GREEN ORGANISATIONAL CULTURE AND ENVIRONMENTAL PERFORMANCE: THE ROLE OF GREEN INNOVATION

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ABSTRACT

The study investigated the relationship between green organizational culture and environmental performance of hospitality firms in South Africa. In addition, the study examined whether green innovation mediates the relationship between green organizational culture and environmental performance. The study adapted the quantitative research design and the cross-sectional survey method was used to collect data from the respondents. The Partial Least Square Structural Equation Modelling (PLS SEM) was used to the test the hypotheses. The empirical results indicated a significant positive relationship between green organizational culture and environmental performance. In addition, green innovation mediates the relationship between green organizational culture and environmental performance.

Keywords: Green Organizational Culture, Environmental Performance, Green Innovation, Hospitality, South Africa

INTRODUCTION

Wang (2019) remarks that ecological issues are increasing becoming important to firms due to growing preferences of consumers for environmentally friendly goods and services and rising public sensitivity about environmental challenges. Strict environmental regulations have been put in place by government and there is pressure by shareholders on firms to take action to preserve the natural environment (Küçükoğlu & Pınar, 2015). Internal drivers and external factors have pressurised firm management to consider environmental factors as a source of competitive advantage (Gürlek & Tuna, 2018; Singh et al., 2020). This has led to the inclusion of environmental factors in the strategic planning process of firms (Biswas et al., 2021).

The hospitality industry contributes significantly to employment and economic growth and is a major economic sector in both developing and developed countries (United Nations World Tourism Organisation, 2020). However, the hospitality industry also negatively affects the environment through over consumption of natural resources, pollution and solid waste (Alipour et al., 2019). Despite the fact that businesses contribute significantly to environmental degradation, they can also enhance environmental preservation through their operation and strategy (Robertson & Barling, 2017). According to the Natural Resource Based view by Hart (1995), organizational resources can play a significant role in the development of successful corporate environmental strategies. One of the organizational resources that may support firm environmental performance and competitive advantage is Green Organizational Culture (GOC) (Liu & Lin, 2020). GOC is defined as "a collective belief toward an ecological, environment-friendly style of (co)production shared by most organizational members" (Liu & Lin, 2020). GOC is one of the most important determinants of corporate environmental strategies and the emergence of environmentally sustainable firms depends on the institutionalization of environmental beliefs and processes in the policies and systems of modern organizations (Norton et al., 2015; Küçükoğlu & Pınar, 2015).

The relationship between GOC and sustainable performance is of importance to firms worldwide. One of the indicators of sustainable performance is Environmental Performance (EP) (Hourneaux et al., 2018). The direct relationship between organizational culture and EP has been the source of empirical studies (Magsi et al., 2018). However, recent stream of research

suggests an indirect relationship between GOC and EP (Gurlek & Tuna, 2018). Because GOC can have a direct or an indirect effect on firm performance, it is important to identify the variables that can have mediating effects in the relationship between the two constructs (Hadjri et al., 2019). One variable whose mediating effect can be examined is green innovation (Feng et al., 2018). Green Innovation (GI) can be described as innovation that focuses on waste reduction, pollution prevention and the implementation of an environmental management system (Aboelmaged, 2018). However, theoretical frameworks and empirical studies on the mediating effect of GI in the relationship between GOC and EP are scarce. This study has two objectives (1) to examine the relationship between GOC and EP and (2) to investigate whether GI mediates the relationship between GOC and EP. The study will be significant in the following ways. Studies on innovation in the hospitality industry have tended to focus on process, product and organizational innovation. Studies that focus on green innovation in the hospitality industry are scarce (Gurlek & Tuna, 2018). This study will contribute to the research on GOC and EP with the goal of ensuring sustainable tourism.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Stakeholder Theory and the Natural Resource-Based Theory

The theoretical foundation of the study can be linked to the Stakeholder theory, the Resource Based View and the Natural Resource Based View. The Stakeholder theory by Freeman (1984) argues that there are interconnected relationships between a firm and its customers, employees, suppliers, investors and communities and value should be created for all stakeholders. The Resource-Based View (RBV) is a framework used by the management of a firm used to decide the strategic resources that can be exploited to attain and sustain sustainable competitive advantage (Barney, 1991). The Natural Resource-Based View (NRBV) builds upon the RBV and proposes that a firm's competitive advantage is based upon its relationship with the natural environment (Hart, 1995). The theory argues that advantage is obtained on the basis of three interconnected strategies which are product stewardship, pollution prevention and sustainable development.

Green Organizational Culture (GOC)

Tharp (2009) points out there is no universally accepted definition of organizational culture. Serpa (2016) defines organizational culture as "a shared way of being, thinking and acting in a collective and coordinated people with reciprocal expectations." Organizational culture is important to the success of corporate environmental management initiatives and the implementation of environmental practices must be embedded into the values and beliefs of the organization (Fietz & Günther, 2021). According to Liu & Lin (2020), different terms have been used to describe Green Organizational Culture (GOC). These are environment-friendly culture, eco-friendly culture and sustainability-oriented culture. These definitions are based on extending organizational culture to a green-oriented context. Based on the definition of organizational culture by Schein (1990); Norton, et al., (2015) describe a pro-environmental organizational culture or GOC as the assumptions learned by a group of people in adapting to the impact of human activity on the environment. GOC is the behavior, beliefs and values of the members of an organization with respect to the natural environment (Hadjri et al., 2019).

Green Innovation (GI)

Küçükoğlu & Pınar (2015) point out that the definitions of Green Innovation (GI) put emphasis on how an organization can decrease its negative environmental impact or improve the environment through organizational, process or product innovations. These innovations are usually new or modified products, processes, systems and practices that contribute to

environmental sustainability (Gürlek & Tuna, 2018), GI describe innovations in products and production processes throughout a product's life cycle that help to decrease ecological footprint and achieve to environmental objectives (Wang, 2019).

Environmental Performance (EP)

Environmental Performance (EP) measures a firm's performance by considering factors such as reduction of waste, emissions and pollution, improved recycling and efficiency of resource utilization. EP refers to how an organization's operations positively impact on the environment (Hadjri et al., 2019). EP helps an organization to save costs through reduced energy consumption and compliance with government environmental regulations. EP enables a firm avoid penalties from government for environmental non-compliance, meet the environmental demands of stakeholders including shareholders and customers and contribute positively to environmental balance (García-Machado & Martínez-Ávila, 2019).

Green Organizational Culture (GOC) and Environmental Performance (EP)

Wang (2019) investigates the relationship between GOC and EP based on the data collected from 327 manufacturing firms in Taiwan. According to Wang (2019), GOC can lead to a change in an organization's current way of thinking. Organizations are more likely to adopt a green culture if their managers value environmental protection. The findings of the study indicate a significant positive relationship between GOC and EP. Hadjri, et al., (2019) examine the effect of green human resource management and GOC on EP in Indonesia. The findings of the study show that GOC positively affects EP. The study by García-Machado & Martínez-Ávila (2019) focused on the automotive sector in Mexico. The findings indicate that GOC positively affects EP. GOC leads to the institutionalization of environmental beliefs and processes in the policies and systems of organizations. This can positively affect environmental performance (Norton et al., 2015). It is hypothesized (H1) that GOC has a positive effect on EP.

Green Organizational Culture (GOC) and Green Innovation (GI)

Gürlek & Tuna (2018) remark that organizational culture positively affects a firm's innovation activities. The effective implementation of GI depends on a culture that is based on environmental values. The findings of the study by Gürlek & Tuna (2018) indicate a significant positive relationship between GOC and GI. The findings are consistent with the results of Roespinoedji, et al., (2018); Wang (2019) that GOC positively affects GI. Wang (2019) points out that innovation is driven by an organization's strategic planning, leadership and culture. GOC positively affects the attitudes of managers and employees toward GI. Managers in organizations with a culture aligned to the protection of the environment are likely to develop and implement GI as part of their environmental protection policies (Wang, 2019). It is hypothesized (H2) that GOC has a positive effect on GI.

Green Innovation (GI) and Environmental Performance (EP)

Singh, et al., (2020) investigate the effect of GI on EP based on a dataset of 309 manufacturing small and medium-sized enterprises. GI reduces the negative environmental impact of a firm through reduction of waste and emissions and energy consumption. Green innovation is an important organizational resource that can be used to enhance environmental performance. Singh, et al., (2020) find a significant positive relationship between GI and EP. Arsawan, et al., (2021) in a study that surveyed 177 managers of export small and medium enterprises in Indonesia argue that GI helps firms to focus on improving or creating products and processes that are ecologically friendly. The study finds that GI positively affects EP. According to García-Machado & Martínez-Ávila (2019), GI leads to products and services that minimize

emissions and pollution, reduce energy consumption, and improve material efficiency. It is hypothesized (H3) that GI has a positive effect on EP.

Mediating Effect of GI in the Relationship between GOC and EP

Wang (2019) points out that firms can use GI obtained through a culture that supports the environment to improve their EP. Firms that have a well-designed GOC can dynamically enhance their green innovation. This can be done through innovations that minimize waste and pollution and reduce energy consumption. This can improve the firm's environmental performance. Eiadat, et al., (2008) find that environmental innovation mediates the relationship between environmental pressure forces and firm performance in Jordan Garlek & Tuna (2018) remark that GOC creates suitable conditions for green innovation by ensuring that green values are shared within an organization. Therefore, GOC can trigger green innovation and improve a firm's environmental performance. It is hypothesized (H4) that GI mediates the relationship between GOC and EP.

RESEARCH METHODOLOGY

The study adopted the quantitative research design and the cross-sectional survey method was used to collect data from the respondents. The sample population was all hotels in South Africa. The survey focused on hotel managers who are expected to have knowledge of the environmental strategy and performance of their firms. The participating hotels were developed by the researcher from the website of the Tourism Grading Council of South Africa. The simple random sampling method was used to select hotels graded as three, four and five star by the Tourism Grading Council of South Africa. Upscale hotels that are more likely to be engaged in environmental practices compared to small hotels. The survey was conducted in Pretoria and Johannesburg in the Gauteng Province and Polokwane and Bela Bela in the Limpopo Province. The Gauteng Province is the economic hub of South Africa and many hotels are located in the Province. The two towns in Limpopo province have a sizeable number of hotels. The management of selected hotel were contacted through phone calls and emails to solicit their participation. After, the questionnaire depicting the purpose of the study and a covering letter were sent to the manager of the hotels that agreed to participate in the survey. Three trained field agent assisted in the collection and the self-administered questionnaire method was used for data collection from the employees of participating hotels. The emails and phone numbers of the participants were obtained during questionnaire distribution and remainders were sent weekly to request for the completion of questionnaire. If a questionnaire is not completed after two months, it is regarded as non-response. The questionnaire contained a cover letter that explained the aim of the study and anonymity and confidentiality. Two experts in the field of sustainability and strategy also assisted to validate the questionnaire and a pilot study was conducted to improve the face and content validity. The survey was conducted between July 2020 and February 2021. The questionnaire was divided into four sections demographic variables, GCO, GI and EP. The study employed the Partial Least Square Structural Equation modelling for analysis. The Cronbach's alpha was used as a measure of reliability.

Measures

Green Organizational Culture (GOC): Six questions adopted from Wang (2019) were used to measure GOC. The five-point Likert scale ranging from 1="Strongly disagree" to 5="Strongly agree" was used as the response categories.

Green Innovation (GI) Seven questions adopted from Soewarno, et al., (2018) were used to measure GI. The five-point Likert scale ranging from 1="Strongly disagree" to 5="Strongly agree" was used as the response categories.

Environmental Performance (EP): Five items adapted from Magsi, et al., (2018) were used to measure EP. The five-point Likert scale ranging from 1="Strongly disagree" to 5="Strongly agree" was used as the response categories.

RESULTS

Response Rate and Biographical Characteristics

500 questionnaires were distributed and 190 questionnaires were returned and found usable. The biographical details of the respondents are as follows: education qualifications of the respondent: below Matric no respondent, Matric, 18 respondents and post-matric qualification 172 respondents. Gender of respondent. Male 116, female 74. Age of respondents. Less than 20, no respondent, 20-30 years, 6 respondents, 31-40 years, 58 respondents, 41-50 years, 77 respondents and above 49. 53 respondents. Age of the firm, less than one year, no respondent, 1-5 years, 36 respondents, 6-10 years, 104 respondents, above ten years 52 respondents.

Evaluation of PLS SEM

The Evaluation of the Measurement Model

The criteria highlighted by Hair, et al., (2019) were used to evaluate the measurement model. These are factor loadings (>0.708), composite reliability (between 0.790 and 0.900), Cronbach's alpha (>0.700) and the Average Variance Extracted (AVE) (>0.500). In addition, the square roots of the AVEs should be greater than the correlations amongst variables. Tables 2 and 3 show that all the criteria were met.

Table 1
THE MEASUREMENT MODEL

Construct	Measurement items	Mean and standard deviation	Item Loading	Cronbach's alpha	Composite Reliability	AVE
Green organizational culture (GOC)		3.95 1.01		0.782	0.899	0.598
We make concerted effort to make all our employees understand the importance of preserving the environment	GOC1		0.822			
We have a clear policy statement on environmental awareness	GOC2		0.729			
Environmental preservation is very important to our firm	GOC3		0.747			
Environmental preservation is a fundamental corporate value in our firm.	GOC4		0.802			
We link environmental objectives with the other corporate goals of our firm.	GOC5		0.788			
We have developed	GOC6		0.746			

products and processes that minimize environment impact						
Environmental performance (EP)		3.48 1.04		0.801	0.882	0.592
efficiency of raw materials	EP1		0.746			
reduction in resource consumption	EP2		0.801			
increase in recycling of materials,	EP3		0.822			
reduction in the cost of environmental compliance	EP4		0.729			
increased overall reputation of products and services	EP5		0.766			
Green Innovation (GI)		3.28 1.04		0.744	0.917	0.611
Environmentally friendly packaging for new and existing products/services.	GI1		0.806			
Environmental considerations in developing products and services	G12		0.803			
technology to make energy and water savings and reduce pollution	G13		0.744			
low energy and water in the in the process of proving services to customers	GI4		0.817			
recycled and reused material in the process of proving services to customers	GI5		0.729			
less material in the in the process of proving services to customers	GI6		0.769			
has reduced pollution and emission of hazardous substances in the in the process of proving services to customers	GI7		0.800			

Table 2
DISCRIMINANT VALIDITY

Construct	GOC	EP	GI
GOC	**0.773**		
EP	0.612	**0.769**	
GI	0.549	0.626	**0.782**

Diagonals in bold signify the square root of the AVE while the other figures depict the correlations.

Structural Model

In order to assess the structural model, the Common Method Bias (CMB), the coefficient of determination (R^2), the predictive relevance of the model (Q2), the Goodness of Fit (GOF), the effect size, the Standardized Root Mean Square Residual (SRMR) and the evaluation of the path coefficients need to be examined. The values of all these variables are satisfactory (Henseler et al., 2016; Hair et al., 2019).

Table 3
PATH COEFFICIENT AND T-STATISTICS

Hypothesised path	Path Coefficient	T-statistics	Decision
H1 GOC→EP	0.259	3.924 *	Supported
H2 GOC→GI	0.311	3.292**	Supported
H3 GI →EP	0.227	4.446*	Supported

*p<0.01; **<0.05

Table 3 depicts the results of the structural model. The results (β=0.259, T=3.924, p<0.01) show a significant positive relationship between GOC and EP Hypothesis one of the study is supported. The results (β=0.311, T=3.292, p<0.05) depict a significant positive relationship between GOC and GI. Hypothesis two is supported. The results (β=0.227, T=4.446, p<0.01) show a significant positive relationship between GI and EP. Hypothesis three of the study is supported.

Table 4
MEDIATION RESULTS

Mediation Path	Indirect Effect	Total Effect and T-Statistics	Confidence Interval Bias (corrected)		Decision	VAF
			LL	UL		
H4 GOC→GI→EP	0.151*	0.188*(1.308)	0.061	0.242	Accepted (full mediation)	80.31%

*P<0.01

Table 4 depicts the results of mediation. The study followed the requirements and types of mediation as depicted Nitzl, et al., (2016); Hair, et al., (2019). The indirect path between GOC, GI and EP is positive and significant. A full mediation is confirmed. Thus, hypotheses four is supported.

DISCUSSION

The hospitality industry negatively affects the environment through over consumption of natural resources, pollution and solid and liquid waste. However, firms in the industry can also enhance environmental preservation through their strategy. The study investigated the effect of GOC on the EP of hospitality firms. In addition, the study examined the mediating effect of GI in the relationship between GOC and EP. The results indicated that there is a significant positive relationship between GOC and EP. Hypothesis one of the study is supported. The findings suggest that GOC can improve a firm's willingness to protect the environment. The findings of the study are consistent with the results of prior empirical studies. Wang (2019); Hadjri, et al., (2019); García-Machado & Martínez-Ávila (2019) find that GOC positively affects. EP. The findings of the study indicated a significant positive relationship between GOC and GI. Hypothesis two of the study is supported. The results show that organizational culture positively

affects the innovation activities of a firm. The effective implementation of GI depends on a culture that is based on environmental values. . Managers in organizations with culture aligned to the protection of the environment are likely to develop and implement GI as part of their environmental protection policies. Roespinoedji, et al., (2018); Wang (2019) also find a positive relationship between GOC and GI. The results indicated a significant positive relationship between GI and EP. Hypothesis three of the study is supported. The findings indicate that GI reduces the negative environmental impact of a firm through reduction of waste and emissions and energy consumption. The findings are consistent with the results of prior empirical studies on the effect of GI on EP (García-Machado & Martínez-Ávila, 2019; Singh et al., 2020; Arsawan et al., 2021). The findings indicate that GI fully mediates the relationship between GOC and EP. The findings suggest that GI is a mechanism through which both GOC can affect EP. The findings are consistent with previous empirical studies on the mediating effect of GI. Wang (2019) points out firms that have a well-designed GOC can dynamically enhance their green innovation. This can be done through innovations that minimize waste and pollution and reduce energy consumption. This can improve a firm's environmental performance. Garlek & Tuna (2018) find that GOC can trigger GI and improve a firm's EP.

CONCLUSION

The study investigated the relationship between GOC and the EP of hospitality firms in South Africa. In addition, the study investigated whether GI mediates the relationship GOC and EP. The findings indicated a significant positive relationship between GOC and EP. In addition, GI mediates the relationship between GOC and EP. The findings can be linked to NRBV in that a firm can improve its environmental performance through its organizational culture. Theoretically, the study developed a model that shows that GI is a mechanism through which GOC can affect EP. Empirically, the study contributes to the literature on the effect GOC on the EP of hospitality firms. The findings have some managerial implications. First, the study confirms the importance of GOC as a driver of EP. Therefore, it is important for the top management of hospitality firms to develop an organizational culture that supports the environment. The provision of training on green culture for the management and employees of hospitality is important. Green champions and green teams can be formed by firms. Environmental goals and performance of a firm should be communicated by management to all employees. The study finds that GI is a mechanism through which GOC can affect EP. Therefore, hospitality firms must focus on GI that focuses on energy conservation, waste recycling, pollution prevention, waste reduction, green product design and environmental management system in order to improve environmental performance. The study has some limitations and proposes some areas for further study. First, the survey was cross-sectional in nature and this limits cause and effect relationship. A longitudinal study will help to improve the findings of the study. Second, the survey was done on firms in one industry and one country. To improve the generalizability of the findings, further studies can include other industries in other countries. The effect of GOC on the sustainable performance of hospitality firms can be examined by other studies.

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