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Green Entrepreneurial Orientation and Green Innovation in Small and Medium-Sized Enterprises (SMEs)

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Abstract: Since environmental issues are becoming an integral part of business performances, policymakers and managers have started recognizing the importance of green innovation towards sustainable business performances. The role of the automotive parts industry is crucial in minimizing environmental degradation and promoting sustainable development. Yet few studies have focused on the connection between green entrepreneurial orientation and green innovation that may affect small and medium enterprise (SME) business performance. Therefore, this study aims to analyze the influence of green entrepreneurial orientation on green innovations, and its effects on sustainable business performances in the automotive parts industry in Thailand. The sample consists of 226 SMEs in the automotive parts industry in Thailand. The partial least square method (PLS-SEM) has been used for the analysis of data. The results of the study show that green innovations have the strongest influence on economic and environmental performances. This study contributes to resource-based view theory by incorporating green innovation as a strategic competency of SMEs' performance. Further, green entrepreneurial orientation and green innovation can assist SME managers in understanding the factors leading to sustainable performance of businesses.

Keywords: green entrepreneurial orientation; green innovation; economic performance; environmental performance; social performance

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1. Introduction

Increasing environmental issues are posing serious threats to humans, their economic growth, and ecology (Leonidou et al. 2017). Due to the heightened wave of environmental issues, governments and businesses are focusing on more sustainable productions and integrating sustainable processes in core business activities (Das and Rangarajan 2020; Liu et al. 2016). In particular, studies suggest that green entrepreneurial orientation (GEO) has a crucial role in realizing the environmental, economic, and social performance of organizations (Asadi et al. 2020; Jiang et al. 2018; Schaefer et al. 2015). Over the years, the views of scholars are split regarding the composition of green entrepreneurial orientation. For example, Lumpkin and Dess (1996) clearly state that entrepreneurial orientation is the combination of enterprise initiative and competitive aggressiveness that enables new behavior. Inferring from Arruda (1999), green entrepreneurial orientation is the combination of initiative and environmental orientation. Past studies indicate that social orientation and environmental orientation are two essential components of green entrepreneurial orientation (Cohen and Winn 2007). Studies on green entrepreneurial orientation reveal the significance of green entrepreneurial orientation due to the dynamic nature of the decision-making model (Jiang et al. 2018). The work of past scholars shows that green entrepreneurial orientation is embedded in a firm's proactive stance that enhances its

capabilities to initiate green ventures and improve business performances (Jiang et al. 2018; Belás et al. 2014).

Green entrepreneurial firms have multiple mechanisms that may help them to contribute to superior environmental performances (Guo et al. 2020; Das and Rangarajan 2020). First, green entrepreneurial orientation designs new products and services that help to address environmental issues (Chang and Chen 2013). Second, it will improve employees' health and safety through reduced emission of toxic materials and carbon dioxide in the workplace (X. Xie et al. 2016; Y. Xie et al. 2016). Third, it will contribute to the social welfare of the consumers through health benefits and safety measures (Chuang and Yang 2014). Similarly, green entrepreneurial orientation enhances firms' financial performance in three different ways. First, it will address the issue of resource costs through product innovation processes (Chuang and Yang 2014). Second, in the pursuit of green opportunities firms will get the benefits of first mover in the industry (Pacheco et al. 2010). Third, firms get unusual profits from the investment of huge amounts on green projects (Woldesenbet et al. 2012). As a whole, green entrepreneurial orientation has a vital role in the improvement of an organization's social, economic, and environmental performance (Asadi et al. 2020; Jiang et al. 2018).

Small and medium enterprises (SME's) have a huge contribution to the gross domestic product (GDP) of Thailand, particularly the automotive parts industry of Thailand (Na-Nan et al. 2020). It is expected to become the global hub of green innovative industry (Suraraksa and Shin 2019). Due to expansion of the automotive industry, the suppliers of auto parts are increasing in the market (Rastogi 2018). As per estimates of Suraraksa and Shin (2019), local manufacturers have over 80% of the share in auto parts production. Therefore, it is essential to understand the importance of factors affecting the performance of the auto parts industry in Thailand. In line with this, the present study has developed a framework to understand the role of entrepreneurial orientation driving green innovation and performance of the auto parts industry in Thailand. The role of GEO in the development of emerging economies has been well studied by previous scholars (Jiang et al. 2018; Zhang et al. 2016; Zhao et al. 2009). However, the existing literature is limited on GEO, green product innovations, and sustainable business performances. Therefore, scholars have highlighted the need for research on the potential influence of SME's GEO on green innovations and several dimensions of sustainable business performances (Asadi et al. 2020; Na-Nan et al. 2020; Belas et al. 2019). The concept of green innovation was first proposed by Fussler and James (1996), which refers to improvements and innovations in product processes that enhance the environmental performance of the firms. In addition to this, Borghesi et al. (2015) refer to green innovation as the processes and use of innovative resources that may reduce the cost of production and improve organizations' performance. Past studies depict the importance of green innovations on firms' economic, environmental, and social performances, and enhancing the edge of the organizations (Asadi et al. 2020; Tamayo-Orbegozo et al. 2017).

This study has two important contributions to the literature on green entrepreneurship. First, the distinguishing point is the relationship between green entrepreneurial orientation and green innovation. Prior studies in this area have considered the influence of green entrepreneurial orientation on sustainable business performances (Jiang et al. 2018; Galbreath 2019). Another distinctive contribution of this study is the relationship between green innovation and sustainable business performances. Although researchers have studied the effect of green innovation on economic and environmental performances, yet social performance is still unclear for the managers. Furthermore, this study enriches the body of literature in the context of the automotive industry in Thailand. These potential gaps in the literature provide valuable space for understanding the importance of green entrepreneurial orientation on green innovation and firm performance in the context of the automotive industry in Thailand. Therefore, the current study will put emphasis on the influence of green entrepreneurial orientation on green innovation and SMEs' performance in the automotive industry of Thailand. The outcomes of this study will provide useful in-

sights to SMEs' managers that help them to compete in the dynamic business environment and achieve sustainable business performance.

2. Literature Review

2.1. Theoretical Foundation: Resource-Based View Theory

This study is based on the principles of the resource-based view (RBV) to examine the influence of green entrepreneurial orientation on green innovation of small and medium enterprises (SMEs) in the automotive parts industry in Thailand. Further, this study focuses on the influence of green innovations on SMEs' social, economic, and environmental performance. The resource-based view theory was first proposed by Wernerfelt (1984) and explains that organizations' unique capabilities create a competitive advantage in the market. From the perspective of RBV, organizations' rare and inimitable characteristics help to achieve a sustainable competitive edge (Jiang et al. 2018; Sirmon et al. 2010; Varanavicius and Navikaite 2015). Further, Xie et al. (2019) inferred that organizational unique internal and external resources are crucial factors that create competitive advantage. Due to excessive internal and external pressure to comply with environmental regulations, firms are comprehensively implementing green strategies (Asadi et al. 2020; Weng et al. 2015). Green strategies require firms to adopt green technologies, design green products, and implement green supply chain practices in the organization (Rosenbusch et al. 2011; Chiou et al. 2011). From the resource-based view (RBV) theory, green entrepreneurial orientation leads to green innovation that creates a competitive edge and affects the environmental, social, and economic performance of the businesses.

2.2. The Relationship between Green Entrepereneurial Orientation and Green Innovation

The green entrepreneurial orientation (GEO) concept is based on the foundation of green entrepreneurial theory and entrepreneurship orientation theory (Guo et al. 2020). GEO follows the principle of a triple bottom line that is aimed at the development of enterprises. The work of Luo et al. (2005) indicated the importance of availing green innovation through proper allocation of resources that reduce the hazardous impact on the environment. Specifically, some scholars asserted that green entrepreneurial orientation includes two aspects: environmental orientation and social orientation (Guo et al. 2020; Cohen and Winn 2007). Furthermore, Becker (2010) argued that GEO is comprised of social and innovative orientation. Notably, as a strategic move, green entrepreneurial orientation (GEO) may facilitate the production of green innovative products that will help to enhance sustainable business performances (Guo et al. 2020; Teece 2016). As such, the main goal of GEO is to promote sustainable production processes and introduce green products and services (Bos-Brouwers 2009). Green innovation enables the firms to develop and produce products that have favorable impact on the environment (Huang and Li 2017). Green innovation and eco-innovation also refers to businesses' contribution towards sustainable development, while increasing competitive advantage of the firms (OECD 2010; Huang and Li 2017). Based on the evidence of past studies, this study believes that green entrepreneurial orientation (GEO) acts as an independent system that reflects firms' strategic gestures to accelerate green innovation and improve sustainable business performances (environmental, economic, and social). Based on the above arguments, the following hypothesis is proposed:

Hypothesis 1 (H1). *Green entrepreneurial orientation has a positive effect on green innovation.*

2.3. The Relationship between Green Innovation and Social, Environmental, and Economic Performance

The Triple Bottom Line (TBL) model highlighted the importance of the economy, society, and environment as the dimensions of firm performance (Asadi et al. 2020; Elkington 1998). This study has included all three dimensions from the perspective of SMEs as these are critical for sustainable innovation and business performance (Asadi et al. 2020). In line with this, the scholars have pointed out the importance of financial performance, social welfare, and

environmental quality in the wellbeing of the general public (Tanwir et al. 2020; Shen et al. 2017). However, scholars argue that organizations are more focused on the economic element as compared to social and environmental (Asadi et al. 2020). Some scholars tried to maintain the balance between economic and social on one hand (Haffar and Searcy 2017) and economic and environmental on the other hand (Susanto et al. 2019; Salzmann et al. 2005). For the successful operations of the business, all components have a crucial role in the success of business performance (Fernando et al. 2019).

From the economic perspective, the implementation of green strategies raises the market position of firms and improves financial performance (Battisti and Perry 2011; Green and Inman 2005). The impact of green strategies can be observed at the organizational level as well as financial indices, customers, suppliers, and the government (Asadi et al. 2020; Virglerová et al. 2016). Other scholars have inferred that green innovation directly affects operational performances that lead towards the economic success of the firms (Asadi et al. 2020; Roca and Searcy 2012; Bock and Hasenkamp 2013). Additionally, green innovation practices reduce the costs of energy consumption and reduce discharge wastes that affect organizational costs positively (Zhu and Sarkis 2004). In line with this, Zhu and Sarkis (2004) pointed out the favorable effect of green innovations on the economic performance of the firms due to reduced wastes and costs. Based on the past evidence regarding the positive effects of green innovation on the economic performance of the firms, the following hypothesis is proposed:

Hypothesis 2 (H2). *Green innovation has a positive effect on economic performance.*

The firms that reduce waste generation and emissions of carbon dioxide, along with the decrease of poisonous substances, are involved in environmental performance (Asadi et al. 2020; Gault 2018; Gavurová et al. 2020). Organizations around the globe are adopting environmental strategies that help to accelerate environmental performances and achieve competitive advantage (Pakurár et al. 2020; Rodríguez-Antón et al. 2012). About this, environmental laws also exert pressure on the manager to comply with environmental performances (B. DiPietro et al. 2013). Environmental performance is an important component of organizational strategy as it encompasses the green innovation and business strategies that create a competitive edge in the market (Dangelico and Pujari 2010). As a result, the organizations that adopted environmental performance as part of organizational strategies have a competitive advantage (Yang et al. 2011). Present literature reveals that improved operational activities and higher productivity lead to better environmental performances of the firms (Asadi et al. 2020; Kozubíková et al. 2017; Montabon et al. 2007). Based on the evidence of previous studies, the following hypothesis is proposed:

Hypothesis 3 (H3). *Green innovation has a positive effect on environmental performance.*

Apart from addressing environmental issues, green innovations are vital in attracting and retaining staff, maintaining better communications, and increasing the acceptability of the brand. Furthermore, it has several other benefits which include awareness of social responsibility, recruitment, and retaining suitable people (Ključnikov et al. 2020; Mehta and Chugan 2015; Crisan et al. 2015). Indeed, as inferred by Wagner (2013), the performance of the firms that invest in social accountability, pay appropriate attention to satisfied customers through innovations, and appoint suitable staff increases. Past studies depict that the green performance of businesses improves social performance (Dias-Sardinha and Reijnders 2005; Asadi et al. 2020). Based on the evidence of previous work, the following hypothesis is proposed:

Hypothesis 4 (H4). *Green innovation has a positive effect on social performance.*

Figure 1 show the progressions of the relationship where Green Entrepreneurial Orientation leads to Green Innovation, which in turn gives rise to three variables with

positive effects. They include Green Social Performance, Green Economic Performance and Green Environmental Performance.

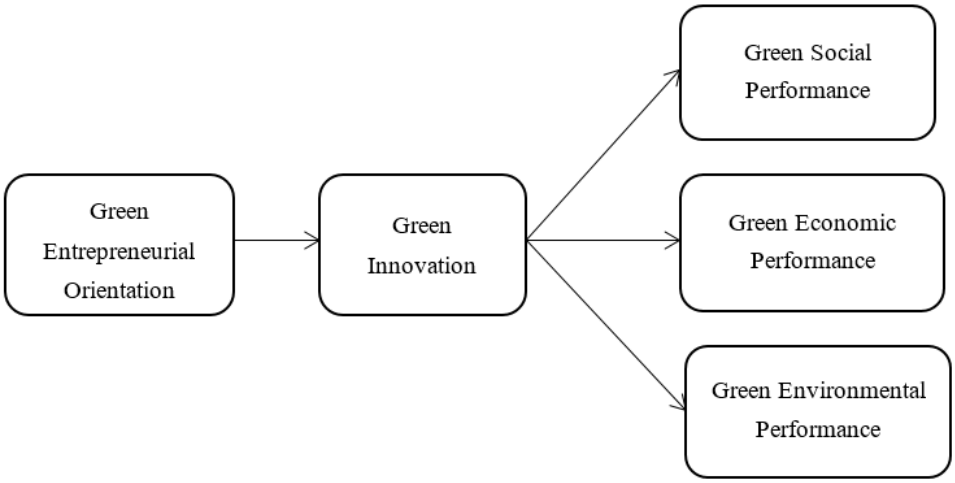

Figure 1. Conceptual Framework.

3. Research Methodology

This study collected data from Thai SMEs in the automotive parts industry to test the proposed conceptual framework. The automotive parts industry is one of the key sectors that are important for the economy of Thailand (Na-Nan et al. 2020). The understanding of the role of green entrepreneurial orientation is critical for the growth of the emerging Thai economy. The ministry of industry Thailand defines and classified SMEs in manufacturing sectors as having not more than 200 employees and having fixed assets up to 200 THB million. Following this definition, we have purposively selected samples from the automotive parts industry of Thailand. The automotive parts manufacturing firms were selected from the registered SMEs with the Department of Industrial Works database, Ministry of Industry of Thailand because this study is restricted to the sample of automotive parts industry in Thailand. Through a structured questionnaire survey, the data of the targeted firms were collected. The senior managers top executives located in Thailand were the target respondents of this study. For data collection, we have taken help of five post graduate students. The authors provided the details of the firms along with email id of the managers to students for the collection of data. Initially we decided to distribute questionnaires to more than 700 firms' managers but due to time constraints and some invalid email address, we have decided to distribute to 450 managers. The questionnaire along with a cover letter mentioning the detailed purpose of the study was sent to the managers of the firms. A total of 450 questionnaires were distributed to the top management of firms. In the end, we have received 238 questionnaires but only 226 were valid for the data analysis with an effective response rate of 56.5%. The sample characteristics of the respondents are presented in Table 1 below.

The survey questionnaire, along with a cover letter that ensured confidentiality of the respondents, was distributed to the respondents of the study. The first section of the survey questionnaire consisted of all constructs (see Appendix A), namely, green entrepreneurial orientation (GEO), green innovation (GI), and sustainable business performance (environmental performance (ENP), economic performance (ECP), and social performance (SP). The second section was related to firms' profiles and demographic characteristics of top management. A 5-point Likert scale was used for the measurement. All measurements used a 5-point Likert-type scale. To ensure reliability and validity, we assembled our questionnaire using established survey items to fit our research context. To ensure the content validity of this study, the adapted questionnaire was evaluated by five academic experts. They made minor changes in the format, spelling, and language of the survey questionnaire. Before formal distribution of the questionnaire to the target respondents, a

pilot study was conducted on 30 mid-level managers and 17 senior managers and 4 top executives of the firms.

Table 1. Profile of the Respondents.

Characteristics	Frequency	Percentage
Gender		
Male	139	61.5
Female	87	38.5
Age in years		
25–30	42	18.6
31–35	58	25.7
36–40	36	15.9
41–45	60	26.5
>45	30	13.3
Experience in years		
<5	68	30.1
5–10	71	31.4
11–15	56	24.8
>15	31	13.7
Firms age		
<3	59	26.1
3–5	88	38.9
6–8	61	27.0
>8	18	8.0

The questionnaire consists of previously established scales from past studies. Five items for the measurement of green entrepreneurial orientation were adapted from the study by Guo et al. 2020 and Jiang et al. 2018. Four items of green innovation were adapted from the study of Asadi et al. 2020 and Chen 2008. Five items for the measurement of environmental performance were adapted from the study of Asadi et al. 2020, Wang 2019; and Ramanathan 2018. Four items of economic performance were adapted from the study of Li 2014 and Zhu et al. 2008. Finally, four items of social performance were adapted from the study of Asadi et al. (2020); Cheah et al. (2019).

4. Results

This study used Partial Least Squares Structural Equation Modelling (PLS-SEM) for the analysis of data. PLS-SEM can easily run regression analysis to test complex relationship among the constructs. Due to PLS-SEM's non-parametric nature, it does not require the assumption of normality and large sample size (Hair et al. 2011). It is a multivariate technique that assesses the measurement and structural model with low error variance. In this study, PLS-SEM software version 3 is used to test the conceptual framework and describe the relationships among the constructs (Hair et al. 2014). PLS-SEM is suitable as it simultaneously validates and describes the relationship among the constructs (Hair et al. 2014). A bootstrapping method using 5000 resampling was used to assess the structural model.

Common method bias (CMB) is a serious threat to the credibility of data. The data collected from a single source will cause CMB. To avoid common method bias, this study made questionnaires anonymous, which allows respondents to be more open and freer in their responses as well as increasing the response rates (Miller and Cardinal 1994). In addition to this, we have used Harman's single factor test (Podsakoff et al. 2003). The results show that a single factor contributes 28.757% of the variance which is less than 50% variance. Therefore, this study depicts that common method bias was not a serious problem.

Reliability represents the internal consistency of the data. First, we assessed the internal consistency through Cronbach's alpha and composite reliability (CR) values in Table 2 below. The Cronbach's alpha values $\geq$0.70 represent internal consistency in the data (Hair et al. 2014). However, composite reliability is the better predictor of internal

consistency (Hair et al. 2014); therefore, we also measured CR values. The composite reliability (CR) values of all constructs were greater than 0.70, representing the internal consistency of the data. For the measurement of convergent validity, two validity tests were performed: convergent validity and discriminant validity. Convergent validity refers to the degree of relationship among the constructs. Discriminant validity tests whether constructs are unrelated to each other. According to Hair et al. (2014), convergent validity establishes when the values of average variance are extracted (AVE) $\geq$ 0.50. In this study the values of all constructs' AVE ranges were 0.534 to 0.763, thus confirming convergent validity, as shown in Table 2 below. Fornell and Larcker's (1981) criterion and Heterotrait–Monotrait (HTMT) methods were used to assess the discriminant validity in Table 3 below. The values of the square root of AVEs are greater than corresponding correlations among the constructs, confirming discriminant validity (Fornell and Larcker 1981; Farrell 2010). Next, the assessments of HTMT values also confirmed discriminant validity as the ratio between two constructs were less than 0.90 (Henseler et al. 2015).

Table 2. Constructs' reliability and convergent validity.

Constructs	Indicator	Loading	CA	CR	AVE
Green Entrepreneurial Orientation	GEO1	0.824	0.909	0.932	0.732
	GEO2	0.891			
	GEO3	0.820			
	GEO4	0.840			
	GEO5	0.899			
Green Innovation	GI1	0.831	0.825	0.884	0.658
	GI2	0.740			
	GI3	0.892			
	GI4	0.772			
Environmental Performance	ENP1	0.916	0.890	0.919	0.697
	ENP2	0.836			
	ENP3	0.900			
	ENP4	0.844			
	ENP5	0.652			
Economic Performance	ECP1	0.909	0.898	0.928	0.763
	ECP2	0.865			
	ECP3	0.905			
	ECP4	0.809			
Social Performance	SP1	0.820	0.733	0.818	0.534
	SP2	0.831			
	SP3	0.647			
	SP4	0.597			

Note: CA = Cronbach's alpha; CR = Composite reliability; AVE = Average variance extracted.

Table 3. Discriminant Validity.

Latent Variables	1	2	3	4	5
Economic Performance	**0.873**				
Environmental Performance	0.735 *(0.805)*	**0.835**			
Green Entrepreneurial Orientation	0.109 *(0.149)*	0.109 *(0.125)*	**0.855**		
Green Innovation	0.410 *(0.456)*	0.318 *(0.348)*	0.224 *(0.249)*	**0.811**	
Social Performance	0.349 *(0.455)*	0.260 *(0.321)*	0.325 *(0.380)*	0.167 *(0.191)*	

Note: Bold diagonal values represent the square of average variance extracted (AVE), italic values in the brackets are the Heterotrait–Monotrait (HTMT) values, and the remaining values are the correlations among the constructs.

4.1. Assessment of Structural Model

The proposed hypotheses were tested using the PLS-SEM technique. The values of predictive relevance were used for the model fit. The values of cross-validated redundancy (Q2) represent the predictive relevance of the model. The values of Q2 should be greater than 0 for the model accuracy (Hair et al. 2014; Henseler et al. 2009). The values of Q2 were determined through the blindfolding method. All the endogenous construct values were greater than 0, representing model accuracy. The values of path coefficient, p-value, and t-statistics were used to accept and reject the hypotheses as shown in Table 4 below. The strength of the relationship between the variables can be examined through path coefficient values. Path coefficient values near +1 indicate a strong relationship and vice versa (Hair et al. 2016). *p*-Values and t-statistics refer to the acceptance and rejection of the proposed hypotheses. In this study, the conceptual model contains four hypotheses. The results of the tested hypotheses have been summarized in Table 4 below. H1 proposed that green entrepreneurial orientation has a positive effect on green innovation, which was accepted ($\beta = 0.224$, $p < 0.002$, $t = 3.137$); H2, which proposed that green innovation has positive effect on economic performance, was accepted ($\beta = 0.410$, $p < 0.000$, $t = 5.655$); and H3, which proposed that green innovation has a positive effect on environmental performance, was rejected ($\beta = 0.318$, $p < 0.000$, $t = 4.085$). Finally, H4 proposed that green innovation has a positive effect on social performance, which was accepted ($\beta = 0.167$, $p < 0.025$, $t = 2.235$). As evident from the findings, green innovation has a huge impact on the different factors of performances (economic, environmental, and social).

Table 4. Hypotheses Testing Results.

Hypotheses	Path Coefficient	*p*-Values	*t*-Values	Decision
GEO → GI	0.224	0.002	3.137	Supported
GI → EP	0.410	0.000	5.655	Supported
GI → ENP	0.318	0.000	4.085	Supported
GI → SP	0.167	0.025	2.235	Supported

Note: GEO = Green entrepreneurial orientation; GI = Green innovation; SP = Social performance; EP = Environmental performance; ENP = Environmental performance.

4.2. Out of the Sample Predictive Power

Following the guidelines of Shmueli et al. (2019), we ran PLSpredict with 10 folds and 10 repetitions to assess the prediction of the PLS model as illustrated in Figure 2. In this study, PLS-SEM errors are asymmetrical; therefore, we based our predictive assessment on mean absolute error (MAE). Table 5 shows that in the PLS-SEM, most of the indicators have lower MAE values than the linear regression model (LM). Therefore, we concluded that the model has medium to high predictive power.

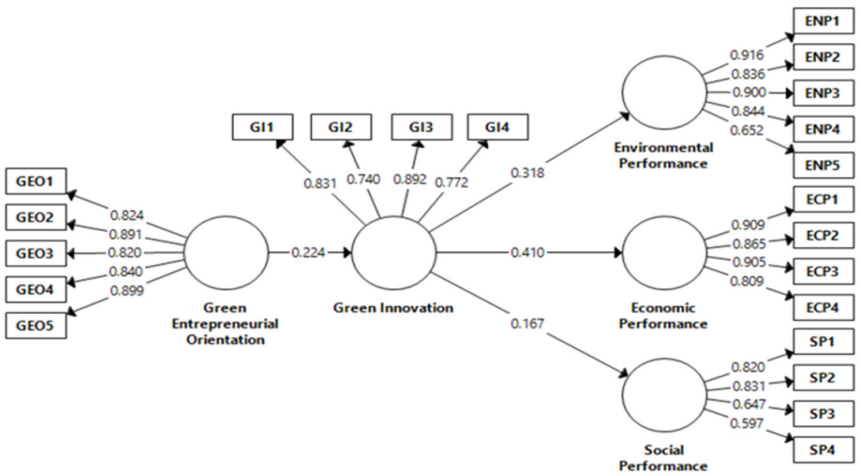

Figure 2. Evaluation of the Structural Model.

Table 5. PLSpredict assessment of manifest variable.

Items	PLS-MAE	LM-MAE	PLS(MAE)-LM(MAE)
ECP1	0.504	0.526	−0.022
ECP4	0.578	0.601	−0.023
ECP3	0.551	0.57	−0.019
ECP2	0.483	0.51	−0.027
ENP2	0.501	0.529	−0.028
ENP4	0.52	0.543	−0.023
ENP5	0.63	0.634	−0.004
ENP1	0.479	0.502	−0.023
ENP3	0.461	0.493	−0.032
SP3	0.633	0.633	0
SP4	0.75	0.754	−0.004
SP1	0.709	0.694	0.015
SP2	0.673	0.649	0.024
GI1	0.539	0.553	−0.014
GI4	0.69	0.707	−0.017
GI2	0.623	0.639	−0.016
GI3	0.616	0.63	−0.014

4.3. Theoretical Implication

The present research has multiple theoretical implications that enrich the literature of green entrepreneurship. Although previous studies have contributed to green innovation, studies were limited to the internal and external factors that affect green strategies and performances. The relationship between green entrepreneurial orientation and green innovation is unique, and has not received ample attention from scholars. Green entrepreneurial orientation is an important factor that affects firms' green strategies and leads towards green innovation, and this link will enrich the body of literature. Green innovation is an important aspect of organizational capabilities that drive firm performance, particularly in the automotive industry performance. The inclusion of green innovation into RBV provides a novel theoretical lens to ascertain firms' performance in emerging markets. Second, previous studies have focused on the relationship between entrepreneurial orientation and innovation and did not consider the sustainability aspect (Shan et al. 2016; Miao et al. 2017). This study has extended the literature by incorporating sustainability into the proposed theoretical framework. Third, the study analyzed the mechanism of green entrepreneurial orientation on green innovation that ultimately creates competitive advantage and improves sustainable business performances in the perspective of SMEs, enriching the literature on resources-based view theory. Further, the proposed theoretical model helps the policymakers and entrepreneurs in understanding the factors that affect SME's sustainable performances.

4.4. Practical Implication

This study has numerous practical implications for the managers and policymakers that sustained the competitive advantage of SMEs. First, from the perspective of green entrepreneurial orientation, this study found that it has a significant impact on the green innovation of the automotive industry in Thailand. To achieve a high level of green innovations, managers and top executives of the automotive industry need to incorporate green entrepreneurial orientation into SME's business strategies. Top management of SMEs should promote and encourage the development of programs that enhance green entrepreneurial orientation in SMEs and increase firms' participation in green innovations.

Second, the results depict that green innovation has a significant impact on economic performance. Therefore, top executives need to formulate strategies that could reduce the cost of operation through superior operational activities, thereby creating a competitive edge and improving the economic performance of the SMEs. Automotive manufacturing firms should utilize renewable resources of energy, introduce energy-efficient technology to reduce energy consumptions, and handle waste and pollutants that reduce the costs of production.

Inferring from Asadi et al. (2020), firms that invested in green innovation have become more successful and profitable than traditional firms. Therefore, it is suggested that automotive firms should incorporative green technology and promote green innovative processes and production to sustain the growth of business. Third, the findings depict that green innovation has a significant impact on firms' environmental performance, and it is a crucial aspect of sustainable business development in the automotive industry of Thailand. There, it is suggested to policymakers to strengthen environmental laws and provide subsidies to firms to invest in green technology and create a competitive advantage. Further, it is suggested that managers should be aware of government policies concerning environmental issues and integrate environmental problems into strategic decision-making. In addition to this, results depict that green innovations also improve the social performance of the firms and enhance firms' reputation and position in society. Therefore, firms need to invest in technology that reduces the negative impact on the environment and human health.

4.5. Discussion and Conclusions

Inspired by the concept of the triple bottom line, this study has constructed a conceptual model based on resource-based view (RBV) theory and assessed the impact of green entrepreneurial orientation (GEO) on green innovation (GI) which ultimately led to social performance (SP), economic performance (EP), and environmental performance of the firms. The findings of the study contribute to resource-based view theory and suggest valuable insights to entrepreneurs regarding the implementation of green strategies. Present literature depicts that very limited studies have been conducted on the influence of green entrepreneurial orientation on green innovation that creates competitive advantage and improve firms' sustainable performances. As indicated by the previous researchers, green innovation is still in the initial phase (Asadi et al. 2020); therefore, this study will contribute theoretically and provide valuable insights to entrepreneurs of the SME sectors that help them to achieve sustainable business performances.

The results of this study reveal the positive impact of green entrepreneurial orientation on green innovation, which corroborates the work of Guo et al. (2020) and Dangelico (2016). This shows that managers and top executives of the automotive parts industry in Thailand should encourage green innovation. Additionally, the findings reveal that green innovation has a positive impact on the social performance of the firms, which supports the work of Jiang et al. (2018). This indicates that green innovation is an important and integral component of social performance. Further, the results reveal that green innovation has a significant impact on firm economic performance, which is in line with the work of Asadi et al. (2020). The findings of the study also confirm the positive effect of green innovation on the environmental performance, which supports the stance of previous researchers who argued that better environmental practices lead to environmental performances (Montabon et al. 2007). As suggested by the previous researchers that firms' performances not only depend upon economic success, but also social performances and environmental factors (Asadi et al. 2020; Chin et al. 2015; Jiang et al. 2018; Paulraj 2011). Therefore, it is imperative for the firms in the automotive industry to triple bottom line strategies at firms' level to boost firm performance.

4.6. Recommendations

Although this study presented a novel framework that addresses SME's sustainable performances based on green entrepreneurial orientation and green innovation, there are several limitations of this study. Future research should investigate additional internal and external factors that could influence green innovation and business performances. Another limitation is related to the population of the study which is the automotive parts industry of Thailand. This indicates that there may be generalization issues as different industries have different behavior. Therefore, it is suggested that future research should attempt to draw conclusions from different emerging economies such as Vietnam, Romania, China, Pakistan, Russia, etc.

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Appendix A

Constructs	Sources
Environmental Performance ENP1: Our organization has achieved important environment-related certifications. ENP2: On average, the overall environmental performance of our organization has improved over the past five years. ENP3: The resource consumption our organization e.g. water, electricity, and gas has been decreased during the last 3 years. ENP4: Our organization has improved on environmental compliance. ENP5: Our organization is complying with environmental regulations (i.e., carbon dioxide emissions, waste disposal).	Asadi et al. (2020); Wang (2019); Ramanathan (2018)
Economic Performance EP1: Our organization has decrease of cost for energy consumption. EP2: Our organization has improved capacity utilization. EP3: Our organization has decreased the fee for waste treatment. EP4: Our organization has decreased the penalty costs for environmental accident.	Li (2014); Zhu et al. (2008)
Social Performance SP1: The customers' satisfaction has increased during the last 3 years. SP2: The customers' motivation has increased during the last 3 years. SP3: Our organization serving more beneficiaries (disadvantaged people) or solving environmental issues. SP4: Our organization provides more social or environmentally friendly services in the community	Asadi et al. (2020); Cheah et al. (2019)
Green Innovation GI1: Our organization uses less or non-polluting/toxic materials. GI2: Our organization improves environmentally friendly packaging for existing and new products. GI3: Our organization recovers end-of-life products and recycling. GI4: Our organization uses eco-labeling.	Asadi et al. (2020); Chen (2008)
Green entrepreneurial Orientation GEO1: Our organization uses less or non-polluting/toxic materials. GEO2: Our organization has a strong tendency for high-risk green product development projects which have a chance for very high returns. GEO3: Our firm organization a strong emphasis on green R&D, technological leadership, and innovation. GEO4: Our firm organization a tendency to initiate green actions for competitors to respond to. GEO5: Our organization has a tendency to be a market leader, always first in introducing green products, services, or technologies.	Asadi et al. (2020); Chen (2008)

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