GREEN ENTREPRENEURIAL ORIENTATION AND FIRM PERFORMANCE IN SOUTH AFRICA[*]

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Abstract. The aim of the study was to investigate the impact of green entrepreneurial orientation (GEO) on the sustainable performance (SP) of firms in the context of the hospitality sector. Sustainable performance was measured by financial, environmental and social indicators. The study utilised the quantitative research approach and the causal research design. The cross-sectional survey method was used for data collection. Questionnaire was distributed to 500 owner/managers of formal hotels and guest accommodations in South Africa. 192 respondents participated in the survey. Descriptive statistics and the structural equation modelling were used for data analysis. The Cronbach's alpha was used as the measure of reliability. The results indicated a significant positive relationship between GEO and financial, environmental and social performance. The findings of the study can assist firms in the hospitality sector understand firm-level factors that can impact on sustainability initiatives.

Keywords: green entrepreneurial orientation; financial; environmental; social; sustainable performance; South Africa

1. Introduction

The broad tourism industry including the hospitality sector contributes significantly to employment creation and economic growth worldwide. Including indirect economic contribution, the tourism industry accounts for approximately 10% of global gross domestic product (GDP) and one out of eleven jobs worldwide (World Travel & Tourism Council, 2015). In the European Union, tourism is the third largest socio-economic activity. The hospitality sector employs about 80% of the total European Union tourism workforce (Hotrec Hospitality Europe,

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2018). In South Africa, the tourism industry including the hospitality sector is a vital part of the economy and is one of the main drivers of sustained and inclusive growth. The tourism sector accounted for 2.9% of South Africa's gross domestic product in 2016. The tourism industry employs 4.4% or one out of every twenty three of the South African workforce. In addition, the tourism industry created 40,000 net new jobs between 2012 and 2016 (Statistics South Africa, 2018).

Although tourism and hospitality can benefit the environment though conservation and preservation of nature, their activities also have the potential to destroy the natural environment in the communities in which they operate. The hospitality sectors puts pressure on natural resources through high food, water, energy and raw material consumption. The other negative environmental impacts of tourism includes pollution through air emissions, sewage and noise. The physical impact of the hospitality sector on the environment include construction activities, infrastructure development, deforestation and unsustainable use of land (Kolawole et al. 2016; Pramanik and Ingkadijaya, 2018). There is a growing consensus by governments, businesses and academics that the current established economic system that focuses primarily on profit maximisation is unsustainable. Greater attention needs to be focused on environmental issues and how to reduce or eliminate environmental degradation caused by business activities (DiVito and Bohnsack 2017; Jiang et al. 2018). For instance, the contribution of South Africa to global emissions is about 1.2% and the country as a signatory to the Kyoto Protocol on Climate change, has promised to reduce emissions by 34% by 2020 and 42% by 2025 (Vosper and Mercure, 2016).

The Brundtland Report (1987), entitled "Our common future" highlights the importance of sustainable development in the perspective of economic growth, social justice and environmental safety. New business models are required to take into consideration the impact of business activities on the environment. With the negative effects of climate change becoming increasingly apparent, there is the need for a sustainable shift in the current production and consumption systems. The change into a green or sustainable economy needs to be led by entrepreneurs who can introduce innovative business solutions that will cater to environmental and social challenges of the twenty-first century. Businesses have the long-term goal, technological knowledge and financial resources to provide solutions to environmental problems. Environmental challenges actually present opportunities to businesses (Casey and Sieber, 2016; Haldar, 2018). The factors that can affect a firm's sustainability initiatives are external and internal. External factors include government regulations and customers. A firm's internal structure and resources can also affect the level of aspiration for environmental sustainability. Sustainability-oriented businesses depend upon the institutionalisation of the environmental processes into their systems (Küçükoğlu and Pınar, 2015; Merriman et al. 2016). Entrepreneurial orientation (EO) is an important intangible resource that characterises a firm-level strategic organisational orientation. EO depicts a firm's strategy, managerial behaviour and values that are entrepreneurial in nature. EO helps a firm to discover and exploit opportunities and focuses on innovativeness, proactiveness and the tendency to take risk. Thus, EO can help a firm through its internal processes, structure and behaviour to identify and pursue sustainability initiatives (Rauch et al. 2009; Dickel 2018).

Green entrepreneurial orientation (GEO) can be described as a firm's inclination to focus on opportunities that produce both financial and environmental benefits through the introduction of environmentally-friendly products and services. GEO involves green innovations and a proactiveness to capture green opportunities and risk-taking behaviour (Gibbs and O'Neill, 2014; Pratono et al. 2018). One of the ways to examine the impact of a firm sustainability initiatives such as GEO is to measure their effect on performance. This study used the sustainable or triple bottom-line approach to measure performance. Sustainable performance takes into consideration not just economic profit but also social and environmental performance. The aim of the study is to investigate the effect of GEO on sustainable performance of firms in the hospitality sector. The study makes a contribution to sustainability and tourism research in the following ways. First, green entrepreneurship is an increasingly significant phenomenon from a sustainable development perspective, but still largely under-researched by

scholars especially in the context of the hospitality industry. Second, although, the positive relationship between EO and performance is largely supported in the context of traditional profit maximising ventures, the nexus between EO and performance is uncertain in the context of green entrepreneurship (Lumpkin et al. 2013). In addition, the impact of GEO on firm performance remains unclear. Whilst some studies find a significant positive relationship between green entrepreneurship and financial and environmental performance, other studies find an insignificant or a negative relationship (Gibbs and O'Neill, 2014; Shrivastava and Tamvada, 2017; Amankwoh-Amoah, et al. 2018; Jiang et al. 2018). These gaps in extant literature stimulated the study. The findings of this study can help firms in the hospitality sector to understand firm-level factors that can impact on sustainability initiatives. The study is organised in the following way: The literature on the hospitality sector, sustainability and GEO is reviewed and hypotheses developed in the next section. This is followed by the research methodology, results, discussion and conclusion.

2. Literature review

2.1 The hospitality sector and sustainability

Although hospitality is one of the oldest professions and contributes significantly to job creation and economic growth, there is no consensus on its definition. The failure to adequately define hospitality has led to a disjointed academic environment (Hemmington 2007, Ottenbacher et al. 2009). Hospitality is often defined within the context of the broad tourism industry. The United Nations World Tourism Organisation (2018) defines tourism as "*a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. These people are called visitors (which may be either tourists or excursionists; residents or non-residents) and tourism has to do with their activities, some of which imply tourism expenditu*re". Tourism related activities include accommodation, food and beverage services, recreation and entertainment, transportation and travel services. The hospitality industry is the combination of the accommodation and food and beverage groupings and collectively make up the largest segment of the tourism industry (United Nations World Tourism Organisation, 2008a). According to Hemmington (2007), hospitality can be defined within the perspective of behaviour and experience. There are five key dimensions of hospitality as a commercial experience. These are the host-guest relationship, generosity, theatre and performance, lots of little surprises and safety and security. The Department of Labour of South Africa (2016) describes the hospitality sector as a commercial business involved in the provision of accommodation. The hospitality sector includes hotels, motels, lodges, guest houses including bed and breakfast establishments, restaurants, pubs, taverns and cafés. The hospitality sector is part of the broad tourism industry contributed 9.6% of total employment, 8.2% of total investment and 8.9% of South Africa's GDP in 2017. Despite the positive contribution of the hospitality sector, the negative impacts of the sector include the production and emissions of greenhouse gases, high water and energy consumption Mbasera et al. 2016; Idahosa et al. 2017). The negative impacts of hospitality has led to the demand by government, customers, business and academics for green or sustainable hospitality. Green hospitality is a normal fit for entrepreneurs that wish to pursue business opportunities in the dynamic business environment where sustainability has become an important part of the business model (Deale, 2013; Melissen, 2013).

The Brundtland Report of 1987 defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable tourism (hospitality) can be defined as "*hospitality that takes full account of the current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities*." (Deale, 2013, p1). Sustainable hospitality should make optimal use of resources, respect the socio-cultural identity of host communities and provide social and economic benefits to all stakeholders (United Nations World Tourism Organisation 2018b). Sustainable hospitality creates employment and economic growth while enhancing and protecting social, natural and cultural resources for the well-being of both residents and visitors. Future tourism and hospitality experiences will be more oriented towards eco-friendly destinations and businesses (van Rheede

and Blomme, 2012; Fermani et al. 2016). The factors that can affect a firm's sustainability initiatives can be external or internal. External factors include government regulations and customers. A firm's internal structure and resources can also affect the level of aspiration for environmental sustainability. EO is an important intangible resource at firm-level (Küçükoğlu and Pınar, 2015; Merriman *et al*., 2016).

2.2 Green entrepreneurial orientation

The term entrepreneurial orientation (EO) does not have a universally accepted definition. Many terminologies are often used by researchers to denote EO. These include intrapreneurship, corporate entrepreneurship, corporate venturing, intrapreneuring and internal entrepreneurship (Wales et al. 2013). EO is a firm decision-making proclivity favouring entrepreneurial activities. EO is the process through which an organisation pursues innovative entrepreneurial opportunities without inhibition by the nature and level of currently available resources. The set of firm behaviour that reflect EO include autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness (Covin and Lumpkin, 2011; Dickel, 2018). According to Miller (1983, p771), EO describes a firm is "*that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch*"

Originally, entrepreneurship and the natural environment were thought to be incompatible by economists, however, management researchers lately have found out that the two concepts can play an important role in modern economic development. Businesses are responsible for many environmental challenges (pollution and high material, water and energy consumption). These challenges can actually present opportunities for new and established entrepreneurial ventures (Dean and McMullen, 2007; Nikolaou et al. 2018). This has led to the development of green entrepreneurship, a business model that takes into consideration profit and environmental protection (Kirkwood and Walton, 2010). Various terms with slightly different meanings have been associated with green entrepreneurship. These include ecopreneurship, environmental entrepreneurship, sustainable entrepreneurship or triple-bottom-line-oriented entrepreneurship (Spence et al. 2011). A green business can be defined as "*a firm or business set up with the motive of contributing to a sustainable society either by adapting innovative processes and producing products which do not have a negative impact on the environment or firms which have adapted innovative processes and/or products over time, which reduce their impact on the environment* (Haldar, 2018, p235). Green entrepreneurship is the inclination of a firm to focus on opportunities that produce financial and environmental benefits through the use of green activities. Green entrepreneurial orientation (GEO), a concept that came from EO, is a combination of entrepreneurial orientation and green entrepreneurship. GEO is reflected in green innovativeness, proactiveness and risk-taking of a firm. GEO allows the identification of business opportunities, while considering environmental aspects (Ge et al. 2016; Jiang et al. 2018).

The Stakeholder theory and the The Natural-Resource Based View (NRBV), an extension of the Resource Based View (RBV) of the firm can be used to provide the theoretical justification for the relationship between GEO and firm performance. The Stakeholder Theory by Freeman (1984) defines stakeholders as an organisation or individual whose activities are either affected by the firm or affects the way the firm operates. Stakeholders include employees, investors, and customers, suppliers and the environment. RBV by Barney (1986, 1991) contends that valuable firm resources and capabilities are the key sources of sustainable competitive advantage for a firm. GEO is an important firm-level strategic organisational orientation that takes into consideration the environment. The NRBV by Hart (1995) posits that the competitive advantage of a firm is based on its relationship with the natural environment.

2.3 Sustainable performance

Performance can be defined as the results of activities of an organisation or investment over a given period. Performance measures provide the yardstick to evaluate a firm's strategies and its level of commitment to achieve established standard criteria, either as a metric or as an initiative. Performance measures include financial and non-financial indicators. Financial measures are quantifiable and objective and include the gross profit, net profit, return on assets and return on equity. Non-financial measures are subjective and include employee and customer satisfaction (Ahmad and Sabri, 2016; Mjongwana and Kamala, 2018). There is a paradigm shift in recent years to measure performance through sustainable indicators. Sustainability performance can be defined as the performance of a firm in all dimensions and for all drivers of corporate sustainability. One of the ways to measure sustainable performance is the triple bottom line (TBL) approach which adds both environmental and social dimensions to the traditional financial results (Elkington, 1998; Qorri et al., 2018). Financial sustainability relates to a positive financial performance especially in the areas of sales and profit. Social sustainability focuses on performance with respect to the community where the business operates and its relationship with customers and employees. Environmental sustainability refers to a firm's performance with respect to its environmental responsibilities (Yang et al. 2011; Nappi and Rozenfeld, 2015).

2.4 GEO and financial performance

The literature is not conclusive about the relationship between GEO and financial performance. The findings of the study by Jiang et al. (2018) support a significant positive relationship between GEO and financial performance. GEO improves firm financial performance through innovation that reduces the consumption of materials, energy and water and process efficiency. GEO also allows a firm to comply with regulations and avoid paying penalties. This has the advantage of cost reduction. Customer attitude and preference are shifting toward green purchasing and consumption. GEO allows a firm to be proactive and gain first-mover competitive advantage. According to Demirel et al. (2019), green entrepreneurship enhances firm performance through increased transparency, cost-efficiency, better risk management and revenue growth as a result of product differentiation. Hernandez-Perlines and Cisneros (2018) find that sustainable entrepreneurial orientation has a significant positive relationship with financial performance of exporting family firms. However, the findings of Parish (2010) and Nikolaou et al. (2011) reveal that green entrepreneurship is not appropriately associated with financial incentives. The real incentives for green entrepreneurship is not the financial benefits but sustainability values, which cannot be easily recognised in the conventional views of a business. The additional costs associated with green entrepreneurship put entrepreneurs at a competitive disadvantage and this limits the economic impact. In addition, many new green entrepreneurs are financially constrained and do not have adequate resources. This negatively impacts on profitability (Pacheco et al. 2010; Ning et al. 2015). Shrivastava and Tamvada (2017) find a negative relationship between the offering of green products and services and financial performance. Sustainability issues, such as green awareness, does not directly affect firm financial performance (Soto-Acosta et al. 2016). However, firms with a strong GEO are innovative and proactive and take risk in order gain competitive advantage in the marketplace. The competitive advantage can improve sales and market share and translate into better financial performance. It is hypothesised that there is a significant positive relationship between GEO and financial performance.

2.5 GEO and environmental performance

Dickel (2018) points out in contrast to the largely supported positive relationship between EO and firm performance, the impact of EO on environmental performance is less evident. Environmental performance is indicated by the reduction of material and energy consumption and waste and compliance with environmental regulations. Entrepreneurial firms are more likely see environmental performance indicators as business

opportunities. Sustainable entrepreneurs create and change business models in order to positively influence ecological and social impact. EO provides reflexivity which is the ability of the entrepreneur to evaluate environmental constraints and visualise or construct alternative opportunities. EO allows a sustainable entrepreneur to create and evaluate unclear decision alternatives between entrepreneurial opportunities and sustainability values (DiVito and Bohnsack, 2017). Ge et al. (2016) find that green proactiveness has a significant positive impact on green performance through reduction in pollution, waste and energy consumption. Jiang et al (2018) find a significant positive relationship between GEO and environmental performance. GEO can contribute to better environmental performance by creating green products and services, reducing waste and material, energy and water consumption and ensuring employee and customer safety. It is hypothesised that there a significant positive relationship between GEO and environmental performance.

2.6 GEO and social performance

The traditional view of the relationship between sustainability and social responsibility suggests that green initiatives are associated with costs that are unlikely to be recovered. The modern view of the relationship is that can EO can enhance relationships with stakeholders ((Lumpkin and Dess, 1996). Thus EO can lead help a firm to improve customer satisfaction and employee safety. EO will result in the potential of a firm to become greener and more socially responsible (Mullens, 2018) Henandez-Perlines and Cisneros (2017) find that EO positively moderates the relationship between social responsibility and firm performance. Low and Thurasa (2016) point out that the five dimensions of EO are related to internal corporate social responsibility and can enhance green entrepreneurship. Autonomy gives employees the independence and authority to make green decisions. This improves employee morale. Competitive aggressiveness helps a firm to attract green-oriented employees when in competition with other firms. Proactivess helps a firm to be forward looking in its relationship with employees and external stakeholders such as the environment. The innovativeness dimension of EO has a positive relationship with corporate social responsibility (Hong and Cho, 2012). Many customers want to be associated with firms that have created green businesses and products, and services. Environmentally friendly consumption attitudes include selecting and purchasing environmentally friendly products and avoidance of non–environmentally friendly products (Arabatzis et al. 2015). Eco-friendly green revolution has penetrated the workplace and is changing the way that firm attract and retain talent. It is hypothesised that there is a significant positive relationship between GEO and social performance.

3.   Research methodology

The study utilised the quantitative research method. The causal research design was utilised to test the relationship between the variables of the study. The cross-sectional survey method was used for data collection. The questionnaire developed for the study was self-administered by the researcher to the respondents. The population for the study is all hotels in South Africa. The study used the convenience sampling method because the hotels were selected from a variety of accommodation databases. The following databases were used to identify the sample of the study: Johannesburg Accommodation listing, Tshwane Accommodation listing, Centurion Bed and Breakfast Association, Guesthouse Association of Tshwane and the Tourism Grading Association of South Africa. The study focused on formal service accommodations (hotels and lodges) and guest accommodation (Bed and Breakfasts, Country houses and Guest houses) (Tourism Grading Association of South Africa, 2018). The researcher physically distributed 500 questionnaires through visits to the respondents. Managers or owners were the identified respondents because they were more likely to have the required information about the GEO and sustainability performance of their organisations. The researcher obtained the phone numbers and email addresses during the distribution of questionnaires. Reminders were sent to the respondents every week through emails and phone calls to complete the questionnaire. However, if questionnaires were not received after one week, follow-up procedure included telephone calls and email reminders every week. If no response is received after six week, it is treated as non-response. This resulted in the collection of 192 completed and usable questionnaires which the

researcher believed was adequate for data analysis and inferences. The questionnaire was pre-tested in a pilot study of thirty respondents to improve face and content validity before actual data collection. The researcher informed the participants about the aim of the study and that participation was voluntary. The participants were also assured confidentiality and anonymity, thus the names of the participants and their organisations were not included in the questionnaire. The Cronbach's alpha was used as the measure of reliability. The minimum recommended coefficient is 0.70 (Nunnally, 1978). Descriptive statistics and structural equation modelling (SEM) were used for data analysis. This study used the Partial Least Squares (PLS) path modelling which is a variance based approach to test the research model. PLS-SEM is a causal-predictive method of analysis. Compared to the covariance–based SEM, PLS does not impose many rigid assumptions on population, distribution or scale measurement. PLS is more robust with less restrictions placed on the unbiased estimate of the sample size and has the capability to handle statistical analysis for formative and reflective indicators (Haenlein and Kaplan, 2004; Hair et al. 2014). Smart PLS 3.2.7 was the software package used for data analysis. The PLS SEM consists of two sub-models which are the measurement model and the structural model (Chin et al.2010). This study used the two-step analysis by examining first the measurement model and then the structural model.

3.1 Measures

Environmental performance (EP) was measured using a five-item scale (1) (improved efficiency of raw materials, (2) reduced resource consumption (energy and water), (3) increased recycling of materials, (4) reduction in the cost of environmental compliance and (5) increased overall reputation in respects of products and services (during the last three years). The items were adapted from previous studies (Qorri et al. 2018; Magsi et al. 2018). All the question items to measure EP were anchored on the five-point Likert scale with "1 strongly disagree and 5 strongly agree". The last three years is broad enough to take into consideration seasonal and cyclical fluctuations in business practices and performance (Urban and George, 2018).

Financial performance (FP): Three question items were used to FP. These were (1) increase in sales, (2) increase in market share and (3) increase in profit during the last three years. All the question items to measure FP were anchored on five-point Likert scale with "1 strongly disagree and 5 strongly agree". This is consistent with previous studies on financial performance (Maletic et al. 2016; Qorri et al. 2018). The study used the subjective measures because objective measures of the performance of the respondents which were mainly small and medium enterprises were not available. The use of subjective measures of performance is consistent with other empirical studies (Urban and George, 2018).

Social performance (SP) was measured by five question items. (1) increased customer satisfaction with products and services, (2) reduced staff turnover, (3) increased employee satisfaction (4) increased health and safety performance and (5) increased contribution for social issues. All the question items were anchored on five-point the Likert scale with "1 strongly disagree and 5 strongly agree". This is consistent with previous studies on SP (Hong and Cho, 2012; Henandez-Perlines and Cisneros, 2017).

GEO: Eight question items were used to measure GEO. These are (1) my firm has introduced many new green products and services (2) changes in our green products or service lines have been quite dramatic (3) In general, my firm favour a strong emphasis on green practices such as research and development, technological leadership and innovations (4) In general, my firm has the tendency to be ahead of others in introducing green products or services (5) In dealing with competition, my firm often try to initiate green actions for which competitors respond (6) We believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's green objectives (7) My firm typically adopts bold aggressive posture to maximize the probability of exploring potential green opportunities (8) My firm has a strong preference for high risk green projects with chances of high return (Lumpkin and Dess,1986; Covin and Wales, 2012). All the question items were anchored on the five-point Likert scale with "1 strongly disagree and 5 strongly agree".

4. Results

4.1 *Response rate and biographical information*

500 questionnaires were distributed to owners and managers of hospitality firms. 204 questionnaires were returned. 192 questionnaires were found usable and 12 questionnaires were deemed unusable as the respondents did not complete certain vital parts of the questionnaire. The response rate was 38.4%. Independent samples T-test and Anova were used to test for statistically significant differences in the responses on the basis of demographic information. The results were not statistically significant. Table 1 shows the biographical details of the respondents.

Table 1. Biographical details of the respondents

Biographical Characteristics	Frequency ($N = 192$)
Educational qualification of respondents	
Below Matric	0
Matric	45
Post–Matric qualifications	147
Gender of the respondents	
Female	72
Male	120
Age of the respondents (years)	
Less than 20	0
20–30	7
31–40	59
41–50	73
Above 50	53
Age of the firm (years)	
Less than one	0
1–5	36
6–10	104
Above ten years	52
Number of employees	
No employees	0
1–5 employees	0
6-20 employees	33
21–50 employees	89
51–200 employees	70

Source: author

Table 1 shows that the majority of the respondents are male with post Matric qualification, with six to ten years of operation, and between 21 and 50 employees. Therefore, the majority of the responding firms can be classified as small and medium enterprises according to the schedule of size standards for the classification of businesses in South Africa (Government Gazette, 2003).

4.2 Descriptive statistics

Table 2. The descriptive statistics of GEO and sustainable performance.

Construct	Mean	Standard deviation
GEO	3.170	1.011
FP	3,250	1.075
EP	3.355	1.092
SP	3.190	1.007

Source: author

Table 2 depicts the descriptive statistics of GEO and SP. The mean for GEO is 3.170 with a standard deviation of 1.011. Out of the three measures of SP, EP has the highest mean with 3. 355 and a standard deviation of 1.092. This is followed by FP with a mean of 3.250 and a standard deviation of 3.250 and a standard deviation of 1.075 and then SP with a mean of 3.190 and standard deviation of 1.007.

4.3 *Measurement model assessment*

The study assessed the convergent and the discriminant validity of the measurement model. Hair et al. (2014) point out that to assess the measurement model, it is important to determine individual item reliability, internal consistency, content, convergent and discriminant validity. Factor loading, composite reliability and average variance extracted (AVE) were assessed in order to determine convergent validity. The factor loading cut-off for the study was 0.7 (Hair et al. 2010). Two GEO items (items 2 and 3) had outer loadings lower than 0.7 and were deleted. Internal consistency reliability is expected to be 0.7 and above (Hair et al. 2014). The reliability of constructs was measured using the Cronbach's alpha. Table 3 shows that all the four Cronbach's alpha coefficients were greater than 0.70, indicating adequate reliability (Nunnaly, 1978). Scale reliability was further assessed by the composite reliability. When SEM-PLS is used, it is suggested that the composite reliability values rather than the Cronbach's alpha coefficients be used. The minimum of 0.70 is suggested for composite reliability (Hair et al. 2014). The composite reliability values for the study were greater than 0.8 for all the constructs, suggesting adequate reliability for the study. Convergent validity was further assessed by the average variance extracted (AVE). Hair et al. (2014) recommend a minimum of 0.50 as the AVE. The AVEs of all the latent variables were greater than 0.5 suggesting adequate convergent validity. Discriminant validity testing of the reflective scale measurement was performed after convergent validity. In order to confirm discriminant validity, the square root of AVE for each latent construct should be higher than the correlations of any other latent construct (Chin et al. 2014). Table 4 shows that the square root of AVE is higher than the correlations among the latent variables ensuring adequate discriminant validity for the constructs in this study.

Overall the measurement model exhibited adequate convergent and discriminant validity (see Table 3 and Table 4 respectively).

Table 3. Convergent validity

Constructs	item	Loading	Cronbach's alpha	Composite reliability	AVE
GEO	1	0.826	0.812	0.907	0.621
	4	0.763			
	5	0.844			
	6	0.827			
	7	0.718			
	8	0.741			
FP	1	0.791	0.799	0.913	0.780
	2	0.992			
	3	0.855			
EP	1	0.829	0.824	0.901	0.648
	2	0.763			
	3	0.788			
	4	0.826			
	5	0.813			
SP	1	0.806	0.816	0.888	0.614
	2	0.764			
	3	0.816			
	4	0.729			
	5	0.799			

Table 4. Discriminant validity

Construct	1	2	3	4
GEO	*0.788*			
FP	0.892	*0.883*		
EP	0.787	0.714	*0.804*	
SP	0. 728	0.688	0.719	*0.784*

The square root of the average variance extracted (AVE) are represented by diagonals in italics. Other entries represent the correlations. FP = financial performance, EP = environmental performance, SP = social performance, GEO = green entrepreneurial orientation. *Source*: author

4.4 Structural model assessment

Table 5. Structural model assessment

Hypotheses	Direction	Standard Beta/Path coefficient	Standard error of estimate	t-value	Decision
H1	GEO to FP	0.25	0.07	3.68***	Accepted
H2	GEO to EP	0.29	0.09	3.94***	Accepted
H3	GEO to SP	0.23	0.05	3.56***	Accepted

***$p < 0.01$ *Source*: author

Table 5 depicts the summary of the structural model which shows the causal relationship between the constructs of the model. The structural model is assessed based on the estimation of the path coefficients and the predictive power based on the value of the R^2. (Sang et al. 2010). The R^2 shows the proportion of variation in the dependent variable that is explained by one or more predictor variables. R^2 value of 0.19 is considered weak, 0.33 moderate and 0.80 substantial in the context of PLS-SEM (Chin, 1998). The R^2 values obtained in this study are moderate. The results ($\beta 0.25$, $p < 0.01$) support a significant positive relationships between GEO and FP. The results (β 0.29,

p < 0.01) support a significant positive relationships between GEO and EP. The results (β 0.23, p < 0.01) support a significant positive relationships between GEO and SP. The conclusion of the results of the study is that GEO positively influences the sustainable performance of firms in the hospital industry.

4.5 Common method bias and predictive relevance of the model

The variance inflation factors (VIFs) was used to evaluate both vertical and lateral collinearity. VIF with a value greater than 3.3, suggests that the model may be contaminated by Common method bias (CMB) (Kock, 2015). The VIFs for all the constructs used in this study were below 3.3 suggesting that the model is free of CMD. The predictive relevance of the model is a recommended supplementary assessment. This study used the cross-validated redundancy measure Q^2 for assessing the predictive model. It can be assumed that the model has predictive relevance, if the Q^2 value is greater than zero, (Dijkstra and Henseler, 2015). The Q^2 of this model is greater than zero suggesting the predictive relevance of the model.

5. Discussion

The study investigated the relationship between GEO and sustainable performance of firms in the hospitality sector. Financial, environmental and social indicators were used to measure sustainable performance. Despite the importance of GEO, studies on GEO and sustainable performance are sparse. In addition, the relationship between GEO and sustainable performance is unclear (Jiang et al. 2018). The study hypothesised that there is a significant positive relationship between GEO and FP, EP and SP. The findings of the study which is validated by a data set of 192 firms in the hospitality sector and analysed through PLS-SEM show significant positive relationship between GEO and FP. The results indicate that GEO can help to improve the financial performance of firms. This is consistent with the findings of Hernandez-Perlines and Cisneros (2018) and Jiang et al. (2018) that GEO has a positive influence on financial performance. GEO improves financial performance through innovativeness and proactiveness that help firms to reduce the consumption of materials and improve process efficiency. This leads to a reduction in operational costs. In addition, GEO enhances compliance with environmental regulations and eliminates potential fines and penalties associated with non-compliance with regulations. This also reduces cost. With changing customer preferences and a shift towards green purchasing and consumption, GEO allows a firm to be proactive and gain first-mover competitive advantage. This can translate to higher sales and greater profitability. Demirel et al. (2019) find that green entrepreneurship enhances firm performance through cost-efficiency, and revenue growth as a result of product differentiation.

The results support a significant positive relationship between GEO and EP. The results indicate that GEO can help to improve the environmental performance of firms. This finding is supported by previous empirical studies (Ge et al. 2016; DiVito and Bohnsack, 2017. Jiang et al. 2018). GEO through the creation of green products and services reduces energy and water consumption and decreases waste, emissions and pollution. GEO also enhances firm environmental compliance while ensuring employee and customer safety (Dickel, 2018). The results also support a significant positive relationships between GEO and SP. This suggests that GEO helps to improve firm internal and external social performance. GEO can help to improve employee and customer satisfaction. Eco-friendly green revolution has penetrated the workplace and is changing the way that firm attract and retain talent. In addition, customers are becoming more environmentally conscious and making consumption decisions based on greening (Hussain et al. 2014). GEO also enhances the relationship with external stakeholders and makes a firm to be more socially responsible ((Mullens, 2019). Overall, the findings demonstrate a positive relationship between GEO and sustainable performance. The findings is consistent with The Natural-Resource Based View that GEO is seen as an important intangible resource that characterises a firm-level strategic organisational orientation. GEO helps a firm to discover and exploit green opportunities and depicts how a firm uses resources to achieve desired end and focuses on green innovativeness, proactiveness and the tendency to take risk with positive influences on performance. Sustainable firms must take into consideration GEO in order to achieve business success.

Conclusion

Although tourism and hospitality can benefit the environment though conservation and preservation of nature, their activities also has the potential to destroy the natural environment in the communities where they operate. The hospitality sectors puts pressure on natural resources through high food, water, energy and raw material consumption. The factors that can affect a firm's sustainability initiatives are external and internal. External factors include government regulations and customers. A firm's internal structure and resources can also affect the level of aspiration for environmental sustainability. GEO involves green innovations and a proactiveness to capture green opportunities and risk-taking behaviour. One of the ways to examine the impact of a firm sustainability initiatives such as GEO is to measure their effect on performance. This study the sustainable or triple bottom-line approach to measure performance. The findings indicate a significant positive relationship between GEO and sustainable performance as measured by financial, environmental and social indicators. The findings of the study could help firms in the hospitality sector in to include GEO in their internal organisational processes and training to improve sustainability. In addition, the findings of the study can assist local and international government and non-governmental organisations that support entrepreneurship and sustainability to understand the effect of GEO on performance. This can influence the training programmes designed by these organisations to assist firms in the hospitality industry. The study has some limitations. The cross-sectional survey approach cannot be used to analyse behaviour of firms or the respondents over a period of time and this limits the cause and effect relationship. Also, only 192 firms participated in the study. Thus care should be exercised in generalising the findings of the study. Other studies can examine the effect of GEO on other measures of performance such as innovation and quality. The moderating effects of demographic variables (level of education, age and gender) as well as a longitudinal study on GEO and SP can be examined.

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