

Uncertain Supply Chain Management

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The effect of green marketing, green supply chain and green human resources on business performance: Balanced scorecard approach

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ABSTRACT

Green management and its implementation and practices attracted the attention of both practitioners and academicians alike, which in part is due to its positive impact on the environment and sustainability, however, little is known about what really measures the effect of green management practices on business performance. Conventional measures of financial performance cannot reflect the proposed effect since green management is long-term oriented and not limited to financial performance only. This research explores the potentials of using balanced scorecard to measure the effect of green marketing, green supply chain and green human resources on the performance of the firms. Simple random sampling technique was followed in this research, and data were collected from 113 managers from different companies in service and manufacturing sectors in UAE. The findings indicate that green marketing was the major determinant of customers' performance, green human resources was the major factor affecting learning and growth, and that green supply chain was the main influencer on financial performance and internal processes.

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1. Introduction

Balanced scorecard was proposed and introduced by researchers as a method of measuring business performance from different perspectives, including the financial performance but not limited to it. Scholars asserted that it is not enough to measure the performance of the companies by solely focusing on the financial indicators as it can reflect the short-term performance (Mamabolo & Myres, 2020) and thus, balanced scorecards is defended as a comprehensive framework of measuring the multi dimensions of companies' performance. Balanced Scorecard not only measures the current financial performance but also looks into the performance indicators about customer, learning and growth, and business processes as it is more future orientated. Green Management implementation can be costly and will depict its results in long-term, hence, it becomes imperative to explore the relationship between green management practices and business performance measured by balanced scorecard. This research adds contribution to this field as it intends to construct a valid and reliable measure of green management, whereas most of the previous studies measures one or two aspects of green management practices. This research intends also to measure several dimensions of green management such as green marketing, green supply chain, and green human resources. It is believed that long term strategic orientations and strategies such as green management need also long term and strategic measures of business performance are concerned on long term results, hence, balanced scorecard is used as a measure of business performance.

2. Literature Review

Several studies have been accomplished on green management practices and its impact on business performance, even though research that covered green management examined specific aspects rather than developing a comprehensive task to what defines green management, on the other hand, several studies have been carried out to explore balanced scorecard and its vital role in measuring the business performance as long term approach of measuring performance. However, there is a

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gap in literature about the link between green management and balanced Scorecard. This research explores what makes a comprehensive approach of green management practices, and how these practices are associated with the several dimensions of balanced scorecard as a measure of business performance.

2.1 Balanced Scorecard

Scholars introduced balanced scorecard as a multi-dimensional construct to measure the long term performance of companies, according to Kaplan and Norton (1992) who initially coined the concept, companies get what they measure and thus the behavior of employees and managers can be affected by measuring financial performance as one and only performance indicator that can mislead decision makers, according to them, a comprehensive approach for measuring the performance which is not limited to financial performance is needed, hence balanced scorecard approach is defended as it is not enough for companies to measure the financial performance (Mamabolo & Myres, 2020). Balanced scorecard is built around four dimensions or perspectives that is believed to better capture the real performance of the company, namely, customer perspective, innovation and learning perspective, internal business perspectives and the also needed financial perspective (Kaplan & Norton, 1992). Chong et al. (2019) asserted that balanced scorecard is a wide measure of business performance and applicable to companies of different sizes. According to them, balanced scorecard can serve as a key indicator of the company performance, as it becomes accounting, finance, and management measure and serves best when it comes to company purpose and measures long term performance. Birinci and Eren (2013), Kaplan and Norton (2000) and Niven (2008) argued that balanced Scorecard is useful since it measures the long-term goals of companies rather than merely focusing on measuring the performance by using only the financial indicators that are mostly reflective and short termed. Some researchers argued that little studies have been done on how to operationalize balanced scorecard so it can measure the performance (Behrouzi & Ma'aram, 2019), and especially in social enterprises in emerging economies (Mamabolo & Myres, 2020). Scholars look for examining the effect of green management practice, and in particular green supply chain management and business performance as measured by balanced scorecard taking into considerations different criteria (Nouri et al., 2018; Malviya & Kant, 2019).

2.2 Green Management

The concept of green management gained importance around the world (Alipour et al., 2019), and this is due to increased interest in environmental problems and how companies can reduce waste, pollution, and carbon emission (Akroush et al., 2019) and also due to many calls from customers, societies and governments that companies should be socially responsible in solving the environmental problems they created (Alipour et al., 2019). This is supported by customers demand for healthy and environmentally friendly products (Chaudhary, 2018; Kim et al., 2013; Jaini et al., 2019) and also increased employees concern of healthy and safe work environment (Nouri et al., 2018; Alipour et al., 2019). Companies across different parts of the world, especially in the developed economies found it imperative to adapt and response to governmental pressure for more green production and operation (Çankaya & Sezen, 2018;) but also derived by the notion that being environmentally friendly is also a source of competitive advantage that companies thrill to achieve in our dynamic and competitive marketplace (Çankaya & Sezen, 2018) as it is believed that green companies have better reputation compared to their conventional counterparts (Akturan, 2018). Most of the studies that examined green management focused merely on one dimension of it such as green supply chain (Malviya & Kant, 2019; Nouri et al., 2018; Parthiban & Dhanalakshmi, 2019), or green human resources management (Alipour et al., 2019) as parts of green management and did not include the other practices of green management, thus a gap in the literature is identified, and this research, among other objectives, tends to provide a comprehensive, valid and reliable construct of what makes green management. In their attempt to measure the impact of green management practices on business performance, most researchers conceptualize only one dimension of green management, for instance, Parthiban and Dhanalakshmi (2019) focused mainly on green supply chain practices and examined Fuzzy set theory of green supply chain management and examined its effect on social, environmental and economic performance and found environmental performance to be the most important one in evaluating green supply chain. Malviya and Kant (2019) also examined the effect of green supply chain management on performance and found that these practices affect the performance positively, however, as their study is limited to automotive sector in India, they argued that their findings might not be applicable to other sectors or other countries. Nouri et al. (2018) used balanced scorecards approach to measure the effect of green supply chain practices and found them interrelated, they suggested that their results are preliminary in nature and called for empirical research and recommended that future research in different sectors need to modify the criteria used in their study. Other researchers examined different dimension of green management and its effect on company performance, namely, green human resources management. For instance, Alipour et al. (2019) examined the effect of green human resources practices such as green recruitment and environmental training and other factors in healthcare system, they argued that green recruitment and environmental training are the most important factors in building green management, and hence, employees need to be both educated and trained on environmental issues.

On a different dimension of green management, researchers examined the effect of green marketing practices on business performance, Issock et al. (2019) examined the effect of green customer satisfaction as derived by different values on green customer's loyalty, green customer trust and positive word of mouth. Çankaya and Sezen (2018) provided a more detailed study on green marketing by incorporating multi-dimensions of green marketing such as green packaging, green distribution and green manufacturing. They found that green supply chain practices are positively associated with sustainability performance as measured by environmental and social indicators but not with economic indicators, they called for more research in different sectors as well so more insights can be generated as they asserted that studies done on the environmental

issues are very limited. This research is a response to the calls by many researchers to examine the relationship between green management by using multi dimensional construct of what makes green management, i.e, green marketing, green human resources, and green supply chain practices and business performance as measured by balanced scorecard multi dimensional construct.

Theoretical Framework and Hypotheses

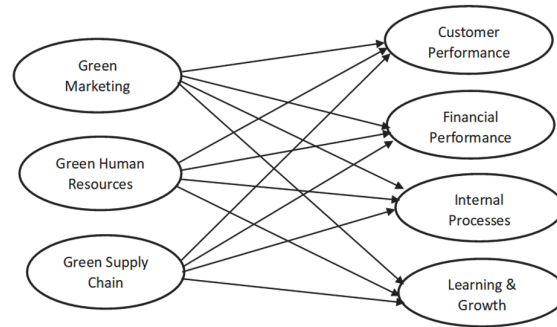


Fig. 1. Theoretical Framework

H₁: *There is a positive and Significant Relationship between Green Marketing practices and Balanced Scorecard performance indicators.*

H₂: *There is a positive and Significant Relationship between Green Human Resources practices and Balanced Scorecard performance indicators.*

H₃: *There is a positive and Significant Relationship between Green Supply Chain practices and Balanced Scorecard performance indicators.*

2.3 Data and Research Methods

This research is empirical in nature and based on data collected by using a questionnaire survey, simple random sampling was used to total of 113 managers at different management levels from manufacturing and service sectors participated in this research. This research intends to measure green marketing, green supply chain and green human resources effect on business performance as measured by balanced scorecard dimensions, namely, customer perspective, innovation and learning perspective, internal business perspectives and financial perspective. Three main hypotheses were developed with 12 sub-hypotheses that intend to measure the relationship between the 3 independent variables and the 4 sub-components of balanced scorecard measures. Statistical Package for Social Sciences (SPSS) version 22 was used to analyze the data collected. To measure the variables in this research, a five-point Likert scale ranging from 1 = Strongly agree to 5 = Strongly Disagree was used. Other than the demographic questions, the questionnaire made up of 32 items to measure the independent and dependent variables. 4 items were adapted from Chen and Yang (2019) and used to measure green marketing, 4 items were adapted from Green et al. (2019) to measure green supply chain, 6 items were adapted from Alipour et al. (2019) to measure green human resources, and 18 items were adapted from Behrouzi & Ma'aram (2019) to measure Balanced Scorecard performance, out of which 4 items were used to measure customer performance, 5 items to measure internal process, 5 items to measure learning and growth, and finally, 4 items to measure financial performance.

2.4 Data Analysis

Total of 113 managers from manufacturing and service sectors in UAE participated in this research, to have the feelings of the data, 4 questions in the survey were about respondents' positions in their respected companies, gender, educational level, and the sector in which the company operates. Fig. 2 below portraies the respondents demographics. According to the figure, it can be concluded that out of 113 respondents, 48 respondents hold top management positions (42%), 36 respondents are middle managers (32%) and 29 respondents are first line managers (26%) which reveal that data collected and testing the hypotheses can be of great importance as all respondents assuming a managerial position, it was the intention of this research to reach the managers at different levels as informants due to the nature of needed data in this research. Furthermore, 71 respondents are male (63%) and 42 (37%) are female, indicating top management positions are predominantly occupied by male. 66 (58%) respondents are from manufacturing sector whereas 47 (42%) are from service sector. And finally, the majority (65) of respondents have bachelor degree (58%) whilst the rest have either Diploma or below (14%) or Master and above (28%).

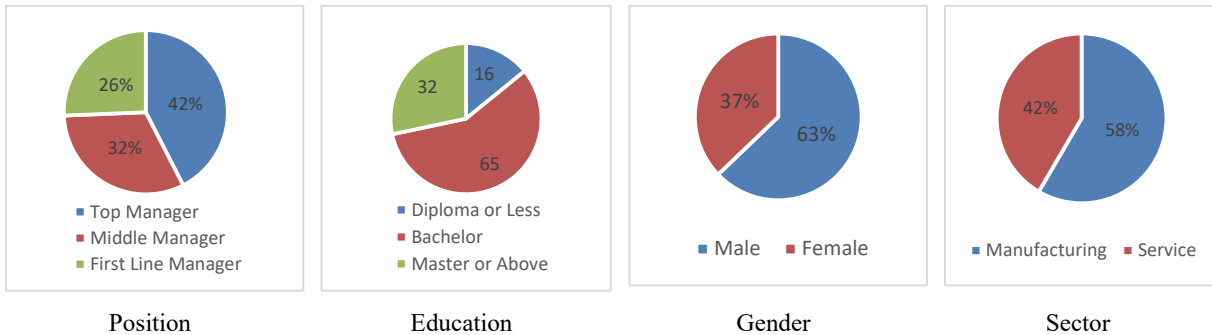


Fig. 2. Respondents Demographic Profiles

Before proceeding to test the hypotheses, it is important to measure the reliability of the items and scales used in this research, for this, Cronbach's Alpha analysis was selected, and cut-of point of (0.70) is used, if an item Cronbach's Alpha value is less than the established threshold, it would be removed and excluded from further analysis, this results in item number 4 in internal processes scale being removed as Cronbach's Alpha increased from .683 to .776 once item deleted. Table 1 below provides the summary of Cronbach's Alpha of the scales used in this research.

Table 1
Reliability Analysis (Cronbach's Alpha)

Scale	Cronbach's Alpha	N of Items	Scale	Cronbach's Alpha	N of Items
Green Marketing	.790	4	Internal Processes	.776	5
Green Human Resources	.849	6	Learning and Growth	.910	5
Green Supply Chain	.812	4	Financial Performance	.839	4
Customer Performance	.866	4			

From the results of reliability analysis shown above, it can be concluded that the scales used in this research are reliable and that they measure what they are supposed to measure, thus, further analysis to test the hypotheses is carried out. In order to test the 3 main hypotheses and the 12 sub-hypotheses of this research, multiple regression analysis tests were conducted, the first analysis was conducted to test the relationship between the three independent variables, namely, green marketing, green supply chain and green human resources and the first dimension of the dependent variable, i.e., customer performance of balanced scorecard. The results of this analysis are depicted in Table 2 below:

Table 2
Multiple Regression Analysis between IV's and Customer Performance

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	.235	.078			3.020	.003
	Green Marketing	.396	.028	.596		17.516	.000
	Green Human Resources	.261	.025	.472		14.511	.000
	Green Supply Chain	.275	.026	.093		2.879	.005

a. Dependent Variable: Customer Performance

Table 2 above shows the results of multiple regression analysis between the independent variables, i.e., green marketing, green human resources and green supply chain and customer performance dimensions of balanced scorecard, at R value (0.95) and adjusted R square of (0.91), the test results indicated that green marketing (B=0.396), green human resources (B=0.261) and green supply chain management (B= 0.275) are positively and significantly (.00) associated with customer performance dimension of balanced scorecard.

Table 3
Multiple Regression Analysis between IV's and Learning and Growth.

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	1.059	.168			6.321	.000
	Green Marketing	.107	.061	.157		1.758	.082
	Green Human Resources	.253	.054	.404		4.722	.000
	Green Supply Chain	.144	.056	.217		2.558	.012

a. Dependent Variable: Learning and Growth

Table 3 shows that at $R^2=0.61$ and adjusted $R^2=0.37$, that except for green marketing (positive but not significant), green supply chain management and green human resources management are positively (0.144) and (0.253), respectively, and significantly (0.01) associated with learning and growth as the second dimension of balanced scorecard. Interestingly – but not surprisingly- green human resources have been found to be the most influencing factor in learning and growth. At R square value of (.82) and adjusted R square (.68), Table 4 above indicates that all independent variables, namely, green marketing, green human resources management and green supply chain are positively ((.260), (.188) and (.268), respectively) significantly (0.00) associated with the third dimension of balanced scorecard, i.e., internal processes.

Table 4
Multiple Regression Analysis between IV's and Internal Processes

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	.590	.122		4.845	.000
	Green Marketing	.260	.044	.374	5.876	.000
	Green Human Resources	.188	.039	.294	4.837	.000
	Green Supply Chain	.268	.041	.396	6.556	.000

a. Dependent Variable: Internal Processes

Table 5
Multiple Regression Analysis between IV's and Financial Performance

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	1.112	.133		8.377	.000
	Green Marketing	.115	.048	.200	2.379	.019
	Green Human Resources	.119	.043	.224	2.790	.006
	Green Supply Chain	.238	.045	.427	5.335	.000

a. Dependent Variable: Financial Performance

Table 5 above shows that, at R square value of (.670) and adjusted R square (.448), all independent variables have been found to be positively and significantly (0.01) associated with the fourth dimension of balanced scorecard, i.e., financial performance, however, weak relationship has been detected between green marketing (.115) and green human resources (.119) whereas green supply chain was found as the strongest influencer (.238) on financial performance.

3. Research Findings

This research has intended to measure the relationship between 3 independent variables, namely, green marketing, green human resources and green supply chain on business performance as measured by balanced scorecard. Balanced scorecard argued that business performance needs to be measured by using 4 dimensions of performance, namely, customer performance, internal processes, learning and growth and financial performance. The findings of this study have revealed that all hypotheses are either supported or partially supported, whereas only the link between green marketing and learning and growth have been found to be positive but weak and not significant. Table 6 summarizes the findings of this research.

Table 6
Summery of Research Findings

Hypothesized Relationship	Adjusted R square	B Value	Sig.	Results
Green Marketing ↔ Customer Performance	0.91	.396	.00	Supported
Green Marketing ↔ Learning and Growth	0.37	.107	.08	Rejected
Green Marketing ↔ Internal Processes	0.68	.260	.00	Supported
Green Marketing ↔ Financial Performance	0.44	.115	.02	Supported
Green Supply Chain ↔ Customer Performance	0.91	.275	.00	Supported
Green Supply Chain ↔ Learning and Growth	0.37	.144	.01	Supported
Green Supply Chain ↔ Internal Processes	0.68	.268	.00	Supported
Green Supply Chain ↔ Financial Performance	0.44	.238	.00	Supported
Green Human Resources ↔ Customer Performance	0.91	.261	.00	Supported
Green Human Resources ↔ Learning and Growth	0.37	.253	.00	Supported
Green Human Resources ↔ Internal Processes	0.68	.188	.00	Supported
Green Human Resources ↔ Financial Performance	0.44	.119	.00	Supported

From Table 6 above, it can be concluded also that green marketing is the strongest predictor of customer performance, green human resources is the strongest predictor of learning and growth, and that green supply chain is the strongest predictor of both internal processes and financial performance.

4. Conclusions and Recommendations

This research has examined several dimensions of green management practices and how these could affect business performance by introducing balanced score card approach, it is believed that green marketing, green human resources and green supply chain practices once measured together can give clear picture on what makes green management practices in general. As these green practices will incur costs in short term and need time to yield results, it is also proposed in this research that balanced scorecard multidimensional construct to measure the companies' performance would be more adequate as it can detect the performance of companies from different perspectives rather than merely focusing on financial performance alone. This research findings are expected to be of great importance to practitioners and academicians, as it shed light on the relationship between green marketing, green supply chain and green human resources and how these affect customers' performance, internal processes, learning and growth and financial performance as measured by balanced scorecard approach. Decision makers are directed to pay special attention to green human resources as it found to be the main driver of learning and growth, managers are also encouraged to focus on green marketing for its strong and significant link with customers' performance. Most importantly, green supply chain found as the main driver of both internal processes and financial performance as 2 measures in balanced scorecard.

5. Recommendations for Future Research

This research shed light on the relationship between green management dimensions and how these affects business performance from balanced scorecard approach, however, it is cross sectional research that collect data from 113 managers only once, future research can duplicate this research by testing the hypotheses in different countries and using longitudinal research design to capture the relationship between the variables in long term. Furthermore, it would be interesting to test the hypotheses on a sample from manufacturing sector and a sample from service sector unlike the approach in this research as it collected data from managers in the two sectors. Other dimensions of green management can be also explored in future research.

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