the strength of the effect of resource sustainability appears to be felt more on their competitiveness as it entrenches efficiency in the production process while cutting both material and regulatory cost. Furthermore, it was concluded that the effects of resource sustainability is a significant vehicle to attaining an eco-friendly operations especially for firms in the beverage sector.

RECOMMENDATIONS

In line with the findings and conclusions above, the following recommendations were made by the study;

(1) For organizations to compete favorably, it is of importance that they consciously develop a raw sustainability programme and integrate such in their operational

strategy

(2) Through backward integration, organizations can enjoy both cost and time efficiency in their raw material resource supply. This is a very significant impetus for the competitiveness of firms in the beverage sector.

(3) To boost their eco-efficiency and reduce regulatory cost, firms in the beverage sector should integrate resource sustainability into their overall value chain.

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