

Effect of Green Packaging, Green Supply Chain, and Green Advertising on Competitive Advantage to Business Performance of Thailand's Pharmaceutical Firms

Chayanan Kerdpitak¹, Napassorn Kerdpitak² and Kai Heuer³ and Lee Li⁴

Abstract

Green marketing and its determinants develop a system that protects the environment from harmful production, consumption of brands and goods, and also protects society and its members. However, this research paper aimed to evaluate the impact of green determinants which include green packaging, supply chain, and advertising on the sustainable performance of the pharmaceutical sector of Thailand. The mediating role of competitive advantage has also been evaluated in this study to improve the sustainability performance of the sector. A study model that was conceptual in nature produced to evaluate the relationships from that model. The target population of this research was 540 managers of different pharmaceutical firms in Thailand, out of which 259 were female and 281 were male. Several techniques and tests were also being used to check as well as to calculate results such as confirmatory factor analysis, KMO, and SEM. The testing of relationships gives results that indicate that the impact of green packaging has been significant in the sustainable performance of the sector. Furthermore, the findings also indicate that competitive advantage positively mediates the relationship between green practices and the sustainable performance of the sector. The significant findings of this research paper will positively contribute to the existing literature.

Keywords: *Green Practices, Green Packaging, Green Supply Chain, Green Advertising, Competitive Advantage, Business Performance.*

INTRODUCTION

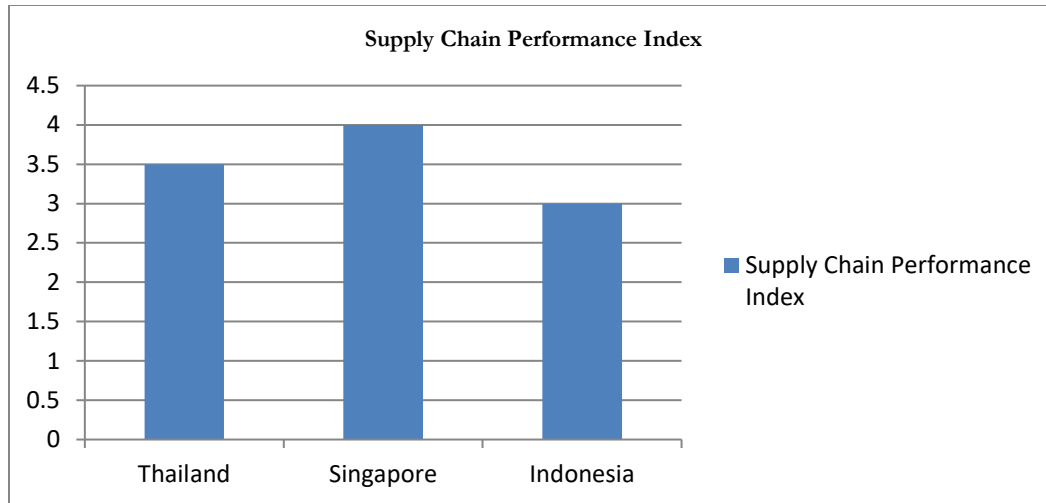
Business performance is the measure of productivity and success of any business (Eugene T Maziriri, Mapuranga, & Madinga, 2018) and can be measured with both objective and subjective ways (Dubihlela & Dhurup, 2015). Competitive advantage is a quality which the rival firms do not possess which gives those firms some benefit (Lazenby, 2018). (Varanavicius & Navikaite, 2015) has explained competitive advantage as a quality that gives an identity or makes a firm separate from others. Achieving competitive advantage is an important indicator of business performance.

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Graph 1.1: Supply Chain performance in countries

Green practices play a vital role in achieving the performance goals. Green packaging involves the size, weight and shape of the package using recyclable & bio-gradable and environment friendly materials (Auliandri, Thoyib, Rohman, & Rofiq, 2019; Chao, Yin, & Ma, 2009; M. Khan, Hussain, & Ajmal, 2016) stated that Green advertising is how the company presents advertising based on the philosophy of ecology to achieve superior performance. Another scholar has expressed green advertising as an important aspect of green marketing (Ghodeswar & Kumar, 2014). The green supply chain also conserves the environment by controlling the waste. All these practices contribute to improved performance index.

Year	Position
2016	45
2018	32

Table 1.1: World Bank Index 2018 for Thailand

Previous research works by (Aziz & Samad, 2016; Jardon & Martos, 2012; Soto-Acosta, Popa, & Palacios-Marqués, 2016; Tang & Tang, 2012) have revealed that there is a dearth of studies on the green concepts like advertising and packaging as sources of competitive advantage and business performance in Asian countries. Hence, similar research is long overdue in different sector or industry (Eugine Tafadzwa Maziriri, 2020), which is pharmaceutical industry of Thailand in this study. This study attempts to fill these gaps. Hence, this study has research objectives which are outlined as follows:

- To explore how Green packaging influences Business Performance
- To explore how Green Supply Chain influences Business Performance
- To explore how Green Advertising influences Business Performance
- To explore how Competitive Advantage mediates the relationship of Green practices and business performance

The purpose of this study is to see how Green practices like advertising, packaging and supply chain effect business performance in the pharmaceutical industry of Thailand and to see impact competitive advantage has a mediator in these relationships. Theoretically, this study adds contribution to the NRBV theory and the body of knowledge by investigating the underlying mechanism in these relationships by measuring the effect of competitive advantage as a mediator. Practically, this study has implications for managers who can consider the development and implementation of green practices so that competitive advantage can be achieved relative to those firms who do not practice green strategies.

This study is structured as ahead. The first section highlights the introduction, while Section 2 details the literature review on these variables. Next section outlines the methodology used to answer the research

questions and section 4 presents the results of the research with its statistical analysis. In the last section of this paper, conclusion is drawn, along with the limitations and implications.

Literature Review and Theoretical Background

This study has its basis on the Natural resource-based view theory (NRBV), with foundations on the resource-based (RBV) (Kumar, 2015; Lazenby, 2018). It is used to describe how green practices and performance are related (Hart, Shoop, & Ashby, 2004).

Impact of Green Packaging

The performance of a firm is affected by marketing strategy, like new product, package and can contribute to customer loyalty and higher sales (Chukwuma, Ezenyilimba, & Agbara, 2018; Jeevan & Bhargav, 2016) leading to business sustainability and value creation (Ghodeswar & Kumar, 2014; Eugene Tafadzwa Maziriri, 2020; Quoquab, Thurasamy, & Mohammad, 2017). This implies that direct relations exist between the two. So, the study can investigate:

H1: Green packaging has a significant impact on business performance

Impact of Green Supply Chain

The advancements in economy has imposed the firms to re consider sustainability and by emphasizing minimal resource consumption and protection of the environment. For this purpose, companies have to implement green supply chain. This produces less waste and reduces ecological problems, thus minimizing the negative impacts on the society. Supply chain practices, focused on green practices, improve the reputation and credibility with customers, who would then invest in the firm or become loyal customers, ultimately leading to improved business performance (Alzaman, 2014; Bulsara, Qureshi, & Patel, 2016; Kazancoglu, Kazancoglu, & Sagnak, 2018; M. Khan et al., 2016; Eugene Tafadzwa Maziriri, 2020). This implies that direct relationship exists between the two. So, the study hypothesizes:

Hypothesis 2: Green Supply Chain has significant association with Business Performance

Impact of Green Advertising

Green advertising is a key factor to positively influence the performance of any business because it paves way to manageable improvement (Bhat, Darzi, & Parrey, 2014; Bhatti, 2016; Nyilasy, Gangadharbatla, & Paladino, 2014). Green marketing describes the ability of green advertising to provide consumers with benefits over traditional green products (Goodman, Rolland, & Bazzoni, 2009; Nyilasy et al., 2014). Furthermore, green advertising provides firms with publicity that persuades the customers to buy specific items increasing the profits (Schmuck, Matthes, Naderer, & Beaufort, 2018; Sheehan & Atkinson, 2016). This implies that green advertising increases the performance of business (Eugene Tafadzwa Maziriri, 2020). So, this study hypothesizes:

Hypothesis 3: Green Advertising has significant association with Business Performance

Mediation of Competitive Advantage

Competitive advantage is the capability which is difficult to copy and adds value to firms (Wang, 2014). In other words, competitive advantage is capability of firm that helps them surpass its rival companies (Arseculeratne & Yazdanifard, 2014). Green packaging is considered as contributing factors of competitive advantage by packaging the items in a way so as to reduce or limit its effects on the environment. Green packaging is a tactic of ecological marketing that drives the firm towards attaining competitive advantage over other rival firms (Bhatti, 2016) and is recognized as a successful device for a firm to adopt ecological marketing technique to convert it into a competitive advantage. This practice gives confidence to the buyers and partners of the firm to achieve green advertising advantages (Eugene Tafadzwa Maziriri, 2020). The GSC involves green practices like procurement and manufacturing that includes using only design, manufacturing and recycling in accordance to the green standards. By applying internal and external GSC practices, the suppliers and customers are

collaborated and encouraged yielding more profits and capturing more market share , hence achieving competitive advantage (Alzaman, 2014; Bulsara et al., 2016; Kazancoglu et al., 2018; M. Khan et al., 2016). Hence, the impact of GM and GSP on business performance can be investigated by studying competitive advantage as the path. So, the study can hypothesize:

Hypothesis 4a: Competitive Advantage significantly mediates in the relationship of Green Packaging and Business Performance

Hypothesis 4b: Competitive Advantage significant mediates in the relationship of Green Supply Chain and Business Performance

Hypothesis 4c: Competitive Advantage significantly mediates in the relationship of Green Advertising and Business Performance

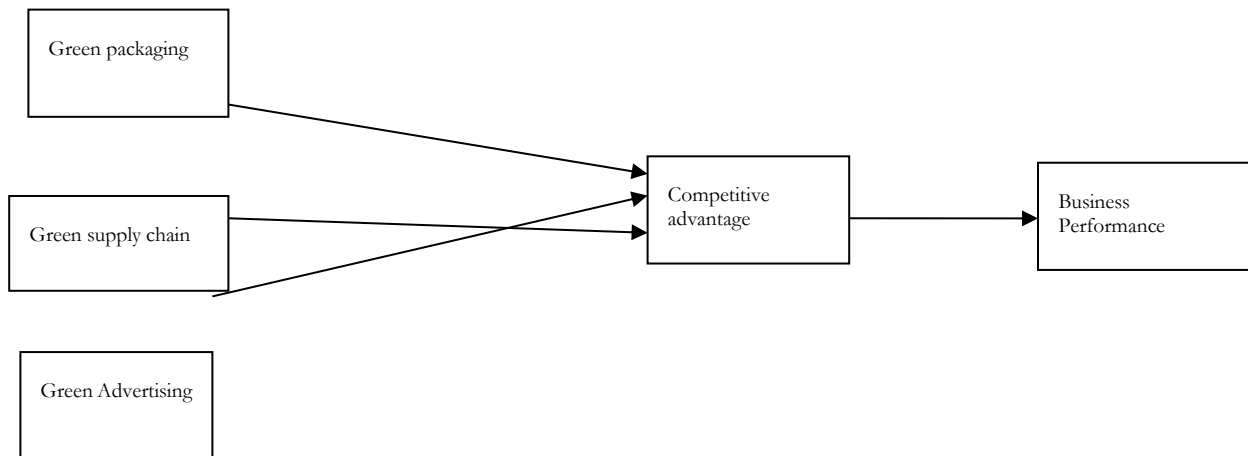


Figure 1.2: Research framework

Methods

Sample Characteristics

A survey design was used for the purpose of this study. A self-administered questionnaire was used to collect data from the respondents. The method of snowball sampling was used, as the managerial staff is busy and it is difficult to get appointments. In order to maintain participant anonymity the names of the organizations and respondents have not been disclosed. The researcher implied the method of item response theory following the criteria of twenty responses against each item i.e. $27 \times 20 = 540$. All of the questionnaires were distributed after getting permission from relevant authorities.

Measures

The scales were selected after carefully reviewing all relevant literature. The scales that have been incorporated into this study were previously verified in a number of studies. All of the scale items had significant reliability and validity scores in previous studies. The validity and relevance of the scale items were ensured by pretesting the questionnaire on managers and academicians and then were made according to their feedbacks. Campbell, Brislin, Stewart, and Werner (1970) directed the questionnaire should first be formulated in English and then translated into Thai using the forward and back translation method. Three linguists and academicians who are fluent in both Thai and English were consulted for the translation. All of the scale items have been measured at a five point Likert scale, ranging from “1=strongly disagree” to “5=strongly agree”.

Green packaging

Green packaging was measured on the basis of 4 items. These items were taken from the already existing scales developed by Kong and Zhang (2014) and Sambu (2016). The items from these studies were adapted and modified to fit the requirements of the current study.

Green Supply Chain

The studies by Esty and Winston (2009) and Zhu, Sarkis, and Lai (2008) were used to develop a construct for measuring green supply chain activities. The construct consisted of four items. The items from these studies were adapted and modified to fit the requirements of the current study.

Green Advertising

Green advertising was measured on the basis of four items. These items were extracted from the study of Ghodeswar and Kumar (2014). The items from these studies were adapted and modified to fit the requirements of the current study.

Competitive Advantage

The scale developed by Almahamid (2008) was used to measure competitive advantage. The items from these studies were adapted and modified to fit the requirements of the current study. The scale originally consists of 11 items but only six were included after excluding the variables that had low ratings in the component matrix.

Business Performance

The scale developed by Zulkiffli and Perera (2011) was used to measure business advantage. The items from these studies were adapted and modified to fit the requirements of the current study. The scale originally consists of 16 items but only nine were included after excluding the variables that had low ratings in the component matrix.

RESULTS

Demographics

The data obtained from 426 out of 540 distributed questionnaires was included in the study. The respondents belong to the pharmaceutical sector of Thailand. 56.6 percent of the respondents were male and 43.4 percent were female. Gender equality in employment initiatives are still being developed in Thailand thus the disparity in employment division is observed. The ages of 62 percent respondents were up to 35. And the educational background of 77.5 percent of the respondents is equivalent to masters. The managers, supervisors and assistant managers were the constituents of the sample therefore the age and education statistics are high.

Descriptive Analysis

The mean values are advancing towards 4, which showcases that the respondents were in assertion with the statements of the variables. The skewness values also fall within the range of -1+1, demonstrating the normality of the data. Moreover, no outliers were observed in the responses.

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
GrePack	426	1.00	5.00	3.4073	1.13975	-.536	.118
GreSuC	426	1.00	5.00	3.5059	1.16264	-.632	.118
GreAdv	426	1.00	5.00	3.3862	1.15642	-.609	.118
BusiPerf	426	1.00	5.00	3.6382	1.14881	-.586	.118
CompAdvan	426	1.00	5.00	3.5155	1.12025	-.588	.118
Valid N (listwise)	426						

KMO and Bartlett's

The KMO value is approaching 1, indicating the adequacy and the Bartlett's sphericity is also significant which points towards the non-relevance of construct items and adequacy of the sample.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.969
Bartlett's Test of Sphericity	Approx. Chi-Square	17757.069
	Df	351

	Sig.	.000
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Factor Loading

The rotated component matrix is structured in order to assess the contribution of each individual scale item in the whole scale. As table 3 demonstrates, all items are significant, as the distinct loadings are greater than 0.7. The factors didn't load in front of one another as well.

Table 3: Rotated Component Matrix^a

	Component				
	1	2	3	4	5
GP1			.824		
GP2			.813		
GP3			.822		
GP4			.800		
GS1				.735	
GS2				.756	
GS3				.759	
GS4				.780	
GA1					.718
GA2					.750
GA3					.745
GA4					.738
BP1	.760				
BP2	.776				
BP3	.761				
BP4	.743				
BP5	.837				
BP6	.852				
BP7	.854				
BP8	.846				
BP9	.866				
CA1		.793			
CA2		.755			
CA3		.781			
CA4		.769			
CA5		.758			
CA6		.760			

Convergent and Discriminant Validity

Convergent validity is ascertained on the basis of CR and AVE (Hassan, Hameed, Basheer, & Ali, 2020; Iqbal & Hameed, 2020). The CR values are more than 0.7 and AVE values are greater than 0.5, indicating the convergent validity. The MSV values are less than the AVE values and self-correlation coefficients are also higher than those of the variable-variable correlation. Thus discriminant validity is also present.

Table 4: Convergent and Discriminant Validity

	CR	AVE	MSV	CA	GP	GS	GA	BP
CA	0.961	0.803	0.548	0.896				
GP	0.955	0.841	0.483	0.650	0.917			
GS	0.956	0.845	0.602	0.691	0.695	0.919		
GA	0.957	0.847	0.602	0.736	0.652	0.776	0.920	
BP	0.925	0.878	0.548	0.740	0.639	0.698	0.715	0.937

Model Fitness

CFA test was performed on the construct items in order to check the fitness of the measurement model. The CMIN value is 2.8 (under 3), IFI and CFI are 0.969 (greater than 0.9), GFI is 0.863 (greater than 0.8) and RMSEA is 0.065 (less than 0.08). As all factors are according to the threshold ranges, the model is regarded as fit.

Table 5: Confirmatory Factors Analysis

Indicators	Threshold range	Current values
CMIN/DF	Less or equal 3	2.800
GFI	Equal or greater .80	.863
CFI	Equal or greater .90	.969
IFI	Equal or greater .90	.969
RMSEA	Less or equal .08	.065

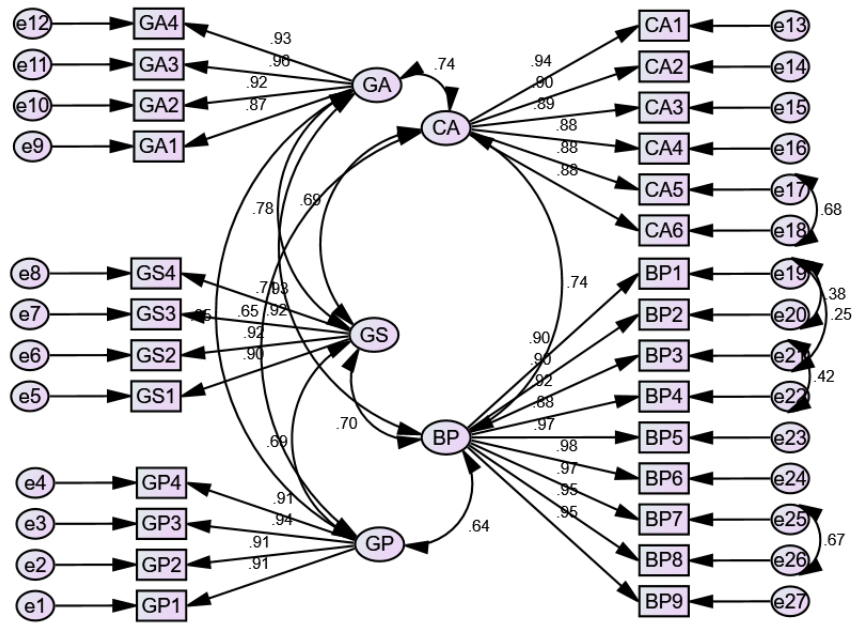


Figure 1: CFA

SEM

A unit change in GreAdv will produce a variation of 22.9 percent in BusiPerf. A unit increase in GreSuc will produce a variation of 21.6 percent in BusiPerf. A unitary change in GrePack will influence a variation of 13.9 percent in BusiPerf. All three relationships are significant therefore the hypotheses are accepted. The mediation of CompAdvan produces an effect of 14.3 percent through GreAdv, 6.8 percent through GreSuC and 8.2 percent through GrePack. All three relationships are significant that is why the hypotheses are accepted even though the mediation variation is minimal.

Table 6: Structural Equation Modeling

Total Effect	GreAdv	GreSuC	GrePack	CompAdvan
CompAdvan	.416***	.197**	.239**	.000
BusiPerf	.372***	.284**	.221**	.344***
Direct Effect	GreAdv	GreSuC	GrePack	CompAdvan
CompAdvan	.416***	.197**	.239**	.000
BusiPerf	.229**	.216**	.139**	.344***
Indirect Effect	GreAdv	GreSuC	GrePack	CompAdvan
CompAdvan	.000	.000	.000	.000
BusiPerf	.143**	.068**	.082**	.000

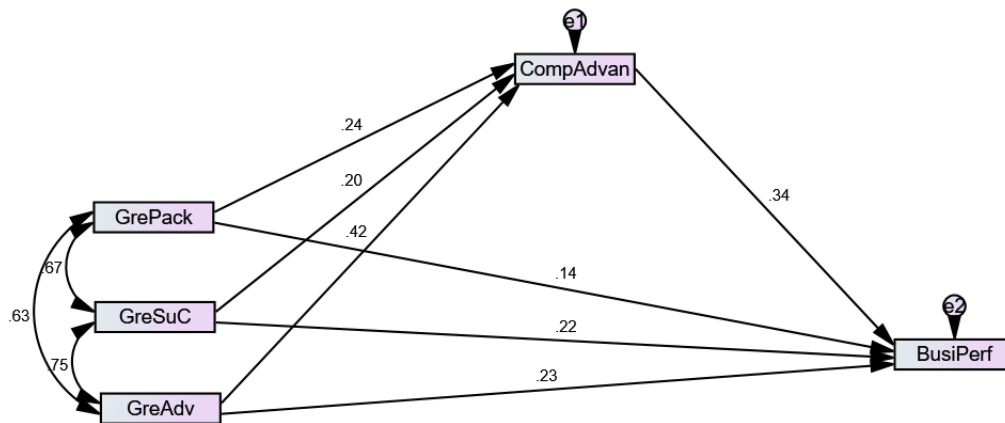


Figure 2: SEM

DISCUSSION

According to a study by S. A. R. Khan and Qianli (2017) green practices and marketing are considered as the commitment of a sector or a firm towards the production of products and brands that are ecofriendly and provide significant opportunities to enhance the environmental performance of the sector. Business organizations have realized the significance of green practices as a meaning of getting a competitive advantage in the market over rivals. The findings and initial results of the study indicate that the impact of green packaging on business performance has been significant. Green packaging is a positive process for businesses because it helps firms in the effective use of resources and materials to get the triple bottom line such as social, environmental, and economic (Laing, Upadhyay, Mohan, & Subramanian, 2019). Therefore, the first hypotheses regarding the relationship between green packaging and SBP have been accepted.

The green supply chain also shows a positive impact on the sustainable performance of the business because green SC can minimize the costs of products along with improved efficiency. Green SC also improved the quality of goods mainly by adapting regulations that directly influence the sustainable performance of the business in a positive way. Thus, hypotheses have been supported. The mediating role of competitive advantage also proves to be very significant for firm sustainable performance because a positive degree of CA distinguishes a firm from its rivals in the market.

CONCLUSION

The study taken regarding Green determinants of sustainable business performance shows that green determinants as green packaging and green advertising influence positive to promote nature-loving and environment-friendly atmosphere as the green determinants are manifold and have a vast impact. The green determinants' effects in the long run to sustain a business and the competitive advantage of the green determinants are vital and this environment-friendly empowers the business. The data obtained by the 426 employees to analyze the importance of Green Determinants. Out of which 241 were male and 185 were female.

Implications and Limitations

This research study gives many implications as well as applications for academics. The findings of this research suggest that green packaging and green supply chain can improve and enhance the sustainable performance of pharmaceutical firms in Thailand. Therefore, for academics in the sector of green practices and marketing, these results would improve their thinking of several relationships between green practices, sustainable business performance, and competitive advantage of the sector. The verdicts of the study also help other sectors that seek some improvement in SBP. The limitation of the study is that this research considers only one mediating variable for enhancing sustainable business performance, so, it is recommended to future studies that they should add more mediating variables for more effective results.

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