Sustainable Marketing Strategy and Marketing Success: Empirical Evidence from ISO 14001 Certified Manufacturing Businesses in Thailand

Suparada Pimpan

A Thesis Submitted in Partial Fulfillment of Requirements for
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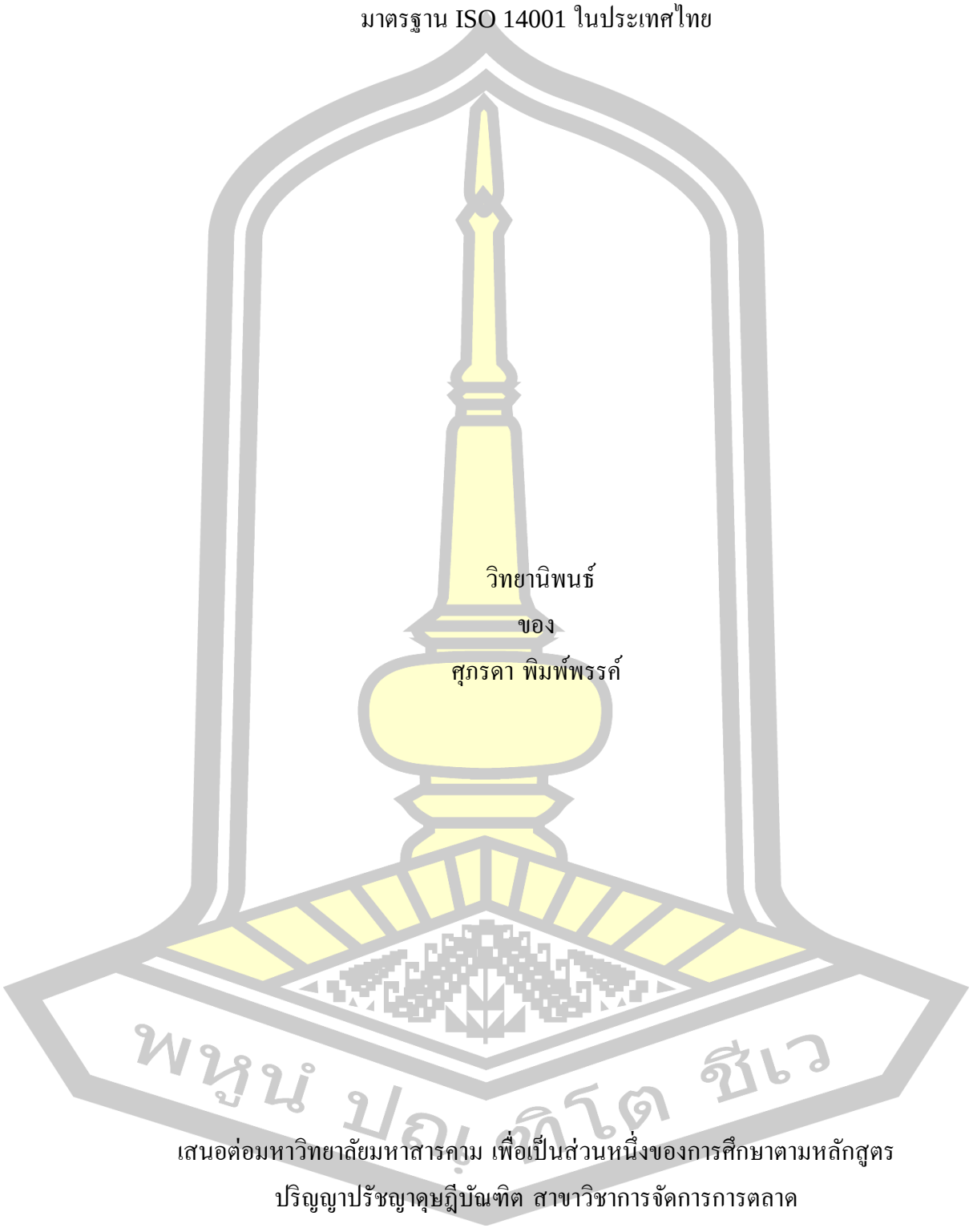
กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางการตลาด: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย



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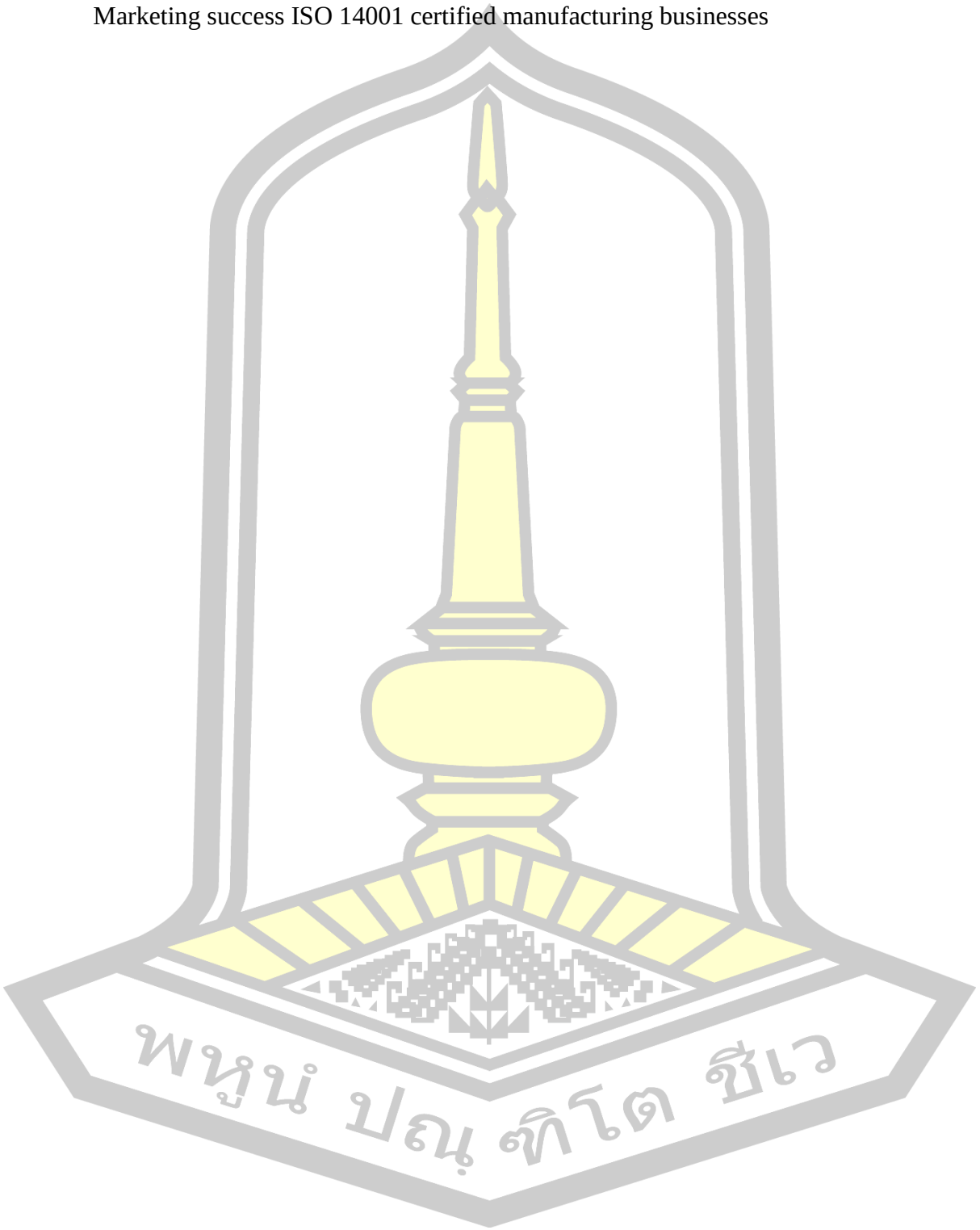
ABSTRACT

The purpose of this research is to examine how sustainable marketing strategy, which includes technology daptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development, has an effect on marketing success. In addition, this research tests the impact of four antecedents (top management vision, firm resource readiness, and competitive force) on sustainable marketing strategy. The model is empirically tested using data collected from a mail survey of 208 ISO 14001 certified manufacturing businesses located throughout Thailand, and using a questionnaire as an instrument. The statistics used for analyzing data were correlation analysis and Structural equation modeling.

The results of the study are described as follows. First, the result found that product innovativeness implementation has a positive effect on product creativity. Moreover, technology adaptation orientation and social responsibility concentration have a positive effect on customer acceptance. Thus, technology adaptation orientation and environmental process development have a positive effect on marketing success. Second, the findings show that product creativity and customer acceptance impact on marketing success. Third, the results indicate that top-management vision, firm resources readiness, and competitive force partially antecedent the interaction between technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. In addition, the study outcome shows that the model of the study fits and is consistent with the empirical results. The findings uniquely contribute to the research on sustainable marketing strategy by providing the relationships among sustainable marketing strategy, consequences, and its antecedents. Furthermore, the findings can help managers, particularly in ISO 14001 certified manufacturing business to understand how their firms can achieve marketing success over their competitors.

Keyword : Sustainable marketing strategy Product creativity Customer acceptance Marketing success ISO 14001 certified manufacturing businesses



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CHAPTER I

INTRODUCTION

Overview

As the scarce resources of the world are depleting rapidly, sustainability concerns in the future will force firms to make paradigm shifts in strategy. Sustainability is the key issue that has emerged in marketing strategy over time (Kumara, Rahmanb, kazmic and Goyald, 2012). Sustainability has been seen as an increasingly urgent strategic issue that positively signifies challenges to business with a widespread and growing recognition both of the public sector and society as a whole (Kopnina, 2017). Thus, sustainability is a mainstream issue in a world where the resources need to be preserved and this worried is evidenced by the growing interest shown in sustainable issues (Gordon, Carrigan and Hastings, 2011). Therefore, the environmental crisis is an important factor for the company to adapt itself to environmental pollution, climate change, and global warming as these factors have been new competitive threats.

Sustainable development is an integrated and balanced development of public wealth, environment, and economics meeting the physiological, social and other needs of people and ensuring the preservation of the environment and ecological diversity without jeopardizing the possibilities of meeting the needs of future generations (Praude and Bormane, 2014). Therefore, the definitions of sustainable development and sustainable marketing and a model of the concept of motivation of its use at a company were developed and the strategy of practical use of sustainable marketing and the motivation of use at companies (Praude and Bormane, 2014). Sustainable marketing strategy dimension is applied from several concepts. Sustainability marketing requires long-term orientation on relationship building rather than conventional short-term focus on transactions in modern marketing (Belz and Peattie, 2009). Gordon et al., (2011) introduces a three-dimensional approach which consists of green marketing, social marketing, and critical marketing. Sustainable marketing as the emphasis has shifted to the importance of sustainable of marketing

activities (Kumara et al., 2012). The three dimensions of sustainable structure include economy, environment and social element (Kumara et al., 2012). Sustainable marketing focuses to use company processes and marketing methods to balance environmental, economic, and social goals to assure long-term development, to attract customers, and to contribute to society (Sun, Kim and Kim, 2014). The marketing growth has occurred by virtue of five concepts which are manufacturing, product, selling, marketing, and societal (Noo-urai and Jaroenwisan, 2016). Sustainable marketing is the development of marketing that integrates aspects of the economy and the new concept of relationship marketing, and social, moral, environmental perspectives (Noo-urai and Jaroenwisan, 2016). In the dimension of sustainable marketing strategy lack of technology and product innovation factors for a good performance of the business. Thus, in the dimension of sustainable marketing, it has much research that demonstrates the best characteristics that can effectively affect the operational performance of an organization.

Therefore, the above in this dimension can help explain the practical development of sustainable marketing strategy. For these reasons, this study develops sustainable marketing strategies along these four dimensions: 1) technology adaptation orientation, 2) product innovativeness implementation, 3) social responsibility concentration, and 4) environmental process development. Moreover, in this study investigates its antecedents: top-management vision, firm resource readiness, and competitive force. In this study attempts to investigate its antecedents and the consequents of sustainable marketing strategy by utilizing two theories, including stakeholder theory and contingency theory to explain the conceptual model. The manufacturing businesses in Thailand are considered appropriate to investigate the relationships among sustainable marketing strategy and marketing success that are important to add value in the business.

The industry sector's growth requires continuous consumption of natural resources. In addition, the environmental impacts by firms are now a problem-solving which should have intense concern from the government sector, non-government sector, and the general public sector. The firms are strongly forced by these sectors to take responsibility for environmental effects from their activities, and their attempt to conserve the environment (Kamruzzaman, 2012). The firms must contribute to

resolve the environmental problem with integration of sustainability and environmental management issues as part of their management strategies such as providing external environmental reports, efficient energy consumption and waste reduction (Naoui, 2015). Therefore, ISO 14001 is the standard for management practices within the organizations and the environmental management system (Boiral, 2011). Prior research found that environmental management system has supported the ISO 14001 as an aggressive environmental performance of the organization (Iraldo, Testa and Frey, 2009). The firms can use environmental management system certification to the right to their image and improve the environmental performance (Darnall, 2007). However, in the context of Thailand, the ISO 14001 businesses in Thailand have become producers and exporters of products to international and global markets such as in textiles, furniture, auto parts, beverages, and tobacco products. In Thailand, manufacturers are controlled by the Ministry of Industry of Thailand which launched ISO 14001 in 1996, because of concern for Environmental Management Systems (EMS).

Therefore, the ISO 14001 certified manufacturing businesses in Thailand is considered appropriate to investigate the relationships among sustainable marketing strategy that are important and add value to the business. This study uses questionnaires to collect data and has sent them to each firm by mail. A list of 468 of ISO 14001 certified manufacturing businesses in Thailand is provided by the Thai Industrial Standards Institute, Ministry of Industry (accessed June 10, 2020). The chosen industry represents a highly competitive business environment. In this study, a valid and reliable self-administered questionnaire is used as the main research instrument for data collection, and both descriptive and inferential statistical techniques consist of factor analysis, correlation analysis, and structural equation model (SEM) analyses which are processed to test all postulated hypotheses. In addition, the test of non-response bias is used to prevent possible response bias problems between early and late respondents.This study provides some theoretical contributions as well as managerial implications. The central theoretical contribution associates with conceptualizing sustainable marketing strategy as a multi-dimension construct, which is a new perspective of developed dimensions. It differentiates from prior sustainable marketing strategy literature. As a result, it clarifies the nature of

sustainable marketing strategy for future research. This study also attempts to incorporate two theories to propose logical connections in a conceptual model, including the stakeholder theory (Freeman, 1984) and contingency theory (Drazin and Van de Ven, 1985). Specifically, this study aims to fulfill a gap in the sustainable marketing strategy literature; and this empirical study indicates the consequences, antecedents, and mediator effects of sustainable marketing strategy in the context of ISO 14001 certified manufacturing businesses in Thailand. Furthermore, the results of this study contribute to managerial practices focusing on sustainable marketing strategy implementation and the usefulness of sustainable marketing strategy that stimulate and enhance marketing success of the ISO 14001 certified manufacturing businesses in Thailand.

Purposes of the Research

The main purpose of this research investigates the relationships among the dimensions of sustainable marketing strategy consisting of technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development and marketing success. The specific objectives are as follows:

1. To investigate the relationships between sustainable marketing strategy on product creativity, customer acceptance, and marketing success,

2. To investigate the relationships among product creativity, customer acceptance, and marketing success,

3. To determine the relationships among top management vision, firm resource readiness, and competitive force, and each dimension of sustainable marketing strategy.

Research Questions

The key research question of this research is how sustainable marketing strategy consisting of technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process

development influences on product creativity, customer acceptance, and marketing success. Also, specific research questions are presented as follows:

1. How does each of the four dimensions of sustainable marketing strategy affect product creativity, customer acceptance, and marketing success?

2. How do product creativity and customer acceptance affect on marketing success?

3. How do top management vision, firm resource readiness, and competitive force influence on sustainable marketing strategy?

Scope of the Research

In this study, the stakeholder theory and contingency theory are used to draw a conceptual framework and develop a set of hypotheses. All theorizations illustrate the relationships among the dimensions of sustainable marketing strategy, its antecedents and its consequences constructs. This study offers the theory of integration to demonstrate the relationship of each variable that focuses on the investigation to fulfill the research question and objectives. Firstly, stakeholder theory is used to explain the phenomenon of marketing management and marketing control that has an impact on the goals and objectives. This study employs the theory to explain the effect of the four dimensions of a sustainable marketing strategy consist of technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. Stakeholder theory involves management and ethical practice toward all their stakeholders with a responsibility to their shareholders and other stakeholders (Iwu- Egwuonwu, 2010). Moreover, Freeman (1984) suggested that stakeholders are the groups who influence the achievement of the corporate goal and objectives (Freeman and Gilbert, 1987). Therefore, stakeholder theory proposes that firms must seek and show concern for the needs of shareholders and other stakeholders that require different interests and needs (Fassin, 2012). The foundation for stakeholder theory is used to illustrate how sustainable marketing strategy relates to product creativity, customer acceptance, and marketing success.

The contingency theory suggests on a better understanding of the nature of organizational strategies is gained by examining its antecedents in forms of both internal and external environmental factors (Atuahene-Gima and Murray, 2004). It predicts that the nature of organizational strategy and performance are better-understood, requiring an investigation of the interaction between internal factors and external factors (Drazin and Van de Ven, 1985). The contingency theory in this study explains the relationships among sustainable marketing strategy antecedents comprising top-management vision, firm resource readiness, and competitive force. Top management investigates the characteristics and drivers of sustainability marketing strategy in the food industry (Belz and Riediger, 2010). It implies that the influences and relationships of sustainable marketing strategy and its antecedents. The study aims to propose the theoretical model of the relationships of each dimension of sustainable marketing strategy, its antecedents and consequences that are illustrated in the next chapter. The conceptual framework of this study in the Figure 1 that the relationships among sustainable marketing strategy, its antecedents and consequences. Sustainable marketing strategy comprises four critical dimensions; namely, technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. In this study, sustainable marketing strategy is defined as a plan of action focused on the process of sustainable keys that incorporates technology, environmental and social to promote environmentally-friendly and socially responsible product practice and brand value (Belz and Peattie, 2009). Technology adaptation orientation is defined as the firm's emphasis on new tools and changing management style to develop the modern equipment systems, which can respond to a customer's need and can achieve competitive advantage (Tuominen, Rajala, and Moller, 2004). Product innovation implementation is defined as the operation of the firm to create and develop ecofriendly products respond to customer needs that lead to raise the quality and productivity level of procedures (Ehlen et al., 2013). Social responsibility concentration is defined as an organizational response to social requirement with awareness, supporting to community, and other social groups for supporting the survival and success of the organization (Kotler and Lee, 2005). Environmental process development is defined as the ability of the firm based on the environmental

changes in organizational operation on environmental pollution (Sharma et al.,2010). Simultaneously, the consequences of sustainable marketing strategy are composed of product creativity, customer acceptance, and marketing success. Mainly, this study aims to investigate the effects of sustainable marketing strategy on marketing success of ISO 14001 certified manufacturing businesses in Thailand. Also, factors such as top-management vision, firm resource readiness, and competitive force are assumed to be the antecedents of the model. With respect to research objectives and research questions, there are many variables in the study. Sustainable marketing strategy is an independent variable, and it has suitable attributes to manage of the firm. Sustainable marketing strategy is explained by technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. Furthermore, the population and sample of this study are drawing from a database of ISO 14001 certified manufacturing businesses in Thailand. The sample of this study was chosen from a database of the Thai Industrial Standards Institute, Ministry of Industry, which lists a total of 468 existing firms.

Finally, the study consists of three major parts. The first important part is the examination of sustainable marketing strategy that influences consequences on product creativity, customer acceptance, and marketing success. The second is to examine the influence of product creativity, customer acceptance, and marketing success. The third is to examine the influence of top-management vision, firm resource readiness, and competitive force on each dimension of sustainable marketing strategy. Finally, this study proposes control variables such as firm age and firm size. A valid and reliable self-administered questionnaire is employed as main research instrument for data collection and the structural equation modeling (SEM) analyses are processed to test all hypotheses.

Organization of the Dissertation

This study is structured in five chapters as follows: chapter one provides an overview of the research, the purposes of the research, the research question, the scope of the study, and the organization of the dissertation. Then, chapter two reviews previous research and relevant literature on sustainable marketing strategy, explains

the theoretical framework to describe the conceptual model and the relationship among the different variables, and develops the related hypotheses for testing. Chapter three discusses the empirical examination of the research methods, including sample selection and data collection procedure, the development and verification of the survey instrument by testing the reliability and validity, the statistics and equations used to test the hypotheses and the table summarizing the definitions and operational variables of the constructs. Chapter four demonstrates the results of the statistical analysis. Finally, chapter five demonstrates the conclusion and discussion, theoretical and managerial contributions, limitations, and the suggestions for future research directions.

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

The previous chapter focuses on the overview of sustainable marketing strategy comprising the purposes of the research, research questions, research objectives, and scope of the research. This chapter demonstrates more precisely the understanding of sustainable marketing strategy, theoretical foundation, literature review, conceptual framework, and hypotheses development. Accordingly, these hypotheses are posited to be examined in order to answer the research objectives and research questions.

Therefore, this chapter is organized into three sections. The first section represents the discussion of principal theoretical perspectives employed to explain the research phenomenon. These theories include the stakeholder theory and contingency theory. The second section provides the relevant literature of all constructs in the conceptual framework, definitions and previous studies on the subject that are relevant to sustainable marketing strategy in the context of ISO 14001 certified manufacturing businesses in Thailand. Also, a conceptual model is presented with the definition of all constructs and relevant previous literature. Finally, the final section illustrates the summary of hypotheses relationships among sustainable marketing strategy and its antecedents and consequences that are discussed in this chapter.

Theoretical Foundations

This study attempts to integrate theoretical perspectives that support how sustainable marketing strategy effects on marketing success and other relationships, two theories applied to these relationships. Two theories supporting this study are stakeholder theory and contingency theory. Therefore, this chapter presents three major sections that review these theories that back up the conceptual model, and then provides the previous research and relevant literature detailing sustainable marketing strategy and other constructs in the conceptual model. Finally, these theories are combined to describe, explain, predict, and link all variables together. Each

theoretical framework is highlighted to make valuable suggestions about sustainable marketing strategy as follows.

Stakeholder theory are used to describe the relationships between sustainable marketing strategy and the consequent variables. Contingency theory is applied to explain the relationships between the antecedent variables consists of top-management vision, firm resource readiness, competitive force, and apply them to explain sustainable marketing strategy as the independent variables.

Stakeholder Theory

Nowadays, the stakeholders are the key persons to put pressure on company calls for attention to respond to stakeholder expectations. The stakeholders have different of needs, so the firm is required to implement different activities that meet the diverse need in order to firm success. According to Freeman (1984), the stakeholder theory approach is about groups and individuals that can affect the company, and it is about managerial behavior undertaken in response to those groups and individuals. A number of studies have suggested that firm survival depend on the ability of the firms to use their resources and capabilities through strategies and activities to respond to stakeholder expectations, and to gain firm success and survival (Roeck and Delobbe, 2012). Moreover, Solomon, and Lewis (2002) indicated that interactions between business and stakeholder show that this is a mutual relationship. Therefore, this theory proposes that firms must seek and concern the needs of shareholders and other stakeholder requirements, including such stakeholders as customers, employees, suppliers, competitors, community, and social groups. The stakeholder theory is focused on the characteristics and behaviors of the company, and appreciates the role of stakeholders into company's environment.

In this study, stakeholder theory is implemented to explain why any firms should recognize the important of sustainable marketing. The argument is that firms are trying to adopt sustainable marketing and must take the demand of economy, ethics, society, and environment by integrating marketing social responsibility, and environmental concept with stakeholder theory perspectives to sustainable marketing strategy dimension into marketing success. Stakeholders in terms of business management begin with strategic planning as the creation of value for stakeholders go

together between society value and economic to deal with ethical problems in business decision making that can be advanced for stakeholder creditability (Orts and Strudler, 2009). The organization needs to understand the demands and concerns of each group of stakeholders because the stakeholder is necessary for business practices. Many researchers have applied the stakeholder theory to the field of sustainable marketing because it has explained the relationships among stakeholders, economic, ethic, society, and environmental issues which emphasize on marketing success. Furthermore, the stakeholder theory is used to descript the dimensions of sustainable marketing strategy and stakeholder expectation which are the antecedents to drive sustainable marketing strategy. The firm responds to stakeholder expectations with different approaches and activities in order to achieve marketing success. Therefore, a firm must recognize and identify the characteristic of the mutual relationship that may affect their stakeholders.

The stakeholder theory is the appropriate tool of analysis of good governance of firms through consideration of marketing, decision making, and actions on behalf of stakeholder interests and requirements (Maignan, Ferrell, and Ferrell, 2005). Therefore, the organization needs to understand the demands and concerns of each group of stakeholders because these stakeholders are necessary for business practices. Prior empirical studies found that there is a positive relationship between stakeholder management and firm performance (Berrone, Surroca, and Tribo 2007). Prior empirical studies found that there is a statistically significant and a positive relationship between stakeholder groups and level of adoption of sustainable marketing practices (Kumar, Rahman and Kazmi, 2016). Moreover, an important implication of a stakeholder is its significant relationship to key marketing outcomes and business performance (Tomas et al., 2010).

Thus, stakeholder theory is employed to investigate the sustainable marketing strategy, which consists of four dimensions: technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development on its consequent variables: product creativity, customer acceptance, and marketing success. As mentioned above, stakeholder theory is employed to investigate the sustainable marketing strategy and the consequent variables.

Contingency Theory

In an era of globalization, organizational management needs to be consistent with the environment and the situation (Taherdangkoo, Mona and Ghasemi, 2018). The executive is the key person for making decisions in all situations. Contingency theory is used to explain the phenomena of the organization's flexibility within the contexts of environment a land situational factor (Donaldson, 2001).

The contingency theory is a classic theory dominating organizational and strategic management research (Nath and Sudharshan, 1994). In the 1950s, the contingency theory was developed and it is the most popular theory in the area of management research such as in strategic management, marketing, information systems, international business operators, human resource management, change management, finance, and accounting (Woodward, 1965). In 1960s, Fiedler proposed the concept of contingency theory, which is a theory of management that depends on the state of the facts. In the business environment, a firm's operation is based on decision-making of an executive who is concerned with many things both routine and contingent determining the policy, plan, and strategy for firm survival in a competitive environment. The contingency theory is rooted in the concept of matching organizational strategies with the corresponding environmental context (Ginsberg and Venkatraman, 1985). Moreover, some researchers have used the contingency theory approach to study the relationship between technology and strategy (King, 1978), and between information system strategy and business strategy (Chan, Huff, Baeclay and Copeland, 1997), between organizational complexity and innovation (Damanpour, 1996).

Prior studies widely employed the contingency theory to examine the relationships between various external and internal contextual factors (Wallace and Kreutzfeldt, 1991). Internal factors include the organizational environment of operational forms such as organizational culture, executive vision, organizational policy, work climate, and technology. External factors include other factors from the outside environment such as technological growth, environmental uncertainty, competitive intensity, social requirement, political government, law/regulation force, and other conditions that affect firm performance (Lawrence and Lorsch, 1967). Therefore, superior organizational performance results in the proper alignment of

internal and external contextual factors and operational management (Phokha and Ussahawanitchakit, 2011).

In this study, the contingency theory is applied to explain the congruence among three antecedents and sustainable marketing strategy. This study expects that the fruitfulness of a sustainable marketing strategy instituted by a firm will vary depending on the top-management vision, firm resource readiness, and competitive force.

In conclusion, the sustainable marketing strategy phenomena in this research are described by two theories, namely, stakeholder theory and contingency theory. These theories are integrated to explain the variables. The main idea of stakeholder theory to explain that sustainable marketing strategy has a positive relationship to product creativity, customer acceptance, and marketing success. The contingency theory is applied to explain the congruence among three antecedents and sustainable marketing strategy. This research expects that the fruitfulness of a sustainable marketing strategy by a firm will vary depending on top-management vision, firm resource readiness, and competitive force. Furthermore, these theories illustrate the relationships of sustainable marketing strategy and its consequent variables; and antecedent variables as shown in the full conceptual model in Figure 1 below.

Relevant Literature Review and Research Hypotheses

In the previous literature, this research attempts to conceptually link the relationships among the antecedents and the consequents of sustainable marketing strategy through two theories, namely, stakeholder theory and contingency theory. The relationship model is separated into three parts as follows.

Firstly, this study focuses on the main effect of sustainable marketing strategy including technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development with a positive effect on product creativity, customer acceptance, and marketing success.

Secondly, this study examines the antecedent variables of sustainable marketing strategy that correlate with an effect on sustainable marketing strategy including top-management vision, firm resource readiness, and competitive force. These, are examined and expected to have a positive relationship with the four dimensions of sustainable marketing strategy.

Finally, the full conceptual model is illustrated in Figure 1. Therefore, the next section details the literature reviews and the hypotheses of sustainable marketing strategy to be discussed and proposed.

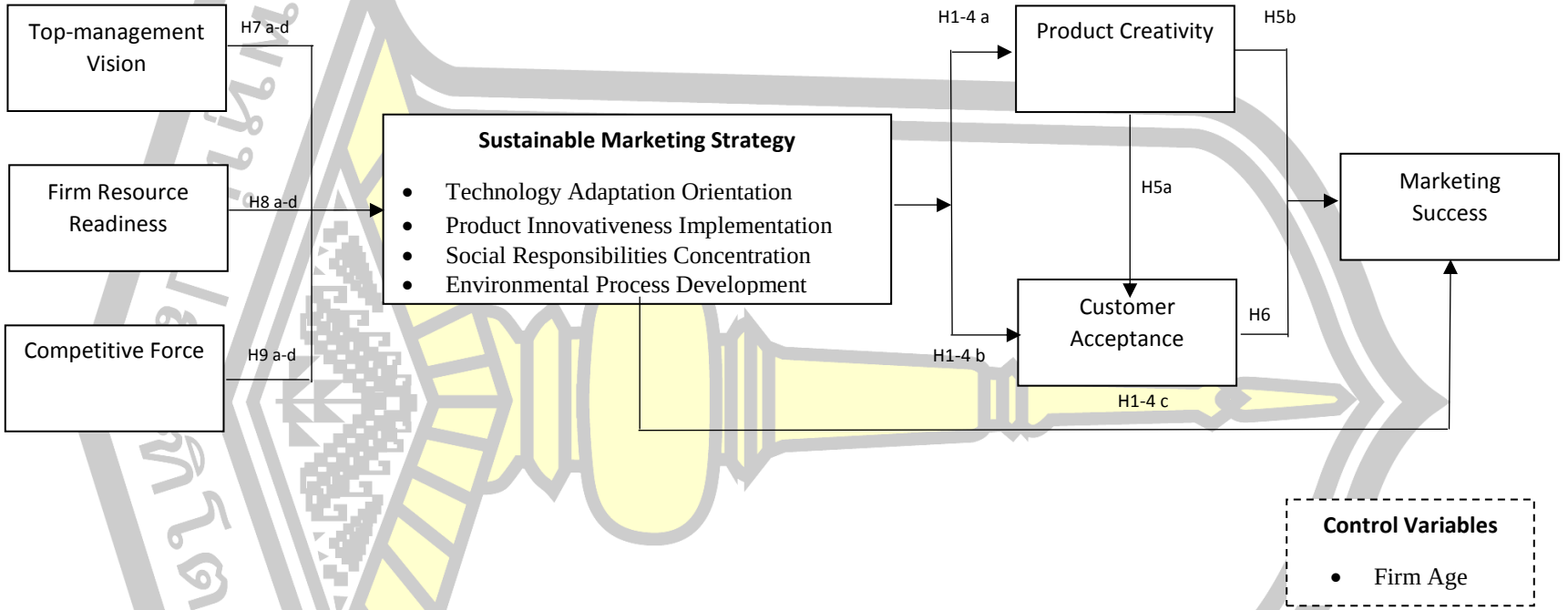


Figure 1 Conceptual Model of Sustainable Marketing Strategy and Marketing Success

Sustainable Marketing Strategy

The field of sustainability is very broad, and it has been defined in several ways. Sustainability is defined as a vision of the future and helps us to focus our attention on a set of values and ethical and moral principles by which to guide our actions (Munier, 2005). In addition, sustainability is the development of marketing that integrates aspects of the economy and the new concept of relationship marketing, and social, moral, environmental perspectives (Noo-urai and Jaroenwisan, 2016). Sustainability is defined as the essential and most important challenge for modern marketing (Sheth et al., 2011).

Sustainable development was first used by International Union for the Conservation of Nature (IUCN) in 1980, it gained importance after the Bruntland Commission Report (1987) as the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development is the long-term stability of the economy and environment; this is only achievable through the integration and acknowledgement of economic, environmental, and social concerns throughout the decision-making process (Renko, 2018).

Sustainable marketing involves building and maintaining sustainable relationships with customers, the social environment and the natural environment (Belz, 2009). Sustainable marketing shares the long-term orientation of relationship marketing, as opposed to the conventional short-term transaction focus of modern marketing. The transition to sustainable marketing in part involves the integration of social and environmental criteria into conventional marketing and processes (Peattie and Belz, 2010). Therefore, it requires their integration into the articulation of marketing values and the setting of marketing goals.

Sustainable marketing strategy is derived from two concepts, sustainable development and marketing strategy. The sustainability marketing is to have indication, which can measure the performance of various dimensions of sustainable development (Kwatra, kumar and Sharma, 2019). Fuller (1999) recognized that sustainable marketing is the key to the success of eco-products and reinforces the market positioning of these products in global value chains. Product innovation positively affected three dimensions of sustainable marketing, which then had

different effects on present and future time perspectives (Sun, Weng and Liao, 2018). Sustainable marketing the relationship between technology orientation and firm growth (Lei, Wu and Fu, 2019). Sustainable marketing of three types of corporate social responsibility such as sponsorship, cause-related marketing, and philanthropy (Lii, Wu and Ding, 2013). The sustainability marketing strategy is positively related to environmental concern and leads to superior financial and market performance (Taherdangkoo, Mona and Ghasemi, 2018). Moreover, the environment issue has become the main issue of marketing policy and the marketing program to integrate marketing mix, marketing activities, communication and delivering high-value products to customer needs for economic outcomes and to response to stakeholder requirements for outcomes (Kotler, Roberto and Lee, 2002). The focuses specifically on balancing and developing long-term environmental, economic, and social goals to attract customers and contribute to stakeholder needs (Sun, Kim, and Kim, 2014). As such, the sustainable marketing construct includes environmental, economic, and social dimensions (Sun et al., 2014). These sustainable marketing dimensions are sourced from Elkington's (1994) triple bottom line accounting concept, which provides a balanced view on a firm's environmental and social efforts in relation to its economic performance. Sustainable marketing in business by using the four dimensions of the marketing mix or 4P as knowledge of product, price, place, promotion and directed towards 3P including; people, planet, and profit (Martin and Schouten, 2012). Moreover, sustainable marketing strategy using the four elements including; innovation, collaboration, communication, and commitment towards the fulfillment of consumers' expectations (Krunal et al., 2018). Thus, the identifies a set of dimensions that characterize sustainable marketing, including, economic, environmental, social, ethical, and technological (Lim, 2015).

Therefore, this study assumes that each form of sustainable marketing strategy. Although these dimensions are conceptual, they help to explain the practical development of sustainable marketing strategy. Therefore, the weight of the individual dimensions and the importance of the various linkages between them vary across individual sustainable marketing strategy. For these reasons, sustainable marketing strategy is along these four dimensions, namely, technology adaptation orientation, product innovativeness implementation, social responsibility

concentration, and environmental process development. In this study, sustainable marketing strategy is defined as a plan of action focused on the process of sustainable keys that incorporates technology, environmental and social to promote environmentally-friendly and socially responsible product practice and brand value (Belz and Peattie, 2009).

Base on a review of relevant and theories, there are four dimensions of sustainable marketing strategy including, technology adaptation orientation, product innovativeness implementation,social responsibility concentration, and environmental process development. The following Table 1 summarizes the definition of sustainable marketing. Table 2 recapitulates key literature reviews on sustainable marketing strategy, which is presented as below:

Table 1 Summary of Definitions of Sustainable Marketing

Author(s)	**Definitions of sustainable marketing**
Dam and Apeldoorn (1996)	The marketing within and supportive of sustainable economic development.
DETR (1999)	An ensuring a better quality of life, now and for generations to come, embracing the three pillars of environmental protection, social responsibility and economic development.
Fuller (1999)	The process of planning, implementing, and controlling the development, pricing, promotion, and distribution of products in a manner that satisfies the following three criteria: (1) customer needs are met, (2) organizational goals are attained, and (3) the process is compatible with ecosystems.
Charter et al. (2006)	Creating, producing and delivering sustainable solutions with higher net sustainable value whilst continuously satisfying customers and other stakeholders.

Table 1 Summary of Definitions of Sustainable Marketing (Continued)

Author(s)	Definitions of sustainable marketing
Belz and Peattie (2009)	The building and maintaining sustainable relationships with customers, the social environment and the natural environment.
Belz and Karstens, (2010)	A management conception which attends to the environmental and social demands and eventually turns them into competitive advantages by delivering customers value and satisfaction.
Martin and Schouten (2012)	A holistic approach to satisfy the wants and needs of the customers while putting equal emphasis on environmental and social issues, thus generating profit in a responsible way.
Noo-urai and Jaroenwisan (2016)	The development of marketing that integrates aspects of economy and the new concept of relationship marketing, and social, moral, environment perspectives.

Table 2 Summary of Key Literature Reviews on Sustainable Marketing Strategy

Authors	Title	Key Issue Examine	Major Finding
Gardon et al., (2011)	A framework for sustainable marketing	The examines how sustainable marketing could be achieved through the contribution of three existing marketing sub-disciplines; green marketing, social marketing and critical marketing	The study found that green marketing needs to be complemented by other activity to achieve the goal of sustainable marketing
Janina (2012)	Sustainable marketing: The importance of being a sustainable business	The examine of this research was to determine the importance of sustainable marketing for companies	The results indicate that the contents of sustainable marketing are implemented and very important for companies

Table 2 Summary of Key Literature Reviews on Sustainable Marketing Strategy (Continued)

Authors	Title	Key Issue Examine	Major Finding
Kumar et al., (2012)	Evolution of sustainability as marketing strategy: Beginning of new era	The issue examines of this study; First, to review and understand concepts of marketing strategy and sustainability. Secondly, to discuss evolution of sustainability in marketing strategy and lastly, to discuss the future of sustainability marketing strategy	The resulted in evolution of green or environmental issues in marketing strategy and now the sustainability in marketing strategy has become the focus of attention of the research
Praude and Bormane (2014)	Sustainable marketing-prospects and challenges under present economy	The examines how the attitude, understanding, and knowledge on sustainable marketing, as well as the essence of sustainable marketing, the strategy of its practical use and the concept of development	The result of sustainable development and sustainable marketing and a model of concept of motivation of its use at a company were developed and the strategy of practical use of sustainable marketing and the motivation of use at Latvian companies was ascertained, confirming the initially advanced hypotheses

Table 2 Summary of Key Literature Reviews on Sustainable Marketing Strategy (Continued)

Authors	Title	Key Issue Examine	Major Finding
Noo-urai and Jaroenwisan (2016)	Sustainability Marketing: A Changing of Marketing Concept Lead to Sustainable Business	The examined of marketing growth has occurred by virtue of five concepts which are manufacturing, product, selling, marketing, and societal	The finding as the two points, the first is sustainability marketing formed of four factors that are planning, organizing, operating and controlling the resources and marketing campaign in order to meet the demand of the consumer. The second, sustainability marketing model comprises three dimensions are economic viability, social equity and environmental protection
Sun et al., (2016)	Do Confucian principles enhance sustainable marketing and customer equity?	The examine the influences of Confucian philosophy on sustainable marketing and customer equity drivers	Adherence to Confucianism is shown to significantly and positively affect sustainable marketing but not to affect customer equity drivers directly

Table 2 Summary of Key Literature Reviews on Sustainable Marketing Strategy (Continued)

Authors	Title	Key Issue Examine	Major Finding
Taherdangkoo et al., (2018)	The role of industries' environmental reputation and competitive intensity on sustainability marketing strategy	The examines the impact of industry drivers on sustainability marketing strategy and performance	The results indicate that industries' environmental reputation is positively related to the sustainability marketing strategies based on customers' environmental concern and leads to superior financial and market performance
Trivedi et al., (2013)	Sustainable Marketing Strategies: Creating Business Value by Meeting Consumer Expectation	The examined identified four major sustainable marketing strategies to be integrated into business practices	The relationship between the proposed sustainability marketing practices and consumer expectations has a great opportunity for this research
Rudawaka (2019)	Sustainable marketing strategy in food and drink industry: a comparative analysis of B2B and B2C SMEs operating in Europe	The examine of sustainable marketing tools in SMEs operating in the food and drink industry in Europe	The research results suggest that both groups of B2B and B2C companies implement sustainable marketing tools to some extent

The Relationships among Sustainable Marketing Strategy and its Consequences

This section shows the investigation of the relationships among sustainable marketing strategy, which consists of four purposed dimensions: technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development; and three critical consequences which are product creativity, customer acceptance, and marketing success. These relationships are presented as below:

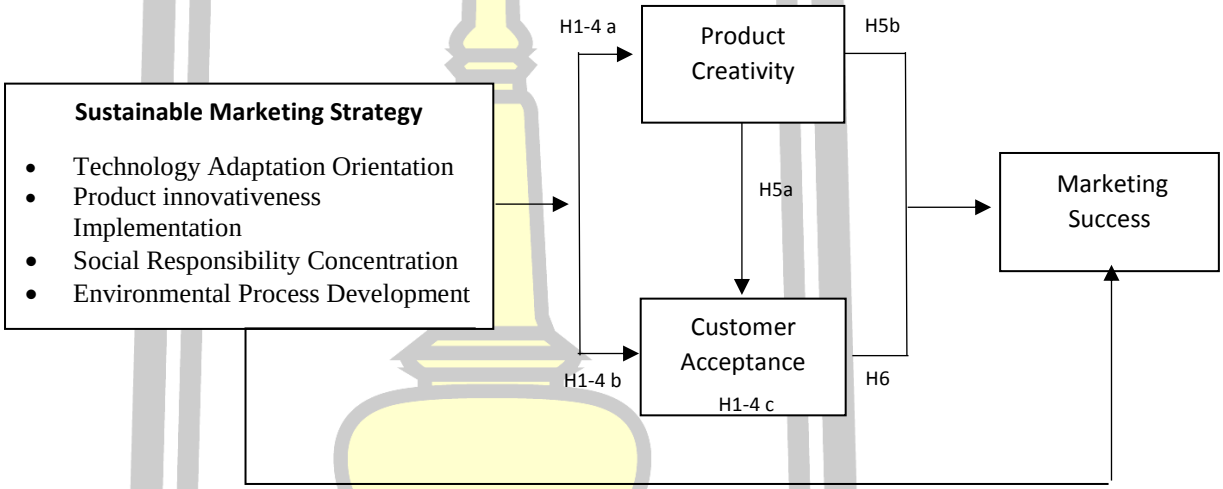


Figure 2 The Relationships among Sustainable Marketing strategy, Product Creativity, Customer Acceptance, and Marketing Success

Technology Adaptation Orientation

The first dimension of sustainable marketing strategy is technology adaptation orientation. Technology plays a fundamental role in achieving the global and local sustainable development goals, which are to mitigate the negative consequences of the traditional economic development model and improve living standards (Ishak, Jamaludin and Abu, 2017). Technological adaptation orientation generates new challenges and chances for new tools or process improvement and industrial diversification, these chances need to occupy and change into value through effective and technology management. Technology orientation and meaning participation in the framework program for learning and knowledge (Luukkonen,

2002). Adaptability can be defined as a firm's ability to identify and capitalize on emerging market and technology opportunities (Tuominen et al., 2004), which, in turn, implies changes in a firm's strategic position (Oktemgil and Greenley, 1997). Therefore, in this study, technology adaptation orientation is defined as the firm's emphasis on new tools and changing management style to develop the modern equipment systems, which can respond to a customer's need and can achieve competitive advantage (Tuominen et al., 2004).

Prior research suggests that adaptive ability is a source of both sustainable competitive advantage and product development success and financial performance (Hurley and Hult, 1998). It suggests that the long-term success of the firm and customer value are best created through new technologies, products, innovations, or production processes (Hakala, 2011) that guide to activities and strategies of the organization in the technology-oriented firm (Zhou, Yim, and Tse, 2005). Technology orientation influenced innovation, product development, and firm performance (Jeong, Pae, and Zhou, 2006). The investigation of new technology on customer acceptance in retailing focuses on their attitude towards e-commerce and e-services (Hernandez, Jimenez and Martin, 2010). The effect of information technology on the marketing success of service industry (Noh and Fitzsimmons, 1999). Sustainable marketing the relationship between technology orientation and firm growth in Chinese Manufacturing (Lei, Wu and Fu, 2019).

Therefore, technology adaptation orientation can create product creativity, customer acceptance, and marketing success. From the arguments discussed above on technology adaptation orientation. Thus, the hypotheses are proposed as follows:

Hypothesis 1a: Technology adaptation orientation is positively related to product creativity.

Hypothesis 1b: Technology adaptation orientation is positively related to customer acceptance.

Hypothesis 1c: Technology adaptation orientation is positively related to marketing success.

Product Innovativeness Implementation

The second dimension of sustainable marketing strategy is product innovativeness implementation. The environmental change for an organizational need to rapidly adapt for survival by building new innovation for the firm, they focus on supporting new ideas and new process to innovative products into new markets, it all together (Kim and Mauborgne, 2005). In particular, changes in consumer behavior will play an important role in the responses of business to climate change, consumers' needs change, market change, and other sustainability issues (World Business Council for Sustainable Development, 2010).

Innovation is widely acknowledged to play a central role in social and technological change processes, solving issues related to today's modern society and in particular to enable its sustainability. Innovation is defined as the commercial or industrial application of something new product, process or method of production; a new market or source of supply; a new form of commercial, and business or financial organization (Schumpeter, 1934). Moreover, product innovation is the firm's ability to generate innovative offering to increase new opportunities of business and new marketplace, it was intended to create innovative products and market pioneer in the market competition and encourage people for awareness and participation in the new product (Thipsri and Ussahawanitchakit, 2009). Sustainability is a key to success for a firm. In this study, product innovativeness implementation is defined as the operation of the firm to create and develop eco-friendly products that respond to customer needs that lead to raising the quality and productivity level of procedures (Ehlen et al., 2013). Hence, the environmental problems are associated with human consumption and the problem of conservation is highly related to consumer consumption behavior.

Hence, consumers need to be responsive to reduce environmental damage through the consumption of environmentally friendly products. Product innovativeness implementation can offer eco-friendly products and high-quality products to customers in the marketplace. The concept of marketing green and eco-products with well-defined eco-standards consisting of wide-ranging eco-friendly products, satisfying ecolabelling and eco-foot printing. Ecolabeling indicates that a company has a long-term vision is flexible, anticipates market expectations, and

creates sustainable value for its products all of which contribute to a company's sustained presence in the market and the increase of its financial value (Epstein and Roy, 1998). For example, the Body Shop aims to develop new green products by using bio-packaging and local eco-products for creating market positioning and marketing success in the cosmetic market (Kotler, 2003). Eco-labels could play a potential role in influencing and supporting the development of new product innovation, conceived and designed to include concerns for the environment (Rubik, Scheer, and Iraldo, 2008). Eco-labels could stimulate companies in their product development and influence the range of products creative offered in markets. Thus, many consumers are seeking environmental labels such as green label, eco-label, carbon footprint, or other indicators before making purchasing decisions (Brecare et al., 2009).

The prior research a firm can attain positive results and gain consumer acceptance through implementing ecolabeling, it serves as an incentive to design and improve products with higher environmental performance to replicate this success (Wagner, 2008). The effect of product innovation, competitive environment, and consumer factors on these two metrics of customer acceptance (Gielens, Steenkamp and Benedict 2007). The relationship between product innovation and product creativity (Marinho et al., 2016). Product innovation had a significant direct effect on marketing performance (Nataya and Sutanto, 2018).

Therefore, product innovativeness implementation is likely to have a positive influence on product creativity, customer acceptance, and marketing success. From the arguments discussed above on product innovativeness implementation. Thus, the hypotheses are proposed as follows:

Hypothesis 2a: Product innovativeness implementation is positively related to product creativity.

Hypothesis 2b: Product innovativeness implementation is positively related to customer acceptance.

Hypothesis 2c: Product innovativeness implementation is positively related to marketing success.

Social Responsibility Concentration

The third dimension of sustainable marketing strategy is social responsibility concentration. Over the past decade, the concept of sustainable development has expanded to include the simultaneous consideration of economic growth, environmental protection, and social equity in business planning and decision-making leading to social and environment that has come a long way in the past decade (Schmidheiney, 1992). The necessity to include the social dimension of sustainable marketing strategy is important question about the nature of social responsibility concentration and its impact on corporate and individual behavior performance. Hence, responsibility for corporate social responsibility was often handed to the communication.

The concept of social responsibility is defined as broadly and often used interchangeably with corporate social responsibility. Corporate social responsibility is defined as the ethical behavior of a company toward a society that is both shareholder and a broader range of stakeholder have legitimate interest in the business (Kakabadse, Rozuel and Lee-Davies, 2005). Social responsibility refers to generally encompass the same or similar aspects and often emphasizes the social responsibility is about the ability to satisfy three bottom line such as economic, social, and environmental (Elkington, 1997). Corporate social responsibility (CSR) as a strategy of an organization has a long history that began with social responsibilities of the businessman which is the first book by Howard Bowen in 1953. In recent years, social responsibility is an interesting concept to the world. It is a concept under consideration of the integration of ethics and social and environmental business practices with voluntary disclosure (Jones, Comfort and Hillier, 2005). Organizations can hold guidelines in conjunction with social responsibility.

The above discussion demonstrates that social responsibility needs to respond to economic, social and environmental factors, which focus on the benefits to the individual, community and society. For example, IKEA strives to maintain a high level of commitment to social responsibility in the global market, and the company's stated mission is to make products with minimum impact on the environment that are manufactured in a socially responsible way (Arrigo, 2005). At the same time, social is

expected to firm. In this study, social responsibility concentration is defined as an organizational response to social requirements with awareness, support to the community, and other social groups for supporting the survival and success of the organization (Kotler and Lee, 2005). In addition, Weber (2008) found that a variety of social responsibility benefits can be separated as follows: efficiency gains (financing advantages, risk reduction), market and product development (increased competitiveness through process and product benefits), employee motivation and retentions (increased company for potential employees), and customer attraction and retentions improvement (customer satisfaction and loyalty). These actions are a reflection of the importance of social responsibility and useful activity. Therefore, behavior of responsibility depends on external influences, the market, implementation and large firm (Abreu, David and Crowther, 2005).

The prior research found a positive relationship between social responsibility and the environmental performance of the company (Rodriguez and Cruz, 2007). Those may not have had a positive performance in the short term, but on the other hand, social responsibility concentration is a positive to the business in the long-term (Lin, Yang and Liou, 2009). Social responsibility positively affects corporate governance and firm value (Jo and Harjoto, 2011). Social responsibility practices relate positively to the achievement of corporate goals such as profitability, sustainability, reputation, and branding, which the best of argue is the most effective uptake of social responsibility (Sriramesh et al., 2007). The prior research has found a significant relationship between social responsibility affects customer acceptance, both directly and indirectly (Berens, Riel and Bruggen, 2005). Although many previous studies have investigated the direct impact of corporate social responsibility on marketing profitability (Lou and Bhattachary, 2006). In addition to the value opportunities, most would also agree that creativity also adds value to products and that social responsibility have a positive impact on product creativity (Horn and Salvendy, 2006).

However, the integration of these three aspects simultaneously that social responsibility gains in growth. Moreover, the company that has focused on social responsibility may be product creativity, customer acceptance, and marketing success.

Therefore, social responsibility concentration is likely to have a positive influence on product creativity, customer acceptance, and marketing success. From the arguments discussed above on social responsibility concentration. Thus, the hypotheses are proposed as follows:

Hypothesis 3a: Social responsibility concentration is positively related to product creativity.

Hypothesis 3b: Social responsibility concentration is positively related to customer acceptance.

Hypothesis 3c: Social responsibility concentration is positively related to marketing success.

Environmental Process Development

The fourth dimension of sustainable marketing strategy is environmental process development. In this study, environmental process development is defined as the ability of the firm based on the environmental changes in organizational operation on environmental pollution (Sharma et al.,2010). In underlying sustainable development, the key element is environmental conservation which is frequently a triple bottom line (TBL) that encompasses the notions of environmental, social, and economic (Henderson, 2007). Thus, environmental consideration is part of corporate social responsibility.

In the past few decades, environmental impacts by firms are now attracting severe concern from the public (Namakonzi and Inanga, 2014). Many industries have come under criticism for environmental destruction, although these industries are trying to present projects to improve the environment. For example, the environment is very important as identified key issues of the environment that affects the business operation in the Australian wine industry for four sections. The first section is water, soil, and air contamination by using chemicals. The second section is community health by chemical spray drifts, odors, and genetic modification. The third section is waste from producers by wastewater, plastic packaging, and chemical residues. The fourth section is loss of soil quality by erosion, soil salinity, biodiversity, and

greenhouse gasses using energy, chemical spray drifts (Gabzdylova, Raffensperger and Castka, 2009). Moreover, the Industry has demonstrated that sustainable development strategies makes good business sense. For example, a 3M manufacturing plant scaled down a wastewater treatment operation by half, simply by running cooling water through its factories repeatedly instead of discharging it after a single use (Conceição, Hamill and Pinheiro, 2002). Therefore, environmental pollution, global warming and the loss of natural resources from operational processes affect organizational environment, and production planning. These challenging problems lead to global warming; thus, it is necessary for the organization to adopt new strategies for environmental process development in order to ensure marketing success.

Prior research, environmental marketing is directly and positively related to the firm's new product success in its principal market success (Baker and Sinkula, 2005). The environmental process is a basic principle and guide for the performance standards of the organization, which can help customer acceptance (Castka and Balzarova, 2008). The organization for external environment considerations such as natural resources, landscape transformation, and waste production, which can increase competitiveness through better product, positive corporate image and reputation from stakeholders (Gabzdylova, Raffensperger and Castka, 2009). Moreover, the environmental effects on business development and long-term growth (Timbur, 2010). 'Therefore, many companies use environmental process as an organizational strategy that contributes to sustainable development.

This research predicts that benefits depend on the firms' environmental process development, which in turn may affect product creative, customer acceptance, and marketing success. Thus, the hypotheses are proposed as follows:

Hypothesis 4a: Environmental process development is positively related to product creativity.

Hypothesis 4b: Environmental process development is positively related to customer acceptance.

Hypothesis 4c: Environmental process development is positively related to marketing success.

The Relationships among the Consequences of Sustainable Marketing Strategy

This section examines the relationships among the consequences of sustainable marketing strategy consisting of product creativity, customer acceptance, and marketing success. The literature review on the definition of each construct and purposed hypotheses are discussed below.

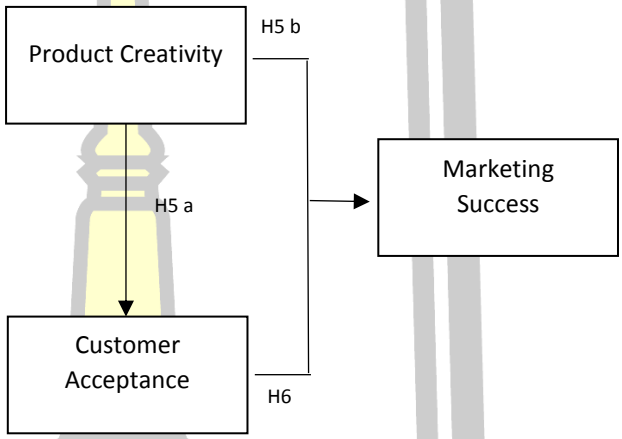


Figure 3 The Relationships among Product Creativity, Customer Acceptance, and Marketing Success

Product Creativity

Product creativity is a key business strategy to offer marketplace to meet customer needs. Furthermore, given product creativity which requires the developing new products, differ from those of a competitor's to achieve superior competition. Product creativity is the process of thoughtful activities and generating new ideas for creating new products and triumphing the firm's objective (Hult, Hurley and Knight, 2004). Creativity is vital to organizational success and provides the foundation of ideas from which innovation follows (Zhou and Shalley, 2003). Likewise, it refers to the ability of the firm to create or improve a firm's products and offer these new products with high quality but lower cost, over others, at a suitable time (Hult et al., 2004).

Therefore, in this study the product creativity is defined as outcome of creative processes of the firm to new product design and presentation of a variety of goods and can achieve competitive advantage (Landwehr and Herrmann, 2015). The prior research shows that the product creative is an important factor for preserving a competitive advantage, profitability, and survivorship of the firm (Brown and Eisenhardt, 1995). Product creativity significantly consumer acceptance and purchase intentions (Horn and Salvendy, 2006). Moreover, previous research shows that the investigates the composition of product creativity by examining elements of consumer products from the consumer's perspective. Product creativity dimensions (centrality, importance and desire) significantly predict customer acceptance and purchasability of creative products (Horn and Salvendy, 2007). Therefore, prior research suggests that the ability of product creativity has a significant impact on customer acceptance and marketing success in this study.

Based on the literature reviewed above, product creativity is likely to affect achievement, which leads to customer acceptance and marketing success. As a consequence, the research hypothesis is proposed as follows:

Hypothesis 5a: Product creativity is positively related to customer acceptance.

Hypothesis 5b: Product creativity is positively related to marketing success.

Customer Acceptance

Many researchers have attempted to define customer acceptance. The concept of customer acceptance is the perception of the customer to the experiences of products, services, information, ordering, payment, material value, delivery, and post-purchase problem resolution, about the firm which lead to the firm value (Foxall, 2003). Customer acceptance is defined as the customers' feedback and customer behaviors recognized as confidence, satisfaction, loyalty on reputation, and image of products. Acceptance refers to consumer preference for the products and images leading to a customer who is related to a set of alternatives (Spreng, et al., 1996). Customer acceptance is the customers' perception based on customer behaviors

recognized as a trust, satisfaction, and loyalty on reputation, and image of the firm (Syers et al., 2012). Dick and Basu (1994) define customer acceptance as the image of the firm's product and services based on consumer loyalty. Also, customer acceptance is defined as a customer behavior trust, loyalty, and satisfaction on goods and service of the firm (Robkob and Ussahawanitchakit, 2009).

Therefore, in this study, customer acceptance is defined as achievement of customer need fulfill that more quickly than competitor in order to attract new users and retain customer loyalty (Wei and Wang, 2011). In previous research, customer acceptance has a positive effect on E-commerce performance (Chailom and Ussahawanitchakit, 2009). Moreover, the previous research customer acceptance greatly shapes market reputation, competitive, and affects potential customers' purchase decisions. That research extends this line of the study to newly introduced and examines their customer acceptance. Therefore, prior research suggests that the ability of customer acceptance has a significant impact on marketing success in this study.

Based on the literature reviewed above, customer acceptance is likely to affect achievement, which leads to marketing success. As a consequence, the research hypothesis is proposed as follows:

Hypothesis 6: Customer acceptance is positively related to marketing success.

Marketing Success

The market success has also been extensively discussed because of its strong associations with many valuable organizational outcomes, such as long-term growth, enhanced customer satisfaction, and competitive advantage (Kotler, 1977). The concept of broad, balanced, non-financial and financial measures help marketers better understand the performance of their strategies (Varadarajan and Jayachandran, 1999).

Financial performance, which means financial measures such as profit margin and return on investment (ROI). Meanwhile, marketing success refers to measures such as market share and sales volume from which that every firm should, in principle, seek profitable growth over a top-selling single (Morgan, Strong and McGuinness,2003). The measurement of marketing success can measure in a variety of aspects as follows: competitive market, consumer behavior, marketing intermediary, and innovativeness (Llonch, Eusebio and Ambler, 2002). Prior research confirmed that market performance has been shown to positively and often significantly affect profitability in a number of several empirical studies (Spanos and Lioukas, 2001). Thus, marketing success means the result of marketing strategies to customers, marketplaces, and financial benefits for the organization.

In this study, marketing success is defined as firm's outcomes of marketing strategy with regards to financial and non-financial performance (Chandler and Graham, 2010). Hence, marketing success implies the output of implementing sustainable marketing strategy and its consequences.

The Relationships among Sustainable Marketing Strategy and its Antecedent

This section presents the influence of purpose antecedents of sustainable marketing strategy. With regard to the contingency theory, this research purposes top management vision, firm resource readiness, and competitive force as the significant antecedents of sustainable marketing strategy dimensions: technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. Therefore, the aforementioned relationships are illustrated in Figure 4.

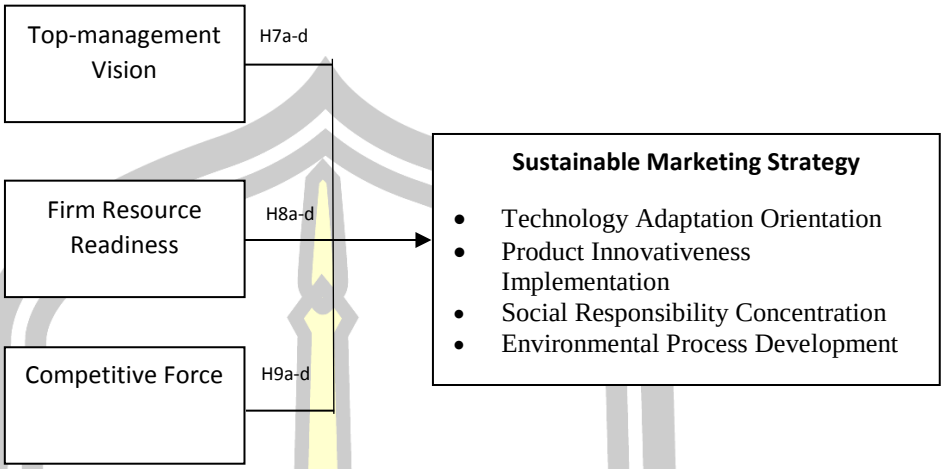


Figure 4 The Relationships among Top-Management Vision, Firm Resource Readiness, Competitive Force, and Sustainable Marketing Strategy

Top-management Vision

Top management vision has been identified as one of the most important factors in the success of a sustainable marketing strategy. The concept of sustainable development has received growing recognition. Although it is not a new idea for many business executives, the concept remains abstract and theoretical. The effort to achieve sustainable development is already having a profound effect on businesses where the board-level decision must be responsive to environmental considerations and social well-being, as well as economic viability.

Following the purpose of this study, top-management vision is defined as to the goal and direction of executive view with the new ideas, which is vision to make the organization goals and sustain growth (Chollet et al., 2012). Top management plays a crucial role in implementing and managing sustainability issues (Chan et al., 2012). Top management presents the vision statement as an organizational direction in the future and to achieve a goal. The definition of vision is the view of the executive involving the viewpoint of the organization's future of operations (Srikarsem and Ussahawanitchakit, 2009). The vision focuses on what is important for an organization should include future foresight with core purpose (Conger, 1989). Therefore, the role of leaders' vision is important in driving sustainable marketing strategy in the organization. The importance of vision is necessary and important for

the organization (Altiok, 2011). The study has shown that executive vision is a key factor in supporting and promoting corporate strategy for goals that include economic, environmental, and social goals. Chenhall (2003) suggested that the most difficult problem organizations face is dealing with changes such as economic, environmental, social and technological changes. Particularly, the vision for the long-term operations of a firm is an idealized goal to be achieved in the future (Korbangyang and Ussahawanitchakit, 2010).

Prior research has empirically demonstrated that a firm's top executives play an important role in new product innovation (Qiang et al., 2013). The executive vision for long-term operation affects sustainable accounting (Pothong and Ussahawanitchakit, 2011); the executive vision for sustainability impacts social responsibility accounting (Waenkaeo and Ussahawanitchakit, 2011). The prior research examined the role of top management and leadership in advancing environmental sustainability (Jang, 2016). The top management support has the relationship between the openness of technology adaptation and service innovation (Hsu et al., 2018).

Therefore, the top-management vision is likely to affect the sustainable marketing strategy under the contingency theory. At this point, to analyze the influence of the top-management vision that affects the four dimensions of a sustainable marketing strategy consist of technology adaptation orientation, product innovativeness implementation, social responsibility concentration,and environmental process development. Therefore, the hypotheses are proposed below.

Hypothesis 7a: Top-management vision is positively related to technology adaptation orientation.

Hypothesis 7b: Top-management vision is positively related to product innovativeness implementation.

Hypothesis 7c: Top-management vision is positively related to social responsibility concentration.

Hypothesis 7d: Top-management vision is positively related to environmental process development.

Firm Resource Readiness

Firm resource readiness effect of sustainable marketing strategy under the contingency theory. This resource is a tool for considering strategic resources available to a business. Resources include all firm assets, capabilities, organizational processes, attributes, information, experience, knowledge and technology. Resource readiness refers to an organization's ability to allocate the existence of an organization's resources to maximize benefits, and the adequacy of a firm's resource can compete with competitors (Tzokas, Saren, and Brownlie, 1997).

Moreover, Barney (1991) takes a broader view to conceptualize resource as all assets and capabilities that enable a firm to understand and implement strategies aiming to enhance efficiency and effectiveness. The resource-based view explains that through internal resources and capabilities a firm uses to building sources for competitive advantage (Barney,1991). The firm resources consist of three categories: physical capital, human capital, and organizational/social resources (Barney, 1991); similar to Grant's (1992) work that firm resources can be classified into five categories; financial, physical, human, technological, and reputation. Thus, if the firm has the resources in readiness and potentiality, this advantage will support the firms to create new opportunities.

Prior research has investigated the organizational readiness has a direct effect on technology adoption: attributes of change, leadership support, internal context, attributes of change target, and information technology support (Aziz and Yusof, 2012). Organizational resources and market competitiveness have a direct positive and significant impact on product innovations (Akgul and Gozlu, 2015). Firm resource relationship between innovation, external environmental, and firm performance (Ombaka and Mahasi, 2015). As indicated in prior research, the organizational resource has been associated with business processes to achieve corporate goals (Ray, Barney, and Muhanna, 2004).

Therefore, in this study, firm resource readiness is defined as firm ability in asset both tangible and intangible for supporting the process of the firm and result in marketing success (Pansuppawatt and Ussawanitchakit, 2011). Firm resource readiness is likely to affect the sustainable marketing strategy under the contingency

theory. Firm resource readiness has the potential capability to enhance four dimensions of a sustainable marketing strategy consist of technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. Therefore, the hypotheses are proposed below:

Hypothesis 8a: Firm resource readiness is positively related to technology adaptation orientation.

Hypothesis 8b: Firm resource readiness is positively related to product innovativeness implementation.

Hypothesis 8c: Firm resource readiness is positively related to social responsibility concentration.

Hypothesis 8d: Firm resource readiness is positively related to environmental process development.

Competitive Force

In a strategic perspective, a competitive strategy is one of the factors that have a major influence on goal achievement. These forces represent a firm's environment. Moreover, that industry structure is also another force directly affecting firm performance and positional advantage in a competitive market. Firms must put their priority on the competitive structure in the industry level which has an impact on businesses and products including competitors in the industry, substitute products, new rivals, suppliers, and customers (Porter, 1980). Porter (2008) has defined three generic competition strategies that help master the competitive forces; cost leadership strategy, differentiation strategy, and focus strategy. The notion of industry competitive intensity is composed of five competitive forces such as the threat of potential entrants, rivalry among the existing firm, the threat of substitute products, bargaining power of suppliers, and bargaining power of buyers **(**Calantone et al., 2010). Tavitiyaman et al (2011), proposed three of five forces relating to potential and current competitors and customers tend to have a major influence on competitive

strategies. These forces represent a firm's environment. It contends that the success of a firm is dependent on how a firm predicts and reacts accurately to competitive forces (Tavitiyaman et al., 2011). Therefore, these forces are at work within a certain industry and depending on the characteristics of that industry certain forces are more powerful than others (Porter, 1980).

In the prior research, the positive, negative, or non-significant moderating effect on competitive forces on the marketing oriented and a product innovation relationship in small manufactures (Espallardo and Ballester, 2009). As both internal and external pressures build to competitive force firms to adopt and maintain environmentally friendly processes and to produce environmentally friendly products and services, manufacturers have to consider the effect of such an environmental approach on business performance, economic viability, and environmental performance of the firm (Soriano et al., 2010). Rajaseker and Raee (2013) used the foundation of Porter's five forces to analyze the larger and smaller relevant competitive factors of the Oman telecommunications services industry. The five competitive forces model impacts technology in the telecommunication services industry in Oman (Rajasekar and Raee, 2013).

In this study, competitive force is defined as a set of perceived influences of industry structure that collectively determines the strategy of competing firms in a given industry (Birkinshaw et al., 2005). This view uses managerial perceptions to capture the competitive forces of a firm (Weerawardena et al., 2010). It contends that the success of a firm is dependent on how a firm predicts and reacts accurately to competitive forces (Tavitiyaman et al., 2011). Hence, the business makes an effort to appoint new strategies to improve corporate sustainability as well as economic development, social development and environmental development.

Therefore, competitive force is likely to affect the sustainable marketing strategy under the contingency theory. Competitive force has the potential capability to enhance four dimensions of a sustainable marketing strategy consist of technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. Therefore, the hypotheses are proposed below:

Hypothesis 9a: Competitive force is positively related to technology adaptation orientation.

Hypothesis 9b Competitive force is positively related to product innovativeness implementation.

Hypothesis 9c: Competitive force is positively related to social responsibility concentration.

Hypothesis 9d: Competitive force is positively related to environmental process development.

Summary

In this chapter, the conceptual model of sustainable marketing strategy and marketing success is illustrated. Two principal theories are used to draw the relationships in the conceptual framework; the stakeholder theory and contingency theory.

This research has also proposed a set of 9 testable hypotheses to explain the overall relationships among constructs in the conceptual model. These relationships are classified into three different groups which are the following: the first group is relevant to the linkages among sustainable marketing strategy and its consequences. It also investigates the impact on product creativity, customer acceptance., and marketing success. The second group holds the relationships among three consequences of sustainable marketing strategy and marketing success. Lastly, the final group contains the influences of three antecedents on each of four dimensions of sustainable marketing strategy, including top-management vision, firm resource readiness, and competitive force. All proposed hypotheses are presented in Table 3.

Table 3 Summary of Hypothesized Relationships

Hypothesis	Description of Hypothesized Relationships
H1a	Technology adaptation orientation is positively related to product creativity.
H1b	Technology adaptation orientation is positively related to customer acceptance.
H1c	Technology adaptation orientation is positively related to marketing success.
H2a	Product innovativeness implementation is positively related to product creativity.
H2b	Product innovativeness implementation is positively related to customer acceptance.
H2c	Product innovativeness implementation is positively related to marketing success.
H3a	Social responsibility concentration is positively related to product creativity.
H3b	Social responsibility concentration is positively related to customer acceptance.
H3c	Social responsibility concentration is positively related to marketing success.
H4a	Environmental process development is positively related to product creativity.
H4b	Environmental process development is positively related to customer acceptance.

Table 3 Summary of Hypothesized Relationships (Continued)

Hypothesis	Description of Hypothesized Relationships
H4c	Environmental process development is positively related to marketing success.
H5a	Product creativity is positively related to customer acceptance.
H5b	Product creativity is positively related to marketing success.
H6	Customer acceptance is positively related to marketing success.
H7a	Top-management vision is positively related to technology adaptation orientation.
H7b	Top-management vision is positively related to product innovativeness implementation.
H7c	Top-management vision is positively related to social responsibility concentration.
H7d	Top-management vision is positively related to environmental process development.
H8a	Firm resource readiness is positively related to technology adaptation orientation.
H8b	Firm resource readiness is positively related to product innovativeness implementation.
H8c	Firm resource readiness is positively related to social responsibility concentration.
H8d	Firm resource readiness is positively related to environmental process development.
H9a	Competitive force is positively related to technology adaptation orientation.
H9b	Competitive force is positively related to product innovativeness implementation.

Table 3 Summary of Hypothesized Relationships (Continued)

Hypothesis	Description of Hypothesized Relationships
H9c	Competitive force is positively related to social responsibility concentration.
H9d	Competitive force is positively related to environmental process development.

CHAPTER III

RESEARCH METHODS

The previous chapter demonstrated an extensive review of the relevant literature detailing sustainable innovation strategy and marketing success in the ISO 14001 certified manufacturing businesses, the theoretical foundations, and the hypothesis development for investigation. Consequently, this chapter thoroughly illustrates the research methods which are organized as follows. Firstly, the sample selection and data collection procedure section include the population and sampling, the data collection, and the test of non-response bias. Secondly, the variable measurements are illustrated. Thirdly, the method section includes the proposed examination of validity and reliability, and the analytical statistics are detailed. Also, the measurement model, structural model analysis and multi-group analysis are depicted. Finally, the table that presents a summary of the definitions of variables, and an overview of the constructs are included.

Sample Selection and Data Collection Procedure

Population and Sample

The population and sample of this study are drawing from a database of ISO 14001 certified manufacturing businesses in Thailand that were chosen from the online database of Thai Industrial Standards Institute, Ministry of Industry. This database is an excellent source of information, providing all the complete addresses and showing the of ISO 14001 certified manufacturing businesses in Thailand, which could confirm the data of whether an ISO 14001 certified manufacturing businesses could remain in businesses. More than one million industrial businesses around the world have adopted many models from the International Organizational for Standardization (ISO) as their guidelines for organizational adaptation and expansion towards international markets and global markets. In Thailand, the Ministry of Industry of Thailand launched an ISO 14001 series in 1996, concerned with the

environmental management system (EMS). At present, there are 468 businesses certified as ISO 14001 compliant. The ISO 14001 standard lays out requirements for creating an Environmental Management System (EMS), and it concentrates on the organization's environmental policy that can improve business efficiency (Boiral, 2011). Therefore, businesses that have obtained ISO 14001 certification have shown an emphasis placed on understanding the environmental impact potential of an organization.

In the globalized world, environmental issues seem to be one of the most important topics. The pollution created in any form such as air emission, effluent, and land contamination has several impacts on people throughout the world. Manufacturing businesses that have obtained ISO 14001 certification have established Environmental Management Systems (EMS) to support environmental protection because the manufacturing industry directly has caused most of the environment problems in Thailand such as air pollution, water pollution and toxic waste (Miles, Munilla and Russell, 1997). Therefore, manufacturing uses many natural resources to input into the production process such as raw materials and fuel. Thus, the industry has affected ecosystem damage and the loss of biodiversity (Peattie, Peattie and Ponting, 2009).

Previous research has demonstrated that a business that manifests responsibilities for economic, social and environmental issues can generate more growth, profit, and long-term outcomes (Palazzi and Starcher, 2000). Likewise, when a business applies for ISO 14001 certification, it not only seeks to enhance its corporate value, but also to improve its image through environmental compliance (Teng, 2011). Finally, in this study, the information from the database of the Thai Industrial Standards Institute, Ministry of Industry, are displayed on the website: www.http//app.tisi.go.th. The population in this study consists of 468 ISO 14001 certified manufacturing businesses. The sample size in this research uses the rule of thumb for the structural equation model (SEM) to calculate the sample size. Although the determination of appropriate sample size is a critical issue in SEM, unfortunately, there is no consensus in the literature regarding what would be the proper sample size for SEM.

Some evidence exists that simple SEM models could be meaningfully tested even if the sample size is quite small (Wen, Marsh, and Hau, 2002)), but usually, N = 100 - 150 is considered the minimum sample size for conducting SEM (Anderson and Gerbing, 1988); (Ding, Velicer, and Harlow, 1995). Some researchers believe an even larger sample size for SEM, for example, simulation studies show that with normally distributed indicator variables and no missing data, a reasonable sample size for a simple CFA model is about N = 150 (Muthén and Muthén, 2002). For analyze multi-group modeling, the rule of thumb is 100-150 cases or observations per group (Kline, 2011). The sample size is often considered in light of the number of observed variables.

Thus, in this research used from Anderson and Gerbing (1988) suggested that the minimum sample size for conducting SEM should be N = 100–150 and Kline, (2011) multi-group modeling the rule of thumb is 100 case/observations per group. Thus, the sample size should be N = 150 case/observations for each group (ISO 14001 certified manufacturing businesses). According to Aaker, Kumar, amd Day (2001), the mail survey with 20 % response rate, and without appropriate follow-up procedure should use a formula to calculate the sample sizes for a population as follows:

$$n = \frac{150 \times 100}{20}$$

$$n = 750$$

Thus, the number of ISO 14001 certified manufacturing business populations was only 468 firms. Thus, it was necessary to determine the 468 population as the sample size for a mail survey in this study.

Data Collection

In this study, a valid and reliable self-administered questionnaire comprises six sections. In the first section, respondents are requested to provide their personal information such as gender, age, education level, work experience, and current position. The second section questions the organizational characteristics; for example, forms of business, types of manufacturing industry, number of employees, operational capital of the firms, the period of the time in operation business, the period of the time

in ISO 14001 of business, and award in environmental management. For the third to sixth section, respondents are canvassed on their perceptions toward sustainable marketing strategy, its consequences, antecedents, and other influences. Moreover, a Likert five-point interval scale, ranging from 1 = strongly disagree, to 5 = strongly agree, is employed. (See the APPENDIX E for Thai version and APPENDIX F for English version).

To be more specific, the third section collects the key concepts of sustainable marketing strategy as four dimensions: technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. The fourth section presents questions concerning the consequences of sustainable marketing strategy, including product creativity, customer acceptance, and marketing success. The fifth section includes questions regarding the antecedents of sustainable marketing strategy including top-management vision, firm resource readiness, and competitive force. Finally, the sixth section provides an open-ended question to gather key respondent suggestions and opinions.

In this study, the key informants are the marketing manager and marketing director such as, ownership, and general manager who are considered appropriate key informants because they determine the sustainable marketing strategy, provide the factual of information, and truly understand their business ISO 14001 certified manufacturing businesses in Thailand. Moreover, it is appropriate because it is a widely used method for large-scale data collection in a geographical area, and mailing questionnaires is effective (Neuman, 2006). After completing it, the questionnaires are directly sent back to the researcher by the prepaid returned envelopes for ensuring confidentiality. Then, for the undelivered mails, firms which are no more in business were eliminated.

All the questionnaires sent were 468 packages mailed in June - August 2020. The scheduled plan to collect data was within eight weeks. At the first stage, the survey was answered and sent to the researcher within the first four weeks. After four weeks, to increase the response rate, a follow-up postcard was sent to firms that had not yet replied, to remind them to complete the questionnaire and to request them to

cooperate in answering. For the convenience of a follow-up mailing, each questionnaire was assigned a coded number at the left corner on the back of the fifth questionnaire page. Concerning the questionnaire mailing, 18 of the surveys were undeliverable because they were no longer in business or had moved to unknown locations. After removing the undeliverable from the original 468 mailed, the valid mailing was 450 surveys, from which 211 responses were returned. Due to three found incomplete and with response errors, they were deducted from further analysis. Of the surveys completed and received, only 208 were usable. The effective response rate was approximately 46.22%. According to Aaker, Kumer and Day (2001), 20% response rate for a mail survey, without an appropriate follow-up procedure, is considered acceptable. Table 4 shows the results of the questionnaire mailing used for analysis in this study.

Table 4 Details of Questionnaire Mailing

Details	Number
Amount of questionnaire mailed	**468**
Number of undelivered questionnaires	**18**
Number of successful questionnaires mailed	**450**
Received questionnaires	**211**
Unusable questionnaires	**3**
Usable questionnaires	**208**
Response Rate 208/(468-18) x 100	**46.22%**

Test of Non-Response Bias

A non-response bias has been claimed in using mail surveys so that it may cause the reduction of generalizability of the sample to the population (Armstrong and Overton, 1977). The other words, if there is a substantial difference of response between the responding firm and non-responding firms, it does not allow inferring to the entire sample and population. Therefore, a non-response bias is assessed to ensure that it is not a severe problem in this study. Seemingly, a non-response bias may arise when the non-responding firm differs from the responding firms in observable

characteristics (Whitehead, Groothuis, and Blomquist, 1993). Following the recommendations of Armstrong and Overton (1977), a t-test comparison of demographics information and all constructs between early and late respondents are tested to prevent and assure possible response bias problems. If the results of the t-test statistics show no statistically significant differences in demographics information between early and late respondents can confirm that no non-response bias exists (Nwachukwu, Vitell, Gilbert, and Barnes, 1997). All 208 received questionnaires are separated into two equal groups: the first 104 responses are treated as the early respondents (the first group) and another 104 responses are treated as the late respondents (the second group). By employing a t-test statistic, the differences of organizational demographics concerning business owner type, type of businesses, period of the time in ISO 14001 of business, location, annual revenue, and all constructs were compared.

It can be seen from the findings that there were no statistically significant differences between the two groups at a 95% confidence level. Thus, it can be mentioned that the non-response bias is not a concern in this research (Armstrong and Overton, 1977). The results of the non-response bias test are presented in APPENDIX B, Table B1 and Table B2.

Measurements

In this study, the measurement procedures involve the multiple items development for measuring each construct in the conceptual frameworks. The most construct is abstractions that cannot be directly measured or observed and should be measured by multiple items (Churchill, 1979). Accordingly, using multiple items provides a wider range for the content of conceptual definition and improvement of reliability (Neuman, 2006). In this study, all constructs are transformed to the operational variables to gain more accuracy in measuring research constructs. All variables are derived from the definition and previous literature, by a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Likewise, the literature review and an examination of relevant documents are the best ways to create or modify a development tool and questionnaire that are consistent with the purpose of

the measurement (Roberts, Laughlin, and Wedell, 1999). These constructs, derived from the literature review, are transformed into the operational variables for precise measuring. The variable measurements of this study are developed by the definitions and the relevant literature as shown in Table 5 that defines each construct, operational variables, scale source, and sample questions and items. Therefore, the variable measurements of the dependent variable, independent variables, mediating variables, and control variables of this study are elaborated as follows.

Dependent variable

Marketing success. Marketing success is defined as firm's outcomes of marketing strategy with regards to financial and non-financial performance (Chandler and Graham, 2010). The construct is measured by the firm's outcomes in their market segment over the past year such as sales growth, market share, profitability the increasing market share and ability to maintain customer satisfaction and customer loyalty. The measurement of this construct is developed as a new scale from the definition and literature review including a five-item scale.

Independent variables

This study consists of nine independent variables which are separated into three categories; core construct, consequential variables, and antecedent variable. Firstly, sustainable marketing strategy is the center and core construct of this study. It can be measured through four distinctive attribute dimensions: technology adaptation orientation,product innovativeness implementation, social responsibility concentration, and environmental process development. These attributes reflect the good characteristics of a sustainable marketing strategy. The measure of each attribute depends on its definition which is detailed below.

Technology adaptation orientation. Technology adaptation orientation is defined as the firm's emphasis on new tools and changing management style to develop the modern equipment systems, which can respond to a customer's need and can achieve competitive advantage (Tuominen, Rajala, and Moller, 2004). This construct is measured by the firm's ability to identify, exploit and create technology opportunities which, in turn, implies changes in a firm's strategic position. The

measurement of this construct is developed as a new scale from the definition and literature review including a five-item scale.

Product innovativeness implementation. Product innovativeness implementation is defined as the operation of the firm to create and develop eco-friendly products that respond to customer needs that lead to raising the quality and productivity levels of procedures (Ehlen et al., 2013). This construct is measured by the firm's perspective to creation and development of goods design to generate higher quality for a firm's products, which do not affect the environment such as an ecofriendly production process and eco-friendly product development by using resources. The measurement of this construct is developed as a new scale from the definition and literature review including a five-item scale.

Social responsibility concentration. Social responsibility concentration is defined as an organizational response to social requirements with awareness, support to community, and other social groups for supporting the survival and success of the organization (Kotler and Lee, 2005). That the item ask for the perceptions of social responsibility concentration of the firm in actions that have an impact on the business operation, society and the environment. The measurement of this construct is developed from the definition and literature review, and is adapted from Robkob and Ussahawanitchakit (2009), including a four-item scale.

Environmental process development. Environmental process development is defined as the ability of the firm based on the environmental changes in organizational operation on environmental pollution (Sharma et al.,2010). This construct is measured by the perceiving and concentration of environmental protection such as renewable technologies, the use and maintenance of natural resources and recyclable resources. The measurement of this construct is developed as a new scale from the definition and literature review including a five-item scale.

Consequent Variables

The second category is the consequences of sustainable marketing strategy, namely, product creative, customer acceptance and marketing success. The measure of each consequential variable conforms to its definition and relative literatures, discussed as follows.

Product creativity. Product creativity is defined as the outcome of creative processes of the firm to new product design and presentation of a variety of goods and can achieve competitive advantage (Landwehr and Herrmann, 2015). This construct is measured by the ability of a firm to create a new product design to contribute to the revenue of the business. The measurement of this construct is developed as a new scale from the definition and literature review including a four-item scale.

Customer acceptance. Customer acceptance is defined as the achievement of customer needs fulfill that more quickly than a competitor to attract new users and retain customer loyalty (Wei and wang, 2011). This construct is measured by the firm can create product quality of the business for customer loyalty. The measurement of this construct is developed as a new scale from the definition and literature review including a four-item scale.

Antecedent Variables

Lastly, the third category is the three antecedents of sustainable marketing strategy comprised of top-management vision, firm resource readiness, and competitive force. All antecedent variables align to their definitions and prior literature. The measure of each variable is discussed as follows.

Top-management vision. Top-management vision is defined as the goal and direction of executive view with the new ideas, which is the vision to make the organization goals and sustain growth (Chollet et al., 2012). This construct is measured by the perception of executive vision for long-term operations using the concept of fundamental objective or strategic direction. The measurement scale of this construct is adapted from Tontiset and Ussahawanitchakit (2010), including a four-item scale.

Firm resource readiness. Firm resource readiness is defined as firm ability in assets both tangible and intangible for supporting the process of the firm and result in marketing success (Pansuppawat and Ussahawanitchakit, 2011). This construct is measured by the level of sufficient and available resources, technology allocation to support strategy implementation, and the effective and efficient application of resources in performance. The measurement scale of this construct is adapted from Pansuppawatt and Ussawanitchakit (2011), including a four-item scale.

Competitive force. Competitive force is defined as a set of perceived influences of industry structure that collectively determines strategy of competing firms in a given industry (Birkinshaw et al., 2005). This construct is measured by the perception of the chief executive officer pertaining to the level of competitive influences that affect the firm operation in terms of competitive intensity. The measurement scale of this construct is developed is adapted from Galbreath and Galvin (2008), including a four- item scale.

Control Variables

This research also adds two control variables are included: firm age and firm size are the characteristics that may influence the hypothesized relationships. The measurement of each control variable is detailed as follows.

Firm age. Firm age is defined as normally associated with business experience, competitiveness and capability. Firm age is measured by the number of years that a firm has been in business (Biddle, Hilary, and Verdi, 2009), and can be measured by the length from the establishment year to the current year of study. It is a critical control variable that may have effects on sustainable marketing strategy. Therefore, in this study, firm age is a dummy variable in which 0 means the firm has been in business less than or equal to 10 years, and 1 means the firm has been in business for more than 10 years (Delmotte and Sels, 2008).

Firm size. Firm size is defined as the operating capital of the firm. Firm size can be measured by the degree of number of employees currently working and registered in the firm as a proxy. It is a significant variable affecting sustainable marketing strategy. Hence, in this study, firm size is a dummy variable in which 0 means a firm has an operational capital lower than or equal to 50,000,000 baht, and 1 means has an operational capital of more than 50,000,000 baht (Rothaermel and Deeds, 2006; Tontiset and Ussahawanitchakit, 2010).

Methods

This research collects data from a questionnaire mail survey in which all constructs in the conceptual frameworks adapt to existing scales from an extensive literature review. Consequently, a pretest method is appropriately conducted to assert the validity and reliability of the questionnaire. After that, five academic experts critique a study of the instruments. Then, comments are made to improve the questionnaire to attain the complete possible scale measure. A pre-test method is appropriately conducted to assert the validity and reliability of the questionnaire. In this study, one of thirty ISO 14001 certified manufacturing businesses is chosen from a sampling frame that is the marketing director and the marketing manager, for the marketing activities of ISO 14001 certified manufacturing businesses in Thailand. Also, the process of pre-test to verify the validity and reliability of each of the measures employed in the questionnaire is to be discussed below.

Validity

The purpose of validity and reliability measure is to create a better instrument in truthfulness, credibility, or believability of the findings in this study. Therefore, the instrumental development is a very important procedure that is based on each of variables, their definitions and previous literature covered this study (Churchill, 1979; Gerbing and Anderson, 1988).

Validity. Validity is defined as the degree to which the instrument correctly measures the data from the questionnaire (Hair, Black, Babin, Anderson, and Tatham, 2010). In order to verify whether this measure addresses absoluteness and accuracy, this study examines the content and construct which can validate the survey questionnaire. In this study, validity is appropriate for accurately confirming the concept or construct of the study. Two types of validity, content validity and construct validity were tested.

Content Validity

Content Validity is the extent to which a measurement reflects the specific intended construct of content (Carmines and Zeller, 1991). Therefore, five academics, who are proficient in marketing fields, are asked for providing face validity and giving some suggestions to ensure that all items contained in the questionnaire are the most appropriate to measure the concept of the variables. This study reaches content validity sufficiency by three expert's suggestions as distinguished scholars (Gable and Wolf, 1993). The result of item-objective congruence (IOC) equals $0.64 \geq 0.50$ is acceptable (Turner and Carlson, 2003). After these five experts designed the questionnaire, they provided comments and improvements; and they then chose the best possible scale of measure corresponding with the conceptual definitions.

Construct validity

Construct validity refers to a set of measured items that reflect the latent theoretical constructs that those items are designed to measure (Hair, Babin and Anderson, 2010). Moreover, this operation is verified by using factor analysis (CFA) to test the validity of the items in the questionnaire. As mentioned above, each of the items had already been assessed by academic experts to ensure content validity.

Convergent validity refers to the degree to which two measures are designed to measure the same construct related to that convergence, and whether it is found in the two measures are highly correlated (Kwok and Sharp, 1998). Thus, to test the convergent validity, this research used confirmatory factor analysis (CFA), average variance extracted (AVE) are used to examine the construct validity of the data in the questionnaire (Fischer, Rudick, Cutter, and Reingold, 1999). The results of this study concluded that average variance extract (AVE) for all 10 constructs is since from 0.545 to 0.786. However, according to Fornell and Larcker (1981), the cut-off value of AVE 0.40 is acceptable. Hence, the AVE of all construct indicates adequate convergent validity.

Reliability

Reliability refers to the measurement level in the survey that is true, and observed variables don't have any errors, which elect the degree of internal consistency between the many variables (Hair et al., 2010). This research tests the reliability of each construct by employing Cronbach's alpha coefficient, composite reliability, and correlation analysis.

The Cronbach's alpha coefficient measured the reliability of the subjects' answers concerning all items of the questionnaire, producing values that range from .00 to 1.00 (Hernandez, Fernandez and Baptista, 2010). Cronbach's alpha coefficient is commonly used as a measure of the internal consistency or reliability of the constructs (Hair et al., 2010). Thus, it is applied to evaluate the reliability. As recommended by Nunnally and Bernstein (1994), the value of Cronbach's alpha coefficient is between zero and one, of which 0.07 (Hair et al., 2010) and above indicates acceptable reliability, as widely accepted are shown in Table 21.

Composite reliability (CR) is as an estimate of a constructs internal consistency. Unlike Cronbach's alpha, composite reliability does not assume that all indicators are equally reliable, making it more suitable for SEM, which prioritizes indicators according to their reliability during model estimation. In this study, all variables have composite reliability more than 0.70 are acceptable. The consistent with the guidance of Nunnally and Bernstein (1994). Therefore, the reliability of this set questionnaire was accepted, as CR values shown in Table 22.

Correlation analysis. The important component of statistical analysis is a correlation analysis of variables. Generally, correlation analysis is able to verify relations among variables and provide a correlation matrix that shows the intercorrelation among all variables. If the variables are highly correlated, there may be a multicollinearity problem, which was tested by Pearson correlation analysis that was applied to examine the relationship between an independent variable and dependent variable. As the results, it shows the relationship between variables and multicollinearity. Importantly, when the relationships between variables are equal or greater than 0.80, it indicates a multicollinearity problem (Hair et al., 2010). values shown in Table 20.

Statistical Techniques

In this study, before hypotheses testing, all of the raw data will be checked, encoded, and recorded in a data file. After that, the underlying assumption of the structural equation model was tested. This process involves checking the normal distribution for the underlying assumption of SEM. This study used several statistical techniques, including descriptive and inferential statistical techniques such as mean, standard deviation, t-test, ANOVA, correlation analysis, measurement model, structural model, and multi-group analysis. For the criteria used to discuss the results of data analysis. It is shown in Chapter IV for the result of the data analysis.

This study uses structural equation modeling (SEM) to analyze the data derived from respondents. Besides, SEM can be used to examine the total effect of exogenous variables on the endogenous variable in the structural model. The software used for analyzing the data in this study was AMOS 22 and SPSS 22. The first step was to test the measurement model. This step examines the validity of a measurement model including convergent validity and construct validity. Further, assessment of the fit of a measurement model between the observed and estimated covariance matrix is taken. Confirmatory factor analysis technique is used to assess fit and validity. The second step was to test the theoretical framework. This step verifies the fit of the hypothetical framework by comparing the observed covariance matrix and the estimated covariance matrix. Also, nine hypotheses for independent and consequence variables, mediating variables, and antecedent variable are tested in this step.

Univariate Normality Test

The normality test used in this study was performed to measure skewness and kurtosis along with standard error of skewness and standard error of kurtosis. Nonetheless, skewness is a measurement of how irregular the probability distribution is in relation to a normal distribution. Before testing a hypothesis, it must also undergo Kurtosis, which is the process to evaluate the combined distribution of data in the tails.

According to Kline (2005) has recommended that in terms of absolute values skewness will be considered as highly expressed if it is more than 3.00. In addition, the research of Hair and et al. (2006) consider the skewness value, which is not more than ± 2 is considered within acceptable criteria.

Meanwhile, the absolute values of kurtosis greater than ± 2.00 can be considered as problematic (George and Mallery, 2010). Additionally, skewness was used to measure the degree and direction of asymmetry. Acceptable asymmetric distribution, such as a normal distribution, has a skewness and kurtosis value not more than 1.00 (Osborne, 2002).

In this study, consider the skewness value, it was found that within the range of 0.136 to 0.967, which is not more than ± 2 is considered within acceptable criteria (Hair et. al, 2006). While, the kurtosis, falls within the range -0.847 to -1.995, which is not more than ± 2 is considered within acceptable criteria (George and Mallery, 2010).

Variance Inflation Factors (VIF's)

Variance inflation factors (VIF's) are applied to test for the severity of multicollinearity among the independent variables and Pearson's correlation. For this reason, to identify the multicollinearity problem by employing VIF's and tolerance value as indicators to indicate a high degree of multicollinearity among the independent variables, VIF's is directly related to the tolerance value. Therefore, provides an indication that measures how much the variance of an estimated regression coefficient is increased as a result of collinearity. These large values of VIF's indicate a high degree of multicollinearity among independent variables, then in consequence of all of VIF's values should be smaller than 10 to be considered that the associations among the independent variables are not problematic (Hair et al., 2010). This study, shows that the maximum value of VIF's = 10, which is not exceeding 10 in the scale (Hair et al., 2010). Therefore, both VIF's and correlations confirms that multicollinearity problems do not occur in this research.

Structural Equation Model (SEM)

Structural equation modeling is a multivariate statistical analysis technique that is used to analyze structural relationships. This method estimates the multiple and interrelated dependence in a single analysis. In this analysis, two types of variables are used exogenous variables and endogenous variables. Endogenous variables are equivalent to dependent variables and are equal to the independent variable. Structural equation model is often visualized by graphical path diagram. In this study, path analysis is used to assess how well the scale measures the concept in a measurement model including a path diagram is utilized to evaluate the suitability of the measurement model for each construct. The model relevancy is indicated by the goodness-of-fit value between the hypothesized model and the samples' data. The statistical indexes indicated goodness-of-fit value include Chi- square, Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Relative Fit Index (RFI) and Incremental Fit Index (IFI). Hair and colleagues (1998) have identified that careful consideration presents assessing the model's goodness-of-fit is more a relative process than one based on an absolute criterion. For the testing results, the chi-square value should be nonsignificant to imply the hypothesized model is well-fitted with the samples' data. At a lower value than 0.05 is recommended for RMSEA (Hair et al., 2010). The others of the goodness-of-fit index such as GFI, NFI, CFI, RFI, and Incremental IFI are considered to the measuring range from 0 (no fit at all) to 1.00 (perfect fit), but the well-fitted level is 0.90 or higher (Diamantopoulus and Siguaw, 2000).

Summary

This chapter details the study methods in this study for data collection and will investigate all constructs in the conceptual framework to answer the research questions. The contents involve the population, sample selection, and data collection procedure, including population and sample, data collection, and test of non-response bias. The population and sample are the 468 firms of ISO 14001 certified manufacturing businesses in Thailand, drawn from a database of Thai Industrial

Standards Institute, Ministry of Industry. The key informants completing the questionnaire are the marketing director, marketing manager, and general manager. Moreover, the variable measurements are followed for each of all variables in the conceptual frameworks. In addition, instrumental verification, including the test of validity and reliability, and the statistical analysis is presented. Finally, Table 5 concludes the definition of each construct, operational variables, scale sources and sample questions, and items. Following this, the next chapter analyzes the results and hypotheses testing of this study. The remaining part of the chapter focuses on hypotheses testing and using equation structural model statistical analysis techniques.

Table 5 Definitions and Operational Variables of Constructs

Construct	Definition	Operational Variables	Scale Source
	Dependent variable		
Marketing success	The firm's outcomes of marketing strategy with regards to financial and non-financial performance	The firm's outcomes in their market segment over the past year such as sales growth, market share, profitability the increasing market share and ability to maintain customer satisfaction and customer loyalty	New Scale
	Independent variables		
Technology adaptation orientation	The firm's emphasis on new tools and changing management style to develop the modern equipment systems, which can respond to a customer's need and can achieve competitive advantage	The firm's ability to identify, exploit and create technology opportunities which, in turn, implies changes in a firm's strategic position	New Scale

Table 5 Definitions and Operational Variables of Constructs (Continued)

Construct	Definition	Operational Variables	Scale Source
		Independent variables (Con.)	
Product innovativeness implementation	The operation of the firm to create and develop eco-friendly products respond to customer needs that lead to raising the quality and productivity levels of procedures	The firm's perspective to create and development of goods design to generate higher quality for a firm's products, which do not affect the environment such as an eco-friendly production process and eco-friendly product development by using resources	New Scale
Social responsibility concentration	Organizational response to social requirement with awareness, supporting to community, and other social groups for supporting the survival and success of the organization	The actions that have a participant in the business operation, society, and the environment	Robkob and Ussahawanitchakit (2009)

Table 5 Definitions and Operational Variables of Constructs (Continued)

Construct	Definition	Operational Variables	Scale Source
		Independent variables (Con.)	
Environmental process development	The ability of the firm based on the environment changes in organizational operation on environmental pollution	The perceiving and concentration of environmental protection such as renewable technologies, the use and maintenance of natural resources and recyclable resources	New Scale
		Mediating variables	
Product creativity	The outcome of creative processes of the firm to new product design and presentation of a variety of goods and can achieve competitive advantage	The ability of a firm to create the new product design to contribute to the environmentally friendly	New scale
Customer acceptance	The achievement of customer need fulfills that more quickly than competitor in order to attract new users and retain customer loyalty	The ability of the firm to create the product quality of the environmentally friendly for customer loyalty	New scale

Table 5 Definitions and Operational Variables of Constructs (Continued)

Construct	Definition	Operational Variables	Scale Source
		Antecedent variables	
Top-management vision	The goal and direction of executive view with the new ideas, which is vision to make the organization goals and sustain growth	The perception of executive vision that focus on social responsibility and environmental that the business to achieve log-term sustainable success	Tontiset and Ussahawanitchakit (2010)
Firm resource readiness	The firm ability in asset both tangible and intangible for supporting process of firm and result in organizational success	The level of sufficient and available resources, technology allocation to support strategy implementation, and the effective and efficient application of resources in performance	Pansuppawat and Ussahawanitchakit (2011)
Competitive force	The perceived influences of industry structure that collectively determines the strategy of competing firms in a given industry	The perception of the chief executive officer pertaining to the level of competitive influences that affect the firm operation in terms of competitive intensity	Galbreath and Galvin (2008)

Table 5 Definitions and Operational Variables of Constructs (Continued)

Construct	Definition	Operational Variables	Scale Source
		Control variables	
Firm age	Numbers of years that firm operates in business	Dummy variable 0 = below and equal to 10 years, 1 = higher than 10 years	Delmotte and Sels (2008)
Firm size	Value of business operational capitals	Dummy variable 0 = below and equal to 50,000,000 Baht, 1 = higher than 50,000,000 Baht	Rothaermel and Deeds (2006)

CHAPTER IV

DATA ANALYSIS

This chapter presents and discusses the results obtained from the statistical analysis performed to determine the set of factors that are critical for the successful development of sustainable marketing strategy among ISO 14001 certified manufacturer businesses in Thailand and their impact on marketing success. The sample profile and results are presented. The following sections of the chapter reveal findings from the different statistical analyses performed on the data obtained from the questionnaires. The results obtained from the factor analysis conducted for the variables are presented and discussed. In addition, the results of item reliability using Cronbach's alpha coefficients for each factor are shown and reviewed. The chapter also examines the existing relationships between constructs identified by a Pearson correlation analysis. The final section of this chapter gives the results obtained from the structural equation modeling (SEM), which was used to test the hypotheses proposed in the theoretical framework model, and to determine the relationships among variables.

The total numbers of the observed variable in this study are forty. These variables and abbreviations of them and their constructs are already shown in this chapter. Variables in this study are classified into two groups: twelve observed variables are exogenous variables, and twenty-eight observed variables are endogenous variables.

For exogenous variables, they are grouped into three constructs. They are a top-management vision (four variables), firm resources readiness (four variables), and competitive force (four variables). Endogenous variables are grouped into seven constructs. They are technology adaptation orientation (four variables), product innovativeness implementation (four variables), social responsibility concentration, (four variables), environmental process development (four variables), product creativity (four variables), customer acceptance (four variables), and marketing success (four variables). Abbreviations of all constructs and observed variables in this study are presented in Table 6.

Table 6 Abbreviations of Exogenous Latent and Endogenous Latent Constructs and Variables

Constructs	Abbreviation	
	Construct	Observed Variable
Exogenous Latent		
Top- Management Vision	TMV	TMV1, TMV2, TMV3, and TMV4
Firm Resource Readiness	FRR	FRR1, FRR2, FRR3, and FRR4
Competitive Force	CF	CF1, CF2, CF3, and CF4
Endogenous Latent		
Technology Adaptation Orientation	TAO	TAO1, TAO2, TAO3, and TAO4
Product Innovativeness Implementation	PII	PII1, PII2, PII3, and PII4
Social Responsibility Concentration	SRC	SRC1, SRC2, SRC3, and SRC4
Environmental Process Development	EPD	EPD1, EPD2, EPD3, and EPD4
Product Creativity	PC	PC1, PC2, PC3, and PC4
Customer Acceptance	CA	CA1, CA2, CA3, and CA4
Marketing Success	MS	MS1, MS2, MS3, and MS4

Demographic Characteristics of Respondent and Firm Characteristics

In this study, ISO 14001 certified manufacturing businesses in Thailand as the unit of analysis and the key informants certainly are the marketing directors, marketing manager, and general manager. They are also called respondents because they represent their firm and complete the questionnaire of this study. The respondent characteristics are described by the demographic characteristics of respondents including gender, age, level of education, working experience, and current position. The demographic characteristics of 208 respondents are as the following. Approximately 66.80 percent of respondents are male. The span of the age of respondents is 31 to 40 years old (36.50 percent). A total of 63.00 percent earned a

higher than bachelor's degree of the respondents, 50.00 percent have work experience more than 15 years. Finally, most of the respondents hold a position as other (38.90 percent) such as senior managers, sale executive, president, marketing manager (26.90 percent), general manager (30.30), and marketing director (3.80 percent) respectively.

The result of the demographic characteristics of 208 ISO 14001 certified manufacturing businesses in Thailand as follow. For Table A1 and Table A2 in Appendix A, most of the business owner types are company limited (19.90 percent), partnership limited (45.20 percent), and public company limited (40.90 percent). The type of manufacturing industry is industrial (29.30 percent). The number of employees is more than 150 people (61.10 percent), the total operatiing capital of the firm is more than 250,000,000 baht (45.20 percent), the period of time in operation business is more than 20 years (29.30 percent), the period of time as an ISO 14001certified business is 3-5 years (46.20 percent), Finally, the award related with in environmental management (78.40 percent). Then, a demographic profile of respondents of this research is presented in Table 7 below.

Table 7 Demographic Characteristics of Respondents

Descriptions	**Categories**	**Frequencies**	**Percent (%)**
1. Gender	1. Male	139	66.80
	2. Female	69	33.20
	Total	208	100
2. Age	1. Less than 30 years old	12	5.80
	2. 31-40 years old	76	36.50
	3. 41-50 years old	67	32.20
	4. More than 50 years old	53	25.50
	Total	208	100

Table 7 Demographic Characteristics of Respondents (Continued)

Descriptions	Categories	Frequencies	Percent (%)
3. Education Levels	1. Bachelor's Degree or undergraduate	77	37.00
	2. Higher than Bachelor' Degree	131	63.00
Total		208	100
4. Working Experience	1. Less than 5 years	14	6.70
	2. 6-10 years	25	12.00
	3. 11-15 year	65	31.30
	4. More than 15 years	104	50.00
Total		208	100
5. Current Position	1. Marketing Director	8	3.80
	2. Marketing Manager	56	26.90
	3. General Manager	63	30.30
	4. Other	81	38.90
Total		208	100

Testing Validity of Observed Variable

The concept of testing the validity of the observed variable is to the first stage investigate all variables in the conceptual framework. This section also reveals the results of examining the validity of the observed variables in this study. There are ten constructs (three exogenous constructs and seven endogenous constructs) for sustainable marketing strategy and product creativity, customer acceptance, and marketing success model.

In this section uses analysis of variance (ANOVA) to test the mean difference and confirmatory factor analysis (CFA) technique to test the validity of variable. Two variables (firm age and firm size) are investigated mean differences among groups for each variable. The objective of testing the mean difference is to determine whether these two variables should be added to the model as control variables.

1) Comparing Mean Difference of Each Variable

This section presents testing mean differences of two variable which are firm age and firm size by using the analysis of variance (ANOVA). If the finding does not significate difference of the mean of all variables, the two variables will not be added into the conceptual framework for depreciating the complexity of the model.

Differences of Firm Age

In this study, test mean differences between different firm Age. There are two dummy variables including 1) less than 10 years and 10-15 years 2) 16-20 years and more than 20 years. Therefore, mean differences among four times period are tested, and the findings are presented in Table 8. An underlying assumption of ANOVA states that variances must be equal across groups. The finding of Levene's test shows that all ten constructs except SRC, FRR, and CF have equal variances across groups at a level of significance 0.05. The results of mean differences show that ten constructs expect SRC, FRR, and CF do not have mean differences among firm age at a level of significance 0.05. It shows that firm age has a significant effect on the marketing success. The mean differences among firm age are tested, and the finding is shown in Table 8. Therefore, it can be concluded from the analysis that different types of firm age have an impact on the analysis of models. Thus, this variable will be included from the model.

Table 8 Mean Difference among Firm Age

Construct	Levene's Test	p-value	F	p-value
TAO	34.023	0.000	7.363	0.007**
PII	39.725	0.000	6.535	0.011**
SRC	1.721	0.491	2.675	0.103
EPD	10.721	0.010	3.946	0.048**
PC	21.370	0.000	4.978	0.027**
CA	23.642	0.000	6.584	0.011**
MS	21.652	0.000	5.927	0.016**
TMV	5.190	0.044	14.784	0.000**
FRR	0.385	0.553	1.590	0.209
CF	5.223	0.021	3.738	0.055

Note: ** is significate level at 0.05.

Differences in Firm Size

In this study, test mean differences between different of firm Age. There are two dummy variables including 1) less than 50,000,000 Baht and 50,000,001-150,000,000 Baht 2) 150,000,001-250,000,000 Baht and more than 250,000,000 Baht. Therefore, mean differences among four times period are tested, and the findings are presented in Table 8. An underlying assumption of ANOVA states that variances must be equal across groups. The finding of Levene's test shows that all ten constructs TAO, PII, SRC, EPD, PC, CA, MS, TMV, FRR, and CF have equal variances across groups at a level of significance 0.05. The results of mean differences show that ten constructs TAO, PII, SRC, EPD, PC, CA, MS, TMV, FRR, and CF have mean differences among firm size at a level of significance 0.05. It shows that firm size has a significant effect on the marketing success. The mean differences among firm size are tested, and the finding is shown in Table 9. Therefore, it can be concluded from the analysis that different types of firm size do not have an impact on the analysis of models. Thus, this variable will be excluded from the model.

Table 9 Mean Difference among Firm Size

Construct	Levene's Test	p-value	F	p-value
TAO	1.020	0.314	0.147	0.702
PII	1.038	0.310	0.132	0.716
SRC	1.786	0.183	0.146	0.703
EPD	1.269	0.261	0.105	0.746
PC	0.024	0.878	0.037	0.849
CA	0.127	0.721	0.013	0.909
MS	0.311	0.578	0.173	0.678
TMV	4.604	0.033	1.912	0.168
FRR	2.611	0.108	0.103	0.749
CF	1.241	0.267	0.234	0.629

Confirmatory Factor Analysis (CFA)

In this section, the study shows confirmatory factor analysis of all constructs base on sustainable marketing strategy, which consists of four purposed dimensions: technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development; and three critical consequences which are product creativity, customer acceptance, and marketing success. The antecedents of sustainable marketing strategy including top-management vision, firm resource readiness, and competitive force. This study uses the confirmatory factor analysis (CFA) technique to test validity for testing the validity of observed variables in this study.

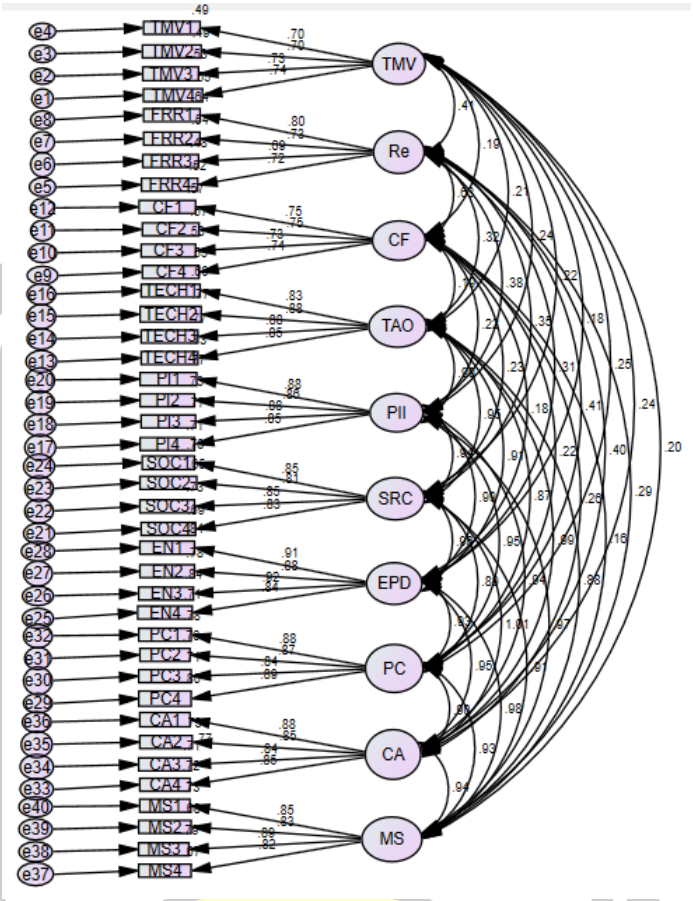


Figure 5 Confirmatory Factor Analysis of Model
Chi-square= 1444.171, df=691, p=0.000

Cmindf= 2.090, GFI=0.760, RMSEA = 0.073

NFI=0.840, CFI=0.909, IFI=0.910, RFI=0.819

The results of confirmatory factor analysis (CFA) are shown in Figure 5. In Figure 5, in this study fixes parameter TMV1, FRR1, CF1, TAO1, PII1, SRC1, EPD1, PC1, CA1, and MS1 to 1 as a reference indicator of the model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). The benefit of a fixed parameter is a more straightforward comparison of a the magnitude of highest reliability between observed variables in the model. Chi-Square test is not significantly different from zero at a level 0.05 (χ_2/ df= 2.090, p=0.000), root mean square error of approximation (RMSEA) is 0.073 and goodness of fit index (GFI) is 0.760. It can be implied that there is a goodness of fit between observed data and estimated model. All standardized factor loading of each observed variable has ranged from 0.932 (EPD1)

to 0.691 (TMV3). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of variance of construct explained by an observed variable. R^2 has ranged from 0.868 (EDP1) to 0.473 (FRR3). It can be concluded that all observed variables should be included in the further analysis. Therefore, the confirmatory factor analysis is conclusion as follows.

Technology Adaptation Orientation

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter TAO1 to 1 as a reference indicator of the odel. The table 10 shows that the chi-square test is not significantly different zero at a level 0.05 (χ2/ df= 4.907, p=0.007), root mean square error of approximation (RMSEA) is 0.137 and goodness of fit index (GFI) is 0.976. It can be implied that there is a goodness of fit between observed data and the estimated model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.823 (TAO1) to 0.891 (TAO2). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of the variance of construct explained by an observed variable. R^2 has ranged from 0.678 (TAO1) to 0.795 (TAO2). It can be concluded that all observed variables should be included in the further analysis.

Table 10 Standardized Factor Loading, t-value, and R^2 of Technology adaptation orientation

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
TAO1	0.823	-	-	0.678
TAO2	0.891	0.071	15.562***	0.795
TAO3	0.846	0.074	14.433***	0.715
TAO4	0.878	0.071	15.230***	0.770
χ2/df = 4.907 p = 0.007 GFI = 0.976 RMSEA = 0.137				

Note: *** is significate level at 0.01.

Product Innovativeness Implementation

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (PII1) to 1 as a reference indicator of the model. The table 11 shows that the chi-square test is not significantly different zero at a level 0.05 ($\chi 2$/ df= 7.337, p=0.001), root mean square error of approximation (RMSEA) is 0.175 and goodness of fit index (GFI) is 0.967. It can be implied that there is a goodness of fit between observed data and the estimated model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.836 (PII1) to 0.886 (PII2). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of variance of construct explained by an observed variable. R^2 has ranged from 0.699 (PII1) to 0.785 (TAO2). It can be concluded that all observed variables should be included in the further analysis.

Table 11 Standardized Factor Loading, t-value, and R^2 of Product Innovativeness Implementation

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
PII1	0.836	-	-	0.699
PII2	0.886	0.066	15.937***	0.785
PII3	0.882	0.066	15.828***	0.778
PII4	0.856	0.066	15.124***	0.734
$\chi 2$/df = 7.337 p = 0.001 GFI = 0.967 RMSEA = 0.175				

Note: *** is significate level at 0.01.

Social Responsibility Concentration

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (SRC1) to 1 as a reference indicator of the model. The table 12 shows that chi-square test is not significantly different zero at a level 0.05 ($\chi 2$/ df= 0.724, p=0.485), root mean square error of approximation

(RMSEA) is 0.000 and goodness of fit index (GFI) is 0.997. It can be implied that there is a goodness of fit between observed data and estimated model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.826 (SRC4) to 0.847 (SRC3). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of the variance of construct explained by an observed variable. R^2 has ranged from 0.683 (SRC4) to 0.717 (SRC3). It can be concluded that all observed variables should be included in the further analysis.

Table 12 Standardized Factor Loading, t-value, and R^2 of Social Responsibility Concentration

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
SRC1	0.843	-	-	0.711
SRC 2	0.835	0.070	14.247***	0.697
SRC 3	0.847	0.070	14.531***	0.717
SRC 4	0.826	0.071	14.032***	0.683
χ_2/df = 0.724 p = 0.485 GFI = 0.997 RMSEA = 0.000				

Note: *** is significate level at 0.01.

Environmental Process Development

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (EPD1) to 1 as a reference indicator of the model. The table 13 shows that the chi-square test is not significantly different zero at a level 0.05 (χ_2/ df= 0.409, p=0.664), root mean square error of approximation (RMSEA) is 0.000 and goodness of fit index (GFI) is 0.998. It can be implied that there is a goodness of fit between observed data and the estimated model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.845 (EPD4) to 0.932 (EPD1).

All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of the variance of construct explained by an observed variable. R^2 has ranged from 0.714 (EPD4) to 0.868 (EPD1). It can be concluded that all observed variables should be included in the further analysis.

Table 13 Standardized Factor Loading, t-value, and R^2 of Environmental Process Development

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
EPD1	0.932	-	-	0.868
EPD2	0.887	0.045	20.621***	0.787
EPD3	0.893	0.045	20.953***	0.797
EPD4	0.845	0.051	18.282***	0.714
χ_2/df = 0.409 p = 0.664 GFI = 0.998 RMSEA = 0.000				

Note: *** is significate level at 0.01.

Product Creativity

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (PC1) to 1 as a reference indicator of the model. The table 14 shows that chi-square test is not significantly different zero at a level 0.05 (χ2/ df= 2.157, p=0.116), root mean square error of approximation (RMSEA) is 0.075 and goodness of fit index (GFI) is 0.989. It can be implied that there is a goodness of fit between observed data and estimated model. The selection of variables as a reference an indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.831 (PC3) to 0.901 (PC4). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of variance of construct explained by an observed variable. R^2 has ranged from 0.690 (PC3) to 0.813 (PC4). It can be concluded that all should be included in the further analysis.

Table 14 Standardized Factor Loading, t-value, and R^2 of Product Creativity

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
PC1	0.878	-	-	0.771
PC2	0.875	0.056	17.290***	0.766
PC3	0.831	0.059	15.687***	0.690
PC4	0.901	0.056	18.241***	0.813
χ_2/df = 2.157 p = 0.116 GFI = 0.989 RMSEA = 0.075				

Note: *** is significate level at 0.01.

Customer Acceptance

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (CA1) to 1 as a reference indicator of the model. The table 15 shows that chi-square test is not significantly different zero at a level 0.05 (χ2/ df= 0.756, p=0.470), root mean square error of approximation (RMSEA) is 0.000 and goodness of fit index (GFI) is 0.996. It can be implied that there is a goodness of fit between observed data and the estimated model. The selection of variables as a reference an indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.845 (CA3) to 0.871 (CA1). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of the variance of construct explained by an observed variable. R^2 has ranged from 0.713 (CA3) to 0.758 (CA1). It can be concluded that all observed variables should be included in the further analysis.

Table 15 Standardized Factor Loading, t-value, and R^2 of Customer Acceptance

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
CA1	0.871	-	-	0.758
CA2	0.855	0.061	15.896***	0.732
CA3	0.845	0.062	15.560***	0.713
CA4	0.850	0.062	15.734***	0.723
χ^2/df = 0.756 p = 0.470 GFI = 0.996 RMSEA = 0.000				

Note: *** is significate level at 0.01.

Marketing Success

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (MS1) to 1 as a reference indicator of the model. The table 16 shows that chi-square test is not significantly different zero at a level 0.05 (χ2/ df= 4.044, p=0.018), root mean square error of approximation (RMSEA) is 0.121 and goodness of fit index (GFI) is 0.982. It can be implied that there is a goodness of fit between observed data and estimated model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.824 (MS2) to 0.867 (MS3). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of the variance of construct explained by an observed variable. R^2 has ranged from 0.678 (MS2) to 0.753 (MS3). It can be concluded that all observed variables should be included in the further analysis.

Table 16 Standardized Factor Loading, t-value, and R^2 of Marketing Success

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
MS1	0.866	-	-	0.750
MS2	0.824	0.065	14.712***	0.678
MS3	0.867	0.065	15.973***	0.753
MS4	0.837	0.065	15.099***	0.701
χ_2/df = 4.044 p = 0.018 GFI = 0.982 RMSEA = 0.121				

Note: *** is significate level at 0.01.

Top-Management Vision

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (TMV1) to 1 as a reference indicator of the model. The table 17 shows that chi-square test is not significantly different zero at a level 0.05 (χ2/ df= 1.049, p=0.350), root mean square error of approximation (RMSEA) is 0.015 and goodness of fit index (GFI) is 0.995. It can be implied that there is a goodness of fit between observed data and estimated model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.691 (TMV3) to 0.742 (TMV1). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of the variance of construct explained by an observed variable. R^2 has ranged from 0.477 (TMV2) to 0.551 (TMV4). It can be concluded that all observed variables should be included in the further analysis.

Table 17 Standardized Factor Loading, t-value, and R^2 of Top-Management Vision

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
TMV1	0.742	-	-	0.483
TMV2	0.740	0.119	8.650***	0.477
TMV3	0.691	0.114	8.632***	0.547
TMV4	0.695	0.120	8.231***	0.551
χ_2/df = 1.049 p = 0.350 GFI = 0.995 RMSEA = 0.015				

Note: *** is significate level at 0.01.

Firm Resources Readiness

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (FRR1) to 1 as a reference indicator of the model. The table 18 shows that chi-square test is not significantly different zero at a level 0.05 (χ2/ df= 3.825, p=0.022), root mean square error of approximation (RMSEA) is 0.117 and goodness of fit index (GFI) is 0.983. It can be implied that there is a goodness of fit between observed data and the estimated model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.688 (FRR3) to 0.828 (FRR1). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of variance of construct explained by an observed variable. R^2 has ranged from 0.473 (FRR3) to 0.686 (FRR1). It can be concluded that all observed variables should be included in the further analysis.

Table 18 Standardized Factor Loading, t-value, and R^2 of Firm Resources Readiness

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
FRR1	0.828	-	-	0.686
FRR2	0.708	0.088	9.790***	0.501
FRR3	0.688	0.090	9.518***	0.473
FRR4	0.719	0.088	9.944***	0.518
χ_2/df = 3.825 p = 0.022 GFI = 0.983 RMSEA = 0.117				

Note: *** is significate level at 0.01

Competitive Force

The finding of confirmatory factor analysis (CFA) is shown in Figure 5. In Figure 5, in this study fixes parameter (CF1) to 1 as a reference indicator of the model. The table 19 shows that chi-square test is not significantly different zero at a level 0.05 (χ2/ df= 0.761, p=0.467), root mean square error of approximation (RMSEA) is 0.000 and goodness of fit index (GFI) is 0.996. It can be implied that there is a goodness of fit between observed data and the estimated model. The selection of variables as a reference indicator should be performed with the highest reliability observation variable in the model (Kline, 2005). Standardized factor loading of each observed variable has ranged from 0.726 (CF1) to 0.758 (CF4). All standardized factor loadings have a significant impact at a level of significance 0.01. Squared Multiple Correlation (R^2) is the percentage of the variance of construct explained by an observed variable. R^2 has ranged from 0.527 (CF1) to 0.574 (CF4). It can be concluded that all observed variables should be included in the further analysis.

Table 19 Standardized Factor Loading, t-value, and R^2 of Competitive Force

Variables	Factor Loading			R^2
	Standardized Factor Loading	S.E.	t	
CF1	0.726	-	-	0.527
CF 2	0.749	0.112	9.454***	0.561
CF 3	0.750	0.111	9.466***	0.563
CF 4	0.758	0.111	9.534***	0.574
χ_2/df = 0.761 p = 0.467 GFI = 0.996 RMSEA = 0.000				

Note: *** is significate level at 0.01.

Descriptive Statistics

In this section, the study shows descriptive statistics of all variables and constructs for all ISO 14001 certified manufacturing businesses in sustainable marketing strategy and marketing success conceptual framework. Descriptive statistics describes the characteristic of empirical data in the quantitative term. In addition, correlation matrices of three frameworks are examined for testing a relationship among constructs.

Descriptive statistics which are mean ($\overline{X}$), Median, Standard deviation (S.D.), skewness (Skew), standard error of skewness (S.E.), kurtosis and standard error of kurtosis (S.E. kur) for all ISO 14001 certified manufacturing businesses in sustainable marketing strategy and marketing success conceptual framework are shown in Table 20.

Table 20 Descriptive Statistic of Sustainable Marketing Strategy and Marketing Success

Construct	All constructs						
	Mean	Median	S.D.	Skewness	S.E.Skew	Kurtosis	S.E.Kur
TAO	4.32	4.00	0.421	0.691	0.169	-1.308	0.336
TAO 1	4.30	4.00	0.461	0.864	0.169	-1.265	0.336
TAO 2	4.33	4.00	0.472	0.720	0.169	-1.496	0.336
TAO 3	4.35	4.00	0.478	0.629	0.169	-1.620	0.336
TAO 4	4.32	4.00	0.468	0.767	0.169	-1.426	0.336
PII	4.32	4.00	0.422	0.662	0.169	-1.383	0.336
PII 1	4.34	4.00	0.474	0.697	0.169	-1.529	0.336
PII 2	4.32	4.00	0.468	0.767	0.169	-1.426	0.336
PII 3	4.33	4.00	0.472	0.720	0.169	-1.496	0.336
PII 4	4.31	4.00	0.463	0.839	0.169	-1.308	0.336
SRC	4.34	4.00	0.420	0.550	0.169	-1.470	0.336
SRC 1	4.33	4.00	0.472	0.720	0.169	-1.496	0.336
SRC 2	4.35	4.00	0.477	0.651	0.169	-1.591	0.336
SRC 3	4.35	4.00	0.478	0.629	0.169	-1.620	0.336
SRC 4	4.36	4.00	0.481	0.585	0.169	-1.674	0.336
EPD	4.36	4.00	0.441	0.526	0.169	-1.578	0.336
EPD 1	4.36	4.00	0.480	0.607	0.169	-1.648	0.336
EPD 2	4.33	4.00	0.221	0.743	0.169	-1.462	0.336
EPD 3	4.35	4.00	0.477	0.651	0.169	-1.591	0.336
EPD 4	4.44	4.00	0.497	0.254	0.169	-1.954	0.336
PC	4.32	4.00	0.424	0.688	0.169	-1.347	0.336
PC 1	4.34	4.00	0.474	0.697	0.169	-1.529	0.336
PC 2	4.31	4.00	0.463	0.839	0.169	-1.308	0.336
PC 3	4.32	4.00	0.467	0.791	0.169	-1.388	0.336

Table 20 Descriptive Statistic of Sustainable Marketing Strategy and Marketing Success (Continued)

Construct	All constructs						
	Mean	Median	S.D.	Skewness	S.E.Skew	Kurtosis	S.E.Kur
PC 4	4.34	4.00	0.474	0.697	0.169	-1.529	0.336
CA	4.36	4.00	0.430	0.483	0.169	-1.574	0.336
CA 1	4.37	4.00	0.483	0.563	0.169	-1.699	0.336
CA 2	4.35	4.00	0.478	0.629	0.169	-1.620	0.336
CA 3	4.36	4.00	0.480	0.607	0.169	-1.648	0.336
CA 4	4.38	4.00	0.485	0.520	0.169	-1.746	0.336
MS	4.29	4.00	0.406	0.825	0.169	-1.081	0.336
MS 1	4.28	4.00	0.452	0.967	0.169	-1.076	0.336
MS 2	4.29	4.00	0.454	0.941	0.169	-1.126	0.336
MS 3	4.32	4.00	0.467	0.791	0.169	-1.388	0.336
MS 4	4.29	4.00	0.456	0.951	0.169	-1.175	0.336
TMV	4.67	4.75	0.374	-0.764	0.169	-0.884	0.336
TMV 1	4.63	5.00	0.484	-0.542	0.169	-1.723	0.336
TMV 2	4.68	5.00	0.479	-0.900	0.169	-0.847	0.336
TMV 3	4.73	5.00	0.447	-1.021	0.169	-0.968	0.336
TMV 4	4.67	5.00	0.472	-0.720	0.169	-1.496	0.336
FRR	4.46	4.50	0.405	0.136	0.169	-1.546	-1.381
FRR 1	4.42	4.00	0.495	0.314	0.169	-1.920	0.336
FRR 2	4.46	4.00	0.500	0.155	0.169	-1.995	0.336
FRR 3	4.52	4.00	0.510	-0.188	0.169	-1.705	0.336
FRR 4	4.44	4.00	0.497	0.254	0.169	-1.954	0.336
CF	4.61	4.75	0.399	-0.475	0.169	-1.381	0.336
CF 1	4.63	5.00	0.483	-0.563	0.169	-1.699	0.336
CF 2	4.57	5.00	0.469	-0.294	0.169	-1.932	0.336

Table 20: Descriptive Statistic of Sustainable Marketing Strategy and Marketing Success (Continued)

Construct	All constructs						
	Mean	Median	S.D.	Skewness	S.E.Skew	Kurtosis	S.E.Kur
CF 3	4.64	5.00	0.490	-0.731	0.169	-1.155	0.336
CF 4	4.61	5.00	0.490	-0.436	0.169	-1.828	0.336

Note: * is significate level at 0.10.
** is significate level at 0.05.
*** is significate level at 0.01.

Means of all variables in Table 20 range from 4.28 (MS1) to 4.73 (TMV3) and means of all constructs range from 4.29 (MS) to 4.67 (TMV). Medians of almost all variables are approximately equaled with their means. To meet the underlying assumption of SEM a variable should have a normal distribution for reliable results of data analysis. The finding shows that the almost constructs is significate in Skewness and Kurtosis test. Thus, the data of sustainable marketing strategy and marketing success framework may encounter a problem of non-normal distribution of variables and constructs. Due to large enough of sample size (N > 200) in data testing, the result of sustainable marketing strategy and marketing success.

Moreover, constructs are robustness and are not impacted by a non-normal distribution. An estimating parameter of in SEM via Maximum likelihood estimation (ML) is convergence and has proper solutions when the sample size is large enough (Boomsma and Hoogland, 2001). Therefore, the findings of sustainable marketing strategy and marketing success are reliable and valid.

Correlation Analysis

The Pearson correlation for bivariate analysis of each variable pair is conducted in this study. The correlation analysis results show a multicollinearity problem and explore the relationships among the variable. Correlation matrices of sustainable marketing strategy and marketing success conceptual framework are

shown in Table 21. A correlation matrix displays the correlations among ten constructs which indicate the relative strength and direction of a linear relationship among constructs in a correlation matrix. In this study shows that in tables 21 also demonstrate a mean (X) and standard deviation (S.D.) of ten constructs in this study. The bivariate correlation procedure is subject to a two-tailed test of statistical significance at 1 level shown as $p < 0.01$.

Therefore, the correlation matrix can prove the correlation between the two variables and verify the multicollinearity problems by the inter-correlations among the independent variables. The results indicate no multicollinearity problems in this study. And the result is lower at 0.80 (Hair et al., 2006). Accordingly, the evidence suggests that there are significant relationships between sustainable marketing strategy and marketing success in all ISO 14001 certified manufacturing businesses ($r = 0.141$ to 0.921, $p > 0.01$). The evidence suggests that there are significant relationships among the four dimensions of sustainable marketing strategy ($r = 0.824$ to 0.921, $p > 0.01$). The correlation matrix reveals a correlation between the consequences of the dimensions of sustainable marketing strategy. The result indicates that the dimension of sustainable marketing strategy in relation to product creativity, customer acceptance, and marketing success is significantly and positively correlated ($r = 0.798$ to 0.921, $p > 0.01$). Therefore, the antecedent constructs, including top-management vision, firm resource readiness, and competitive force are significantly related to the dimensions of sustainable marketing strategy ($r = 0.141$ to 0.527, $p > 0.01$). Finally, both VIF's and correlations confirm that multicollinearity problems do not occur in this research.

Table 21 Correlation Matrix of Sustainable Marketing Strategy and all Constructs

	TAO	PII	SRC	EPD	PC	CA	MS	TMV	FRR	CF	FA
TAO	1.000										
PII	0.824**	1.000									
SRC	0.857**	0.854**	1.000								
EPD	0.846**	0.921**	0.882**	1.000							
PC	0.798**	0.886**	0.818**	0.868**	1.000						
CA	0.908**	0.864**	0.921**	0.876**	0.826**	1.000					
MS	0.810**	0.885**	0.826**	0.902**	0.860**	0.861**	1.000				
TMV	0.180**	0.214**	0.184**	0.151**	0.251**	0.213**	0.177**	1.000			
FRR	0.281**	0.331**	0.303**	0.272**	0.356**	0.346**	0.253**	0.338**	1.000		
CF	0.168*	0.198**	0.203**	0.164*	0.197**	0.227**	0.141*	0.158*	0.527**	1.000	
FA	0.166*	0.155*	0.094	0.119	0.134	0.157*	0.146*	0.262*	0.100	0.143*	1.000
Mean	4.326	4.324	4.347	4.366	4.324	4.361	4.295	4.675	4.460	4.614	-
S.D.	0.421	0.422	0.420	0.441	0.424	0.430	0.406	0.374	0.405	0.399	-

Note: ** Correlation is significant at the 0.01. level (2-tailde)

* Correlation is significant at the 0.05. level (2-tailde)

Measurement Model Assessment

In this study, tests the reliability and validity of a measurement model of sustainable marketing strategy and marketing success. The objective of measurement model assessment is to evaluate the reliability and the validity of observed variables and constructs to increase the quality of input of a structural model.

1) Reliability Test

Reliability measures the internal consistency of a set of variables of a latent construct. High reliability of a construct demonstrates the high opportunity of all variables in a construct to measure the same thing (Hair et al., 2006). Reliability has a value between 0 and 1. Reliability of all constructs in this study is tested by using Cronbach's alpha (α) (Cronbach, 1951). The rule of thumb is that Cronbach's alpha should be higher than 0.7 (Nunnally and Bernstein, 1994) for enough internal consistency. The results of testing reliability of all variable and constructs are shown in Table 22. For sustainable marketing strategy and marketing success all constructs

in all ISO 14001 certified manufacturing businesses have reliability indices range from 0.808 to 0.938 The results show high reliabilities of all constructs and can analysis validity in the next section.

Table 22 Cronbach's Alpha of all ten constructs

Construct	Number of variables	All construct
Exogenous		
Top-Management Vision	4 Items	0.808
Firm Resource Readiness	4 Items	0.824
Competitive Force	4 Items	0.834
Endogenous		
Technology Adaptation Orientation	4 Items	0.919
Product Innovativeness Implementation	4 Items	0.922
Social Responsibility Concentration	4 Items	0.904
Environmental Process Development	4 Items	0.938
Product Creativity	4 Items	0.927
Customer Acceptance	4 Items	0.916
Marketing Success	4 Items	0.911

2) Validity Test

To test the validity of a measurement model, the confirmatory factor analysis is used. For CFA, the aim of applying CFA is to test how well the construct validity developed from prior research (Carlo and Randall, 2002). Moreover, Nunnally and Berstein (1994) suggested that all constructs should have factor loading that is great than 0.50. Another objective of CFA is to assess a measurement model. This assessment is to test the reliability and the validity of constructs.

For testing the reliability of each variable, composite reliability (R^2) is used to test the reliability of each variable. This measure demonstrates how well variables serve as measurement items for constructs, whereas R^2 has a value between 0.00 and 1.00, the value of R^2 from 0.30 to 0.50 is acceptable (Moore, Notz, and Flinger, 2013). A significant value reveals a good measurement item for constructs. However, Hair et al. (2006) suggested that a researcher should consider factor loading between variables and constructs more than composite reliability for deleting variables.

Factor loadings (λ) of a measurement model of sustainable marketing strategy and marketing success are shown in Table 23. The findings show all variable have a factor loading more than 0.4, Average Variance Extracted (AVE) more than 0.50 (Fornell and Larcker, 1981), and Construct Reliability (CR) more than 0.70 (Hair et al., 2005). Therefore, all variable not will be deleted from the model.

Table 23 Standardized Factor Loading, S.E., t-value, R^2, A.V.E., and CR of Measurement Model of All Construct

Variable	Factor loading					
	Standardize Estimate	S.E.	t	R^2	AVE	CR
TAO					0.739	0.919
1. TAO 1	0.830	-	-	0.688		
2. TAO 2	0.875	0.067	16.074***	0.766		
3. TAO 3	0.878	0.068	16.142***	0.770		
4. TAO 4	0.855	0.068	15.446***	0.730		
PII					0.744	0.921
1. PII 1	0.875	-	-	0.765		
2. PII 2	0.854	0.056	17.284***	0.729		
3. PII 3	0.875	0.055	18.207***	0.766		
4. PII 4	0.854	0.056	16.937***	0.714		

Table 23 Standardized Factor Loading, S.E., t-value, R^2, A.V.E., and CR of Measurement Model of All Construct (Continued)

Variable	Factor loading					
	Standardize Estimate	S.E.	t	R^2	AVE	CR
SRC					0.700	0.903
1. SRC 1	0.854	-	-	0.730		
2. SRC 2	0.807	0.064	14.952***	0.651		
3. SRC 3	0.855	0.061	16.569***	0.731		
4. SRC 4	0.830	0.063	15.713***	0.689		
EPD					0.786	0.936
1. EPD 1	0.919	-	-	0.845		
2. EPD 2	0.873	0.046	20.196***	0.762		
3. EPD 3	0.911	0.043	22.835***	0.831		
4. EPD 4	0.842	0.051	18.440***	0.709		
PC					0.761	0.927
1. PC 1	0.833	-	-	0.780		
2. PC 2	0.869	0.054	17.954***	0.756		
3. PC 3	0.841	0.056	16.773***	0.708		
4. PC 4	0.896	0.053	19.186***	0.804		
CA					0.731	0.916
1. CA 1	0.878	-	-	0.771		
2. CA 2	0.850	0.055	17.473***	0.723		
3. CA 3	0.842	0.056	17.145***	0.710		
4. CA 4	0.849	0.056	17.419***	0.721		

Table 23 Standardized Factor Loading, S.E., t-value, R^2, A.V.E., and CR of Measurement Model of All Construct (Continued)

Variable	Factor loading					
	Standardize Estimate	S.E.	t	R^2	AVE	CR
MS					0.716	0.910
1. MS 1	0.844	-	-	0.712		
2. MS 2	0.835	0.065	15.406***	0.697		
3. MS 3	0.874	0.064	16.712***	0.764		
4. MS 4	0.830	0.065	15.259***	0.689		
TMV					0.565	0.866
1. TMV 1	0.703	-	-	0.494		
2. TMV 2	0.697	0.116	8.451***	0.486		
3. TMV 3	0.726	0.109	8.708***	0.527		
4. TMV 4	0.743	0.116	8.846***	0.552		
FRR					0.545	0.827
1. FRR 1	0.801	-	-	0.642		
2. FRR 2	0.732	0.088	10.451***	0.536		
3. FRR 3	0.693	0.090	9.851***	0.480		
4. FRR 4	0.722	0.088	10.303***	0.522		
CF					0.555	0.833
1. CF 1	0.754	-	-	0.568		
2. CF 2	0.752	0.102	10.038***	0.556		
3. CF 3	0.730	0.101	9.772***	0.534		
4. CF 4	0.745	0.101	9.951***	0.555		

Note: *** is significate level at 0.01.

For construct validity, fit indices are the criterion to determine how well the fit of association among indicators and latent variables of a study's estimated model and observed data (Schumacker and Lomax, 2011). Several indices to evaluate the fit of the model are suggested, for example, Chi-square test ($\chi 2$), root mean square error of approximation (RMSEA), comparative fit index (CFI), normed fit index (NFI), incremental fit index (IFI), and relative fit index (RFI). Diamantopoulos, Siguaw, and Siguaw, (2000) suggested that Chi-square to the degree of freedom ratio ($\chi 2$/d.f.) less than 2 reveals a good fit and 2-5 reveals available fit between the estimated model and observed data. Bentler and Chou, (1987) suggested a cutoff value for NFI should be higher than 0.9 for a good fit between observed and estimated data. This criterion is also applied to other fit indices such as CFI, IFI, and RFI (Marsh, Balla, and Hau, 1996) Furthermore, Garson, (2012) recommend a cutoff value of RMSEA is lower than 0.05 to 0.08 for an acceptance fit of the estimated model with observed data.

In Table 24, a measurement model of sustainable marketing strategy and marketing success have Chi-square to the degree of freedom ratio ($\chi 2$/d.f.) (1.4444.171/691) equal 2.090 which is between 2.00 to 5.00. So, this ratio demonstrates a reasonable fit between the estimated model and observed data. But, the p-value is lower than 0.05 which proves a bad fit model. It is because the Chi-square value is sensitive to sample size. Large sample size increases Chi-square value and decreases p-value.

For this reason, Fornell and Larcker (1981) suggested that a researcher should consider other fit indices (such as RMSEA, NFI, CFI, IFI, and RFI) rather than p-value to evaluate a goodness of fit between the observed and estimated model when the sample size is large. RMSEA of a measurement model is 0.073 which is lower than 0.8 to 0.50. It shows a good fit between the estimated model and observed data. In addition, NFI (0.840), CFI (0.909), IFI (0.910), and RFI (0.819). Thus, these fit indices demonstrate a good fit between the estimated model and observed data. Based on the analysis, this study concludes that a measurement model of sustainable marketing strategy and marketing success framework has a reasonable fit with the data.

Table 24 Fit Indices for Testing Measurement Model of All construct

Parameter	Value
X^2	1.444.171
d.f	691
X^2/d.f.	2.090
p-value	0.000
RMSEA	0.073
NFI	0.840
CFI	0.909
IFI	0.910
RFI	0.819

Structural Model Assessment

After the results of testing reliability and validity of the measures and model fit assessment of measurement model for sustainable marketing strategy and marketing success are satisfied, assessing the fit of the structural model is performed. Based on the analysis, in this study the purpose is to test the structural model of the sustainable marketing strategy and marketing success framework consistently fits the empirical data.

The criteria for assessing fit indices presenting goodness of fit of the model are Chi-square test, CFI, IFI, NFI, RFI, and RMSEA. P-value of Chi-square should be more than 0.05 to reject the null hypothesis (Schermelleh-Engel, Moosbrugger, and Müller, 2003). χ^2/d.f. should have lower than 2.00 is the goodness of fit (Bollen, 1989) or between 2.00 to 5.00 is the available goodness of fit (Diamantopoulos et al., 2000) This can be explained that the observed and estimated covariance matrix are not different. Further, other indices, such as CFI, IFI, NFI, and RFI should have values higher than a cutoff value 0.9. Besides, RMSEA should have value lower 0.80.

Table 25 Fit Indices for Testing Structural Model of Sustainable Marketing Strategy and Marketing Success

Parameter	Value
X^2	1428.187
d.f	729
X^2/d.f.	1.959
p-value	0.000
RMSEA	0.068
NFI	0.843
CFI	0.915
IFI	0.916
RFI	0.823

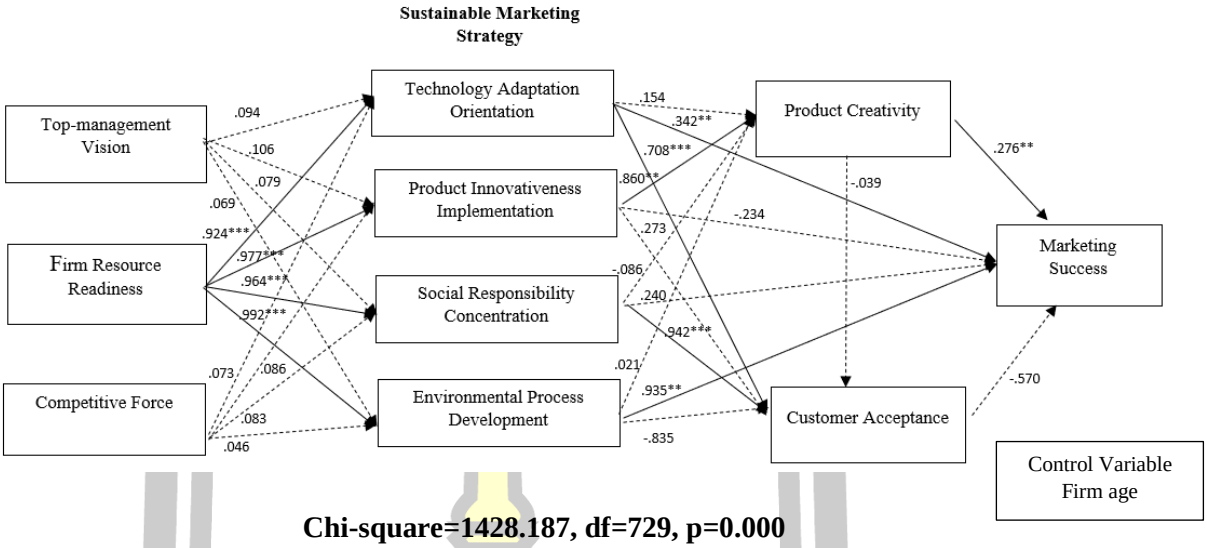
The results of the model fit assessment of sustainable marketing strategy and marketing success are summarized in Table 24. The results show that that observed and estimated covariance matrix are not different is accepted at the level of significance 0.05. The other fit indices demonstrate a good fit of sustainable marketing strategy and marketing success framework. The ratio of Chi-square value to the degree of freedom is lower than 2 (1428.187/729 = 1.959 < 2.00) which show that an adequate fit of a model with the observed data. Moreover, fit indices, NFI (0.843), CFI (0.915), IFI (0.916), and RFI (0.823), are above the cutoff criteria (0.900) and RMSEA (0.068) is lower than recommended value (0.80) is acceptance (Kline, 2005). Overall, these indicators demonstrate a good fit.

Hypothesis Testing and Results

This section turns to the results of the structural equation modeling analysis. Using a statistical package, the causal relationships were examined between four dimensions of sustainable marketing strategy, product creativity, customer acceptance, and marketing success. The results also were tested for reliability and validity and the fit of the measurement model was completed. The criteria for

determining goodness of fit of the model were Chi-square test, CFI, IFI, NFI, RFI, and RMSEA. The p-values of the Chi-square test should be more than 0.05 to not reject the null hypothesis (Diamantopoulos et al., 2000). $\chi 2/df$ should be lower than 2.00 for a goodness of fit result (Bollen, 1989) or between 2.00 to 5.00 is the available goodness of fit (Diamantopoulos et al., 2000). The explanation is that the observed and estimated covariance matrixes are not different. Further, other indices, such as CFI, IFI, NFI, RFI, and RMSEA should have a value lower 0.05.

The results show that observed and estimated covariance matrix are not different and is accepted at the level of significance 0.05. Fornell and Larcker (1981) suggested that in such a study other fit index (such as RMSEA, NFI, CFI, IFI, and RFI) should be considered rather than merely a p-value to evaluate a goodness of fit between the observed and estimated model when the sample size is large.



Chi-square=1428.187, df=729, p=0.000
$\chi 2$ /df = 1.959, CFI=0.915, IFI=0.916, NFI=0.843, RFI=0.823, RMSEA=0.068

Figure 6 Structural Model of Sustainable Marketing Strategy and Marketing Success Framework with Standardized Parameter stimates and Statistical Significance

The Impact Among Each Dimension of Sustainable Marketing Strategy on Its Consequences

Figure 6 shows the effects among each dimension of sustainable marketing strategy and its consequences which are proposed in Hypotheses 1a-c, Hypotheses 2a-c, Hypotheses 3a-c, Hypotheses 4a-c, Hypotheses 5a, Hypotheses 5b, and Hypotheses 6. The effect of each hypothesis is proposed in a positive direction. These hypotheses can be transformed into the structural equation model.

To consider the effects of four dimension of sustainable marketing strategy and its consequence. In this study tests H1a-c proposed in Chapter 2. The findings are shown in Figure 6 and Table 26. The results indicate that technology adaptation orientation is not the significant effect on product creativity at a level of significance 0.05 (γ= 0.154, p > 0.05). ***Therefore, H1a is not supported.*** However, technology adaptation orientation has a significant positive effect on customer acceptance (γ = 0.708, p < 0.01). ***Thus, Hypothesis 1b is supported.*** In addition, technology adaptation orientation has a significant positive effect on marketing success at a level of significance 0.05 (γ = 0.342, p < 0.05). ***Thus, Hypothesis 1c is supported***.

To consider the effects of four dimension of sustainable marketing strategy and its consequence. In this study tests H2a-c a proposed in Chapter 2. The findings are shown in Figure 6 and Table 26. The results indicate that product innovativeness implementation has a significant positive effect on product creativity at a level of significance 0.05 ($\gamma = 0.860$, $p < 0.05$). ***Thus, Hypothesis 2a is supported.*** However, product innovativeness implementation is not the significant effect on customer acceptance at a level of significance 0.05 ($\gamma = 0.273$, $p > 0.05$). ***Thus, Hypothesis 2b is not supported.*** Thus, product innovativeness implementation is not significant negative effect on marketing success ($\gamma = - 0.234$, $p > 0.01$). ***Thus, Hypothesis 2c is not supported.***

To consider the effects of four dimension of sustainable marketing strategy and its consequence. In this study tests H3a-c a proposed in Chapter 2. The findings are shown in Figure 6 and Table 26. The results indicate that social responsibility concentration is not the significant negative effect on product creativity at a level of significance 0.05 ($\gamma = -0.086$, $p > 0.05$). ***Thus, Hypothesis 3a is not supported.*** Moreover, social responsibility concentration has a significant positive effect on customer acceptance ($\gamma = 0.942$, $p < 0.01$). ***Thus, Hypothesis 3b is supported.*** Therefore, social responsibility concentration has a significant positive effect on marketing success ($\gamma = 0.240$, $p > 0.05$). ***Thus, Hypothesis 3c is not supported.***

To consider the effects of four dimensions of sustainable marketing strategy and its consequence. In this study tests H4a-c a proposed in Chapter 2. The findings are shown in Figure 6 and Table 26. The results indicate that environmental process development is not the significant effect on product creativity at a level of significant 0.05 ($\gamma = 0.021$, $p > 0.05$). ***Thus, Hypothesis 4a is not supported***. However, environmental process development is not the significant negative effect on customer acceptance ($\gamma = - 0.835$, $p > 0.05$). ***Thus, Hypothesis 4b is not supported***. Thus, environmental process development has a significant positive effect on marketing success at a level of significance 0.05 ($\gamma = 0.935$, $p < 0.05$). ***Thus, Hypothesis 4c is supported***.

The Impact of Product Creativity, Customer Acceptance, on Marketing Success

Figure 6 shows the effects product creativity, customer acceptance, on marketing success which are proposed in Hypotheses 5a-b and Hypotheses 6. The effect of each hypothesis is proposed in a positive direction. These hypotheses can be transformed into the structural equation model.

To consider the effects of product creativity, customer acceptance, on marketing success. In this study tests H5a, H5b, and H6 a proposed in Chapter 2. The findings are shown in Figure 6 and Table 27. The results indicate that product creativity is not the significant negative effect on customer acceptance at a level of significance 0.10 (γ = -0.039, p > 0.10). ***Thus, Hypothesis 5a is not supported***. However, product creativity has a significant effect on marketing success (β = 0.276, p > 0.10). ***Thus, Hypothesis 5b is supported***. Therefore, customer acceptance is not the significant negative effect on marketing success (γ = -0.570, p > 0.01). ***Thus, Hypothesis 6 is not supported***.

The Impact of the Antecedents on Each Dimension of Sustainable Marketing Strategy

It is important to analyze the antecedents of sustainable marketing strategy. Figure 6 draws the theoretical linkage between top-management vision, firm resource readiness, competitive force, and four dimensions of sustainable marketing strategy, including technology adaptation orientation, product innovativeness implementation, social responsibilities concentration, environmental process development. which are proposed in Hypotheses 7a-d, Hypotheses 8a-d, and Hypotheses 9a-d. The effect of each hypothesis is proposed in a positive direction. These hypotheses can be transformed into the structural equation model.

The results indicate that top-management vision does not affect on technology adaptation, product innovativeness implementation, social responsibility concentration, and environmental process development. To consider the effects of the antecedents on each dimension of sustainable marketing strategy. In this study tests H7a-d a proposed in Chapter 2. The findings are shown in Figure 6 and Table 28. Top-management vision is not significant effect on technology adaptation orientation at a level of significance 0.01 (γ = 0.106, p > 0.01). ***Thus, Hypothesis 7a is not***

supported. However, top-management vision is not significant effect on product innovativeness implementation (γ = 0.106, p > 0.01). ***Thus, Hypothesis 7b is not supported***. Moreover, top-management vision is not significant effect on social responsibility concentration (γ = 0.079, p > 0.01). ***Thus, Hypothesis 7c is not supported***. Thus, top-management vision is not significant effect on environmental process development (γ = 0.069, p > 0.01). ***Thus, Hypothesis 7d is not supported***.

The results indicate that firm resource readiness has a significant effect on technology adaptation, product innovativeness implementation, social responsibility concentration, and environmental process development. To consider the effects of the antecedents on each dimension of sustainable marketing strategy. In this study tests H8a-d a proposed in Chapter 2. Firm resource readiness has a significant effect on technology adaptation orientation at a level of significance 0.01 (γ = 0.924, p < 0.01). ***Thus, Hypothesis 8a is supported***. Moreover, firm resource readiness has a significant effect product innovativeness implementation (γ = 0.977, p < 0.01). ***Thus, Hypothesis 8b is supported***. However, firm resource readiness has a significant effect on social responsibility concentration (γ = 0.964, p < 0.01). ***Thus, Hypothesis 8c is supported***. Therefore, firm resource readiness has a significant effect on environmental process development (γ = 0.992, p < 0.01). ***Thus, Hypothesis 8d is supported***.

The results indicate that competitive force does not affect on technology adaptation, product innovativeness implementation, social responsibility concentration, and environmental process development. To consider the effects of the antecedents on each dimension of sustainable marketing strategy. In this study tests H9a-d a proposed in Chapter 2. Competitive force is not significant effect on technology adaptation orientation at a level of significance 0.01 (γ = 0.073, p > 0.01). ***Thus, Hypothesis 9a is not supported***. Moreover, competitive force is not significant effect on product innovativeness implementation (γ = 0.086, p > 0.01). ***Thus, Hypothesis 9b is not supported***. However, competitive force is not significant effect on social responsibility concentration (γ = 0.046, p > 0.01). ***Thus, Hypothesis 9c is not supported***. Thus, competitive force is not significant effect on environmental process development (γ = 0.046, p > 0.01). ***Thus, Hypothesis 9d is not supported***.

Table 26 Standardized Structural Equation Parameter Estimates, t-value, and p-value of Sustainable Marketing Strategy on Its Consequences

Constructs	PC			CA			MS		
	γ	t-value	p-value	γ	t-value	p-value	β	t-value	p-value
Exogenous constructs									
TAO	0.154	1.249	0.212	0.708	5.486***	0.01	0.342	2.289**	0.022
PII	0.860	2.329**	0.020	0.273	0.772	0.440	-0.234	-0.548	0.584
SRC	-0.086	-0.370	0.712	0.942	3.718***	0.01	0.240	1.151	0.250
EPD	0.021	0.052	0.958	-0.835	-1.991**	0.046	0.935	2.512**	0.012
Endogenous constructs									
PC	-	-	-	-0.039	-0.289	0.773	0.276	1.835*	0.067
CA	-	-	-	-	-	-	-0.570	-2.692***	0.007

Note: *** significance level at 0.01.
** significance level at 0.05.
* significance level at 0.10.

γ is a standardized parameter estimate from exogenous to endogenous construct

β is a standardized parameter estimate from endogenous to endogenous construct

Table 27 Standardized Structural Equation Parameter Estimates, t-value, and p - value of Product Creativity, Customer Acceptance, on Marketing Success

Constructs	CA			MS		
	γ	t-value	p-value	β	t-value	p-value
Exogenous constructs						
PC	-0.039	-0.289	0.773	0.276	1.835*	0.067
Endogenous constructs						
CA	-	-	-	-0.570	-2.692***	0.007

Note: *** significance level at 0.01.
** significance level at 0.05.
* significance level at 0.10.

γ is a standardized parameter estimate from exogenous to endogenous construct

β is a standardized parameter estimate from endogenous to endogenous construct

Table 28 Standardized Structural Equation Parameter Estimates, t-value, and p-value of Antecedents on Each Dimension of Sustainable Marketing Strategy

Constructs	TAO			PII			SRC			EPD		
	γ	t-value	p-value	γ	t-value	p-value	γ	t-value	p-value	γ	t-value	p-value
Exogenous constructs												
TMV	0.094	1.217	0.224	0.106	1.399	0.162	0.079	1.043	0.297	0.069	0.921	0.357
FRR	0.924	4.171***	0.01	0.977	4.227	0.01	0.964	4.218***	0.01	0.992	4.206***	0.01
CF	0.073	0.959	0.337	0.086	1.151	0.250	0.083	1.106	0.269	0.046	0.620	0.535

Note: *** significance level at 0.01.

** significance level at 0.05.

* significance level at 0.10.

γ is a standardized parameter estimate from exogenous to endogenous construct

β is a standardized parameter estimate from endogenous to endogenous construct

Table 29 Summary Results of Hypothesized Relationships

Hypotheses	Description of Hypothesized Relationships	Results
H1a	Technology adaptation orientation has a positively influence on product creativity	Not Supported
H1b	Technology adaptation orientation has a positively influence on customer acceptance	Supported
H1c	Technology adaptation orientation has a positively influence on marketing success	Supported
H2a	Product innovativeness implementation has a positively influence on product creativity	Supported
H2b	Product innovativeness implementation has a positively influence on customer acceptance	Not Supported
H2c	Product innovativeness implementation has a positively influence on marketing success	Not Supported
H3a	Social responsibility concentration has a positively influence on product creativity.	Not Supported
H3b	Social responsibility concentration has a positively influence on customer acceptance.	Supported
H3c	Social responsibility concentration has a positively influence on marketing success.	Not Supported

Table 29 Summary Results of Hypothesized Relationships (Continued)

Hypotheses	Description of Hypothesized Relationships	Results
H4a	Environmental process development has a positively influence on product creativity	Not Supported
H4b	Environmental process development has a positively influence on customer acceptance	Not Supported
H4c	Environmental process development has a positively influence on marketing success	Supported
H5a	Product creativity has a positively influence on customer acceptance	Not Supported
H5b	Product creativity has a positively influence on marketing success	Supported
H6	Customer acceptance has a positively influence on marketing success	Not Supported
H7a	Top-management vision has a positively influence on technology adaptation orientation	Not Supported
H7b	Top-management vision has a positively influence on product innovativeness implementation	Not Supported
H7c	Top-management vision has a positively influence on social responsibility concentration	Not Supported
H7d	Top-management vision has a positively influence on environmental process development	Not Supported

Table 29 Summary Results of Hypothesized Relationships (Continued)

Hypotheses	Description of Hypothesized Relationships	Results
H8a	Firm resource readiness has a positively influence on technology adaptation orientation.	Supported
H8b	Firm resource readiness has a positively influence on product innovativeness implementation	Supported
H8c	Firm resource readiness has a positively influence on social responsibility concentration.	Supported
H8d	Firm resource readiness has a positively influence on environmental process development	Supported
H9a	Competitive force has a positively influence on technology adaptation orientation.	Not Supported
H9b	Competitive force has a positively influence on product innovativeness implementation	Not Supported
H9c	Competitive force has a positively influence on social responsibility concentration.	Not Supported
H9d	Competitive force has a positively influence on environmental process development	Not Supported

Summary

This chapter presents the result of data analysis of sustainable marketing strategy. The results of all twenty-seven hypotheses testing. The critical participant characteristics, firm characteristics are described. Then, the results demonstrate in testing observed variables in the conceptual framework. The first step including comparing the mean difference of each variable and test control variable, confirmatory factor analysis to all variables, descriptive statistics, and correlation analysis are examined. The reliability of measurement items and the validity of measurement and structural models are examined. The model frameworks are reliable and valid. Further, the finding of hypothesis testing for sustainable marketing strategy are revealed. Table 29 present a summary of hypothesized relationships. The result shows that in all frameworks of four dimensions of sustainable marketing strategy, product creativity, customer acceptance, and marketing success. Also, the result shows that product creativity and customer acceptance is the most important mediating factor for marketing success. Finally, the result shows that top-management vision, firm resources readiness, and competitive force is the most important antecedents factor for four dimensions of sustainable marketing strategy. The next chapter presents the discussion and conclusion of the study, theoretical contribution, managerial implication, limitations, and research directions for further study.

CHAPTER V

CONCLUSIONS AND DISCUSSION

The previous chapter describes respondent and firm characteristics, reliability, validity, descriptive statistic, correlation matrix, measurement model, structural model assessment, and hypothesis testing. Therefore, this chapter provides conclusions and discussion of the research findings. Recommendation for academicians and practitioners who are theoretical and managerial contributions are described. Finally, limitations of the study and future research are suggested.

Summary of Results

This study has investigated the influences of sustainable marketing strategy on marketing success of ISO 14001 certified manufacturing businesses in Thailand. The effects of sustainable marketing strategy on product creativity, customer acceptance, and marketing success have been investigated. Furthermore, the relationships among product creativity, customer acceptance, and marketing success have been examined. Additionally, top-management vision, firm resources readiness, and competitive force are assumed to become the antecedents of sustainable marketing strategy.

The key research question of this research is “How does sustainable marketing strategy influence on marketing success?” In addition to the key research question, five specific research questions are as follows: 1) How does each of four dimensions of sustainable marketing strategy (including technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development) effect on product creativity, customer acceptance, and marketing success? 2) How does product creativity influence on customer acceptance? 3) How does product creativity influence on marketing success? 4) How does customer acceptance influence on marketing success? 5) How do top-management vision, firm resources readiness, and competitive force have an impact on each of four dimensions of sustainable marketing strategy?

This research implements two theories to explain the relationships among all of the variables in the conceptual model. Firstly, stakeholder theory takes the point of view of the awareness of the firm and applies it to explain the relationships between sustainable marketing strategy and product creativity, customer acceptance, and marketing success. Lastly, contingency theory is applied to explain the relationships between all antecedents of sustainable marketing strategy and each dimension of sustainable marketing strategy.

This research investigates the role of sustainable marketing strategy. A sample of 208 firms was drawn from the database of 468 ISO 14001 certified manufacturing businesses in Thailand maintained by the Thai Industrial Standards Institute, Ministry of Industry, Thailand (http//app.tisi.go.th/syscer/14000.html, last accessed June 2020). The selected key informants were marketing manager, marketing director and general managers position of each of the firms. For data collection, a questionnaire was mailed to gather data and 468 questionnaires were sent to those key informants. For statistical analysis, structural equation modeling was used to improve all hypotheses testing. It can be concluded that the majority of the hypotheses tested are partially supported.

For the first specific research question, the results indicate that technology adaptation orientation has no relationship with product creativity but technology adaptation orientation has a positive relationship with customer acceptance and marketing success. Moreover, product innovativeness implementation has a positive relationship with product creativity but product innovativeness implementation has no relationship with customer acceptance and marketing success. In addition, social responsibility concentration has no relationship with product creativity and marketing success but social responsibility concentration has a positive relationship with customer acceptance. Similarly, environmental process development has no relationship with product creativity but environmental process development has a positive relationship with customer acceptance and marketing success. For the second specific research question, the results point out that product creativity has no relationship with customer acceptance. For the third specific research question, the results present that product creativity has a positive relationship with marketing success. For the fourth specific research question, the results show that the customer

acceptance has a positive relationship marketing success. For antecedent variables the fifth specific research question, top-management vision has no relationship with technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. For the sixth specific research question, firm resources readiness has a relationship positive with technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. According to the seven specific research question, competitive force has no relationship with technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. Therefore, the evidence will provide the directions and suggestions for ISO 14001 certified manufacturing businesses to improve their marketing success. As described earlier, the summary of all research questions and results are included in Table 29 below.

Similarly, the control variables have been tested and found that does not have to mean differences were significant in this study, control variable including, firm size and firm age. Firm size uncollected adding to testing in the conceptual framework. The hypotheses testing is performed, and the results of hypothesis testing are organized into three parts: firstly, the impact among each dimension of sustainable marketing strategy (including technology adaptation orientation, product innovativeness implementation,social responsibility concentration, and environmental process development) on its consequences. Secondly, the impact of product creativity, customer acceptance, on marketing success. Lastly, top-management vision, firm resource readiness, and competitive force have an impact on each of four dimensions of sustainable marketing strategy. The results reveal finding are as follows.

<u>The Impact Among Each Dimension of Sustainable Marketing Strategy on its Consequences</u>

Hypothesis 1a-c, technology adaptation orientation is likely significantly to promote firms related to product creativity, customer acceptance, and marketing success. Therefore, the hypothesis is conclusion as follows.

The first dimension of sustainable marketing strategy and its consequence factors indicated that technology adaptation orientation is not the significant effect on product creativity. The results have shown that hypothesis 1a, which states that technology adaptation orientation is not the significant effect on product creativity (γ= 0.154, $p > 0.01$). Previous studies, this is consistent with Al-Ansari, Altalib, and Sardoh (2013) who showed the result that the technology orientation of SMEs in Dubai has a weak effect on business performance and also indicates the innovation to which derived from product development plays mediating role between technology orientation and business performance. ***Thus, Hypothesis 1a is not supported.***

In the same way, the relationship between technology adaptation orientation has a significant positive effect on customer acceptance. The results in show that the hypothesis and indicate that technology adaptation orientation has a significant positive effect on customer acceptance ($\gamma = 0.708$, $p < 0.01$). Similarly, prior research showed that the investigate new technology on customer acceptance in retailing focuses on their attitude towards e-commerce and e-services (Hernandez, Jimenez and Martin, 2010). ***Thus, Hypothesis 1b is supported***

As well, the relationship of technology adaptation orientation has a significant positive effect on marketing success. The results show that the hypothesis and technology adaptation orientation has a significant positive effect on marketing success ($\gamma = 0.342$, $p < 0.05$). The prior research showed that technology orientation has influenced innovation, product development, and firm performance (Jeong, Pae, and Zhou, 2006). Sustainable marketing the relationship between technology orientation and firm growth in Chinese Manufacturing (Lei, Wu and Fu, 2019). The study of Song, Droge, Hanvanich, and Calantone (2005) found that technology capabilities effects positively impact performance. As mentioned above, there is appropriate explanation for the reason why there is an association between technology adaptation orientation and marketing success. ***Thus, Hypothesis 1c is supported***.

Hypothesis 2a-c, product innovativeness implementation is likely significantly to promote firms related to product creativity, customer acceptance, and marketing success. Therefore, the hypothesis is conclusion as follows.

The second dimension of sustainable marketing strategy and its consequence factors indicated that product innovativeness implementation has a significant positive effect on product creativity. The results shown that the study support this hypothesis and that product innovativeness implementation has a significant positive effect on product creativity ($\gamma = 0.860$, $p < 0.05$). The results are consistent with previous research. Prior research shows that the relationship between product innovation and product creativity (Marinho et al., 2016). As mentioned above, there is appropriate explanation for the reason why there is an association between product innovativeness implementation and product creativity. ***Thus, Hypothesis 2a is supported.***

In contrast the relationship between product innovativeness implementation has no positive effect on customer acceptance. The results shown that the study support this hypothesis and that product innovativeness implementation is not the significant positive effect on customer acceptance ($\gamma = 0.273$, $p > 0.01$). The previous research show that the process and those factors which determine whether not an innovation is accepted with special note towards the determinants of customer acceptance of an innovation (Herbig and Day, 1992). As mentioned above, there is appropriate explanation for the reason why there is an association between product innovativeness implementation and customer acceptance. ***Thus, Hypothesis 2b is not supported.***

As well, the relationship of product innovativeness implementation has no positive effect on marketing success. The result shows that the study support this hypothesis and that product innovativeness implementation is not the significant negative effect on marketing success ($\gamma = - 0.234$, $p > 0.01$). The previous research, product innovativeness has an impact on the rate of success in the marketplace. That means that high and low innovativeness products are more likely to be less successful in the future (Kleinschmidt and Cooper, 2002). As mentioned above, there is an appropriate explanation for the reason why there is an association between product innovativeness implementation and marketing success. ***Thus, Hypothesis 2c is not supported***.

Hypothesis 3a-c, social responsibility concentration is likely significantly to promote firms related to product creativity, customer acceptance, and marketing success. Therefore, the hypothesis conclusion is as follows.

The third dimension of sustainable marketing strategy and its consequence factors indicated that social responsibility concentration has no positive effect on product creativity. The result shows that the study supports this hypothesis and social responsibility concentration is not a significant negative effect on product creativity (γ = - 0.086, p > 0.01). Previous research shows that corporate social responsibility activity is related to cause-related marketing that aims to enhance business revenues and sales through the value of product differentiation by creating socially responsible attributes (Varadarajan and Menon, 1988). In conclusion, this study revealed that the social responsibility concentration of leaders in ISO 14001 certified manufacturing businesses has no significant influence on product creativity. This implies that leaders should integrate other factors to conduct business if they only have social responsibility concentration. Otherwise, they will achieve success in business. ***Thus, Hypothesis 3a is not supported.***

Likewise, social responsibility concentration had a positive effect on customer acceptance. The result shows that the study support this hypothesis and social responsibility concentration has a significant positive effect on customer acceptance (γ = 0.942, p < 0.01). The prior research has found a significant relationship between social responsibility affects customer acceptance, both directly and indirectly (Berens, Riel and Bruggen, 2005). In conclusion, this study revealed that the social responsibility concentration of leaders in ISO 14001 certified manufacturing businesses had a positive effect on customer acceptance. ***Thus, Hypothesis 3b is supported.***

However, social responsibility concentration has no positive effect marketing success. The result shows that the study support this hypothesis and social responsibility concentration has a significant positive effect on marketing success (γ = 0.240, p > 0.01). The prior research, results show that proposing executive compensation programs including social responsibility criteria has a negative impact on financial performance (Cavaco, Crifo, and Guidoux, 2020). ***Thus, Hypothesis 3c is not supported.***

Hypothesis 4a-c, environmental process development is likely significantly to promote firms related to product creativity, customer acceptance, and marketing success. Therefore, the hypothesis is conclusion as follows.

The last dimension of sustainable marketing strategy and its consequent factors indicate that environmental process development has no positive effect on product creativity. The result shows that the study support this hypothesis and environmental process development is not a significant effect on product creativity ($\gamma = 0.021$, $p > 0.01$). The previous research shows that the implications of evolving environmental concern over the management of product development. The process of managing product development while taking into account the environmental attributes of products. Therefore, the environmental not significance of the product development in the white goods industry (Roome and Hinnells, 1993). Therefore, environmental process development had not a significant effect on product creativity. ***Thus, Hypothesis 4a is not supported***.

In the same way, the relationship between environmental process development has a positive effect on customer acceptance. The result shows that the study support this hypothesis and environmental process development is not a significant negative effect on customer acceptance ($\gamma = - 0.835$, $p > 0.05$). The previous research, is partially consistent with the results of a study by Inoue and Lee (2010) who found that environmental responsibility has a differential effect on short-term and long-term profitability, depending on business type. For example, service businesses such as airlines, hotels, and casinos may not be interested in the environment, which will not influence either short-term or long-term profitability. However, the cause of natural issues is complex and turbulent. Thus, a firm may not understand their environment situations, and unclear about the requirements of customers (Lynes and Andrachuk, 2008). Therefore, the results indicate that environmental process development had a negative significant on customer acceptance. ***Thus, Hypothesis 4b is not supported***.

However, the environmental process development has a positive effect on marketing success. The result shows that the study support this hypothesis and environmental process development has a significant positive effect on marketing success ($\gamma = 0.935$, $p < 0.05$). The previous research has indicated that environmental has effects of business development and long-term growth (Timbur, 2010). Prior research show that environmental marketing is directly and positively related to the firm's new product success in its principal market success (Baker and Sinkula, 2005).

Moreover, the achieved sustainable environmental strategy could contribute to a superior competitive advantage and financial performance (Sharma et al., 2010). In conclusion, this study revealed that the environmental process development of leaders in ISO 14001 certified manufacturing businesses had a positive effect on marketing success. ***Thus, Hypothesis 4c is supported***.

Hypothesis 5a, product creativity is likely significantly to promote firms related to customer acceptance. Therefore, the hypothesis is conclusion as follows.

Product creativity does not affect on customer acceptance. The result shows that the study support this hypothesis and product creativity is not the significant negative effect on customer acceptance (γ = -0.039, $p > 0.10$). The prior research show that the present an empirical study investigating whether providing information about a complex development process could not amplify consumer's acceptance of product creativity (Valgeirdottir, Onarheim, and Gabrielsen, 2014). Therefore, product creativity is not the significant negative effect on customer acceptance. ***Thus, Hypothesis 5a is not supported***.

Hypothesis 5b, product creativity is likely significantly to promote firms related to marketing success. Therefore, the hypothesis conclusion is as follows.

Product creativity has a significant effect on marketing success. The result shows that the study support this hypothesis and product creativity has a significant positive effect on marketing success (β = 0.276, $p < 0.10$). The prior research shows that the product creative is an important factor for preserving a competitive advantage, profitability, and survivorship of the firm (Brown and Eisenhardt, 1995). Therefore, product creativity has a significant effect on marketing success. ***Thus, Hypothesis 5b is supported***.

Hypothesis 6, customer acceptance is likely significantly to promote firms related to marketing success. Therefore, the hypothesis is conclusion as follows.

Customer acceptance has a significant effect on marketing success. The result shows that the study support this hypothesis and customer acceptance has a negative significant effect on marketing success (γ = -0.570, $p > 0.01$). In fact, customer acceptance depends on the individual's perception that is in the affective domain of satisfaction, namely, attitudes and a person's behavior. The prior research show that the evidence suggests that customer acceptance as customer behaviors trust,

loyalty, and satisfaction on goods of the firm (Robkob and Ussahawanitchakit, 2009). Owing to the different findings from the literature, customer acceptance may be related to the evaluation of alternatives and decision-making before marketing success. Therefore, in this study, customer acceptance does not affect marketing success. ***Thus, Hypothesis 6 is not supported***.

The Impact of the Antecedents on Each Dimension of Sustainable Marketing Strategy

Hypothesis 7a-d, top-management vision is likely significantly to promote firms related to four dimension of sustainable marketing strategy. Therefore, the hypothesis is conclusion is as follows.

Firstly, the top-management vision does not affect on all of four dimensions of sustainable marketing strategy. Top-management vision does not affect on technology adaptation orientation. The result shows that the study support this hypothesis and top-management vision is not significant effect on technology adaptation orientation ($\gamma = 0.106$, $p > 0.01$). The previous research, is consistent with Rodgers and Hunter (1991) who indicated that productivity gains correlation with the extent of top management support for employees' participation in the process of setting objectives, which do not describe in specific individual development as focus on technology. Therefore, the top-management vision has no positive effect on technology adaptation orientation. ***Thus, Hypothesis 7a is not supported***.

Secondly, the top-management vision does not affect on all of four dimensions of sustainable marketing strategy. Top-management vision does not affect on product innovativeness implementation. The result shows that the study supports this hypothesis and top-management vision is not significant effect on product innovativeness implementation ($\gamma = 0.106$, $p > 0.01$). The consistency with Elkins and Keller (2003) claimed that executive with vision and support innovation is an essential factor in the development of the creativity and innovation. In contrast, the previous research show that executive support policy is the top management team affected to the firm's strategy to concentrate on the innovation development (Talke, Salomo, and Rost, 2009). The results indicate that top-management vision does not affect on product innovativeness implementation. Therefore, top-management vision

has no positive effect on product innovativeness implementation. ***Thus, Hypothesis 7b is not supported***.

Thirdly, top-management vision does not affect on all of four dimensions of sustainable marketing strategy. Top-management vision does not affect on social responsibility concentration. The result shows that the study support this hypothesis and top-management vision has not significant effect on social responsibility concentration ($\gamma = 0.079$, $p > 0.01$). The previous research, the findings indicate a significant positive relationship between top management commitment and all dimensions of green human resource management. However, the relationship between top management commitment has not a significant effect on and corporate social responsibility (Yusliza et al., 2019). The results indicate that top-management vision did not affect social responsibility concentration. ***Thus, Hypothesis 7c is not supported***.

Lastly, top-management vision does not affect on all of four dimensions sustainable marketing strategy. Top-management vision does not affect on environmental process development. The result shows that the study support this hypothesis and top-management vision is not significant effect on environmental process development ($\gamma = 0.069$, $p > 0.01$). Prior research, the empirical evidence shows that top-management value and leadership in advancing environmental sustainability. The results also demonstrated the top-management value has a negative impact on environmental sustainability (Jang, Zheng, and Bosselman, 2017). The results indicate that top-management vision does not affect environmental process development. ***Thus, Hypothesis 7d is not supported***.

Hypothesis 8a-d, firm resources readiness is likely significantly to promote firms related to four dimensions of sustainable marketing strategy. Therefore, the hypothesis conclusion is as follows.

Firstly, firm resource readiness has a significant effect on all of four dimensions sustainable marketing strategy. Firm resource readiness has a significant effect on technology adaptation orientation. The result shows that the study support this hypothesis and firm resource readiness has a significant effect on technology adaptation orientation ($\gamma = 0.924$, $p < 0.01$). Previous research that firm-specific characteristics as differential access to financial and other resources which located

that are significant condition the likelihood that firms is adopting a new technology which is the technological changing (Harrison, Kelley, and Gant, 1996). Therefore, firm resource readiness has a significant effect on technology adaptation orientation. ***Thus, Hypothesis 8a is supported***.

Secondly, firm resource readiness has a significant effect on all of four dimensions sustainable marketing strategy. Firm resource readiness has a significant effect on product innovativeness implementation. The result shows that the study supports this hypothesis and firm resource readiness has a significant effect on product innovativeness implementation ($\gamma = 0.977$, $p < 0.01$). Previous research that the availability of organizational resource enables firms to innovation adoption and strategic innovation capability (Sriboonlue, 2015). Moreover, organizational resources attempt to transform assets into something (e.g. innovative products) that will give them an edge in the marketplace, succeed by identifying and building capabilities that set them apart from competitors (Daugherty, Chen, and Ferrin, 2011). Therefore, firm resource readiness has a significant effect on product innovativeness implementation. ***Thus, Hypothesis 8b is supported***.

Thirdly, firm resource readiness has a significant effect on all of four dimensions sustainable marketing strategy. Firm resource readiness has a significant effect on social responsibility concentration. The result shows that the study support this hypothesis and firm resource readiness has a significant effect on social responsibility concentration ($\gamma = 0.964$, $p < 0.01$). Previous research that resource of the firm has made significantly headway in explaining differences in performance. This perspective has a significantly the social and ethical dimensions of organizational resources (Litz, 1996). Therefore, firm resource readiness has a significant effect on social responsibility concentration. ***Thus, Hypothesis 8c is supported***.

Lastly, firm resource readiness has a significant effect on all of four dimensions sustainable marketing strategy. Firm resource readiness has a significant effect on environmental process development. The result shows that the study support this hypothesis and firm resource readiness has a significant effect on environmental process development ($\gamma = 0.992$, $p < 0.01$). Previous research show that organizational resource has a direct impact on performance. However, organizational resource has

influence is subject to other factors key among the external environmental and innovation. Therefore, the empirical investigation on the influence of external environmental and innovation on the relationship between organizational resources and performance (Ombaka, Machuki, and Mahasi, 2015). Firm resource readiness has a significant effect on environmental process development. ***Thus, Hypothesis 8d is supported***.

Hypothesis 9a-d, competitive force is likely significantly to promote firms related to four dimension of sustainable marketing strategy. Therefore, the hypothesis conclusion is as follows.

Firstly, competitive force does not affect on all of four dimensions of sustainable marketing strategy. Competitive force does not affect on technology adaptation orientation. The result shows that the study support this hypothesis and competitive force is not significant effect on technology adaptation orientation (γ = 0.073, p > 0.01). Previous research shows that the finding of this empirical study reveals that technological marketing has no significant impact on Porter's five competitive forces (Sibanda and Masocha, 2014). Therefore, competitive force does not affect on technology adaptation orientation. ***Thus, Hypothesis 9a is not supported***.

Secondly, competitive force does not affect on all of four dimensions of sustainable marketing strategy. Competitive force does not afeect on product innovativeness implementation. The result shows that the study supports this hypothesis and competitive force is not significant effect on product innovativeness implementation (γ = 0.086, p > 0.01). Previous research, the non-significant final moderating effect of the five competitive forces on the market orientation and product innovation relationship in small manufacturing (Espallardo and Ballester, 2009). Therefore, competitive force does not affect on product innovativeness implementation. ***Thus, Hypothesis 9b is not supported***.

Thirdly, competitive force does not affect on all of four dimensions of sustainable marketing strategy. Competitive force does not affect on social responsibility concentration. The result shows that the study support this hypothesis and competitive force has not significant effect on social responsibility concentration (γ = 0.046, p> 0.01). Previous research, the competitive force has negative

environmental, social impacts and may lead large companies to act irresponsibly, corporate social responsibility (CSR), especially stakeholder theory, pays little attention to competition and market pressure (Lanoizelée, 2011). Therefore, competitive force does not affect on social responsibility concentration. ***Thus, Hypothesis 9c is not supported***.

Lastly, competitive force does not affect on all of four dimensions of sustainable marketing strategy. Competitive force does not affect on environmental process development. The result shows that the study support this hypothesis and competitive force has not significant effect on environmental process development ($\gamma = 0.046$, $p > 0.01$). Previous research show that the results indicate that industries' environmental reputation is positively related to the sustainability marketing strategies based on customers' environmental concern and leads to superior financial and market performance. They also posit that competitive intensity has not significant effect on environmental reputation (Taherdangkoo, Mona, and Ghasemi, 2019). Therefore, competitive force does not affect on environmental process development. ***Thus, Hypothesis 9d is not supported***.

Table 30 Summary of Results in the Relationships of Conceptual Model

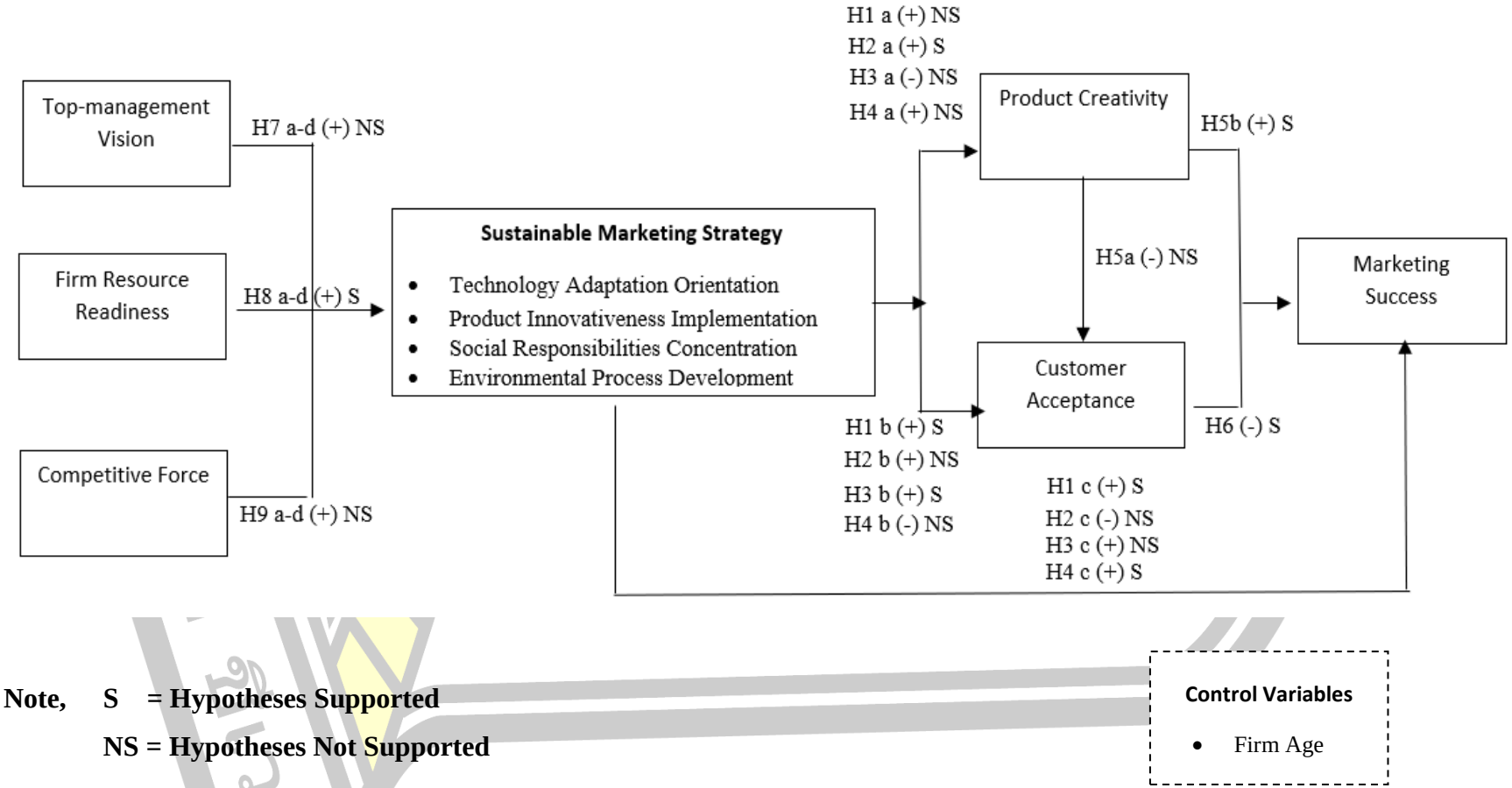
Research Questions	Hypotheses	Results	Conclusion
Specific Research Question (1) How does each of four dimensions of sustainable marketing strategy (including technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development) affect on product creativity, customer acceptance, and marketing success?	H1a-c H2a-c	• Technology adaptation orientation has not significant effect on product creativity • Technology adaptation orientation significantly and positively relates to customer acceptance and marketing success • Product innovativeness implementation significantly positively relates to product creativity • Product innovativeness implementation has not significant effect on customer acceptance • Product innovativeness implementation has not significant negative effect on marketing success	Supported (H1b- and H1c) Not Supported (H1a) Supported (H2a) Not Supported (H2b and H2c)

Table 30 Summary of Results in the Relationships of Conceptual Model (Continued)

Research Questions	Hypotheses	Results	Conclusion
Specific Research Question (1) How does each of four dimensions of sustainable marketing strategy (including technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development) affect on product creativity, customer acceptance, and marketing success?	H3a-c H4a-c	• Social responsibility concentration has not significant negative effect on product creativity • Social responsibility concentration significantly positively relates to customer acceptance • Social responsibility concentration has not significant effect on marketing success • Environmental process development not significant effect on product creativity • Environmental process development has not significant negative effect on customer acceptance • Environmental process development significantly positively relates to marketing success	Supported (H3b) Not Supported (H3a and H3c) Supported (H4c) Not Supported (H4a and H4b)

Table 30 Summary of Results in the Relationships of Conceptual Model (Continued)

Research Questions	Hypotheses	Results	Conclusion
Specific Research Question (2) How does product creativity have influence on customer acceptance?	H5a	• Product creativity has not significant negative effect on customer acceptance	Not Supported
(3) How does product creativity have influence on marketing success?	H5b	• Product creativity have positive influence on marketing success	Supported
(4) How does customer acceptance have influence on marketing success?	H6	• Customer acceptance have not significant negative effect on marketing success	Not Supported
(5) How do top-management vision, firm resource readiness, and competitive force have an impact on each four dimension of sustainable marketing strategy?	H7a-d H8a-d H9a-d	• Top- management vision has not significant effects on all of four dimension of sustainable marketing strategy • Firm resource readiness has a positive related to all of dimension of sustainable marketing strategy • Competitive force has not significant effects on all of four dimension of sustainable marketing strategy	Not Supported (H7a-d) Supported (H8a-d) Not Supported (H9a-d)



Note, S = Hypotheses Supported

NS = Hypotheses Not Supported

Figure 7 Summary of the Supported Hypotheses

Theoretical and Managerial Contributions

Theoretical Contribution

This paper attempts to gain more understanding of the relationships between sustainable marketing strategy and marketing success, and its antecedents. It can be stated that this research provides four unique theoretical contributions. Firstly, from reviewing the literature of sustainable marketing strategy, it has been found that sustainable marketing is widely described as an abstract concept, so empirical evidence of sustainable marketing is introduced as varying concepts, depending on the notion of the researchers. Additionally, the prior literature found that there is little research examining the relationships between sustainable marketing strategy and other variables.

This research has sought to develop a more concrete concept, and gain more understanding regarding a new concept of sustainable marketing strategy by applying findings from the sustainable marketing literature. This research determines four dimensions of sustainable marketing strategy that includes: technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development. Moreover, this research has been developed to clarify the concept of sustainable marketing strategy, which will be useful for further study. Furthermore, this research has sought to identify the relevant constructs, including antecedents, and consequents that relate to the use of sustainable marketing strategy.

Secondly, this research appropriately modifies the measurement of several constructs, including technology adaptation orientation, product innovativeness implementation, social responsibility concentration, and environmental process development, and the four facets of the consequences (product creativity, customer acceptance, and marketing success) which have been developed and applied. These applications can benefit further study for academics who are studying sustainable marketing strategy literature.

Thirdly, multiple theoretical perspectives are incorporated to explain the proposed relationships in the conceptual model. It is mentioned that real business phenomena are complex due to many internal and external factors; for example, firm

strategy and competitive forces. Therefore, this research aims to develop the conceptual model that best explains as much as possible. As a result, two theories, including stakeholder theory and contingency theory are employed as a theoretical foundation of research. These theories enable researchers to better explain the relationships among constructs and to predict the results of those relationships.

Finally, sustainable marketing was discovered most of the existing research on sustainable marketing strategy has been conceptual, quantitative and thus lacking in qualitative results. Since this study has been based on quantitative research, it provides results that can be generalized about the relationships among the relevant constructs and sustainable marketing strategy.

Managerial Implications

This research presents several practical implications. Firstly, the findings of this research provides firms, particularly in ISO 14001 certified manufacturing businesses to understand how they can achieve sustainable marketing strategy which leads to marketing success. Therefore, managers may put more emphasis on how to establish the concept of sustainable marketing strategy in their organizations. To maximize the benefits of sustainable marketing strategy, managers should provide other resources to support its effectiveness relating to this concept and create new opportunities in the local and global market and utilize their sustainable marketing to succeed.

Secondly, sustainable marketing strategy is encouraged by important factors: top-management vision, firm resource readiness, and competitive force. Moreover, firms should focus on firm resource readiness to search for new knowledge that leads to the creation, development, improvement, and transform of the sustainable marketing model to increase product creativity, customer acceptance and marketing success.

Thirdly, from a practical standpoint, top-management vision who are responsible for marketing should concentrate the different routes to marketing success as a result of sustainable marketing strategy. In support of this research, in the context of the ISO 14001 certified manufacturing business can adapt themselves to the uncertain business environments by adapting core competency to ensure the building

of competitive advantage (product creativity and customer acceptance). Therefore, firms that analyze the business opportunities/weaknesses allow themselves to improve their direction of business operations.

Finally, the conceptual model in this study can be applied to other industries, other countries and culture because the concepts and theories that are used in this study have been studied from several industries and countries. Therefore, the contribution of this study can be used in other context.

Limitations and Future Research Directions

Limitations

This study has some limitations that should be mentioned. The limitation of this study is due to the data solely collected from the online database of Thai Industrial Standards Institute, Ministry of Industry. Thus, the number of usable questionnaires is 208; some constructs of this study are developed as a new scale. Although scales are developed from a thorough literature review and based on the definition of each construct, these new scales are to be taken into careful consideration in the verification and application of this study. However, SEM is used to analyze the impact of each construct in the proposed framework requiring a large sample size for a stable solution. Weston and Gore (2006) suggested that the minimum sample size for SEM should be 200. In addition, Anderson and Gerbing (1988) reveal that acceptamce with SEM is robust if the sample size is more significant than between 100-150.

Therefore, interpreting the results must be done with caution. Moreover, limitation of the period time, the data collection procedure is relatively short which the process and follow-up method only took approximately a month. If this study has waited for more responses, there are limitation concerns response rate may affect analysis in particular the power of statistical test. Moreover, the newly-proposed dimensions of sustainable marketing strategy can be also re-proposed to fit the variety of each industry environment and condition as well as the antecedents would be fruitful to the literature to expand this study in future research.

However, the researchers should be examined in another variable that impacts to operation in ISO 14001 certified manufacturing businesses for better in conceptual frameworks. Lastly, the result of this study is derived from only ISO 14001 certified manufacturing businesses in Thailand. Thus, the results of this study may be narrow as lacking generalization concept of both other industries and countries. Therefore, the results are very different from those obtained from the literature.

Future Research Directions

Firstly, future research should take into consideration the moderating variables to enhance the relationships between the antecedent variables and the dimensions of sustainable marketing strategy. Future research should attempt to study other potential moderating variables such as market turbulence, technology changes, competitive pressures, marketing culture, service culture, and corporate flexibility.

Secondly, most constructs are original scales and measurements drawn from the literature reviews. Therefore, future research should explore and develop scales from different methods such as in-depth interviews from marketing managers representing each industry of ISO 14001 memberships, to create and confirm measurements that consist with true context of business and all relationships of this research model.

Thirdly, future research should be investigated more for their positive effect on other possible outcomes such as firm survival. Thus, further research should investigate on these variables because they affect the success of sustainable marketing strategy. The survey is derived from ISO 14001 certified manufacturing businesses in Thailand. Thus, future research may be collecting data from different groups of the sample and comparative population to verify the ability to generalize of the research and increase reliability.

Finally, this conceptual framework can be applied to compare researches between Thailand and western countries because both are different in the importance of sustainable marketing strategy. Therefore, it is interesting that the results will be from different cultures. This study suggests a new theoretical framework but that only examines ISO 14001 certified manufacturing businesses in Thailand. For example,

future research may separate the population of certified ISO 14001 firms in Thailand into two groups including manufacturer and service businesses to compare the results of such two groups. Therefore, future research should study and apply the same or similar conceptual frameworks with other services and businesses for comparing results between manufacturing and services sectors businesses.

Summary

This chapter describes the conclusions and discussions, theoretical and managerial contributions, limitations, and future research. The results of the study sustainable marketing strategy and marketing success framework are discussed. Theoretical and managerial contributions for academics and practitioners are revealed. Finally, the study recognizes the limitations of the research and suggests different issues in sustainable marketing strategy and marketing success for future research.

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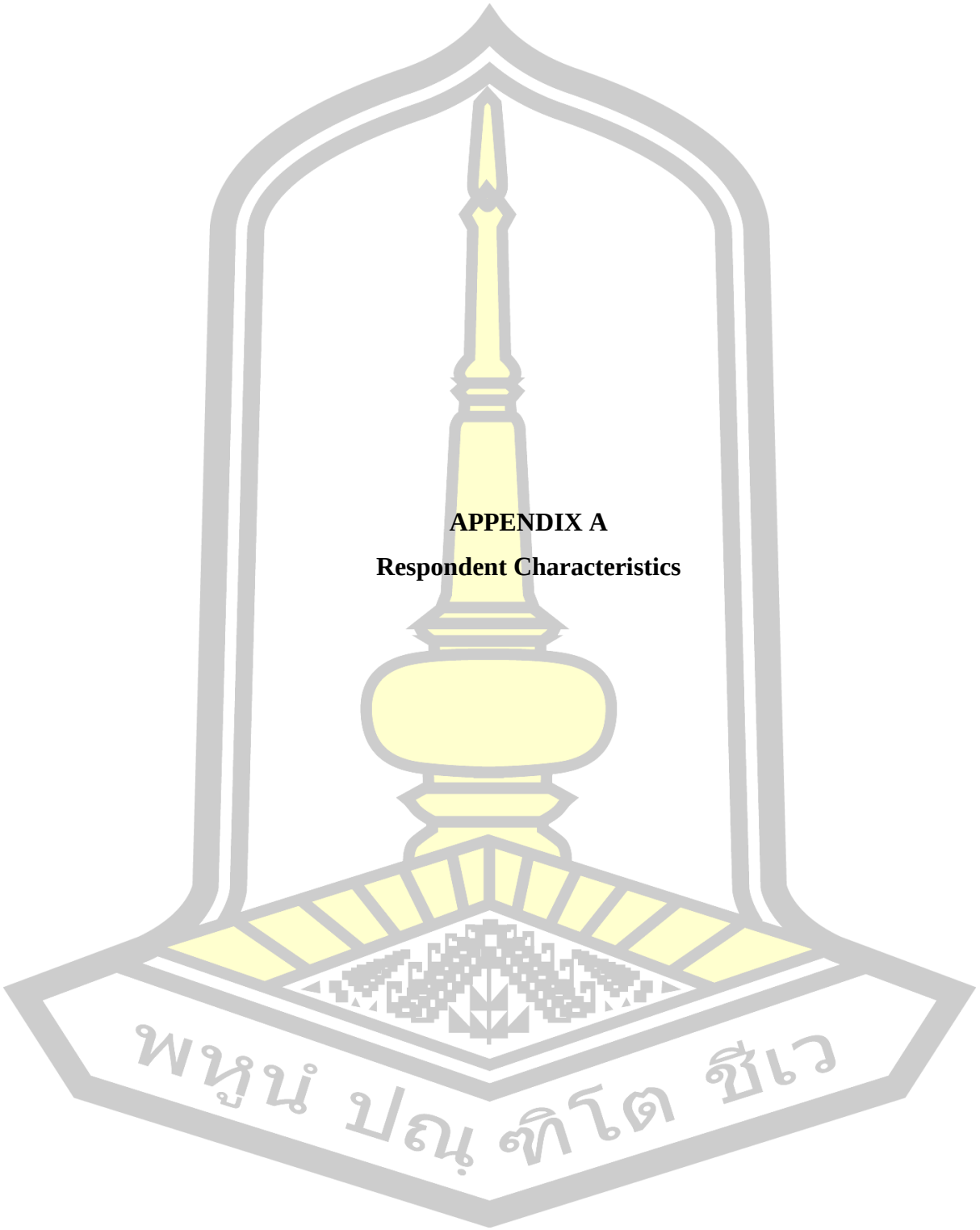
APPENDICS



APPENDIX A

Respondent Characteristics

Table A1: Demographic Characteristics of ISO 14001 Certified Manufacturing Businesses in Thailand

Descriptions	Categories	Frequencies	Percent (%)
1. Forms of business	1. Company Limited	29	19.90
	2. Partnership Limited	94	45.20
	3. Public Company Limited	85	40.90
	Total	208	100
2. Types of Manufacturing Industry	1. Agro and Food Industry	27	13.00
	2. Industrial	61	29.30
	3. Property and Construction	42	20.20
	4. Technology	52	25.00
	5. Other	26	12.50
	Total	208	100
3. Numbers of employees	1. Less than 50 persons	36	17.30
	2. 51-100 persons	19	9.10
	3. 101-150 persons	26	12.50
	4. More than 150 persons	127	61.10
	Total	208	100
4. Operational capital of the firm	1. Less than 50,000,000 Baht	14	6.70
	2. 50,000,001-150,000,000 Baht	58	27.90
	3. 150,000,001-250,000,000 Baht	42	20.20
	4. More than 250,000,000 Baht	94	45.20
	Total	208	100

Table A1: Demographic Characteristics of ISO 14001 Certified Manufacturing Businesses in Thailand (Continued)

Descriptions	Categories	Frequencies	Percent (%)
5. The period of time in operating business	1. Less than 10 years	52	25.00
	2. 11-15 years	53	25.50
	3. 16-20 years	42	20.20
	4. More than 20 years	61	29.30
Total		208	100
6. The period of time in ISO 14001 certificate	1. Less than 1 years	6	2.90
	2. 3-5 year	73	35.10
	3. 5-7 year	96	46.20
	4. More than 7 year	33	15.90
Total		208	100
7. Award in environmental management	1. Yes	163	78.40
	2. No	45	21.60
Total		208	100

APPENDIX B

Non-Response Bias Tests

Table B1: Non-Response Bias Tests

Comparison	N	Mean	S.D.	t	p-value
Business owner type					
• First Group	104	2.31	0.655	.802	0.424
• Second Group	104	2.23	0.727		
Types of business					
• First Group	104	2.98	1.215	.387	0.699
• Second Group	104	2.91	1.293		
Number of full-time employees					
• First Group	104	3.20	1.242	.355	0.723
• Second Group	104	3.14	1.101		
Business capital registered					
• First Group	104	3.03	0.939	-1.38	0.890
• Second Group	104	3.05	1.065		
The period of time in operating business					
• First Group	104	2.57	1.156	.358	0.720
• Second Group	104	2.51	1.166		
The period of time in ISO 14001 certificate					
• First Group	104	2.77	0.642	.368	0.713
• Second Group	104	2.73	0.850		
The environmental management and sustainability award					
• First Group	104	0.17	0.380	-1.517	0.131
• Second Group	104	0.26	0.441		

Total respondents = 208 the early respondents (n=104) and the last respondents (n=104) that have different in respondents group.

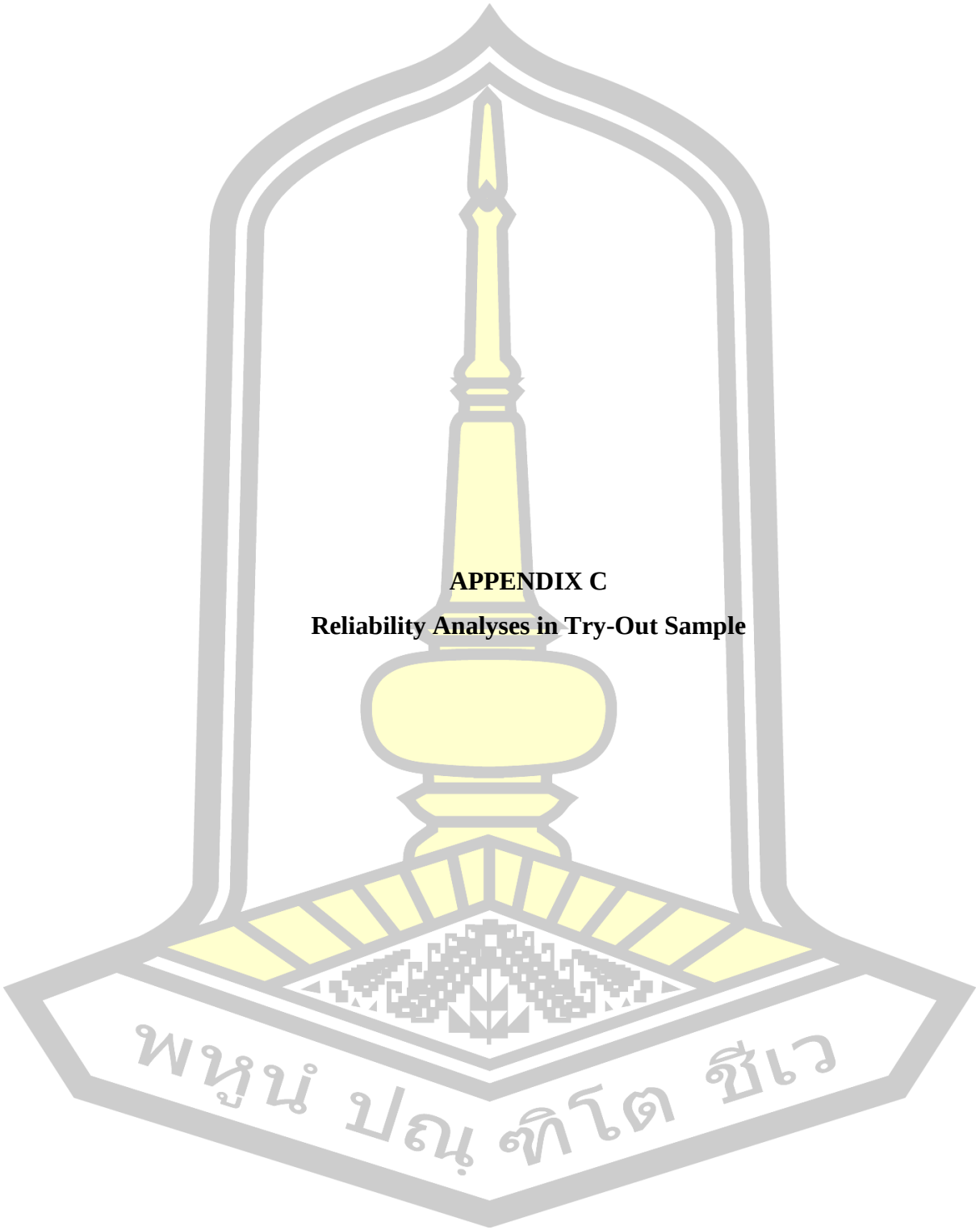
Table B2: Non-Response Bias Tests

Comparison	N	Mean	S.D.	t	p-value
Technology adaptation orientation (TAO)					
• First Group	104	4.32	0.414	0.472	0.935
• Second Group	104	4.32	0.430	0.472	0.935
Product innovativeness implementation (PII)					
• First Group	104	4.33	0.443	0.966	0.683
• Second Group	104	4.31	0.402	0.966	0.683
Social responsibility concentration (SRC)					
• First Group	104	4.33	0.388	0.610	0.651
• Second Group	104	4.36	0.451	0.610	0.651
Environmental process development (EPD)					
• First Group	104	4.33	0.432	0.236	0.368
• Second Group	104	4.39	0.451	0.236	0.368
Product Creativity (PC)					
• First Group	104	4.36	0.456	0.590	0.378
• Second Group	104	4.28	0.388	0.590	0.378
Customer Acceptance (CA)					
• First Group	104	4.37	0.425	0.675	0.650
• Second Group	104	4.34	0.436	0.675	0.650
Marketing success (MS)					
• First Group	104	4.29	0.407	0.896	0.547
• Second Group	104	4.29	0.407	0.896	0.547

Table B2: Non-Response Bias Tests (Continued)

Comparison	N	Mean	S.D.	t	p-value
Top-management vision (TMV)					
• First Group	104	4.76	0.364	0.505	0.800
• Second Group	104	4.58	0.364	0.505	0.800
Firm resource readiness (FRR)					
• First Group	104	4.51	0.443	0.500	0.378
• Second Group	104	4.40	0.357	0.500	0.378
Competitive force (CF)					
• First Group	104	4.59	0.437	0.400	0.566
• Second Group	104	4.63	0.358	0.400	0.566

Total respondents = 208 the early respondents (n=104) and the last respondents (n=104) that have different in respondents group.



APPENDIX C

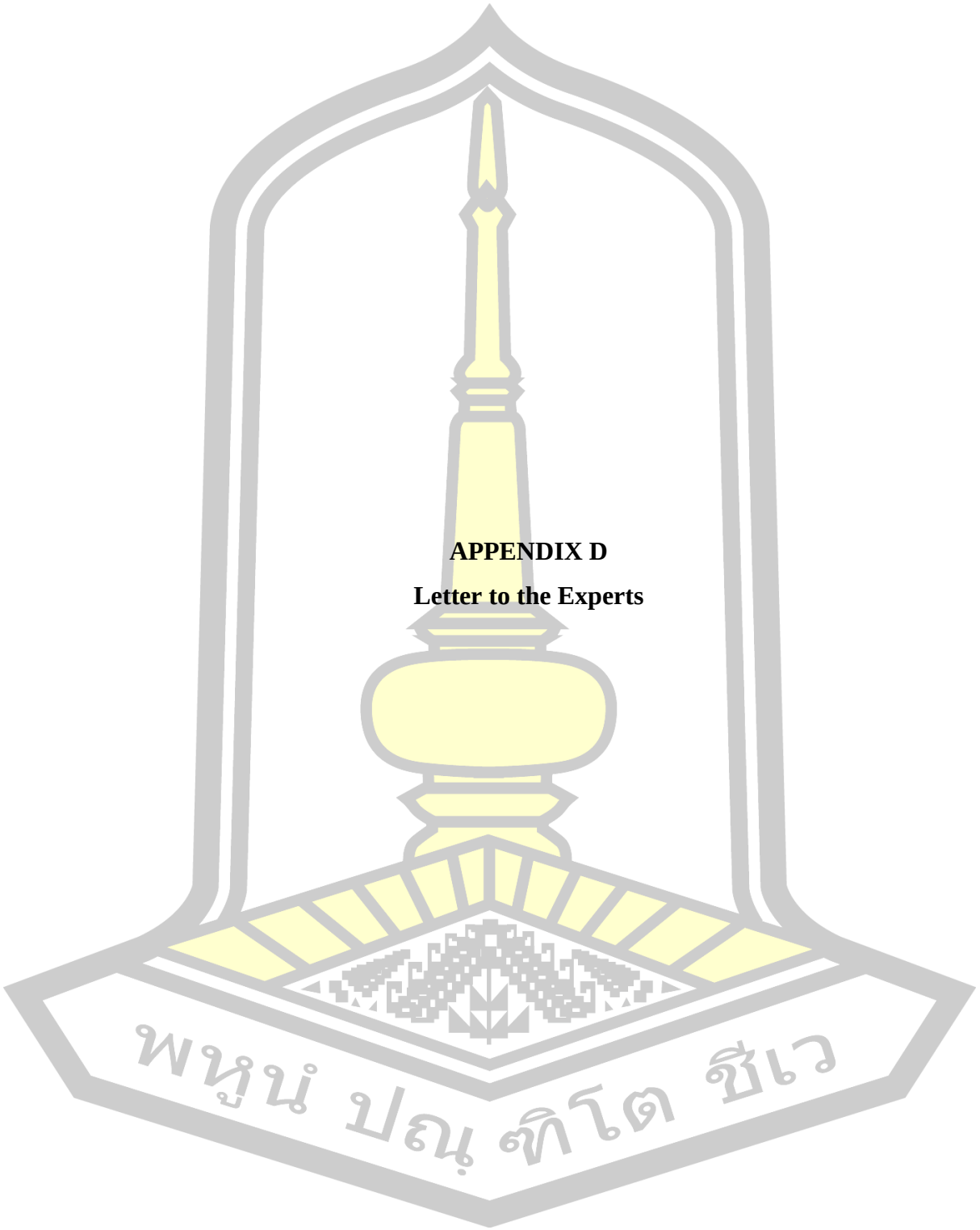
Reliability Analyses in Try-Out Sample

Table C1: Reliability Analyses in Try-Out Sample

Constructs	Items	Reliability Items (Alpha)	Reliability constructs (Alpha)
1. Technology adaptation orientation (TMO)	TMO1	0.740	**0.907**
	TMO2	0.882	
	TMO3	0.915	
	TMO4	0.658	
2. Product innovativeness implementation (PII)	PII1	0.918	**0.899**
	PII2	0.728	
	PII3	0.619	
	PII4	0.870	
3. Social responsibility concentration (SRC)	SRC1	0.718	**0.842**
	SRC2	0.660	
	SRC3	0.602	
	SRC4	0.747	
4. Environmental process development (EPD)	EPD1	0.881	**0.934**
	EPD2	0.826	
	EPD3	0.887	
	EPD4	0.800	
5. Product Creativity (PC)	PC1	0.772	**0.861**
	PC2	0.695	
	PC3	0.664	
	PC4	0.701	

Table C1: Reliability Analyses in Try-Out Sample (Continued)

Constructs	Items	Reliability Items (Alpha)	Reliability constructs (Alpha)
6. Customer acceptance (CA)	CA1	0.884	**0.944**
	CA2	0.890	
	CA3	0.782	
	CA4	0.915	
7. Marketing success (MS)	MS1	0.818	**0.908**
	MS2	0.718	
	MS3	0.710	
	MS4	0.872	
8. Top-management vision (TMV)	TMV1	0.807	**0.892**
	TMV2	0.708	
	TMV3	0.800	
	TMV4	0.738	
9. Firm resources readiness (FRR)	FRR1	0.785	**0.869**
	FRR2	0.664	
	FRR3	0.714	
	FRR4	0.764	
10. Competitive force (CF)	CF1	0.914	**0.918**
	CF2	0.772	
	CF3	0.698	
	CF4	0.869	



APPENDIX D

Letter to the Experts

ที่ อว 0605.10/420

คณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม
ตำบลขามเรียง อำเภอกันทรวิชัย
จังหวัดมหาสารคาม
44150

2 มิถุนายน 2563

เรื่อง ขอความอนุเคราะห์เป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.ดนุพล หุ่นโสภณ

ด้วย นางสาวสุภรดา พิมพ์พรรค์ รหัสนิสิต 60010962002 **นิสิตระดับปริญญาเอก** หลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการจัดการการตลาด คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง "กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางการตลาด: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย" ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความอนุเคราะห์ท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม หวังเป็นอย่างยิ่งว่าคงได้รับความอนุเคราะห์จากท่านด้วยดี และขอขอบคุณมา ณ โอกาสนี้ด้วย

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร.นิติพงษ์ ส่งศรีโรจน์)
คณบดีคณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม

งานวิชาการระดับบัณฑิตศึกษา
คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม
โทรศัพท์ 0-4375-4333 ต่อ 3431
โทรสาร 0-4375-4422

ที่ อว 0605.10/420

คณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม
ตำบลขามเรียง อำเภอกันทรวิชัย
จังหวัดมหาสารคาม
44150

2 มิถุนายน 2563

เรื่อง ขอความอนุเคราะห์เป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน ผู้ช่วยศาสตราจารย์ **ดร.ฉัตรชัย อินทลังษ์**

ด้วย นางสาวศุภรดา พิมพ์พรรค์ รหัสนิสิต 60010962002 **นิสิตระดับปริญญาเอก** หลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการจัดการการตลาด คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง "กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางการตลาด: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย" ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความอนุเคราะห์ท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม หวังเป็นอย่างยิ่งว่าคงได้รับความอนุเคราะห์จากท่านด้วยดี และขอขอบคุณมา ณ โอกาสนี้ด้วย

ขอแสดงความนับถือ

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คณบดีคณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม

งานวิชาการระดับบัณฑิตศึกษา
คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม
โทรศัพท์ 0-4375-4333 ต่อ 3431
โทรสาร 0-4375-4422

บันทึกข้อความ

หน่วยงาน คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม โทรศัพท์ 043-754333-3431 Fax 043- 754422
ที่ อว 0605.10/๙๒๑ **วันที่** 2 มิถุนายน 2563
เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน อาจารย์ ดร.ประทานพร จันทร์อินทร์

ด้วย นางสาวศุภรดา พิมพ์พรรค์ รหัสนิสิต 60010962002 **นิสิตระดับปริญญาเอก หลักสูตร** ปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการจัดการการตลาด คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง "กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางการตลาด: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย" ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความอนุเคราะห์ท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

จึงเรียนมาเพื่อโปรดพิจารณา

(ผู้ช่วยศาสตราจารย์ ดร.นิติพงษ์ ส่งศรีโรจน์)
คณบดีคณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม

บันทึกข้อความ

หน่วยงาน คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม โทรศัพท์ 043-754333-3431 Fax 043- 754422

ที่ อว 0605.10/ ๙๒๒ **วันที่** 2 มิถุนายน 2563

เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน อาจารย์ ดร.นริศรา สัจจพงษ์

ด้วย นางสาวศุภรดา พิมพ์พรรค์ รหัสนิสิต 60010962002 **นิสิตระดับปริญญาเอก หลักสูตร** ปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการจัดการการตลาด คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง "กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางการตลาด: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย" ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความอนุเคราะห์ท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

จึงเรียนมาเพื่อโปรดพิจารณา

(ผู้ช่วยศาสตราจารย์ ดร.นิติพงษ์ ส่งศรีโรจน์)
คณบดีคณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม

บันทึกข้อความ

หน่วยงาน คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม โทรศัพท์ 043-754333-3431 Fax 043- 754422

ที่ อว 0605.10/๗๑๗ **วันที่** 2 มิถุนายน 2563

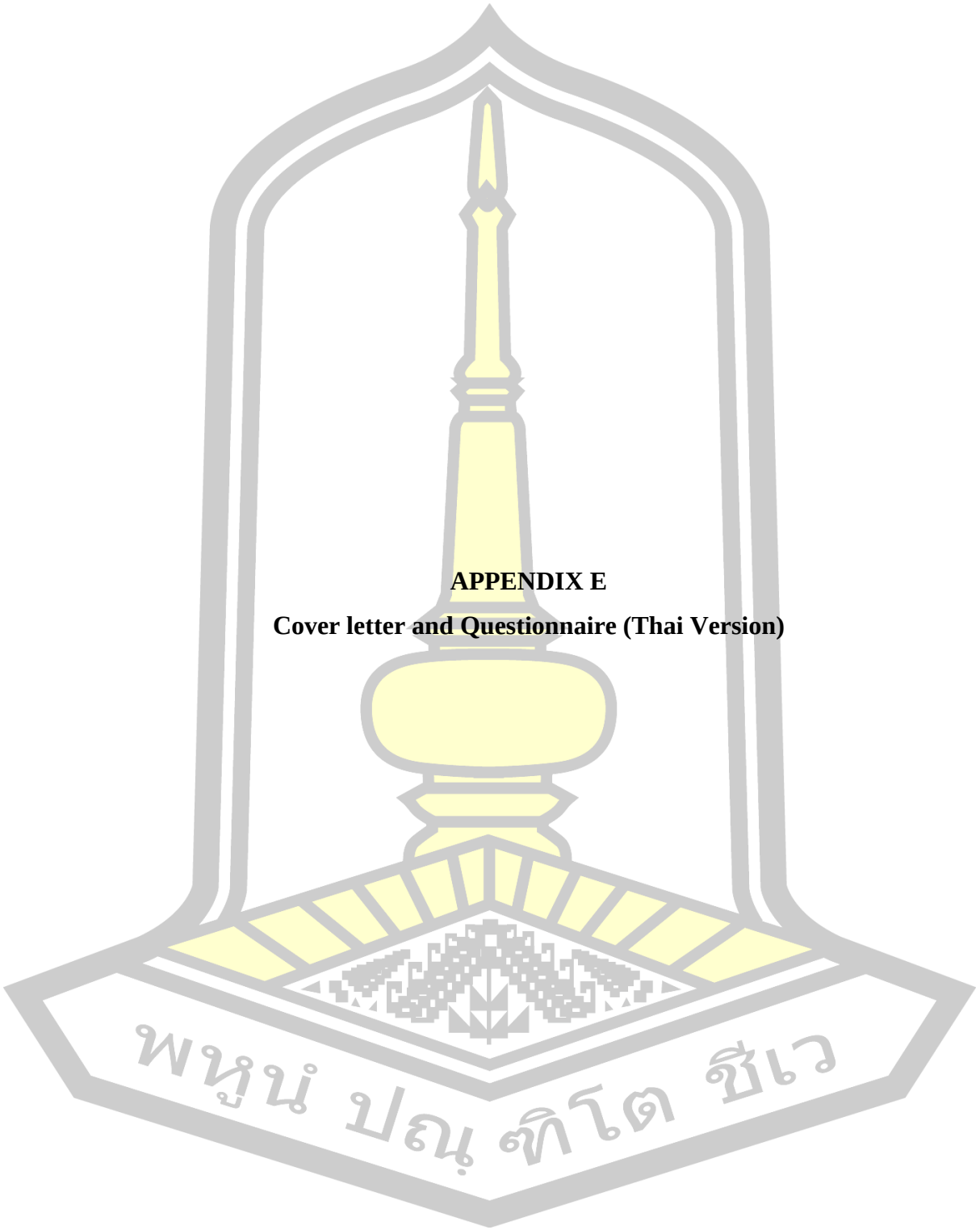
เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน อาจารย์ ดร.แคทลียา ขาปะวัง

ด้วย นางสาวศุภรดา พิมพ์พรรค์ รหัสนิสิต 60010962002 **นิสิตระดับปริญญาเอก หลักสูตร** ปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการจัดการการตลาด คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง "กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางการตลาด: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย" ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความอนุเคราะห์ท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

จึงเรียนมาเพื่อโปรดพิจารณา

(ผู้ช่วยศาสตราจารย์ ดร.นิติพงษ์ ส่งศรีโรจน์)
คณบดีคณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม



APPENDIX E

Cover letter and Questionnaire (Thai Version)

ที่ อว 0605.10/ ๗๖

คณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม
ตำบลขามเรียง อำเภอกันทรวิชัย
จังหวัดมหาสารคาม
44150

22 มิถุนายน 2563

เรื่อง ขอความอนุเคราะห์กรอกแบบสอบถาม

เรียน ผู้อำนวยการฝ่ายการตลาด/ผู้จัดการฝ่ายการตลาด/ผู้จัดการทั่วไป

ด้วย นางสาวศุภรดา พิมพ์พรรค์ รหัสนิสิต 60010962002 นิสิตระดับปริญญาเอก หลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการจัดการการตลาด คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง "กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางการตลาด: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001" ซึ่งเป็นส่วนหนึ่งของการทำวิทยานิพนธ์หลักสูตรปรัชญาดุษฎีบัณฑิตและการศึกษาในครั้งนี้ได้เน้นให้นิสิตศึกษาข้อมูลด้วยตนเองดังนั้น เพื่อให้การจัดทำวิทยานิพนธ์เป็นไปด้วยความเรียบร้อยและบรรลุวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความอนุเคราะห์ให้ นางสาวศุภรดา พิมพ์พรรค์ ศึกษาและเก็บรวบรวมในรายละเอียดตามแบบสอบถามที่แนบมาพร้อมนี้

คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม หวังเป็นอย่างยิ่งว่าคงได้รับความอนุเคราะห์จากท่านในการให้ข้อมูลในครั้งนี้เป็นอย่างยิ่ง และขอขอบคุณมา ณ โอกาสนี้

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร.นิติพงษ์ ส่งศรีโรจน์)
คณบดีคณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม

ฝ่ายวิชาการระดับบัณฑิตศึกษา
คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม
โทรศัพท์ 0-4375-4333 ต่อ 3431
โทรสาร 0-4375-4422

แบบสอบถามเพื่อการวิจัย

เรื่อง กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางธุรกิจ: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

คำชี้แจง

โครงการวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาวิจัย “กลยุทธ์การตลาดที่ยั่งยืนและความสำเร็จทางธุรกิจ: หลักฐานเชิงประจักษ์ของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย” เพื่อเป็นข้อมูลในการจัดทำวิทยานิพนธ์ในระดับปริญญาเอกของผู้วิจัยในหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาการจัดการการตลาด คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จังหวัดมหาสารคาม หมายเลขโทรศัพท์ 043-754333

ข้าพเจ้าใคร่ขอความอนุเคราะห์จากท่านผู้ตอบแบบสอบถามได้โปรดตอบแบบสอบถามชุดนี้ โดยรายละเอียดของแบบสอบถามประกอบด้วยส่วนคำถาม 7 ตอนดังนี้

ตอนที่ 1 ข้อมูลทั่วไปเกี่ยวกับผู้บริหารฝ่ายการตลาดของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

ตอนที่ 2 ข้อมูลทั่วไปเกี่ยวกับบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

ตอนที่ 3 ความคิดเห็นเกี่ยวกับกลยุทธ์การตลาดที่ยั่งยืนของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

ตอนที่ 4 ความคิดเห็นเกี่ยวกับผลการดำเนินงานทางการตลาดของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

ตอนที่ 5 ความคิดเห็นเกี่ยวกับปัจจัยภายในที่มีต่อการดำเนินงานของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

ตอนที่ 6 ความคิดเห็นเกี่ยวกับปัจจัยภายนอกที่มีต่อการดำเนินงานของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

ตอนที่ 7 ข้อคิดเห็นและข้อเสนอแนะเกี่ยวกับกลยุทธ์การตลาดที่ยั่งยืนของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

คำตอบของท่านจะถูกเก็บรักษาเป็นความลับและจะไม่มีการใช้ข้อมูลใด ๆ ที่เปิดเผยเกี่ยวกับตัวท่านในการรายงานข้อมูลรวมทั้งจะไม่มีการร่วมใช้ข้อมูลดังกล่าวกับบุคคลภายนอกอื่นใดโดยไม่ได้รับอนุญาตจากท่าน

ท่านต้องการรายงานสรุปผลการวิจัยหรือไม่

( ) ต้องการ E - mail _____ ( ) ไม่ต้องการหากท่านต้องการรายงานสรุปผลการวิจัย โปรดระบุ E-mail Address ของท่าน หรือแนบนามบัตรของท่านมากับแบบสอบถามชุดนี้

ผู้วิจัยขอขอบพระคุณที่ท่านได้กรุณาเสียสละเวลาในการตอบแบบสอบถามชุดนี้อย่างถูกต้องครบถ้วน และหวังเป็นอย่างยิ่งว่าข้อมูลที่ได้รับจากท่านจะเป็นประโยชน์อย่างยิ่งต่อการวิจัยในครั้งนี้ และขอขอบพระคุณอย่างสูงมา ณ โอกาสนี้ หากท่านมีข้อสงสัยประการใดเกี่ยวกับแบบสอบถาม โปรดติดต่อผู้วิจัย นางสาวศุภรดา พิมพ์พรรค์ โทรศัพท์เคลื่อนที่ 091-8647498 หรือ E – mail : pimpan.suparada@gmail.com

(นางสาวศุภรดา พิมพ์พรรค์)

นิสิตปริญญาเอก สาขาวิชาการจัดการการตลาด

คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม

ตอนที่ 1 โปรดทำเครื่องหมาย ✓ที่ตรงกับข้อมูลทั่วไปของผู้บริหารฝ่ายการตลาดของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

1. เพศ

☐ ชาย ☐ หญิง

2. อายุ

☐ น้อยกว่า 30 ปี ☐ 31- 40 ปี

☐ 41-50 ปี ☐ มากกว่า 50 ปี

3. ระดับการศึกษา

☐ ปริญญาตรีหรือต่ำกว่า ☐ สูงกว่าปริญญาตรี

4. ประสบการณ์ในการทำงาน

☐ น้อยกว่า 5 ปี ☐ 6-10 ปี

☐ 11-15 ปี ☐ มากกว่า 15 ปี

5. ตำแหน่งงานในปัจจุบัน

☐ ผู้อำนวยการฝ่ายการตลาด ☐ ผู้จัดการฝ่ายการตลาด

☐ ผู้จัดการทั่วไป ☐ อื่นๆ (โปรดระบุ) .....

ตอนที่ 2 โปรดทำเครื่องหมาย ✓ที่ตรงกับข้อมูลทั่วไปเกี่ยวกับบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

1. รูปแบบธุรกิจ

☐ บริษัทจำกัด ☐ ห้างหุ้นส่วนจำกัด

☐ บริษัทมหาชนจำกัด

2. ประเภทอุตสาหกรรม

☐ สินค้าอุปโภค บริโภค ☐ สินค้าอุตสาหกรรม

☐ ทรัพยากรธรรมชาติและเหมืองแร่ ☐ เทคโนโลยี

☐ อื่นๆ (ระบุ).....

3. จำนวนพนักงานในปัจจุบัน (ก่อนสถานการณ์โควิด-19)

☐ น้อยกว่า 50 คน ☐ 51-100 คน

☐ 101-150 คน ☐ มากกว่า 150 คน

4. ทุนในการดำเนินงาน

☐ ต่ำกว่า 50,000,000 บาท ☐ 50,000,001-150,000,000 บาท

☐ 150,000,001-250,000,000 บาท ☐ มากกว่า 250,000,000 บาท

5. ระยะเวลาในการดำเนินงาน

☐ น้อยกว่า 10 ปี ☐ 11-15 ปี

☐ 16-20 ปี ☐ มากกว่า 20 ปี

ตอนที่ 2 โปรดทำเครื่องหมาย ✓ที่ตรงกับข้อมูลทั่วไปเกี่ยวกับบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย (ต่อ)

6. ระยะเวลาที่กิจการรับรองมาตรฐาน ISO 14001

☐ น้อยกว่า 1 ปี ☐ 3-5 ปี

☐ 5-7 ปี ☐ มากกว่า 7 ปี

7. กิจการได้รับรางวัลที่แสดงถึงการจัดการสิ่งแวดล้อม เช่น รางวัลด้านความยั่งยืน และรางวัลด้านความเป็นเลิศด้านการจัดการสิ่งแวดล้อม

☐ เคย ☐ ไม่เคย

ตอนที่ 3 โปรดทำเครื่องหมาย ✓ในช่องที่ตรงกับความคิดเห็นเกี่ยวกับกลยุทธ์การตลาดที่ยั่งยืนของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

กลยุทธ์การตลาดที่ยั่งยืน	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
แนวทางการปรับตัวทางเทคโนโลยี					
1. กิจการส่งเสริมการใช้เทคโนโลยีที่มีความเหมาะสมต่อการพัฒนาสินค้าใหม่ๆ ที่เป็นมิตรต่อสิ่งแวดล้อม					
2. กิจการเชื่อมั่นว่าการมีเทคโนโลยีใหม่ๆ จะช่วยให้กิจการประสบความสำเร็จอย่างยั่งยืน					
3. กิจการแสวงหาเทคโนโลยีที่มีประสิทธิภาพเพื่อนำไปสู่การสร้างสรรค์ที่ยั่งยืน					
4. กิจการได้ใช้เทคโนโลยีใหม่ๆ ในการส่งเสริมผลิตภัณฑ์ที่เป็นมิตรต่อสิ่งแวดล้อม					
การนำนวัตกรรมผลิตภัณฑ์ไปใช้					
5. กิจการมุ่งมั่นพัฒนากระบวนการการผลิตเพื่อลดการใช้วัตถุดิบและพลังงานให้เป็นไปอย่างมีประสิทธิภาพ					
6. กิจการมุ่งเน้นการผลิตสินค้าเพื่อให้ได้มาตรฐานที่บ่งชี้ถึงความเป็นมิตรต่อสิ่งแวดล้อม					

ตอนที่ 3 โปรดทำเครื่องหมาย ✓ในช่องที่ตรงกับความคิดเห็นเกี่ยวกับกลยุทธ์การตลาดที่ยั่งยืนของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย (ต่อ)

กลยุทธ์การตลาดที่ยั่งยืน	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
7. กิจการส่งเสริมให้บุคลากรคิดและออกแบบผลิตภัณฑ์ใหม่ๆที่คำนึงถึงผลกระทบต่อสิ่งแวดล้อม					
8. กิจการให้ความสำคัญในการนำเสนอนวัตกรรมผลิตภัณฑ์ใหม่ในตลาดเพื่อให้ลูกค้ายอมรับ					
ความรับผิดชอบต่อสังคม 9. กิจการมีแนวทางการดำเนินงานที่สะท้อนถึงความรับผิดชอบต่อสังคม และชุมชน					
10. กิจการตระหนักต่อชุมชน สังคม และสิ่งแวดล้อมอยู่เสมอ					
11. กิจการสนับสนุนความรับผิดชอบต่อสังคมในด้านความเป็นมิตรต่อสิ่งแวดล้อม					
12. กิจการเชื่อมั่นว่าการดำเนินงานที่มีต่อความรับผิดชอบต่อชุมชนและสังคมจะส่งผลไปยังการดำเนินงานขององค์กร					
การพัฒนากระบวนการด้านสิ่งแวดล้อม 13. กิจการส่งเสริมให้บุคลากรเห็นถึงความสำคัญของการดำเนินงานที่มุ่งเน้นการรักษาสิ่งแวดล้อมทั้งภายในและภายนอก					
14. กิจการมีการดำเนินงานที่แสดงออกถึงความรับผิดชอบต่อการลดมลภาวะการลดปริมาณของเสียในกระบวนการผลิต					
15. กิจการมีการวิเคราะห์สภาพแวดล้อมและเหตุการณ์ที่มีผลกระทบต่อสิ่งแวดล้อมเพื่อนำมากำหนดเป็นแนวทางในการปฏิบัติงานอย่างมีประสิทธิภาพ					
16. กิจการจัดสรรงบประมาณและวิจัยพัฒนาเพื่อสนับสนุนการดำเนินงานในด้านการอนุรักษ์ ป้องกัน ฟื้นฟูสิ่งแวดล้อม					

ตอนที่ 4 โปรดทำเครื่องหมาย ✓ในช่องที่ตรงกับความคิดเห็นเกี่ยวกับผลการดำเนินงานทางการตลาดของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศ

ผลการดำเนินงานทางการตลาด	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
ความคิดสร้างสรรค์ผลิตภัณฑ์					
17. กิจการมีการพัฒนาผลิตภัณฑ์ที่เป็นมิตรต่อสิ่งแวดล้อมอยู่เสมอ					
18. กิจการมีการสร้างสรรค์ผลิตภัณฑ์ใหม่ที่แตกต่างและคำนึงถึงผลกระทบต่อสิ่งแวดล้อม					
19. กิจการสร้างสรรค์ผลิตภัณฑ์ที่ได้มาตรฐานการอนุรักษ์ทรัพยากรช่วยให้ลูกค้าตัดสินใจง่ายขึ้น					
20. บุคลากรมีการพัฒนาทักษะในการเรียนรู้เทคนิคในการออกแบบสินค้าที่เป็นมิตรต่อสิ่งแวดล้อม					
การยอมรับของลูกค้า					
21. กิจการได้รับการยอมรับในการดำเนินธุรกิจที่เป็นมิตรต่อสิ่งแวดล้อม					
22. กิจการได้รับการยอมรับภาพลักษณ์ตราผลิตภัณฑ์ และส่งเสริมธุรกิจให้ดียิ่งขึ้น					
23. กิจการได้รับการยอมรับว่าสินค้ามีคุณภาพเป็นมิตรต่อสิ่งแวดล้อม และเป็นที่ต้องการของตลาด					
24. กิจการได้รับความเชื่อมั่นจากสังคมอยู่เสมอ					
ความสำเร็จทางการตลาด					
25. กิจการสามารถนำเสนอสินค้าที่มีคุณภาพ โดยที่คู่แข่งลอกเลียนแบบได้ยาก					
26. กิจการสามารถรักษาฐานลูกค้ารายเก่าและแสวงหาลูกค้ารายใหม่					
27 กิจการมียอดขายเจริญเติบโตอย่างต่อเนื่อง เมื่อเปรียบเทียบกับในอดีต					
28. กิจการมีอัตราการเติบโตของส่วนแบ่งตลาดเพิ่มสูงขึ้นอย่างต่อเนื่อง					

ตอนที่ 5 โปรดทำเครื่องหมาย ✓ในช่องที่ตรงกับความคิดเห็นเกี่ยวกับปัจจัยภายในที่มีต่อการดำเนินงานของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

ปัจจัยภายในที่มีต่อการดำเนินงาน	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
วิสัยทัศน์ของผู้บริหาร					
29. ผู้บริหารประยุกต์ใช้เทคนิคและวิธีการใหม่ๆโดยถือว่าเป็นส่วนหนึ่งของกลยุทธ์ด้านความยั่งยืน					
30. ผู้บริหารให้การสนับสนุนอย่างเต็มที่ในงานด้านความเป็นมิตรต่อสิ่งแวดล้อมที่มีผลกระทบต่อแผนการดำเนินงานที่ได้กำหนดไว้					
31. ผู้บริหารมีวิสัยทัศน์ในการบริหารงานที่ดีและมีศักยภาพเป็นไปตามเป้าหมายต่อความรับผิดชอบต่อสังคม และสิ่งแวดล้อม					
32. ผู้บริหารเชื่อมั่นว่าการดำเนินกิจการที่มุ่งเน้นความรับผิดชอบต่อ สังคม และสิ่งแวดล้อม ทำให้กิจการบรรลุความสำเร็จในการแข่งขันอย่างยั่งยืนในระยะยาว					
ความพร้อมของทรัพยากรของบริษัท					
33. กิจการมีทรัพยากรต่างๆ อย่างเพียงพอต่อการวางแผนกลยุทธ์การตลาดที่ยั่งยืน					
34. กิจการใช้ทรัพยากรต่างๆ ที่มีอยู่เพื่อให้เกิดประโยชน์สูงสุดในด้านสิ่งแวดล้อมและความยั่งยืน					
35. กิจการให้ความสำคัญกับการจัดสรรงบประมาณในด้านสิ่งแวดล้อม ชุมชน และสังคม					
36. กิจการมีทรัพยากรบุคคลทางการตลาดที่มีคุณภาพ จะช่วยส่งเสริมการดำเนินงานให้บรรลุเป้าหมายได้					

ตอนที่ 6 โปรดทำเครื่องหมาย ✓ในช่องที่ตรงกับความคิดเห็นเกี่ยวกับปัจจัยภายนอกที่มีต่อการดำเนินงานของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

ปัจจัยภายนอกที่มีต่อการดำเนินงาน	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
แรงกดดันทางการแข่งขัน					
37. การแข่งขันในปัจจุบันเกิดขึ้นจำนวนมาก กิจการจำเป็นต้องปรับปรุงและพัฒนาตนเองในด้านต่างๆ เช่น ความรับผิดชอบต่อสังคม					
38. แรงกดดันทางการแข่งขันทางธุรกิจมีความรุนแรงมากขึ้นกิจการจำเป็นต้องแสวงหาโอกาสทางการแข่งขันอยู่เสมอ					
39. แรงกดดันจากปัจจัยทางสังคมมีการเปลี่ยนแปลงอย่างรวดเร็วทำให้กิจการต่างๆต้องปรับเปลี่ยนกลยุทธ์อยู่ตลอดเวลา					
40. แรงกดดันจากการผลิตสินค้ารักษ์โลกทำให้กิจการต่างๆต้องปรับเปลี่ยนกลยุทธ์อย่างต่อเนื่อง					

ตอนที่ 7 ข้อคิดเห็นและข้อเสนอแนะเกี่ยวกับกลยุทธ์การตลาดที่ยั่งยืนของบริษัทที่ได้รับรองมาตรฐาน ISO 14001 ในประเทศไทย

หากท่านมีข้อเสนอแนะเพิ่มเติมเกี่ยวกับการบริหารงานและการดำเนินงานทางการตลาดได้โปรดเสนอแนะในช่องว่างข้างล่างนี้

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ขอขอบพระคุณท่านที่ได้กรุณาสละเวลาตอบแบบสอบถามทุกข้อ ได้โปรดพับแบบสอบถามและใส่ซองที่แนบมาพร้อมนี้ ส่งคืนตามที่อยู่ที่ระบุ หากท่านต้องการรายงานสรุปผลการวิจัยครั้งนี้ โปรดแนบนามบัตรของท่านมาพร้อมกับแบบสอบถาม ข้าพเจ้ายินดีที่จะจัดส่งรายงานสรุปให้แก่ท่านภายหลังเสร็จสิ้นการสรุปผลการวิจัย

APPENDIX F

Cover letter and Questionnaire (English Version)

Questionnaire to the Ph. D. Dissertation Research
"Sustainable Marketing Strategy and Marketing Success: Empirical Evidence from ISO 14001 Certified Manufacturing Businesses in Thailand"

Dear Sir /Madam,

The objective of this research is to examine Sustainable Marketing Strategy and Marketing Success: Empirical Evidence from ISO 14001 Certified Manufacturing Businesses in Thailand**.** This research is a part of doctoral in marketing management dissertation of Mahasarakham Business School, Mahasarakham University, Thailand. Tel 043 – 754333

The questionnaire is divided into 7 parts:

Section 1: Personal information about marketing executives of ISO 14001 certified manufacturing businesses in Thailand,

Section 2: General information of ISO 14001 certified manufacturing businesses in Thailand,

Section 3: Opinion on sustainable marketing strategy of ISO 14001 certified manufacturing businesses in Thailand,

Section 4: Opinion on business outcomes of ISO 14001 certified manufacturing businesses in Thailand,

Section 5: Opinion on the effect of internal environmental factor business outcomes of ISO 14001 certified manufacturing businesses in Thailand,

Section 6: Opinion on the effect of external environmental factor business outcomes of ISO 14001 certified manufacturing businesses in Thailand, and

Section7: Recommendations and suggestions regarding business administration of ISO 14001 certified manufacturing businesses in Thailand

Your answer will be kept as confidentiality and your information will not be shared with any outsider party without your permission.

Do you want a summary of the results?

( ) Yes e-mail _____ ( ) No

If you want a summary of this research, please indicate your e-mail address or attach your business card with this questionnaire.

Thank you for your time to answer all questions. I very much hope that your answer will provide the valuable information for my dissertation. If you have questions with respect to this research, please contact me, Ms. Suparada Pimpan, Tel 095-1690307 or e-mail pimpan.suparada@gmail.com

(Suparada Pimpan)
Ph. D. Student
Marketing Management
Mahasarakham University, Thailand

<u>Part 1:</u> Personal information about executive director or marketing manager of ISO 14001 certified manufacturing businesses in Thailand

1. Gender

☐ Male ☐ Female

2. Age

☐ Less than 30 years old ☐ 31-40 years old

☐ 41-50 years old ☐ More than 50 years old

3. Level of education

☐ Bachelor's degree or undergraduate ☐ Higher than bachelor's degree

4. Working experience

☐ Less than 5 years ☐ 6-10 years

☐ 11-15 years ☐ More than 15 years

5. Current position

☐ Marketing director ☐ Marketing manager

☐ General Manager ☐ Other (Please Specify) ……

<u>Part 2</u>: General information about ISO 14001 certified manufacturing businesses inThailand

1. Business owner type

☐ Company limited ☐ Partnership limited

☐ Public company limited

<u>Part 2</u>: General information about ISO 14001 certified manufacturing businesses in Thailand (Continued)

2. Types of businesses

☐ Agro and Food Industry ☐ Industrials

☐ Property and Construction ☐ Technology

☐ Other (Please specify) ……

3. Number of full-time employees

☐ Less than 50 persons ☐ 51 - 100 persons

☐ 101 – 150 persons ☐ More than 150 persons

4. Business capital registered

☐ Less than 50,000,000 Baht ☐ 50,000,001 – 150,000,000 Baht

☐ 150,000,001-250,000,000 Baht ☐ More than 250,000,000 Baht

5. The period of time in operating business

☐ Less than 10 years ☐ 11-15 years

☐ 16-20 years ☐ More than 20 years

6. The period of time in ISO 14001 of business

☐ Less than 1 years ☐ 3-5 years

☐ 5-7 years ☐ More than 7 years

7. Have the firm ever won environmental management and sustainability award?

☐ Yes ☐ Never

Part 3: **Opinion on Sustainable Marketing Strategy of ISO 14001 certified businesses in Thailand**

Sustainable Marketing Strategy	Levels of Agreement				
	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
Technology Adaptation Orientation					
1. Firm promotes the use of appropriate technology to develop new products that will allow for environmentally friendly					
2. Firm believes that having new technology in the operation of the organization will help the business to be more sustainable successful					
3. Firm focuses that the ability to use technology effectively to lead the creative sustainable					
4. Firm uses new technology to promote environmentally friendly products					
Product innovativeness Implementation					
5. Firm focuses to develop a production process to reduce the use of raw materials and energy to be more efficient					
6. Firm focused on producing products to meet standards that indicate environmentally friendly					
7. Firm promotes the employees to think and design new products do not impact the environment					
8. Firm attaches importance to offering new product innovations in the market for customer to accept					

Part 3: **Opinion on Sustainable Marketing Strategy of ISO 14001 certified businesses in Thailand (Continued)**

Sustainable Marketing Strategy	Levels of Agreement				
	5 Strongly agree	**4 Agree**	**3 Neutral**	**2 Disagree**	**1 Strongly Disagree**
Social Responsibility Concentration					
9. Firm emphases to operational guidance, to reflect the responsibility to impact social and community					
10. Firm recognizes to community, social, and environmental consistently					
11. Firms supports social responsibility to environmentally ecofriendly					
12. Firm believes in the operation of the organization to the responsibility to community, social and lead to the operations of the organization					
Environmental Process Development					
13. Firm support to employees the importance of focuses on the environment both inside and outside the company					
14. Firm promotes processes of business operations that demonstrate responsibility, such as reducing pollution, minimizing waste productions					
15. Firm analysis of the environmental and events for guideline to determine the operational efficiency					
16. Firm allocates budget, research and development for promote operations systems in conservation, protection, and restoration of the environment					

Part 4: Opinion on business outcomes of ISO 14001 certified manufacturing businesses in Thailand

Business Outcomes	Levels of Agreement				
	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
Product Creativity					
17. Firm has product development that is environmentally friendly all the time					
18. Firm has created new products that are different and consider the impact on the environment					
19. Firm has created new products that meet the resource conservation, which will help customers make decisions easier					
20. The employees have developed skills in learning techniques for designing environmentally friendly products					
Customer Acceptance					
21. Firm is recognized for conducting business that the environmentally friendly.					
22. Firm has recognized the brand image and promote the business to be better					
23. Firm is recognized that the quality products that are environmentally friendly and demand in the market					
24. Firm believes from social all the time					
Marketing Success					
25. Firm presents to providing qualified product and they are difficult to imitate from competitors					
26. Firm maintains existing customers while increases new customers consistently					
27. Firm has increase sale revenue continuously when compare from last year					
28. Firm has increase market share continuously from the past to present					

Part 5: Opinion on internal environmental operation of ISO 14001 certified manufacturing businesses in Thailand

Internal Environmental Factors	Levels of Agreement				
	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
Top-management Vision					
29. Top-management apply techniques and new methods as part of a sustainable strategy					
30. Top-management supports environmentally friendly that has an impact on the specified operational plans					
31. Top management vision has the potential to meet the targets towards social responsibility and environmental					
32. Top-management believes that the operations that focus on social responsibility and environment, the business to achieve long-term sustainable success in the competition					
Firm Resource Readiness					
33. Firm uses sufficient resources for sustainable marketing strategy planning					
34. Firm focuses on applying existing resources to maximize benefits so as to environmental and sustainable					
35. Firm places a priority on sufficient budget allocation to environmental, community, and social					
36. Firm has quality marketing human resources, which will help firm can more operation target achievement					

Part 6: Opinion on external environmental operation of ISO 14001 certified manufacturing businesses in Thailand

External Environmental Factors	Levels of Agreement				
	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
Competitive Force					
37. In present day, business competition has more competitor, business has improved and development such as social responsibility					
38. The competitive force of intense competition, business must seek competitive opportunity at all the time					
39. The competitive force of social factors is changing rapidly, business must seek strategy all the time					
40. The competitive force of the production of green products, business must seek strategy at all the time					

Section 7: Recommendations and suggestions regarding business administration of ISO 14001certified manufacturing businesses in Thailand.

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Thank you for your time and attention to this matter. Please fold and return in provided envelope and return to me. If you desire a summary report of this study, please give your business card attached with this questionnaire. The summary will be mailed to you upon the completion of data analysis.

BIOGRAPHY

NAME	Miss Suparada Pimpan
DATE OF BIRTH	14 August 1990
PLACE OF BIRTH	UdonThani
ADDRESS	289/2 Soi prompakai 2, Prompakai Rd., Mak Khaeng, Muang Udon Thani, Udon Thani Province, Thailand, 41000
EDUCATION	2012 Bachelor of Business Administration, (International Business Management) Stamford International University of Thailand
	2014 Master of Management (Marketing), Central Queensland University of Australia
	2021 Doctor of Philosophy (Marketing Management), Mahasarakham University, Maha Sarakham, Thailand