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Factors that Affect Green Procurement Implementation in the Manufacturing Industry: A Case of Harare Firms in Zimbabwe

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Abstract:

The study sought to ascertain factors that facilitate the successful implementation of green procurement in the manufacturing industry of Zimbabwe. The major objective of the study was to examine how staff competence, supplier participation and ICT infrastructure affect the implementation of green procurement. Questionnaires were used to gather primary data and secondary data was gathered from business journals. From a target population of 93 participants, a sample of 31 participants was selected using stratified random sampling technique. The study concluded that staff competence, supplier participation and ICT infrastructure significantly affect implementation of green procurement, although at different levels. One of the major recommendations was that manufacturing organisations should carry out performance assessments to identify all the factors which affect green procurement in order to apply logical management initiatives and to attain sustainable development. Initiatives like early supplier involvement should be implemented to enhance supplier participation.

1. Background of the Study

Consumers and organizations are increasingly considering longer term sustainability issues when they purchase goods or services (McDonald and Oates, 2006). However, according to Chari and Chiriseri (2014), progress is slow and the percentage of green purchases in the manufacturing industry of Zimbabwe has remained considerably low for the past few years.

Green procurement is the selection of products and services that minimize negative environmental impacts and also considers the continued availability of such non-renewal resources to the future generations according to Brammer and Walker (2011).

Drumwright (1994) says going green has become an important environmental issue in contemporary business practices worldwide. In light of the growing importance of green procurement and green supplier development, Robinson and Stranberg (2008) state that various studies have been conducted all over the world, particularly among European Union members and the Middle East on green manufacturing, challenges of green procurement and opportunities related to environmental responsibility.

Green procurement requires a company to consider the costs of securing raw materials, production, transportation, storage, use and disposal of the product says Matthews and Axelrod (2004). It is rooted in the principle of pollution prevention, eliminating risks to human health and the environment at the same time ensuring the availability of the natural resources to the future generations.

Carlsson and Waara (2006) say that green products are produced in a way that consumes fewer natural resources or uses them more sustainably. Buying 'green' on the other hand, involves buying recyclable products that last longer or produce less waste. Ryan (2009) says green products require fewer resources to manufacture and operate, so savings can be made on energy, water, fuel and other natural resources.

All over the globe, both public and private sector organizations are focusing on sustainability in resource extraction, use and disposal (Gonzalez et al., 2008).

Carlsson and Waara (2006) found out that, while the western countries are leading users of Green Public Procurement (GPP), some developing countries are following suit. Carlsson and Waara (2006) assert that EU countries are particular about environmental considerations in the awarding of contracts, and in contract performance clauses. Companies are under regulatory pressure from government and the public to adopt green procurement policy (UNEP, 2002).

1.1. Statement of the Problem

Since 2009 Zimbabwean industries manufacturing capacity has declined to low a level of 34% and there is fear that green considerations may not be adhered to when industries are eventually revived. To this end, this study investigates the factors that determine the implementation of green procurement in manufacturing industries. Even though developed countries have initiated the

use of green procurement as a tool to protect the environment, resources and the wellbeing of the earthly residents, developing countries can adopt green culture in order to minimize rapid deterioration of the environment.

1.2. Objectives of the Study

The study was based on the following research objectives:

- To establish if staff competence affects green procurement implementation in the manufacturing industry.
- To find out whether ICT infrastructure affects implementation of green procurement in the manufacturing industry.
- To ascertain if supplier participation plays any role on green procurement implementation.

1.3. Scope

This study was conducted in Harare, Zimbabwe from December 2014 to November 2015. The effects of staff competencies, supplier participation and ICT infrastructure on green procurement implementation were the variables under study.

2. Literature Review

2.1. Green Procurement

Amemba et al., (2013) defines green procurement as environmental procurement activities such as reduction, reuse and recycling of materials in procurement. Toke et al., (2012) say that it can be a participative approach where organizations jointly develop cleaner technology and processes with their suppliers. They suggest that organizations can conduct supplier environmental audits and assessments to monitor supplier compliance to environmental standards and requirements so as to achieve green procurement.

2.2. Staff Competence

Rothwell and Zegveld (1981) greater competence is required to encourage suppliers to innovate and Cousins et al., (2006) suggests that, purchasers with high skills and knowledge have a significant impact on financial performance and operational efficiency in terms of quality improvement, design and lead time reduction.

2.3. Supplier Participation

New technologies come on stream faster when there is supplier confidence and clarity within the supply chain about the direction of developments and this makes it worthwhile for a supplier to make the investments in research and development to achieve new performance standards according to Amy and Coro (2006). This implies that supplier participation enables the success of green procurement.

3. Theoretical Framework

Institutional theory and the (natural) Resource-based view (NRBV) are the forefront models on green procurement. Institutional theory provides the rationale for why firms adapt green procurement, while RBV explains how firms can derive competitive advantage from pursuing environmental initiatives.

Institutional theory suggests that action taken by firms are driven by the external pressures they face (Scott, 1994). The theory also specifies that firms adopt these initiatives in order to gain legitimacy within the society. Whereas Jennings and Zandberg (1995) explains the adoption of the practices in the environmental context, several scholars have subsequently investigated the positive impact of these institutional pressures on green procurement (Sarkis et al., 2010). The resource-based view of the firm emphasises that valuable, rare, imperfectly imitable and non-substitutable resources result in competitive advantage (Barney, 2001). The NRBV extends the resources-based view by highlighting that the environment might be a constraining factor impacting on sustainable competitive advantage (Hart, 1995).

3.1. Stakeholder Support for Green Procurement

Political support for green procurement has manifested in some parts of the world especially in the Middle East (China and Japan) and Europe. The potential for green sourcing as a policy instrument and as an important tool within the concept of sustainable development has become increasingly recognized (Drumwright, 1994). Resultantly, green procurement practices began to take form, resulting in a variety of policies and initiatives, giving a different status to green procurement and purchasing in different countries says Robinson and Stranberg (2008). According to Gonzalez, et al., (2008), the practices also focuses on the social profile of their suppliers and it demands fair and equal treatment of employees, discourages child and forced labour.

3.2. Social Responsible Purchasing

Environmental and social responsibilities have recently compelled organizations to incorporate non-economic criteria into their procurement practices (Gonzalez, et al., 2008). This is referred to as Socially Responsible Purchasing (SRP). Attempts to integrate social considerations are taking shape in both the private and public sector of the economy regardless of the fact that the initiative is new (Gonzalez, et al., 2008). However, the rate at which social requirements are integrated into procurement has been found to be higher than for corresponding environmental requirements (Mbohwa, 2002).

3.3. Green Packaging

One way which contributes towards greening products is through the components that producers choose for product design and engineering stages of the supply chain (Drumwright 1994). To foster the initiative of going green through the procurement function, manufacturers should choose suppliers who practice green packaging. Suppliers can cut down significantly on waste by choosing more sustainable ways to package their products, including less plastic and less packaging.

3.4. Waste Management and Environmental Concern

Suppliers can make use of reverse logistics and stop excess waste in the landfills. This can possibly stop hazardous material exposure from products that are improperly disposed of, for example computers with high levels of mercury. A company called MBDC that has developed a certification process to identify environmentally-intelligent design (MBDC, 2008). Companies can engage MBDC to certify their products as cradle to cradle. Cradle to cradle certification certifies that the company uses environmentally safe and healthy materials, designs for material reutilization, uses renewable energy, efficiently uses water and ensures maximum water quality associated with production and institutes strategies for social responsibility (MBDC, 2008).

3.5. Eco-labelling Standards and Performance

In order to purchase green products, consumers must be able to identify them. Eco-labelling is a means to identify products and their position as far as greening is concerned (TCEM, 2007). As environmentally sustainable purchasing becomes more popular, the number of products advertised as green products is bound to increase. Swanson et al., (2005) note that one of the challenges to green purchasing lies in factors to consider when distinguishing environmentally preferable products. Chari and Chiriseri (2014) posits that orders are currently being awarded based on lowest cost principle neglecting environmental and social considerations. These challenges are increased when green washing techniques are used by manufacturers. Green washing is defined as the act of misleading consumers regarding the green environmental practices of a company and the green environmental benefits of a product or service (TCEM, 2007).

3.6. Government Intervention

The government can carry out appraisals which ensure compliance by companies to sustainability requirements. The motive of the government is to ensure adherence to sustainable development goals and environmental sustainability policy requirements (Amy and Coro, 2008). This appraisal involves all activities undertaken by the company giving special attention to procedures used in procurement processes, effects of vehicle movements, the salinity levels of drainage water in terms, effects of plastics, effects of power supply, effects of steam supply, effects of flue gases among others according to Bergstrom, (1996).

In Zimbabwe, the government's environmental policy aims at integrating environmental aspects into national development plans (EMA, 2002). The broad objectives of the national environmental policy include: (a). Optimal use of natural land and water resources in improving the quality of human environment. (b). Sustainable use of natural resources to meet the needs of the present generations while preserving their ability to meet the needs of future generations. (c). Meeting national goals and international obligations by conserving bio-diversity, arresting desertification, mitigating effects of disasters, protecting the ozone layer and maintaining an ecological balance on earth.

3.7. Empirical Evidence

Hussain and Shale (2014) carried out a case study of Unilever Kenya Limited, and focused on how sustainable procurement practices impact on organizational performance. The study found that, corporate social responsibility, product re-usability, supplier involvement and ethical practices contribute to green procurement in the firm. The authors concluded that, the firm product re-usability contributed greatly to green procurement in the organization.

Nderitu and Ngugi (2014) carried out a study in Kenya on the effects of green procurement practices on East African Breweries Limited. The study revealed that a plethora of factors are required for successful implementation of green procurement practices. Competence of the staff members on green procurement concepts was an essential contributor to the effects of green procurement. The study recommended that organizations should have competent professional workforce and extensive investment in ICT among other strategic investment approaches to green procurement to realise the positive effects of green procurement.

Chien and Shih, (2007) carried out an investigation on the green supply chain management practices likely to be adopted by the electrical and electronic industry in Taiwan and the research targeted companies which had attained ISO 14001 on green certification. The study found out that adoption of green procurement generated favourable environmental and financial performance for the respective companies.

Chari and Chiriseri (2014) investigated the factors that hinder the adoption of sustainable procurement in Zimbabwe. The study found out that lack of management support, unavailability of sustainable products, lack of knowledge and wrong perception that sustainable product is expensive were limiting factors in the adoption of sustainable procurement. The study suggests that employees should be trained and educated on sustainability practices.

Qiao and Wang (2009) examined the development of Chinese green procurement and the issues involved in its implementation and concluded that the Chinese government uses green procurement to promote sustainable development and to protect the environment. The Chinese government established its public procurement system in 1990 and went further to implement green procurement in 2004.

4. Research Methodology

Descriptive research approach was used to collect and analyze data and enabled the collection of qualitative data based on opinions, perceptions and attitudes from procurement personnel, management and executives. The study targeted company policy makers as well as procurement practitioners. Stratified random sampling was used to select a sample size of 30 participants from a population of 93 participants. Primary data was obtained using Likert scaled questionnaires.

5. Findings, Data Analysis and Recommendation

5.1. Staff Competence

Figure 4.1 below shows that the majority of the survey respondents agree that staff competency facilitates green procurement initiatives towards operational excellence.

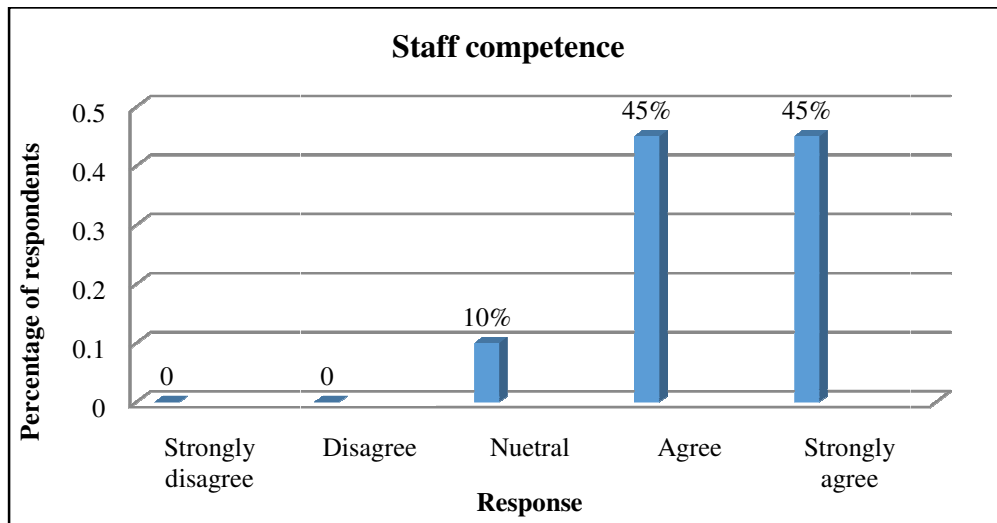


Figure 1: Staff competency on green procurement
Source: Primary data (2015)

The majority of the respondents (90%) confirmed that staff competence contributes to the successful implementation of green procurement in the manufacturing industry. Staff competence enhances collaboration, idea generation and motivation of the employees towards going green, thereby promoting implementation of green procurement. This concurs with Zaim et al., (2013) and Nderitu and Ngugi (2014) who suggested that there is a positive relationship between competence and green procurement implementation.

5.2. Supplier Participation

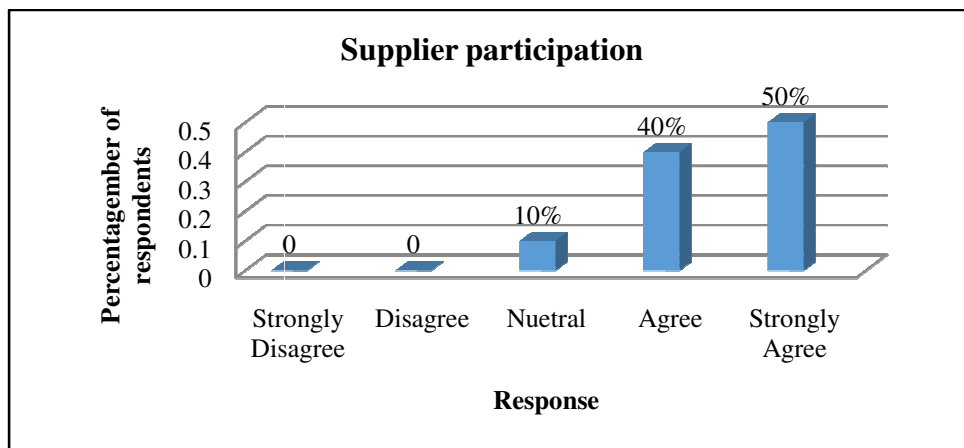


Figure 2: Supplier participation
Source: Primary data (2015)

The majority of the respondents agreed that supplier participation facilitates green procurement implementation. Communication with suppliers enables idea sharing and suppliers are made to know the requisite green procurement standards. This confirms findings by Hsu and Hu (2008) and Hussain and Shale (2014) that supplier involvement contributes to sustainable procurement and improved environmental performance.

Suppliers promote waste reduction and pollution prevention through sustainable business operations (Lamming and Hampson 1996) and collaborating with them on green procurement initiatives promotes environmentally sound management across the entire supply chain.

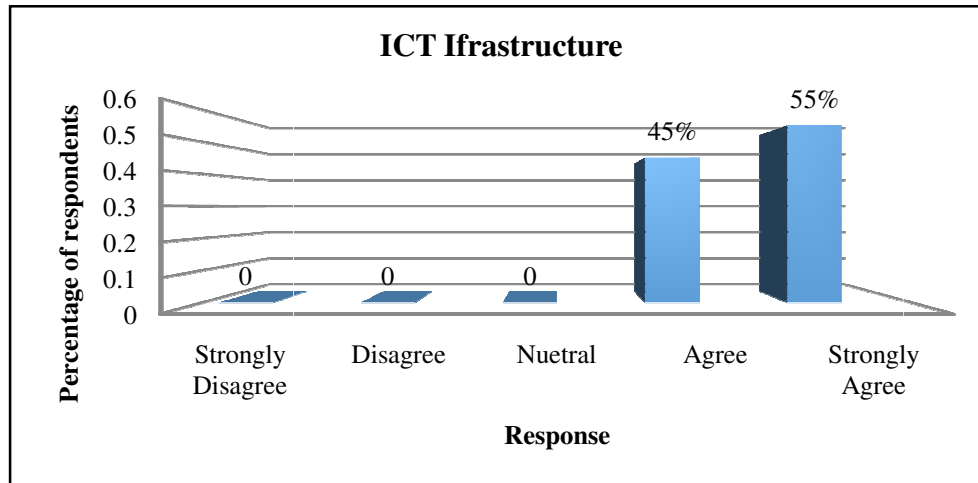


Figure 3: ICT Infrastructure
Source: Primary Data (2015)

All the respondents were of the view that ICT infrastructure positively affects the successful implementation of green procurement. Cleaner technology supports green procurement, reduces consumption of inputs such as fuels and water and promotes efficient production processes. Brynjolfsson (2003) confirms that ICT infrastructure increases productivity and operational efficiency in specific business processes by reducing costs and improves on quality in design processes and inventory management systems.

The respondents confirmed that business travel can be reduced through the use of ICT connectivity. Reduced business travels result in reduction in costs and carbon emission. These findings buttress Majundar et al., (2010) who states that the benefits of ICT to an organization includes savings of inputs, general cost reduction, higher flexibility and improvement in product quality.

Bloom et al., (2009) also agreed that, ICTs play a crucial role in networking and communication as firms use these technologies to facilitate communication among employees and reduce coordination costs. Ekwali and Osasere (2012) complements that ICT is redefining concepts and its facilities are measuring productivity, aiding in the enhancement of methodologies and providing new and better facilities and ways of operations in manufacturing and productivity.

6. Conclusion

The study concluded that staff competence, supplier participation and ICT infrastructure have a positive influence on green procurement implementation. Altogether, these variables complement each other to facilitate successful implementation of green procurement.

6.1. Recommendations

The study recommends that companies should formulate and implement a green procurement policy to support green procurement initiatives. National and Local government should ensure implementation of the green procurement strategy in the whole manufacturing industry by drafting and implementing green procurement policy enforceable at law.

At the organizational level, management should train and develop staff on green procurement and its importance. Organizations should put in place best supplier relationship management practices to enhance early supplier involvement and supplier participation in their operations. Organizations should undertake thorough supplier analysis and deal with sustainably sound suppliers. Suppliers may be given incentives for developing sustainable products and formulating and implementing green procurement policy. Companies should recruit professional environmentalists to guide the organization on green awareness.

The organization should have special techno-economic knowledge and openness to new, effective methods when assessing tenders for green procurement implementation.

Organizations should do market analysis and competitor and strive to know the green needs of consumers and competitors respectively, in order to enable consumer satisfaction through appropriate products offerings.

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