

# The Extent Green Marketing Has Been Embraced in the Construction Industry - Employee Perspective in Zimbabwe

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## Abstract

### Purpose

The purpose of this research was to examine the awareness of employees about green marketing, the initiatives taken by contractors and the challenges encountered in implementing the concept in the construction industry in Zimbabwe.

### Methodology

The study was quantitative using an explanatory research design with the study population limited to construction companies registered with CIFOZ. A sample of 182 executives representing construction companies completed the questionnaire. The data were analysed using STATA version 12.

### Findings

The findings showed a positive awareness in employees to green marketing in the industry and a positive perception of practices as evidenced by the construction employees. However, there are challenges in the implementation of green marketing, including a lack of green standards.

### Contribution and value add

Based on employee perspectives, a conclusion was reached that green marketing has been embraced in the Zimbabwean construction industry, and there are green marketing initiatives undertaken by the construction companies in that country. The results of this study contribute to the body of academic knowledge, hence the theory base that was used to drive this study could be amended as a result of the insights from the study.

**Keywords:** construction industry, environment, green marketing, green products, organisational performance

## 1. Introduction

In recent years, environmental issues have become high on the global agenda as organisations embrace environmental protection as part of their competitive strategies (Dean & Pacheco 2014). As governments and international institutions are changing and adopting legislation and policies that address environmental awareness, both customers and business organisations are looking at performance from a different perspective, changing their behaviour in favour of protection (Sandu 2014; Ahmad 2014). Marketers are under scrutiny regarding the effects of their products on the environment and this has led organisations to integrate green practices into their systems as an assurance to customers that an appropriate environmental system is in place. This has also caused most companies to include environmental issues on their corporate websites (Tireksani & Djajadikerta 2014:19).

While a substantial body of literature on green marketing exists in other parts of the world (Dean & Pacheco 2014:14; Zhu & Sarkis 2016:293; Arseculeratne & Yazdanifard 2014:130), academic studies on the awareness of practices in Zimbabwe have generally been limited (Mbasera, Du Plessis, Saayman & Kruger 2016:2). There are few studies (if any) that have investigated green marketing concerns within the construction industry in that country, despite that, the industry should be investigated as it has a unique set of circumstances and challenges that could likely yield results. Furthermore, the scope still has limitations as most of the studies on green marketing focus primarily on customer perceptions. Yet the emergence of green marketing has increased

environmental awareness among environmental groups, employees, policymakers, and, most of all, the customers (Thakur 2016:77). The perspective of construction employees regarding green marketing practices has not been explored even though the success of implementing green marketing is largely achieved by employees. The construction industry is labour intensive which implies that contractors heavily rely on manpower to exercise green practices. It is therefore essential to examine green marketing in the Zimbabwean construction industry based on employees' perceptions as this may affect the organisation's ultimate green performance.

A review of literature has also shown the omission of socio-demographic factors in green marketing studies in the Zimbabwean context. The role of socio-demographic factors on environmental issues is vital and in other countries, this role has been well documented (Ibok & George 2014:47). Socio-demographic factors form a subset of ethical behaviour that organisational employees demonstrate and understanding the implications is important. An attempt to identify and examine the socio-demographic characteristics of employees in an organisation would show whether employees are environmentally conscious and would be able to draw some organisational environmental implications in the policy-making process.

The question that has remained unanswered in the Zimbabwean context is, 'To what extent has green marketing been embraced in the construction industry in Zimbabwe?' This article examines this question, based on a study that specifically sought to:

- examine employees' awareness of green marketing amongst the Zimbabwean construction companies,
- examine green marketing practices by contractors as perceived by employees, and
- determine the challenges faced by contractors in implementing green marketing based on employees' perspective.

## **2. Literature Review**

Although several theories have a bearing on the study (corporate environmental theory, stakeholder theory and customer behaviour theory), this study was based on the green marketing theory.

## **3. The Concept of Green Marketing**

The conceptualisation of green marketing can be traced back to 1975 when the American Marketing Association (AMA) introduced it in a workshop on "Ecological Marketing" (Zhu & Sarkis 2016:290; do Paco & Raposo 2009:365) and it later came into prominence in the late 1990s and early 2000s (Deshpande 2011). However, despite the studies available, there is no consensus as to what constitutes green marketing. According to Polonsky (1994:2), it consists of all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these occur with a minimal detrimental impact on the natural environment. The AMA, defined as the marketing of products that are presumed to be environmentally safe, thus incorporating a broad range of activities, including product modification, changes to the production process, packaging changes, and modifying advertising. Based on the review of literature, the working definition for this study is provided by AMA, a definition that has common features including environmental sustainability, production of environmentally safe products and customer satisfaction.

## **4. Benefits of Green Marketing**

While the need for green marketing has been attributed to the deterioration of the environment (Saxena & Khandelwal 2010:278), there is a common understanding in the literature that from a strategic standpoint it has a crucial competitive advantage and is considered a point of differentiation and positioning of the offer (Dean & Pacheco 2014:14; Zhu & Sarkis 2016:293; Moravcikova, Krizanova, Kliestikova & Rypakova 2017:2; Arseculeratne & Yazdanifard 2014:130). Leonidou, Leonidou and Hultman (2011:25) argue that, when practised well, green marketing leads to competitive advantage and can be a central part of a company's brand and value proposition. This is in line with Chaudhary, Tripathi and Monga's (2011:9) view that firms that develop new and improved products and services with environmental inputs in mind give themselves access to new markets and increase their profit sustainability. Nadaf and Nadaf (2014:95) added that these firms enjoy a competitive advantage over those which are not concerned for the environment. However, some organisations view green marketing as an additional cost that reduces profit (Wymer & Polonsky 2015: 243). The authors argue that increasing renewable inputs increases costs more than any additional revenue that may result, namely, marginal costs exceeding marginal revenue.

## **5. Green Marketing Practices**

Companies worldwide have started making use of green marketing strategies and techniques in their marketing practices. For example, an empirical study conducted by Laheri, Dangi and Vohra (2014:147) in India showed

that pressure from government and environmental lobbies caused the firms to go green to combat pollution and preserve natural resources. Green marketing has become an important ingredient of most companies (Arseculeratne & Yazdanifard 2014:130), and as Czinkota and Ronkainen (1992:39) proposed, corporations need to find solutions to environmental challenges through marketing strategies, products and services. To remain competitive, they are making numerous attempts to keep up with the environmental movement (Chen & Chai 2010:28). Some of the practices include new technologies for handling waste and air pollution, product standardisation to ensure environmentally safe products, providing natural products and those oriented towards resource conservation and greater occupant health (Czinkota & Ronkainen 1992:39). These practices assure the company plays a legitimate role in providing for the needs of the society, as well as the opportunity to achieve industry pre-eminence (Lekhanya 2014:625).

## 6. Customer Retention

The emergence of green concepts opened an opportunity for entrepreneurial growth. Firms have noticed that customers are becoming more concerned about their everyday habits and impact on the environment (Rahman, Barua, Hoque & Zahir 2017:9), resulting in most profit-driven business branding products in line with it. This is to capture market opportunities associated with the green concept, for example, as Cherian and Jacob (2012:118) reported, businesses such as Wal-Mart promote the concept of organic food to customers as a way of improving the environment by promoting 'green' products and issues as well as meeting customers environmental demands. According to Kaur (2015:66), 87% of people from various nations, such as Brazil, Canada, China, France, Germany, India, the UK and the USA, have shown an interest in reducing their impact on the environment, achieved through taking action against environmentally friendly products. However, Kaur (2015:66) argues that showing interest and taking action on the interest are two different activities.

## 7. Challenges of Green Marketing

In the light of growing global concern, green marketing has gained much support from many countries; however, despite this many are still encountering challenges in implementing the concept (Ahmad 2014:3). Green marketing requires renewable and recyclable materials, advanced technology, especially for water treatment, but the majority of people and organisations are not aware of the concept, hence there is a need to create awareness of green products and their uses. According to Windapo (2015:6098), green buildings are a result of using green products. However, it is a challenge for many organisations to implement the concept because it is too costly and requires large investments in research and development (Thulasimani 2012:450). For example, in South Africa, Woolworths invested approximately R10 million in sustainable initiatives for its distribution centre in Midrand (van der Merwe 2007). Some small 'cowboy' companies may not afford to raise the capital and regard the concept as costly (Cekanavicius, Bazyte, Dicmonaite 2014:85) and another challenge encountered is the lack of standards or public consensus about what constitutes green marketing (Govender & Govender 2016:77). This lack of consensus has slowed the growth of green marketing because organisations are often reluctant to promote their green attributes, while customers are often sceptical about the claims (Seyrek & Gul 2017:309).

## 8. Hypotheses

Based on the review of the literature, the following assumptions were formulated:

- H<sub>1</sub> Employees in the Zimbabwean construction industry are aware of green marketing practices.
- H<sub>2</sub> There are green marketing practices within Zimbabwean construction companies that resulted in positive customer retention (based on employee perception).
- H<sub>3</sub> Based on employee perception, there is a positive customer perception about organisations' green marketing practices.
- H<sub>4</sub> There are challenges encountered by Zimbabwean construction companies in implementing green marketing
- H<sub>5</sub> Socio-demographic characteristics of employees show their environmental consciousness

## 9. Methods of Data Collection

The study was quantitative. An explanatory research design was used because little information existed about green marketing in the Zimbabwean context. The population of the study were employees of construction companies registered with the Construction Industry Federation of Zimbabwe (CIFOZ) in the building and civil engineering categories. According to CIFOZ 2018 register, there were 250 members in the two categories. A simple random probability sample was used to select a group of construction companies to participate in the study. Using the sampling calculator based on a 5% significance level, the sample size required was 152 or more

construction companies but not all would respond to the questionnaires, and this necessitated adjustment for attrition rates. It was anticipated that 20% would not respond to the questionnaires, hence an adjustment for these gave a required sample size of 182 construction companies. The participants were all foremen of the respective construction companies.

### 10. The Research Instrument

A questionnaire with 27 items was constructed by researchers. A literature review (Coetzee & Bean 2016; Thakur & Gupta 2012; Lekhanya 2014; Thulasimani 2012; Dean & Pacheco 2014:14; Zhu & Sarkis 2016; Arseculeratne & Yazdanifard 2014) was the source of the variables for the formulation of the questionnaire and was developed with closed-ended questions. All the variables were measured using a five-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5). The scale allowed the respondents to express their degree of agreement that varied in terms of relative intensity. The questionnaire was constructed with five sections.

### 11. Data Analysis

The first segment of data analysis included creating variables awareness, practices, employees’ perception of how they think customers feel and challenges in Microsoft Excel. We used the mode to give the overall response for each section for each employee as either agree (coded 1), disagree (coded 0) and neutral (coded 2). These coded responses were then exported to STATA version 12 for analysing the data.

### 12. Test of Normality and Test of Difference

To analyse the descriptive statistics, the test of normality used the Shapiro Wilk test and distributions of histograms. Statistical tests on demographic factors and different assessment outcomes were carried out depending on the normality or deviation. Two groups of statistical tests of difference, namely, parametric and nonparametric were used for bivariate analysis. Parametric tests were used for normally distributed data, namely the t-Test for comparing means between two independent groups and one-way ANOVA to compare means for more than two independent groups, assuming normality (Saunders, Thornhill & Lewis 2009). The p-value shows the significance level and for  $p < 0.05$ , the null hypothesis is rejected and for  $p > 0.05$  the null hypothesis is accepted.

The independent t-test compares the means between two groups using the spread of scores as the measure. If there is a low likelihood of difference between the two groups, it is represented using a large t statistic where the  $p < 0.05$  is statistically significant (Saunders *et al.* 2009). In a one-way analysis of variance (ANOVA) test, the variance is analysed using ANOVA both within and between the groups by comparing the means. The F-ratio, as a result, would represent the differences, and when there is a low likelihood of difference between groups, the F statistic is large with  $p < 0.05$  showing statistical significance (Saunders *et al.* 2009). For data that were not normally distributed, non-parametric tests were used. For the difference between two independent groups, a Mann-Whitney U test (Wilcoxon rank-sum test) was used, a non-parametric equivalent of the parametric independent t-test. Similarly, a Kruskal-Wallis H-test was performed for more than two independent groups.

### 13. Regression Analysis

Linear regression analysis was conducted with awareness, practices, employees’ perception of how they think customers feel and challenges as the dependent variables and socio-demographic factors as the independent variables to come up with four regression equations. Four principal assumptions justify linear regression:

- normality of error distribution
- linearity and additivity
- statistical independence,
- homoscedasticity.

The coefficient of determination ( $R^2$ ) is the amount of variation in the dependent variable which is explained by the independent variables, based on the equation and the adjusted  $R^2$  takes account of the number of independent variables from the equation.

### 14. Results and Discussion

The results consist of descriptive statistics, parametric and non-parametric tests for bivariate analysis and regression analysis.

## 15. Explanatory Results

An explanatory study was conducted with the frequency data summarized in Table 1. The majority of participants were male (79%) compared to female (20%). The majority of participants (55%) were aged between 30 and 49 years while only 15% were less than 30 years. Most employees in the construction industry (51%) had at least 10 years' job experience, with only 5% having more than 20 years as employees. Three-quarters of the participants had attained a university degree and the remaining 25% were diploma holders. Most companies involved in the study (48%) had an establishment of less than ten, while only 7% of the companies had more than 50 employees.

Table 1. Socio-demographic characteristics of employees of construction industries in Zimbabwe

Characteristics	N=135 n (%)
Gender	
Male	107(79)
Female	28(21)
Age in years	
<30	20(15)
30 – 49	74(55)
>50	41(30)
Job experience in years	
<5	46(34)
5 – 10	69(51)
11 – 20	13(10)
>20	7(5)
Formal Education	
Diploma level	34(25)
Degree level	101(75)
Company Size	
<10	65(48)
11 – 20	35(26)
21 – 50	25(19)
>50	10(7)

Source: Own compilation from survey results

### Assessment of awareness, practices, employees' perception of how they think customers feel and challenges on green market practices

Since the neutral point on the Likert scale was three, those means below three suggest overall agreement with the statement and the mean above three reflect disagreement. Table 2 (below) shows overall awareness in most employees to green marketing concept as there was a general agreement on this with a mean of 2.71. Employees agreed to awareness of the benefits of green marketing with a mean value of 2.8, however, most were unaware of the benefits of holding green accreditation as they mostly disagreed with this, mean 3.39. Generally, most employees were aware that large businesses and the government preferred businesses that practised green marketing since most agreed, mean 2.91. Overall, the employees were aware of green marketing practices with a mean of 0.87

Table 2. Assessment of green marketing awareness

Awareness	Mean	SD	Outcome
B6. Aware of the green marketing concept.	2.71	1.09	Agree
B7. Every member of staff knows what is expected of them - and why.	2.91	1.18	Agree
B8. Aware of the benefits of green marketing	2.81	1.14	Agree
B9. Aware of the benefits of holding a green accreditation	3.39	0.954	Disagree
B10. Aware that large businesses and government departments prefer businesses that practice green marketing	2.91	1.06	Agree
BA - Overall Response	2.95	1.08	Agree

Source: Calculated from survey results using STATA version 12

Most of the construction companies used environmentally friendly material in all their construction sites and all construction material was checked for 'green' conformance, as most employees generally agreed to this, with a mean of 2.59 and 2.7 respectively. There was also a general agreement that lights and computers were shut off at construction sites when not in use, with a mean of 2.49, and most of the companies had switched to renewable energy sources such as solar power, with a mean agreement of 2.56. However, most construction companies had no policies or procedures in place to help manage waste more efficiently on construction sites as most employees disagreed with this, with a mean of 3.07. Many companies did not seem to donate money to causes that benefit the environment, as reflected by a mean disagreement of 3.41. Also, most of the management in these companies did not seem to lead in the management of environmental issues as most employees disagreed with this, with a mean of 3.38. A summary of this description is shown in Table 3 (below).

Table 3. Assessment of green marketing practices

Green marketing practices	Mean	SD	Outcome
C11. The company uses environmentally friendly material in all its construction activities.	2.59	1.11	Agree
C12. All construction material checked (supplier labels and packaging) for 'green' conformance.	2.70	1.16	Agree
C13. Have policies and procedures in place that help us to manage waste more efficiently on construction sites	3.07	1.09	Disagree
C14. The company donates money to causes that benefit the environment.	3.41	1.02	Disagree
C15. Management takes a lead in the management of environmental issues.	3.38	0.953	Disagree
C16. At all our construction sites, we shut off lights and computers when they are not in use	2.49	0.969	Agree
C17. All our construction sites have switched to renewable energy sources such as solar power,	2.56	0.997	Agree
CP – Overall response	2.88	1.04	Agree

Source: Calculated from survey results using STATA version 12

Most clients for these construction companies had a positive perception of their green marketing practices and were loyal and happy about their green marketing practices. This is highlighted by an overall agreement by most employees, with means of 2.49 and 2.31 respectively. Despite complaints about the pricing structure, most clients still contracted these companies on most of their projects. Green marketing also resulted in an improvement in sales growth for most of the companies as compared to their competitors, with most employees agreeing with a mean value of 2.82. Table 4 (below) provides a summary of these findings.

Table 4. Assessment of employees' perception of how they think customers feel

Employee perception	Mean	SD	Outcome
D18. There is a positive perception of our green marketing practices from our clients	2.49	0.953	Agree
D19. We have loyal customers that are happy about our green marketing practices	2.31	0.878	Agree
D20. Even though our customers complain about our pricing structure, they still contact us on most of their projects	2.56	1.06	Agree
D21. Recently, an improvement in our sales growth has been realised compared to our competitors due to green marketing practices.	2.82	0.997	Agree
DR – Overall Response	2.54	.972	Agree

Source: Calculated from survey results using STATA version 12

Generally, most construction companies faced some green marketing challenges which included the high costs associated with renewable and recyclable material required for green products. Also, the majority of customers were unwilling to pay a premium for green products, as agreed to by most of the employees, with a mean of 2.27. Lack of credibility or trust by customers on green products was realised, with most of the employees alluding to this, with a mean of 2.29. Employees overall agreed that there was a lack of standards and public consensus on what constituted "green", affirmed by a mean of 2.42. The requirement of advanced technology for 'green marketing' which entailed large investment in R & D as a challenge for most of the companies. Employees agreed to this, as shown by a mean of 2.22. However, most employees disagreed that the majority of the customers were unaware of green products and their uses, with a mean of 3.69. Table 5 (below) summarises the findings.

Table 5. Assessment of green marketing challenges

Green marketing challenges	Mean	SD	Outcome
E22. Green products require renewable and recyclable material, which is costly	2.19	0.842	Agree
E23. The majority of the customers are not willing to pay a premium for green products	2.27	0.775	Agree
E24. There is a lack of credibility or trust by customers on green products	2.29	0.907	Agree
E25. The majority of our customers are not aware of green products and their uses	3.69	0.916	Disagree
E26. There is a lack of standards and public consensus as to what constitutes "green"	2.42	0.966	Agree
E27. Green marketing requires advanced technology, which entails large investment in R & D	2.22	0.816	Agree
EC – an overall decision	2.51	0.87	Agree

Source: Calculated from survey results using STATA version 12

## 16. Test of Normality

Table 6 (below) presents a summary of all results of the test of normality for all factors based on Shapiro-Wilk. From the table, it can be observed that gender, age and formal education were normally distributed on awareness ( $p > 0.05$ ). All socio-demographic factors on the assessment of green marketing practices deviated from normality ( $p < 0.05$ ) while all socio-demographic factors on employees' perception of how they think customers feel were normally distributed, except for customer size.

Table 6. Test of Normality (Shapiro -Wilk Test)

Variable	Gender	Age	Job Experience	Formal Education	Company Size
Awareness	Normal	Normal	Deviated	Normal	Deviated
Practices	Deviated	Deviated	Deviated	Deviated	Deviated
Perception	Normal	Normal	Normal	Normal	Deviated
Challenges	Deviated	Deviated	Normal	Deviated	Deviated

Source: Calculated from survey results using STATA version 12

In the cases in which lack of deviation from normality parametric tests such as independent t-test and one-way ANOVA tests were used. However, in the cases in which there was a deviation from normality, non-parametric tests, Mann-Whitney U test and Kruskal-Wallis test were applied.

### The association between awareness and all socio-demographic factors

Since the p-value (0.873) for gender was greater than  $p$  (0.05), the independent t-test provided insufficient evidence to claim that awareness of male participants, ( $M=0.87$ ,  $SD=0.71$ ) and female participants, ( $Mean=0.89$ ,  $SD=0.63$ ) on green marketing practices was different (Table 8). Based on the ANOVA results from Table 7, the level of awareness of green marketing among age groups was similar, with a p-value of 0.512. Similarly, the length of job experience did not seem to affect the level of awareness of green marketing. This finding was also true for the level of formal education  $p$  (0.396) and company size  $p$  (0.358).

Table 7. Characteristics of construction employees on awareness of green marketing

Characteristic	N	Mean	SD	p	Test Used
Gender				0.873	
Male	107	0.87	0.71		t-test
Female	28	0.89	0.63		
Age				0.512	One-way ANOVA
<30	20	0.95	0.69		
30 – 49	74	0.81	0.66		
>50	41	0.95	0.77		
Job experience				0.658	Kruskal-Wallis
<5	46				
5 – 10	69				
11 – 20	13				
>20	7				
Formal Education				0.936	One-way ANOVA
Diploma Level	34	0.88	0.73		
Degree Level	101	0.87	0.69		
Company Size				0.358	Kruskal Wallis
<10	65				
11 – 20	35				
21 – 50	25				
>50	10				

Source: Calculated from survey results using STATA software

### The association between green marketing practices and socio-demographic factors

The length of experience in employment was shown to be significantly associated with green marketing practices, evidenced by ( $p=0.041$ ) from the Kruskal-Wallis test. Table 8 (below) indicates no significant difference in green marketing practices between male and female employees, with a p-value of 0.634. The age of the employee did not affect green market practices, shown by an insignificant difference ( $p=0.096$ ) among the different age categories. Formal education and company size did not prove to be of any significance to green marketing practices.

Table 8. Characteristics of Construction Employees on Green Marketing Practices

Characteristic	N	Mean	SD	p	Test Used
Gender				0.634	
Male	107				Mann-Whitney
Female	28				
Age				0.096	Kruskal-Wallis
<30	20				
30 – 49	74				
>50	41				
Job experience				0.041	Kruskal-Wallis
<5	46				
5 – 10	69				
11 – 20	13				
>20	7				
Formal Education				0.074	Kruskal-Wallis
Diploma Level	34				
Degree Level	101				
Company Size				0.926	Kruskal-Wallis
<10	65				
11 – 20	35				
21 – 50	25				
>50	10				

Source: Calculated from survey results using STATA software

### The association between employees' perception of how they think customers feel and socio-demographic factors

There was no significant difference in employees' perception of how they think customers feel between male and



female employees  $p$  (0.889) as shown in Table 9 (below). Age category was also not significantly associated with customer retention (based on employee perception), as was job experience. Customer retention was the same among employees with different levels of education, while company size did not determine customer retention.

Table 9. Characteristics of Construction Employees on the perception of how they think customers feel

Characteristic	N	Mean	SD	p	Test Used
Gender					
Male	107	1.06	0.51	0.889	T-test
Female	28	1.07	0.54		
Age				0.320	ANOVA
<30	20	0.9	0.55		
30 – 49	74	1.09	0.53		
>50	41	1.07	0.47		
Job experience				0.739	ANOVA
<5	46	1	0.47		
5 – 10	69	1.07	0.52		
11 – 20	13	1.15	0.55		
>20	7	1.14	0.69		
Formal Education				0.847	TTest
Diploma Level	34	1.24	0.5		
Degree Level	101	1	0.51		
Company Size				0.100	Kruskal-Wallis
<10	65				
11 – 20	35				
21 – 50	25				
>50	10				

Source: Calculated from survey results using STATA version 12

### The association between green marketing challenges and socio-demographic factors

Table 10 (below) showed no significant difference in green marketing challenges between male and female employees, with a  $p$ -value of 0.714. The age of an employee was not associated with green marketing challenges,  $p$ -value 0.788. Nor were job experience, level of education or company size significantly associated with green marketing challenges.

Table 10. Characteristics of Construction Employees on Green Marketing Challenges

Characteristic	N	Mean	SD	p	Test Used
Gender					
Male	107			0.714	Mann-Whitney
Female	28				
Age				0.788	Kruskal-Wallis
<30	20				
30 – 49	74				
>50	41				
Job experience				0.160	ANOVA
<5	46	0.96			
5 – 10	69	0.91			
11 – 20	13	1			
>20	7	1.2			
Formal Education				0.075	Kruskal-Wallis
Diploma Level	34				
Degree Level	101				
Company Size				0.279	Kruskal-Wallis
<10	65				
11 – 20	35				
21 – 50	25				
>50	10				

Source: Calculated from survey results using STATA version 12

## 17. Regression Analysis

Regression analysis was only performed on green market practices and employees' perception of how they think customers feel in which variables of interest were identified during bivariate analysis. For the first model, Table 11, the adjusted  $R^2$  with the controlled socio-demographic variables shows that the independent variables do not explain any variation in employees on green marketing practices. On bivariate analysis, job experience was significantly associated with green marketing practices. However, on performing multivariate analysis, the association became insignificant. From Table 11 (below) gender could have confounded the relationship between job experience and green marketing practices as most construction workers with more job experience were generally male, as this profession has been mainly male-dominated over the past years and generally the study has more males than females.

In the second model, Table 12, the adjusted  $R^2$  with controlled socio-demographic variables shows that 3.8% of the variation in employees' perception of how they think customers feel is explained by such factors. There was no association between level of education and employees' perception of how they think customers feel in the bivariate analysis but the association became significant upon performing multivariate analysis. This association might have been confounded by company size as the more the number of people in a company, the more likely are certain standards likely to be compromised

Table 11. Regression analysis of green marketing practices and socio-demographic factors

	$R^2$	Adj- $R^2$	B	P	CI
	0.0344	-0.0031			
Gender			0.0292	0.816	-0.2191 – 0.2216
Age			-0.0707	0.361	-0.2235 – 0.0820
Job Experience			0.0243	0.702	-0.1009 – 0.1495
Formal Education			-0.0175	0.070	-0.0172 – 0.0435
Company Size			-0.1180	0.734	-0.1193 – 0.0843

Source: Calculated from survey results using STATA version 12

Table 12. Regression analysis employees' perception of how they think customers feel and socio-demographic factors

	$R^2$	Adj- $R^2$	$\beta$	p	CI
	0.0738	0.0379			
Gender			0.0690	0.534	-0.1499 – 0.2879
Age			0.0894	0.191	-0.0451 – 0.2241
Job Experience			0.0547	0.328	-0.0556 – 0.1650
Formal Education			-0.2338	0.022	-0.4333 – -0.0435
Company Size			-0.0661	0.147	-0.1559 – 0.0236

Source: Calculated from survey results using STATA version 12

## 18. Discussion

The study examined the extent to which green marketing has been embraced in the Zimbabwean construction industry. The views of the employees on the concept as practised in the industry were obtained. Specifically, the study focused on the awareness, practices, employees' perception of how they think customers feel and challenges encountered by contractors on green marketing.

The empirical findings indicated that generally, employees are aware of green marketing practice in the Zimbabwean construction industry. Employees agreed to the awareness of the benefits of green marketing such as improved environmental performance, prevention of pollution, resource conservation and increased efficiency. The result shows that Zimbabwean contractors have recognised the benefits of green marketing and that customers require green products based on employees' perceptions. This finding is in line with Arseculeratne and Yazdanifard (2014) who argued that the growing concern among consumers towards the environment has forced business organisations to make changes in their marketing strategies. Contractors are positioning their brands in a manner that supports customer intentions, seeking value for going green and incorporating this message into their marketing programme and communicating the green concept to their customers.

Of concern, however, most of the contractors were unaware of the benefits of holding green accreditation, which enables them to portray their buildings as green and thus gain a competitive advantage. This would also become

a new marketing tool that could be used to create a new corporate image and product differentiation. The absence of a green rating standard means contractors are less attractive to most international companies operating in Zimbabwe. If this standard could be embraced, contractors would improve the efficiency of resource consumption and control of environmental impacts (Petrovic, Djordjevic, Milicevic, Nastasijevica & Parunovic 2015:237).

The assessment of green marketing practices demonstrated that most employees had a positive perception about organisations' green marketing practices and further confirmed customers were loyal and happy about the practices. The positive perception has a great impact both on society and contractors as green practices promote health and safety, cost-effectiveness and efficiency, as well as performance, reputation and convenience. Therefore, contractors need to monitor their activities involving their products, processes and advertising and fully align with the green marketing concept. This would enable contractors to reach most of the environmentally-conscious customers, improving sales growth when compared to their competitors.

### **19. Conclusion and Recommendations**

The results of this study demonstrated a positive awareness in most employees of the green marketing concept. Further, there is a positive perception of green marketing practices as evidenced by loyal and satisfied customers. However, there are challenges encountered by contractors in the implementation, notably recyclable material required for green products, customers not being willing to pay a premium for green products and lack of credibility or trust by customers on green products.

Based on the perceptual lessons from the respondents, the following recommendations are made:

- The lack of internationally recognised environmental standards such as green accreditation was noted in the Zimbabwean construction industry. The industry regulating authority should enforce environmental quality standards in the industry. In particular, government policies and the development of a rating system (green accreditation) could stimulate the development of green marketing in the country. The contractors would, therefore, gain a competitive advantage, thereby improving organisational performance.
- The impact of human activities on the environment's quality is visible in human's daily activities. To prevent further negative impact on the environment, contractors are encouraged to make green marketing a business norm. Contractors must make customers understand the need for green buildings in Zimbabwe and that future generation would benefit from their current environmental actions.

### **20. Limitations of the Study and Further Research**

The study relied on a sample of respondents registered with CIFOZ in the building and civil engineering categories thereby omitting the perceptions of other contractors in the country. Even though the results could be generalized to the sampled population, they cannot be a representative of all construction companies in Zimbabwe.

The study was conducted in the construction industry in Zimbabwe and it reflects the position for that industry. The results cannot be used as a true reflection of different industries. Based on the limitations raised, the areas suitable for further research include:

- Validation of the results of this study by incorporating all contractors in the country. Instead of relying on the CIFOZ register, other organisation such as Small Enterprise Development Company (SEDCO) could be used to realize a wider population.
- Future research can be conducted using a similar technique; however, the study would be extended to contractors of different sizes in different industries and provinces.

### **Competing interests**

The authors declare that they have no competing interest in the writing of this article.

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