INFLUENCE OF CONSUMERS' TRUST AND KNOWLEDGE IN ECO-LABELS ON PRICE PREMIUM OF ECO-LABELED CLOTHING IN THAILAND

BY

MR. NIPAT PUTHIPAD

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION PROGRAM IN GLOBAL BUSINESS MANAGEMENT (INTERNATIONAL PROGRAM)

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ENTITLED

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ABSTRACT

A typical clothing production is known to have various negative sustainability impacts. Along with the UN sustainable development goals in responsible consumption and production, consumption of more sustainable clothing has to be promoted. Seemingly, more consumers are interesting in purchasing sustainable clothing products. However, lack of reliable information, regarding environmental performance of products tend to be one of the main barriers in purchasing sustainable clothing products. The use of third-party certified eco-labels has been implied to one of effective solutions to this hindrance.

Eco-labels have been broadly used and suggested to positively impact consumption of sustainable products, in various countries. Nevertheless, few research works have been found to be in the context of sustainable clothing in Thailand. Besides, third-party certified eco-labels are not widely used in Thailand, especially in the clothing industry. This has been suggested to be due to lack of consumers' willingness to pay more for eco-labeled products, along with high cost in applying for the labels. Many research studies have implied that two of the main factors affecting consumers' preference in the increased price of eco-labeled products the include trust and knowledge in the eco-labels.

Nonetheless, no research has been found to clarify these influences in the context of eco-labeled clothing in Thailand.

In order to elucidate the consumers' perception on the price premium of eco-labeled clothing, concerning their trust and knowledge in eco-labels, quantitative research has been conducted by a survey on consumers living in Thailand. A set of collected data from 386 people living in Thailand with the age between 18-60 years old has been analysed. The results have indicated that, for both third-party certified and self-declared eco-labeled clothing in Thailand, 72.5% and 59.1% of the consumers, respectively, are willing to pay higher price than that of the conventional clothing. Among the consumers who are willing pay higher price for eco-labeled clothing, most of them are willing to pay up to 20% higher price for the clothing with eco-labels attached. Besides, consumers are willing to pay higher price for clothing with a third-party certified eco-label attached, as compared to that with a self-delcared eco-labels attached. Also, the study confirms the potential of third-party certification in enhancing consumers' trust in eco-labels, along with the price premium of the labeled clothing. Moreover, consumers' trust in eco-labels, despite the types of labels, has been found to positively impact the price premium of clothing with eco-labels attached. On the other hand, impact of consumers' knowledge in eco-labels on the price premium of eco-labeled clothing is not significant.

Keywords: Eco-labels, Eco-labeled products, Eco-labeled clothing, Price premium, Sustainable clothing, Eco-label trust, Eco-label knowledge

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Mr. Nipat Puthipad

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CHAPTER 1
INTRODUCTION

1.1 Study importance

Thailand population has been increasing continuously. This can cause higher impact on the sustainability issues in all dimensions. Rising numbers of people can lead to the higher demand in resources, especially clothing (Niinimäki, 2020). Consequently, various negative impacts on the sustainability terms are expected. These may include the increase in waste, higher CO_2 emission, scarcity of certain resources, water pollution, increase in unfair trade and etc (Talanova, 2019; Payet, 2021). Apparently, in 2015, 79 billion m^3 of water have been used, 1,715 million tons of CO2 have been emitted and 92 million tons of waste have been generated by textiles and clothing industry (Šajn, 2019). These numbers are expected to increase to 118 billion m^3, 2,791 million tons and 148 million tons of water used, CO_2 emitted and waste produced, respectively (Rausch & Kopplin, 2021).

Since 2015, United Nations (UN) have attempted to stimulate the approaches to address the mentioned impact, by setting up 13 sustainability development goals, especially the 12^{th} goal, which is the encouragement of responsible consumption and production (United Nations, 2016). This brings attention to various parties around the world in enhancing the sustainability of the clothing industry. The improvement in the sustainability of the clothing industry can be performed through various approaches. These approaches are ranged from designing process such as the design of multifunctional clothing, production process such as using organic materials and natural dyes, to maintenance and disposal process by the consumers such as recycling (Maldini & Balkenede, 2017; Provin et al, 2021). Recently, consumers tend to have more intention in sustainable clothing (KPMG, 2019; Genomatica, 2021). However, the consumers tend to have a lack of awareness and reliable information on the available sustainable clothing (Harris et al, 2016; Nosto, 2019).

In order to create consumer awareness of the sustainable clothing, as well as enable the consumers to select clothes that serve their needs and are sustainable at the same time, reliable sustainability-related information of the clothing products should be provided (Koszewska, 2021). This can be conducted by various methods, including third-party certified and self-approved eco-labels that conform to the International Organization for Standardization (ISO), as well as other free-form sustainability communications such as advertisement and other non-verified labels that do not comply with the ISO (Allison & Carter, 2000; Turunen & Halme, 2020). However, the eco-labels, which conform to the ISO, have been suggested to enhance the consumer trust towards the sustainability-related information (Riskos et al, 2021). Besides, the third-party certified eco-labels seem to be the most suitable indications in creating sustainability-related awareness of the clothing products. This can be attributed to the fact that the third-party certified eco-labels can significantly build trustworthiness to the provided information, regarding the sustainability, of the products (Allison & Carter, 2000; Choudhury, 2015; Turunen & Halme, 2020).

Seemingly, although various research works have realized that the eco-label can positively impact the sustainable product purchase intention and behavior of the consumers (Taufique et al, 2017; Thanabordeekij et al, 2019; Riskos et al, 2021), including clothing products (Calderon-Monge et al, 2020; Dhir et al, 2021), eco-labels are not widely used in clothing products in Thailand. Currently, as suggested in cataloguer ecolabelindex.com, there seems to be approximately 455 eco-labels in 199 countries. In these 455 eco-labels. Although several eco-labels seem to be used in Thailand, only one public label is being recorded to be in the ecolabelindex.com, which is known as the ‘Thai Green Label’. Besides this, according to recent database from Thailand Environment Institute (TEI), only one clothing brand has been found to attain the Thai Green Label, which is Wacoal Thailand Pub.Co.,Ltd.

Recently, Mungkung et al (2021) have suggested that absence in consumers’ willingness to pay a higher price for eco-labeled products tend to be one of the main barriers in using third-party certified eco-label in Thailand. However, Mungkung et al (2021) have

not intended to analyze the price premiums of specific products or services for consumers, as well as the reasons behind the lack of consumer's willingness to pay higher price for eco-labeled products. Besides, while several research studies have suggested diverse ranges of price premium for various eco-labeled products in different countries (Gallastegui, 2002; Shen, 2012; Vitale et al, 2020; Žurga & Tavčer, 2014), a lack of research studies have been found to focus on the eco-labeled clothing in Thailand. Subsequently, the study on the price premium of the eco-labeled clothing products is required for the companies to consider further marketing strategy, incorporating the eco-label, to encourage consumption of sustainable clothing in Thailand. Moreover, while most of the research studies have suggested that the consumers' trust in the eco-label tend to be one of the main factors affecting the consumers' willingness to pay for and price premium of certain eco-labeled products (Janssen & Hamm, 2012; Jaung et al, 2019; Khachatryan et al, 2021; Loo et al, 2011), some literatures have suggested that this is not always the case (Liebregt, 2017 & Shen, 2012). Also, consumers' knowledge in eco-labels tend to be another influential factor affecting the price-premium of different eco-labeled products in various coutries (Koszewska, 2016; Mohamed et al, 2014; Moscovici et al, 2020; Mulazzani et al, 2021). However, lack of research has been realized to emphasize on the context of eco-labeled clothing in Thailand. Besides, although several research have revealed that the third-party certification of the label can enhance the consuemrs' trust in the eco-label (Brach et al, 2018; Darnall et al, 2016), none has been found to confirm this effect with the eco-labeled clothing products in Thailand. Therefore, this research also aims to investigate the effect of consumers' trust in third-party certified and self-declared eco-labels, as well as consumers' knowledge in eco-labels, on the price premium of eco-labeled clothing products, in Thailand.

1.2 Objective of the study

The main objective of this research is to elucidate the consumers' perception on the price premium of eco-labeled clothing in Thailand. Hence, this research aims to

investigate the consumers' preference on the increase in price of eco-labeled clothing products, as compared to conventional ones, in Thailand. Also, the effect of consumers' trust in third-party certified and self-declared eco-labels, and knowledge in eco-labels, on the price premium is intended to be studied. Therefore, this study would address two key questions. One is that how much more are the consumers willing to pay for eco-labeled clothing product, in Thailand, as compared to conventional ones and another is that does the cosumers' acceptable price premium of eco-labeled clothing product in Thailand related consumers' trust and knowledge in ecolabel.

1.3 Scope of the study

This research is aimed to study the price premium of eco-labeled clothing products in Thailand, alongside the possible relationship between consumers' trust and knowledge in eco-label and the price premium. Therefore, the targeted samples are individuals who are living in Thailand. Also, in order to ensure the ability of the samples in making own-decision and minimize the unreliability of the acquired data, children and elders are excluded (Andrews & Herzog, 1986; Bogers et al, 2000; Quinn, 2010). Therefore, the samples with age between 18 to 60 years old are considered as a prospect respondent in this present sresearch.

1.4 Expected contribution

The research is intended to suggest how much more the consumers are willing to pay for clothing products, in Thailand, with eco-label attached, as compared to non-labeled ones. This finding can enable the clothing companies to notify the actual suitable price premium for eco-labeled clothing products. Thus, the results of this research can be used as guidelines for the clothing companies to plan their pricing strategy, along with the use of eco-label, to encourage the consumption of their sustainable clothing. Moreover, the relationships between consumers' trust and knowledge in eco-labels, and the consumers'

preferable price premium are aimed to be investigated. This can also be beneficial for the clothing companies to plan their green marketing strategy, incorporating eco-labels. Furthermore, this research can be academically beneficial in gaining better understanding of the consumers' perception in price premium of eco-labeled clothing products in Thailand. Besides, the data and results from this research can potentially be a stepping-stone for further research to clarify other possible factors that affect the consumers' acceptable price premium of eco-labeled clothing in Thailand.

CHAPTER 2
LITERATURE REVIEW

This research aims to investigate the price premium of eco-labeled clothing products in Thailand, alongside the possible relationship between consumers' trust and knowledge in eco-labels and the price premium. Therefore, numbers of literature, relating to the context of consumers' willingness to pay, as well as price premium, for eco-labeled products, including clothing, have been reviewed. The gathered information from the reviewed theories and literatures has been used as basis to create a research approach for clarifying the objective of this research. The necessarily acquired knowledge for this research is presented in sections as follow:

2.1 Price premium of eco-labeled clothing

2.2 Eco-label

2.3 Consumers' trust in eco-labels

2.4 Consumers' knowledge in eco-labels

2.1 Price premium of eco-labeled clothing

The price premium, in this research, can be defined as, the maximum increase in price that consumers are willing to pay for products or services (Sethuraman & Cole, 1999; Junhee et al, 2009). Thus, the price premium of eco-labeled clothing is simply described as the increase in price that consumers are willing to pay for clothing products with eco-label attached. The eco-label is ought to be attained by sustainable products or, in this case, clothing (Ranasinghe & Jayasooriya, 2021). Sustainable clothing can be referred to the clothing that incorporates design or production processes that are more environmental-friendly and social-responsible than typical ones. Regarding the design process, the sustainable clothing may include clothing products that are designed to be multi-functional, transformable, modular or size-flexible, which can lead to less required clothing products to serve a person's needs (Maldini & Balkenede, 2017). Besides, pattern

designs for less cutting waste, less seam or upcycling methods are considered to be sustainable approaches. Regarding the production process, the sustainable clothing may consist of using organic, recycled or environmental-friendly textiles and applying natural dyes, as well as replacing conventional production process with lower energy-consumption and CO_2 emission process (Provin et al, 2021). Furthermore, the production process that ensure fair wages and working conditions of the labors can be included in the approaches in making sustainable clothing. Apparently, the cost of producing sustainable products, including clothing, tends to be higher than that of the conventional ones (Brécard et al, 2009 & Jacobs et al, 2018). The high cost of sustainable clothing production can be attributed to various factors such as additional labor costs, environmental-friendly materials and advanced technology for the production process. Moreover, in order for the clothing products to attain the eco-label, the requirements of that specific label shall be met. According to the Thailand Environment Institute (TEI), these requirements can be ranged from limiting the number of pesticides used in the fibers to prohibiting the use of halogenated carriers in the polyester dyeing process. Therefore, extra cost in various sustainability-related tests is required to provide evidence for the eco-label that conform to the International Organization for Standardization (ISO). Besides, cost of the sustainable clothing products tend to become higher when reliable information on the product sustainability is required as third-party certified eco-label may come in to play an important role. In order for the products to be reliably confirmed as sustainable, additional cost in applying for verification from a third-party have to be paid (Mungkung et al, 2021). Thus, the price premium tends to be one of the main discussed issues regarding eco-labeled products (Roheim et al, 2011; Sedjo & Swallow, 2002; Tebbe & Blanckenburg, 2017; Veisten, 2006; Vitale et al, 2020; Zhang et al, 2018).

During the past decades, several research studies have intended to investigate the price premium of and consumers' willingness to pay more for various eco-labeled products in different countries (Capenter, 2016; Janssen & Ham, 2012; Jaung et al, 2019; Leal et al, 2021; Nimon & Beghin, 1999; Oesman, 2021; Vitale et al, 2020; Yokessa & Merette, 2019; Žurga & Tavčer, 2014). According to the studies, diverse ranges of

premium price have been suggested in dissimilar countries and products. Gallastegui (2002) reviewed that consumers are willing to pay 10% more for ecologo in Canada, while only 5% price premium has been suggested for products with Singapore green label. Veisten (2006) also examined the price premium for wood furniture products in England and Norway. The study suggested the median price premium of only around 2% in Norway but up to 16% in England. Furthermore, Vitale et al (2020) and Zhang et al (2018) attempted to discover the price premium for seafood products in Italy and the United Kingdom, respectively. The data implies that consumers are willing to pay 10-25% more for eco-labeled haddock in the United Kingdom and 16-24% for the labeled anchovy in Italy. Moreover, Tebbe and Blanckenburg (2017) studied the price premium of various eco-labeled food and beverage products in Germany. The research work has found out that the consumers are willing to pay up to around 15% more for food and beverage products with eco-label attached. Beside this, in the United States, Loo et al (2011) have revealed the premium price of more than 100% for chicken breast with the organic label from the United States Department of Agriculture, or the USDA organic label. Similarly, several research studies have suggested that consumers are willing to pay more for eco-labeled clothing products in certain countries. Nimon and Beghin (1999) have presented the premium price of around 34% for clothing products, in the United States, with organic label attached. Žurga and Tavčer (2014) also suggested that, in Slovenia, consumers are willing to pay up to 10% for apparel with eco-label attached. Furthermore, Leal et al (2021) confirmed that consumers can accept the premium price of eco-labeled apparel in Brazil. Although various literatures have suggested that consumers are willing to pay more for the eco-labeled products, as compared to non-labeled ones, some studies have suggested the opposite (Gam et al, 2014; Henninger, 2015). Recently, in Thailand, Mungkung et al (2021) have conducted strengths, weaknesses, opportunities and threats (SWOT) analysis on the eco-label and suggested that consumers are not willing to pay a higher price for the eco-label. This tends to be one of the main barriers that hinder the use of eco-label in Thailand. However, Mungkung et al (2021) have not intended to investigate the price premium of specific products or services for consumers. Also potential reasons for the

absence of consumers' willingness to pay higher price for eco-labeled products have not been investigated.

Seemingly, various research studies have attempted to realize the factors that can influence the price premium of and consumers' willingness to pay more for eco-labeled products (Khachatryan et al, 2021; Liebregt, 2017; Liu et al, 2017; Mohamed et al, 2014; Vitale et al, 2020). According to the literatures, these factors can ranged from consumers' typical characteristics, including sociodemographic and economic, to other cognitive factors such as attitude. Carpenter (2016) reviewed that the consumers with higher income are willing to pay more for eco-labeled products as they tend to have lower price sensitivity. Consumers' education can also affect the willingness to pay more for eco-labeled products due to more awareness of the information on the eco-label. Besides, some research studies have suggested that the price premium of eco-labeled products may depend on the gender of the consumers (Mohamed et al, 2014; Vitale et al 2020). Moreover, Shen (2012) intended to determine the possible factors that can influence the consumers' willingness to pay more for various eco-labeled products in China. The results suggested that consumers' trust in the positive environmental impact of eco-labeled products and consumers' preference between life convenience and environmental conservation tend to be the main issues that affect the price premium. Shen (2012) also suggested that the factors that induce the consumers' willingness to pay more may differ for dissimilar eco-labeled products. Nonetheless, consumers' trust in the eco-label tends to be one of the most discussed issues regarding the price premium of eco-labeled products (Khachatryan et al, 2021; Janssen & Hamm, 2012; Loo et al, 2011), including apparel in some countries (Leal et al, 2021; Žurga & Tavčer, 2014). Besides, consumers' knowledge in eco-labels tends to be another widely discussed factor among the research studies on the price premium of eco-labeled products, and seem to be influential (Koszewska, 2016; Moscovici et al, 2020; Mulazzani et al, 2021). Nevertheless, research on potential factors that can affect the price premium of eco-labeled clothing products in Thailand has not been found.

2.2 Eco-label

Apparently, sustainable clothing products are getting more attention from consumers (Genomatica, 2021; Nosto, 2019). However, the consumers tend to have a lack of awareness and reliable information on the available sustainable clothing (Harris et al, 2016). This suggests the necessity of clothing companies in communicating sustainability-related information about their products to the consumers. The information, regarding the sustainability of the clothing products, can be communicated through various methods. This includes free-form communication, such as non-verified labels that do not conform to the ISO and the standardized eco-labels that comply with the ISO (Turunen & Halme, 2020). Nevertheless, D'Souza (2004) and Georgakarakou et al (2020) have pointed that the trustworthiness of the provided sustainability-related information is essential to the consumers. Thus, third-party certified eco-label tends to be one of the most effective approaches in building awareness of the consumers on sustainability-related information of the products (Choudhury, 2015; Koszewska, 2013; Leire & Thidell, 2005).

In this research, the eco-label can be referred to one of the communicating tools, in a form of a label, which can provide the information, regarding environmental benefits, of a product or service. Examples of the eco-labels may include the Nordic Swan and the EU Eco-Flower label (Henninger, 2015; Turunen & Halme, 2020).

2.2.1 Types of eco-label and certifications

Seemingly, there are three main types of eco-labels corresponding to the International Organization of Standardization (ISO). These include third-party certified labels as type I labels, self-approved or self-claimed labels by the manufacturers, importers or distributors as type II labels and lifecycle-impact-related quantified product information as type III labels (Rusko & Koraus, 2013). Each type of eco-label can be described as follows:

1. Type I eco-labels, as complied to the ISO 14024 (2018), are third-party-certified labels, logos or seals that are awarded to products or services that fulfil a set of

criterion, regarding environmental contribution, based on a life cycle assessment or LCA (Taufique et al, 2014). This criteria may include water and energy consumption, use of harmful substances, disposal, etc. The awarding body can be ranged from governmental to a private non-commercial organization (Allison & Carter, 2000). The most commonly known type I eco-label in Thailand tends to be the 'Thai Green Label' (Fig. 2.1). This label is given by the Thailand Environment Institute (TEI), which is a member of the Global Ecolabelling Network (GEN).

Figures 2.1 An example of type I eco-label in Thailand – the 'Thai Green Label'

2. Type II eco-labels, as conforming to the ISO 14021 (2016), are verifiable self-claims or declarations, by the manufaturers, importers or distrubutors, on the environmental performance of the products or services. Therefore, this type of eco-label tends to have higher flexibility, as compared to the other two types of eco-label, in responding to specific customer requirements or highlighting specific product performance (Allison & Carter, 2000). Although this type of labels is not third-party certified, according to ISO 14021, the claims should be transparent, scientifically sound and documented to ensure the validity of the claims for the consumers. The terms used in type II eco-labels are, therefore, prescribed to be specific (e.g. compostable, recyclable, made from x% recycled materials, etc.). Examples of type II eco-labels in Thailand may include the 'SCG Eco Value' label from the Siam Cement Group Co.,Ltd. and the 'Green Heart' label from the Siam City Cement Pub.Co.,Ltd. (Fig. 2.2).

(a) (b)

Figures 2.2 Examples of type II eco-label in Thailand – the 'SCG Eco Value' label (a) and the 'Green Heart' label (b)

3. Type III eco-labels are the labels that quantitatively indicate the environmental performance of the products based on the LCA (ISO 14025, 2006). This type of label is often known as environmental product declarations (Taufique et al, 2014). Typically, type III eco-labels tend to provide quantitatively raw data on specific criteria such as CO_2 emissions. Similar to the type I eco-labels, type III eco-labels are prescribed to be third-party certified. An example of type III eco-label in Thailand is the 'Carbon Footprint' label (Fig. 2.3), which is certified by the Thailand Greenhouse Gas Management Organization (TGO).

Figures 2.3 Examples of type III eco-label in Thailand – the 'Carbon Footprint' label certified by the TGO

Koszewska (2011) has attempted to summarize the comparison of the types of ISO eco-label as shown in Table 2.1.

Table 2.1

Comparision between types of eco-labels that are conformed to the ISO (suggested by Koszewska, 2011)

Compared parameters	Eco-label type		
	Type I	Type II	Type III
Standard	ISO 14024	ISO 14021	ISO 14025
Third party involvement	Yes	No	Yes
Possibility of differentiating products ecologically within a group of products	Yes	No	Yes
Form of information	Graphic mark label/seal/logo	Graphic mark/phrase/text	Numerical data along with graphic mark/label
Verifiability/reliability	High	Low	High

According to Koszewska (2011), the third-party certified eco-labels tend to have higher reliability. This can potentially build the consumers' trust in the eco-labels. Besides, several literatures have intended to investigate the impact of third-party certification on the consumers' trust in the eco-labels and, hence, sustainable purchase intention (Brach et al, 2018; Carlucci et al, 2016; Darnall et al, 2016; Janssen & Hamm, 2012). Although most of the research studies have revealed that third-party certification tends to be essential in promoting consumers' trust in the eco-labels and sustainable purchase intention (Janssen & Hamm, 2012; Carlucci et al, 2016; Brach et al, 2018), Darnall et al (2016) suggest that third-party certification is not essential if consumers have

already trusted the organization that provides the label. However, no research has been found to confirm the influence of third-party certification on building consumers' trust in the eco-label in Thailand.

Currently, the cataloguer 'Ecolabel index' (ecolabelindex.com) has indicated that there are 455 eco-labels in 199 countries and 25 industry sectors. Although several eco-labels seem to be used in Thailand, only one ecolabel has been recorded into the ecolabelindex.com, which is the 'Thai Green Label'. Besides, according to the database of Thailand Environment Institute (TEI), only one clothing brand has been found to attain the Thai Green Label, which is Wacoal Thailand Pub.Co.,Ltd.

2.2.2 Influence of eco-labels on consumers' purchase behavior and price premium of sustainable products

Since the eco-labels tend to be essential in giving sustainability-related information of the product to consumers, various research studies have attempted to investigate the impact of eco-label on sustainable products purchase intention and behavior (Chekima et al, 2016; Grunert et al, 2014; Koszewska, 2011; Lee et al, 2020; Mei et al, 2012; Potter et al, 2021; Rees et al, 2019; Riskos et al, 2021; Song et al, 2019; Wojnaroska et al, 2021), as well as the price premium of and consumers' willingness to pay more for eco-labeled products (Loo et al, 2011; Tebbe & Blanckenburg, 2017; Žurga &Tavčer, 2014). Although some studies have suggested that eco-labels may not be sufficient in promoting sustainable purchase behavior (Mei et al, 2012 & Wojnaroska et al, 2021), several research works have notified positive impact of the eco-labels on the consumer sustainable purchase intention and behavior (Lee et al, 2020; Riskos et al, 2021; Song et al, 2019; Taufique et al, 2017; Wijekoon and Sabri; 2021). Riskos et al (2021) also investigated on the influence of eco-label on the sustainable products purchase behavior of samples in Greece. The results suggested that eco-label can lead to a positive direct effect on sustainable products purchase behavior. .Furthermore, recently, some research works have suggested similar positive effects of the eco-label on sustainable apparel purchase behavior (Calderon-Monge et al, 2020; Dhir et al, 2021). Calderon-Monge et al (2020)

study the importance of eco-label, for consumers in Spain, when purchasing various types of products. These types of the products include food, electrical and electronic appliances, drugstore products and clothes. The data indicated that the importance of eco-label in the clothing products tends to be higher than the other types. This suggests the potential of the eco-label in promoting the consumers' purchasing decision towards sustainable apparel. Dhir et al (2021) also found out that Japanese consumers with a higher desire for eco-label tends to have more sustainable apparel purchase behavior. Moveover, Oesma (2021) found out that the eco-label positively affects both consumers' purchase intention and willingness to pay more for sustainable products in Indonesia. Besides, Nimon and Beghin (1999), Žurga and Tavčer (2014) and Leal et al (2021) have reported that consumers are willing to pay a higher price for eco-labeled clothing products, as compared to the non-labeled ones, in the United States, Slovenia and Brazil, respcectively.

Despite the suggested potential of eco-label in enhancing sustainable products purchase intention and behavior, the eco-label has not been widely used in the clothing industry in Thailand. As mentioned earlier, only one clothing brand has managed to get the Thai Green Label. Mungkung et al (2021) suggested that one of the main barriers in using third-party certified eco-label, in Thailand, is that small and medium enterprises may not be able to afford the cost in applying for the label and consumers are not willing to pay higher price for labelled products. Cheyjunya and Lattipongpan (2021) also notified that price tends to be one of the most influential factors in choosing fashion products However, lack of research studies have been found to focus in clarifying the actual consumers' perception on different types of eco-label and the price premium of eco-labeled clothing products in Thailand.

2.3 Consumers' trust in eco-labels

Trust can be decribed as a person's expectation or belief in the capability of another person, product or organization in keeping promises and fulfilling commitments (Taufique et al, 2017). Thus, the consumers' trust in eco-labels, in this research, is simply

defined as the consumers' expectation or belief that the eco-labels can represent the actual environmental performance of the products or services. Consumer acceptance, including trust, on the eco-labels can be one of the main factors in measuring the effectiveness of the labels (Choudhury, 2015). Various literatures also suggested that different types of ecolabel tend to have unequal credibility (Allison & Carter, 2000; Amstel et al, 2007; Koszewska, 201; Mungkung et al, 2021). Consequently, consuemrs' trust in the eco-labels tends to be one of the most considered issues among the research works that focus on investingating the practicability of the eco-labeled products.

Seemingly, there are several research studies that discuss on the consumers' trust in the eco-labels to investigate the potential of eco-label on the consumers' sustainable products purachase intention and behavior, as well as willingness to pay higher price and perception on the price premium (Cai et al, 2017; Khachatryan et al, 2021; Riskos et al, 2021; Taufique et al, 2017). Taufique et al (2017) have collected a set of data among the consumers in Malaysia and conclude the consumers' trust in eco-labels tend to be essential in directly promoting the consumer sustainable products purchase behavior. Cai et al (2017) and Rikos et al (2021) also suggested that the consumer perceived credibility of the eco-labels can enhance the consumers purchase behavior on sustainable furniture and products, in general, in Chaina and Greece, respectively. Moreover, Jaung et al (2019) suggested that certified eco-label can even potentially increase the price premium of drinking water in Indonesia. Khachatryan et al (2021) also indicated that consumers' trust in the organization behind the eco-label is essential in consumers' preferences for eco-labeled plant products in the United States. Besides, Loo et al (2011) have compared the price premium of chicken breast with general organic label to that with USDA organic label. The results imply that the price premium for chicken breast with the general organic label is around 35%, while the premium price of more than 100% has been realized in chicken breast with USDA organic label. Likewise, Žurga and Tavčer (2014) also noticed that consumers' trust in eco-labels tend to be necessary for eco-labeled apparel in Slovenia. Although various literatures state that consumers' trust in eco-labels tends to be important in stimulating consumers' willingness to pay and perception on the price premium of eco-

labeled products, some research studies have suggested that this is not always the case (Liebregt, 2017; Shen, 2012). Shen (2012) carried out a web-based survey on the consumers' willingness to pay for various eco-labeled products in China. The research has realized that while the consumers' belief in the eco-labes tend to affect the cosnumers' willingness to pay a higher price for eco-labeled furniture, appliance, recycled paper and soft drink, insignificant effects have been shown for building material, glass tableware and battery. Liebregt (2017) also suggested that the consumers' understanding of eco-labels tend to be more influential, than trust in the eco-labels, in supporting the willingness to pay higher price for eco-labeled food products in the Netherlands. Nonetheless, a lack of research has been found to study the consumers' trust in the eco-labels for apparel in Thailand, as well as its relationship with the price premium.

2.4 Consumers' knowledge in eco-label

Consumers' knowledge in eco-label, in this research, can be referred as the consumers' familiarity with the meaning of various terms used in eco-labels (Taufique et al, 2016). As mentioned earlier, the consumers' eco-label knowledge tends to be widely discussed in the research works relating to consumers' sustainable behavior (Musova et al, 2021; Taufique et al, 2017; Witek, 2017) and willingness to pay a price premium for eco-labeled products (Mulazzani et al, 2020; Mohamed et al, 2014; Oesman, 2021). Seemingly, most of the research studies have suggested that the consumers' knowledge in eco-labels can significantly influence both consumers' behavior and willingness to pay more for eco-labeled products. Data from Witek (2017) has revealed that consumers' knowledge in eco-label is related to willingness to pay a higher price for eco-labeled products in Poland. Moscovici et al (2020) and Vecchio (2013) suggested that consumers with more knowledge of eco-labels tend to be more willing to pay a price premium for eco-labeled wine in the United States and Italy, respectively. Moreover, Mulazzani et al (2020) also carried out face-to-face interviews, with the repondents in Italy, on the price premium of eco-labeled small pelagics. The results suggest that one of the main factors affecting price premium is

the consumers' knowledge on the eco-labels. Moreover, Mohamed et al (2014) conducted a survey on the consumers' willingness to pay for eco-labeled food products in Malaysia. The data has indicated that consumers' knowledge to distinguish eco-label from other labels can significantly influence their willingness to pay for eco-labeled food products. Besides, Liebregt (2017) reviewed that consumers' lack of understanding in the meaning of eco-labels can hinder the consumers' willingness to pay more for the eco-labeled products. Oesama (2021) has also suggested the importance of consumer knowledge and trust about the eco-labels in affecting the consumers' willingness to pay more for eco-labeled products in Indonesia. However, a lack of research has been found to confirm that the consumers' knowledge in eco-labels is related to the price premium of eco-labeled clothing in Thailand.

Regarding the reviewed literatures as explained in this chapter, while eco-label has been implemented and found to have a positive effect on the sustainable products purchase behavior of the consumers in other countries (Riskos et al, 2021; Taufique et al, 2017), lack of research on the eco-labeled clothing has been found in Thailand. Besides, eco-label is not widely used in the clothing industry in Thailand. Mungkung et al (2021) suggested that one of the barriers in using the eco-labels in Thailand is the absence in the consumers' willingness to pay higher price for eco-labeled products. However, the research has not intended to study the actual consumers' perception of the price premium of eco-labeled clothing. Though various literatures have attempted to recognize diverse ranges of price premium of dissimilar product types in different countries (Capenter, 2016; Zhang et al, 2018; Žurga and Tavčer, 2014), none has focused on the eco-labeled clothing in Thailand.

Many research studies conclude that consumers' trust in the eco-label can potentially affect the price premium of the eco-labeled products (Khachatryan et al, 2021; Loo et al, 2011; Žurga & Tavčer, 2014). On the contrary, some literatures have suggested that in a certain context, the consumers' trust in the eco-labele may not play an important role in driving the consumers' willingness to pay more for the eco-labeled products

(Liebregt, 2017; Shen, 2012). Various research studies have discussed that consumers' knowledge in eco-labels tend to be another important factor that can influence the price premium of eco-labeled products (Mohamed et al, 2014; Mulazzani et al, 2020; Vecchio, 2013). Nonetheless, no research has been found to investigate these issues in the context of eco-labeled clothing in Thailand. Besides, while different types of eco-label tend to have unequal credibility, due to third-party certifications, and tend to affect consumers' trust in certain contexts (Brach et al, 2018; Darnall et al, 2016), a lack of research has confirmed that this can influence the consumers' trust in the eco-label and the price premium of eco-labeled clothing in Thailand. Consequently, the hypotheses of this research can be set, to clarify the mentioned gaps regarding the consumers' perception on the price premium of eco-labeled clothing products in Thailand, as follows:

H1 Consumers' trust in the third-party certified is significantly higher than that in self-declared eco-label

H2 Third-party certified eco-labeled clothing has significantly higher price premium than self-declared eco-labeled ones

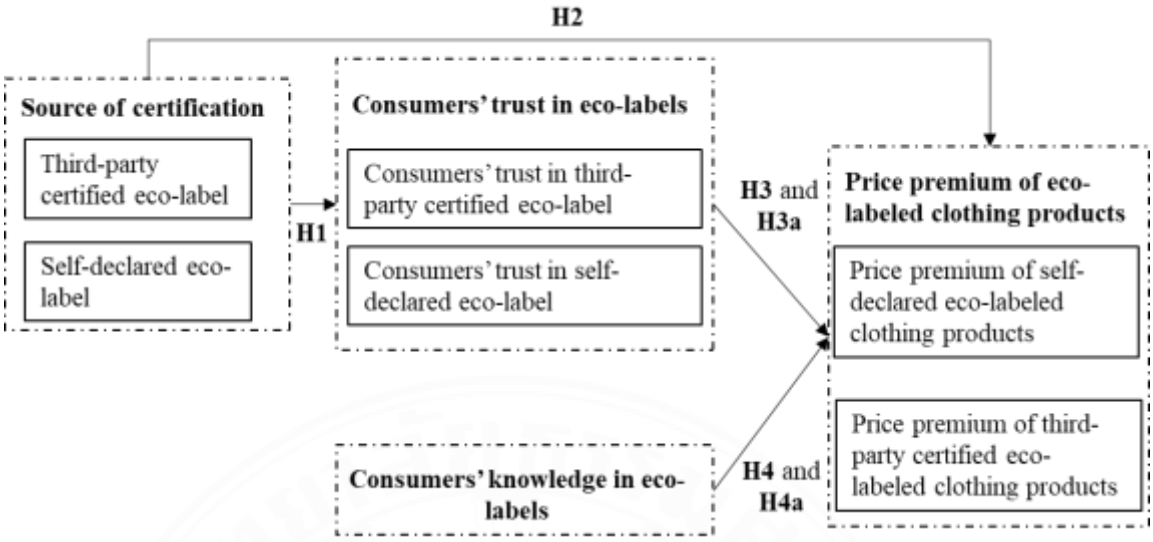
H3 Consumers' trust in the third-party certified eco-label is significantly related to higher price premium of the third-party certified eco-labeled clothing

H3a Consumers' trust in the self-declared eco-label is significantly related to higher price premium of the self-declared eco-labeled clothing

H4 Eco-label knowledge is significantly related to higher price premium of the third-party certified eco-labeled clothing

H4a Eco-label knowledge is significantly related to higher price premium of the self-declared eco-labeled clothing

Accordingly, the conceptual framework of this research is illustrated in Fig. 2.4.



Figures 2.4 Conceptual framework of consumers' perception in the price premium of eco-labeled clothing products applied in this research

CHAPTER 3
RESEARCH METHODOLOGY

Corresponding to the objective of this study, experimental research was developed. The hypotheses of this research were tested with the empirical data from surveyed samples. The data was attained, by sets of the completed online questionnaire, from Thai respondents with various characteristics. The quantitative research method was applied in data collection and analysis to evaluate effects between the variables. The acquired data was statistically analyzed by using the 'IBM SPSS Statistics' software. The detail of the research methodology is explained thoroughly in this chapter.

3.1 Variables

For simplicity, the experiment of this research was divided into two mian parts. For the first part, the research attampts to confirm the effect in the source of eco-label certification on consumers' trust in the label. Thus, the dependent variable for this part of experiment is:

1. Consumers' trust in eco-labels

One independent variable is therefore listed as:

1. Source of eco-label certification

For the second part of the experiment, the research aims to investigate the consumers' perception on the price premium of eco-labeled clothing products in Thailand. Hence, for the first part, the dependent variable is:

1. Price premium of eco-labeled clothing products

According to the reviewed literatures and the set hypotheses, three independent variables are considered for this part as:

1. Consumers' trust in eco-labels
2. Consumers' knowledge in eco-labels
3. Source of eco-label certification

3.2 Population and sample

3.2.1 Population

This research study aims to clarify the consumers' perception on the price premium of eco-labeled clothing products in Thailand. Therefore, the targeted population is people who are living in Thailand. Besides, participants with the age between 18 to 60 years old are considered to ensure the ability of the samples in making own-decision and minimize the unreliability and bias of the acquired data.

3.2.2 Sample size

According to Cochran (1977), in order to achieve the results with 95% confidence and 5% precision → the target sample size is calculated using the following equation:

$$n = \frac{P(1-P)Z^2}{d^2} \quad (1)$$

Where n is the minimum required sample size, P is the proportion of wanted population which is equal to 0.5, Z is 1.96 for normal distribution at a 95% confidence and d is proportion of allowable discrepancy which is 0.05 for 95% confidence.

From the calculation, the sample size shall be not less than 385 people. Nonetheless, total participants of 390 was surveyed to ensure adequate numbers of data are attained, in case there is unusable data. The participants were randomly selected with convenience sampling method.

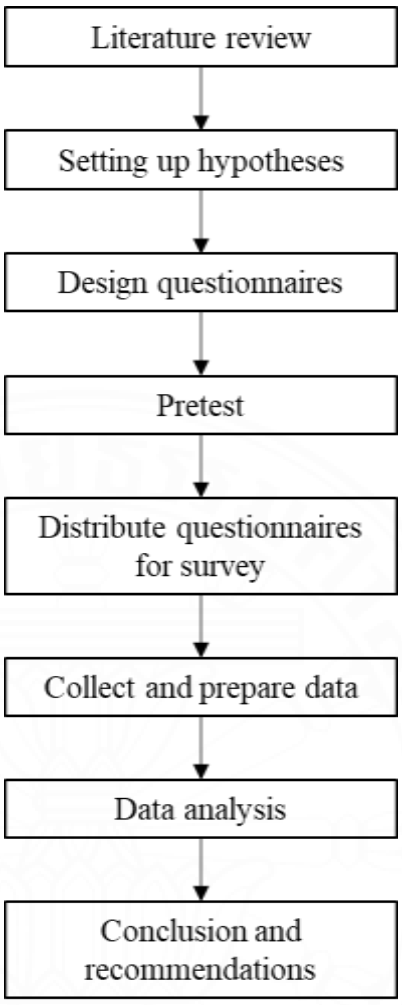
3.3 Pretest

Pretest was conducted in this research to evaluate the understanding of the samples on the terms used in the questionnaire. This pretest was performed for ensuring that the questionnaires were suitable for the targeted participants. Therefore, the prestest of this research was conducted by letting some of the targeted respondents finish the whole

set of the questionnaires. Treece and Treece (1982) and Connelly (2008) suggested that the sample size for a pilot study should be at least 10% of the original sample size. Thus, 40 respondents were selected to take the pretest. The reliability of the collected data on the cosnumer's trust and knowledge in eco-labels was then tested by using Cronbach's alpha to ensure the suitability of the questionnaires (Appendix A).

3.4 Research process sequence

The research process of this study was started with setting up hypotheses based on the reviewed literatures. The pretest questionnaires were then designed and used to test the participants understanding of the terms used in the questionnaires. Suitable survey questions were then being designed and distributed. After that, the data collected from the survey was prepared and analyzed. The results from the data analysis were then being interpreted and concluded and recommendations are made with regard to the conclusion. Thus, the research process sequence of this research can be simply presented in Fig. 3.1.



Figures 3.1 Research process sequence

3.5 Research tools

In this research, online questionnaires were used as a tool to obtain wanted data for statistical analysis. The designed questionnaires were based mainly on the reviewed literatures. The survey questions can be divided into three parts:

1. Questions on respondent characteristics
2. Questions on consumers' knowledge in eco-labels
3. Questions on consumers' trust in eco-labels

4. Questions on the price premium of eco-labeled clothing products

For the questions on respondent characteristics, personal data such as age, gender, highest educational level and living location was enquired. This information was mainly acquired in categorical data. In the second and third section, questions on the consumers' trust and knowledge in eco-labels were reviewed and implemented. These questions were designed to attain the data in scores from five-point Likert scale as follows:

Score 5 = 'Strongly agree'

Score 4 = 'Agree'

Score 3 = 'Neutral'

Score 2 = 'Disagree'

Score 1 = 'Strongly disagree'

In order to interpret the scores in groups of respondents, the mean score of the maximum and minimum score on the five-point Liker scale is used as class interval, which can be calculated as follows:

$$Mean\ score = \frac{Maximum\ score - Minimum\ score}{Number\ of\ class\ interval} = \frac{5-1}{5} = 0.80$$

The calculated mean score of the maximum and minimum score on the five-poin Likert scale is 0.80. Therefore, the mean score of participant groups can be interpreted as follows:

Mean score between 4.21-5.00 = 'Strongly agree'

Mean score between 3.41 to 4.20 = 'Agree'

Mean score between 2.61 to 3.40 = 'Neutral'

Mean score between 1.81 to 2.60 = 'Disagree'

Mean score between 1.00 to 1.80 = 'Strongly disagree'

For the final section of the questionnaire, a set of questions were designed to determine the price premium of clothing products with different types of eco-label. In this section, simple multiple-choice questions were given to the respondents to answer how

much more they are willing to pay for the clothing with different types of eco-label attached. Similar to the second and third section, the data collected in this section was also treated as scores in the scale of 1 to 5, along with the same interpretation method of the calculated mean scores as suggested above.

3.5.1 Questions on respondent characteristics

The characteristic of each respondent tends to be beneficial to evaluate the data from a specific group of consumers. The first part of the questionnaire, thus, consists mainly of queries on the socio-demographics of the respondent that potentially affect the purchase behavior of consumers and their willingness to pay more for eco-labeled products. Since the targeted participants, in this research, are people with the age between 18 to 60 years and who are living in Thailand, the questions on age and living location are indispensable. The other characteristics may include gender, educational level, total income, marital status and number of children, alongside the frequency of buying clothing products (Bangsa & Schlegelmilch, 2020; Carpenter, 2016; Jacobs et al, 2018; Rausch & Kopplin, 2021). All the compositions and group range of the respondent characteristics in this research are presented in Appendix B.

3.5.2 Questions on consumers' knowledge in eco-labels

Taufique et al (2014) have attempted to synthesize various constructs to model respondents' perception of eco-labels. These constructs also include respondents' knowledge in eco-labels. Taufique et al (2016) then suggested various questions to measure consumers' knowledge in the eco-labels. The questions are aimed to measure the respondents' understanding of various terms used in the eco-labels, which are in line with this research. Thus, for simplicity, the questions from Taufique et al (2016) were adapted (Appendix C). In this section, the respondents were asked to indicate how much they agree with the following four statements:

1. I know the meaning of the term "recycled."
2. I know the meaning of the term "eco-friendly"
3. I know the meaning of the term "organic."
4. I know the meaning of the term "energy efficient."

The scores shall be given in five-point Likert scales (1 for ‘strongly disagree’ and 5 for ‘strongly agree’).

3.5.3 Questions on consumers’ trust in eco-labels

Similar to the questions on the consumers’ knowledge in eco-labels, Taufique et al (2016) have suggested various questions to measure cosnumers’ trust in the eco-labels. Therefore, the questions from Taufique et al (2016) were adapted. Two forms of the label in providing environmental information, including self-declared and third-party certified eco-label, of the clothing product, were presented to the respondents. The graphic both self-declared and third-party certified eco-labels were designed specifically for this research, in order to eliminate other influential factors such as the design of the labels (Appendix D). In this section, after illustrating each type of eco-label, the repondents were asked to answer how much they agree with the following three statements, regarding the presented eco-label (Fig 3.1).

1. The label is genuinely committed to environmental protection
2. Most of what the label say about its product is true
3. If the label makes a claim or promise about its product, its probably true

The scores shall be given in five-point Likert scales (1 for ‘strongly disagree’ and 5 for ‘strongly agree’).

Third-party certified eco-label

- The label is attached to a product to inform that the product is environmentally preferable
- The label is certified and awarded by third party (the Thailand Environmental Institute)

Please answer how much you agree with the following statements

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. The label is genuinely committed to environmental protection					
2. Most of what the label say about its product is true					
3. If the label makes a claim or promise about its product, its probably true					

Figure 3.2 Example of questions on consumers' trust in the eco-label

3.5.4 Questions on the price premium of eco-labeled clothing products

In the final section of the questionnaire, a set of multiple-choice questions on the price premium of eco-labeled clothing product was shown to the respondents. The questions simply asked the respondents to answer how much more they are willing to pay for a clothing product if different eco-labels are attached. Thus, a typical clothing product with certain attributes and price was illustrated prior the questions were asked (Fig. 3.3). A typical grey t-shirt with a collar is chosen to be used in this research to represent a general clothing product that can be worn by both men and women. According to the actual typical price for a t-shirt with collar, the price of the t-shirt illustrated in this research was presented as 400THB. Moreover, the actual price premium of the clothing product with the 'Thai Green Label' attached is in the range between 20-40% higher than the conventional ones. Thus, the choices given for the respondents to answer how much more they are willing to pay for eco-labeled clothing were in divided into 5 levels with the range difference of 20% between each level. Thus, these levels include 'nothing more', 'up to 80THB more', '81-160THB more', '161-240THB more' and 'more than 240THB more'. It is essential to be noted that in the actual purchasing scenarios, other factors, such as brand, can also influence the decision of the respondents. Nonetheless, in this question, all factors other than the price and the eco-label are assumed to be the same.

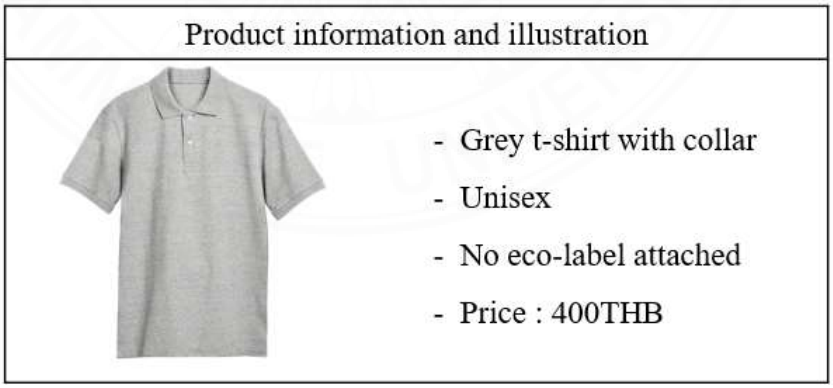


Figure 3.3 Example of a choice set to determine the price premium of ecol-labeled clothing product

The summary of the questionnaires on the price premium of eco-labled clothing products, in this research, can be seen in Appendix E.

3.6 Data collection

The data was attained by sets of online questionnaires. These sets of questionnaires were prepared in the survey tool 'Google Form'. Besides, the questionnaires were randomly distributed via online media such as LINE and Facebook to groups of targeted participants, including people with the age range between 18 to 60 years old and who are living in Thailand. In this research, the questionnaire survey was carried out in the period of November to December 2021, in order to acquire data from at least 400 completed questionnaires.

3.7 Data analysis

3.7.1 Data reliability and validity analysis

In this research, for statistical analysis, the software 'IBM SPSS Statistics' was used. The reliability and validity of collected data from each measure item were tested by using Cronbach's alpha and factor loading.

3.7.2 Descriptive statistics

Descriptive statistics were used to investigate the score of each considered constructs or variables acquired from the sample group. The descriptive statistics on each variable was also be analysed. The descriptive statistics tools used may include mean, standard deviation, percentage and frequency.

3.7.3 Inferential statistics

In this study, inferential statistics are aimed to be used for hypotheses testing. The statistics tools such as t-test and regression can be applied to compare the effects of various independent variables on the dependent variable.

CHAPTER 4
RESULT ANALYSIS

In this chapter, the analysis of the collected data is presented. This includes the descriptive analysis of the respondent characteristics, reliability and validity analysis on the variables by using the composite reliability and exploratory factor analysis, descriptive analysis of the variables and hypotheses testing by using t-test and regression analysis. A total of 386 usable sets of data has been collected from the targeted respondents, who are people living in Thailand and having age between 18-60 years old. These sets of data have been statiscally analysed to fulfill the objective of this research.

4.1 Respondent characteristics

The data on the characteristic of the respondents include age, gender, highest education level, monthly income, marital status, number of children and frequency in buying clothes. The descriptive statistics on the characteristics of all 386 respondents are shown in Table 4.1. According to Table 4.1, the majority of the respodents are people with age of 31-40 years old, which covers around 48.2% of all the respodents. Also, most of the respondents are female, which accounts for 68.4% of the total number of the respondent. Among the 386 respondents, 198 respondents (51.3%) have attained the bachelor's degree as their highest education level. Besides, 94.3% of all the respondents are having the education level of bachelor's degree or higher. Corresponding to the descriptive statistics, 60.9% of the total respondents are having a monthly income in the range between 10,001-60,000THB. Table 4.1 has presented that the 236 respondents, out of all 386 respondents, are single. Moreover, 70.5% of all the respondents have no children. Additionally, most of the respondents (44.3% of all the respondents) are buying 6-15 pieces of clothes every year.

Table 4.1

Characteristics of the respondents

Characteristics	Sample	
	Frequency (n = 386)	Percentage
Age		
18-30 years old	77	19.9
31-40 years old	186	48.2
41-50 years old	73	18.9
51-60 years old	50	13.0
Gender		
Female	264	68.4
Male	122	31.6
Highest education level		
Primary school	0	0.0
Secondary school	1	0.3
High school	11	2.8
Bachelor’s degree	198	51.3
Master’s degree	151	39.1
PhD	15	3.9
Other	10	2.6
Monthly income		
0-10,000THB	21	5.4
10,001-60,000THB	235	60.9
60,001-150,000THB	111	28.8
150,001-300,000THB	14	3.6
>300,000THB	5	1.3
Marital status		
Single	236	61.1

Characteristics	Sample	
	Frequency (n = 386)	Percentage
Married	141	36.5
Divorced	6	1.6
Widowed	3	0.8
Number of children		
None	272	70.5
One child	58	15.0
Two children	47	12.2
Three children or more	9	2.3
Frequency in buying clothes		
1-5 pieces a year	63	16.3
6-15 pieces a year	171	44.3
16-30 pieces a year	101	26.2
31-50 pieces a year	25	6.5
>50 pieces a year	26	6.7

4.2 Reliability and validity analysis

In this research, 3 variables were measured by using multiple scale items. These variables include the respondent knowledge in eco-labels, trust in self-declared eco-label and trust in third-party certified eco-label. Therefore, the reliability and validity assessment of these variables were conducted prior to incorporating them in the analysis.

The reliability analysis was conducted to assess the consistency of the adopted scale items. This can ensure that the used scale items can generate consistent results for each variable. The reliability analysis in this research was performed by evaluating the composite reliability (α) or the Cronbach's alpha. The Cronbach's alpha of all variables was attained by using the SPSS software. Table 4.3 shows the derived Cronbach's alpha of each variable, which ranges from 0.892 for eco-label knowledge, 0.917 for trust in third-

party certified eco-label to 0.933 for trust in self-declared eco-label. The analysis recommended no item to be deleted. These results suggest that the reliability of the used scale items for eco-label knowledge is good, as the Conbrach's alpha value lies between 0.8 to 0.9, while the reliability of the scale items for trust in third-party certified and self-declared eco-label is considered to be excellent as the Conbrach's alpha value is higher than 0.9 (Hair et al, 2007).

Table 4.2

Reliability of the constructs

Variables	Scale item	n = 386 Composite reliability (α)
Eco-label knowledge	I know the meaning of the term 'recycled' I know the meaning of the term 'eco-friendly' I know the meaning of the term 'organic' I know the meaning of the term 'energy-efficient'	0.892
Trust in self-declared eco-label	The label is genuinely committed to environmental protection Most of what the label says about its products is true If the label makes a claim or promise about its product, it's probably true	0.933
Trust in third party-certified eco-label	The label is genuinely committed to environmental protection Most of what the label says about its products is true If the label makes a claim or promise about its product, it's probably true	0.917

The validity test was conducted on all variables to analyse by using exploratory factor analysis on all scale items (Cavana et al, 2001). This analysis was used to investigate whether these scale items are suitable to determine the expected variables or not. Table 4.2 presents the results from the exploratory factor analysis. The results have suggested that this set of data and scale items are suitable for factor analysis due to the Kaiser-Meyer-Okin (KMO) value of 0.843, which is more than 0.8 (Wei, 2006). The results from the Bartlett test of sphericity are significant ($p = 0.000$; d.f. = 45), which suggests the scale items are related. The factor analysis was conducted based on the principal component analysis. Varimax rotation based on orthogonal rotation was also applied. According to the results, the analysed scale items are able to measure three main variables as three components have been shown to have an Eigenvalue of more than 1.000 (Table 4.2). These include the eco-label knowledge with the Eigenvalue of 5.236, trust in self-declared eco-label with the Eigenvalue of 1.831 and trust in third-party eco-label with the Eigenvalue of 1.217. Moreover, considerably high factor loadings for all the scale items have been revealed, ranging from 0.797 to 0.928 (Table 4.2). Corresponding to Comrey and Lee (1992), this range of factor loadings, which is more than 0.71, can be considered as excellent in defining meaningful loading.

Table 4.3

Variable validity test by exploratory factor analysis

Variables	Scale item	n = 386		
		Factor loading	Eigenvalue	Percentage of variance explained
Eco-label knowledge	I know the meaning of the term ‘recycled’	0.797	5.236	52.359
	I know the meaning of the term ‘eco-friendly’	0.878		
	I know the meaning of the term ‘organic’	0.818		
	I know the meaning of the term ‘energy-efficient’	0.830		

Variables	Scale item	n = 386		
		Factor loading	Eigenvalue	Percentage of variance explained
Trust in self-declared eco-label	The label is genuinely committed to environmental protection	0.870	1.831	18.312
	Most of what the label says about its products is true	0.928		
	If the label makes a claim or promise about its product, it's probably true	0.926		
Trust in third party-certified eco-label	The label is genuinely committed to environmental protection	0.866	1.217	12.166
	Most of what the label says about its products is true	0.858		
	If the label makes a claim or promise about its product, it's probably true	0.870		

Note: n = 386; KMO Measure of Sampling Adequacy = 0.843; p = 0.000 ($p<0.05$); d.f. = 45
Cumulative Percentage Rotation of Squared Loadings = 82.837
Approx. Chi-Square = 3099.854

4.3 Descriptive statistics of the respondent trust and knowledge in eco-labels

According to the results of reliability and validity analysis, the scale items adopted in this research can be used to measure the independent variables of this research, including respondent knowledge in eco-label and respondent trust in the third-party certified and self-declared eco-label. Therefore, these independent variables were computed by averaging the considered scale items. The mean of each scale item and independent variable between the respondents was also obtained to investigate the

respondent eco-label knowledge and trust in the third-party certified and self-declared eco-label. Table 4.4 shows the results on the mean, along with the standard deviation, of each scale item and the considered independent variable.

Regarding eco-label knowledge, the results indicate considerably high scores of all used scale items. These include the score of 4.26 (*SD* = 0.703), 4.20 (*SD* = 0.739), 4.19 (*SD* = 0.744) and 4.04 (*SD* = 0.798) for the respondent understanding in the term 'recycled', 'energy-efficient', 'eco-friendly' and 'organic', respectively. These results suggest that, on average, the sample group agrees that they know the meaning of the term 'eco-friendly', 'organic' and 'energy efficient' as the mean scores of these items lie in the range 3.41-4.20. Besides, the sample group seems to strongly agree that they understand the term 'recycled', as their mean score is higher than 4.21. Table 4.4 also indicates the mean score of the computed variable eco-label knowledge is 4.17 (*SD* = 0.650). This suggests that, on average, the respondents agree that they understand the general terms used in the eco-label and, thus, have a high level of knowledge in eco-labels.

As notified in Table 4.4, the respondent mean scores of the used scale items for trust in the self-declared eco-label ranged from 3.34-3.47, while a higher range of 3.79-3.94 has been suggested for that in third-party certified eco-label. Correspondingly, the respondent mean scores of the computed variable trust in self-declared and third-party certified eco-label are 3.39 (*SD* = 0.806) and 3.85 (*SD* = 0.733), respectively. This suggests that, on average, the sample group has moderate level of trust in the self-declared eco-label as the mean score lies between 2.61-3.40. On the other hand, a high level of trust in third-party eco-label has been revealed, for this sample group, as the mean score is in the range of 3.41-4.20 (Table 4.4).

Table 4.4

Mean score and standard deviation of each scale item and computed variable on respondent trust and knowledge in eco-labels

Construct	Scale item	Sample (n = 386)			
		Mean of each scale item	Std. deviation of each scale item	Mean of the construct	Std. deviation of the construct
Ecolabel Knowledge	I know the meaning of the term 'recycled'	4.26	0.707	4.17	0.653
	I know the meaning of the term 'eco-friendly'	4.19	0.749		
	I know the meaning of the term 'organic'	4.04	0.803		
	I know the meaning of the term 'energy-efficient'	4.20	0.744		
Trust in self-declared eco-label	The label is genuinely committed to environmental protection	3.47	0.868	3.39	0.811
	Most of what the label says about its products is true	3.35	0.856		
	If the label makes a claim or promise about its product, it's probably true	3.34	0.866		
Trust in third party-certified eco-label	The label is genuinely committed to environmental protection	3.94	0.755	3.85	0.738
	Most of what the label says about its products is true	3.83	0.797		

Construct	Scale item	Sample (n = 386)			
		Mean of each scale item	Std. deviation of each scale item	Mean of the construct	Std. deviation of the construct
	If the label makes a claim or promise about its product, it's probably true	3.79	0.834		

4.4 Respondents' preference in price premium of eco-labeled clothing product

Since one of the main aims of this study is to investigate the price premium of eco-labeled clothing products, the results on the sample group preference increase in the price of eco-labeled clothing have been evaluated. In this research, two types of eco-label are considered. These include third-party certified and self-declared eco-labels. Thus, the attained data on the price premiums of both third-party certified and self-declared eco-labeled clothing were analysed, as illustrated in Fig. 4.1. According to the results, in general, more than half of the sample group is willing to pay a higher price for clothing with both types of eco-label attached. The results have suggested that around 59.1% of the respondents are willing to pay a higher price for self-declared eco-labeled clothing, as compared to the conventional ones. Besides, similarly to the study by Žurga and Tavčer (2014) in Slovenia, around 72.5% of the sample group indicate that they are willing to pay more for the clothing with eco-label that is certified by a third party. However, among the respondents who are willing to pay more for eco-labeled clothing, the majority of them are willing to pay only 1-80THB, which can be considered as up to 20%, higher than a typical 400THB collared t-shirt. Fig. 4.1 shows that the respondents who are willing to pay up to 20% more for the third-party certified and self-declared eco-labeled clothing accounts for 46.6% and 43.3% of the whole sample group, respectively. For the rest of the respondents, regarding the clothing with the third-party certified eco-label attached, 16.3%, 4.9% and 4.7% of the whole sample group can accept the price premium of the range 81-160THB

(20-40%), 161-240THB (40-60%) and more than 240THB (>60%), respectively. Smaller percentages of respondents are found willing to pay higher ranges of price premium for clothing with a self-declared eco-label, as compared to that with a third-party certified eco-label, attached. These include 12.4%, 3.4% and none for the price premium of the range 81-160THB (20-40%), 161-240THB (40-60%) and more than 240THB (>60%), respectively.

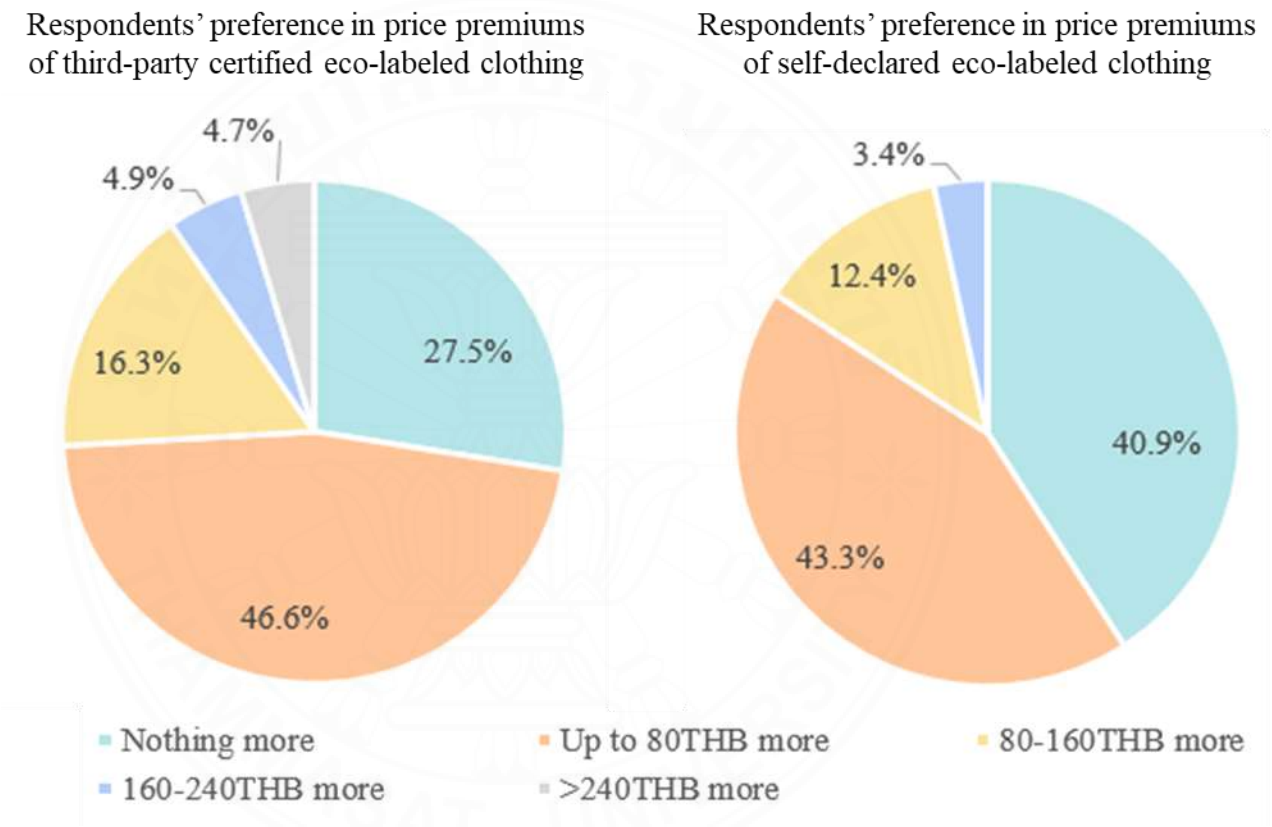


Figure 4.1 Percentage of sample group willing to pay different ranges of price premium for clothing with third-party certified (left) and self-declared (right) eco-labels attached as compared to a typical clothing with the price of 400THB(n=386)

4.5 Hypotheses assessment

In order to achieve the objective of this study, the research hypotheses were tested by using inferential statistics. The statistical tools for the hypotheses testing include paired sample t-test and simple regression analysis. The following sections show the results obtained from the hypotheses testing.

4.5.1 Influence of certification source on consumers' trust in eco-label

One of the main aims of this research is to confirm the potential of third-party certification in enhancing the consumers' trust in the eco-labels. As discussed earlier, in this research, the constructs that were used to measure the respondents trust in the third-party certified and self-declared eco-label were computed. Correspondingly, the mean scores of the computed variables on the respondent trust is the third-party certified eco-label (M = 3.85, SD = 0.73) and self-declared eco-label (M = 3.39, SD = 0.811) have been compared (Table 4.5). The results have shown that the mean score of the respondent trust in the eco-label with third-party certification is higher than that declared by the producers or retailers themselves. Besides, the respondents tend to have high trust in the third-party certified eco-label, as the mean score is in the range 3.41-4.20, while they only have moderate trust in the self-declared eco-label, with the mean score in the range 2.61-3.40. The results of the paired sample t-test have also implied that the difference between the mean scores of trust in the third-party certified and self-declared eco-label is statistically significant, with the confidence level of 95%, $t(385) = 11.152$, $p = 0.000$ (which is less than 0.05). Thus, the research hypothesis that the consumers' trust in the third-party certified eco-label is higher than that in self-declared eco-label (**H1**) is supported. The analysed results are in line with most of the literatures (Brach et al, 2018; Darnall et al, 2016; Janssen & Hamm, 2012) that the third-party certification can enhance the consumers' trust towards the eco-label, for the targeted sample group who are living in Thailand. This may be attributed to reduction in consumers' perceived risk in 'greenwashing' of the products (Genç, 2013).

Table 4.5

Mean comparison between respondents' trust in third-party certified and self-declared eco-labels

Variables	n = 386						
	Mean	Std. deviation	Mean of the paired differences	Std. deviation of the paired differences	t	d.f.	p
Trust in third-party certified eco-label	3.85	0.738	0.464	0.818	11.152	385	0.000
Trust in self-declared eco-label	3.39	0.811					

4.5.2 Influence of certification source on the price premium of eco-labeled clothing

As mentioned in Chapter 3, the price premiums of the eco-labeled clothing was also obtained in terms of score, from 1 to 5, to represent the level of price premium accepted by the sample group. Although the mean score of price premium for third-party certified eco-labeled clothing is in the low range (1.81-2.60), with the value of 2.13, it is still higher than that for self-declared eco-labeled clothing, which is in the very low range (1.00-1.80), with the value of 1.78. The paired samples t-test was also used to compare between the average score of price premiums for clothing with third-party certified (M = 2.13, SD = 1.020) and self-declared (M = 1.78, SD = 0.789) eco-labels attached (Table 4.6). The results have suggested that the difference between the two mean scores are statistically significant with the confidence level of 95%, $t(385) = 7.048$, $p = 0.000$ (<0.05). These imply that the third-party certification of the eco-label can enhance the price premium of the eco-labeled clothing. Subsequently, the research hypothesis that consumers are willing

to pay higher price for clothing with a third-party certified eco-label than that with a self-declared eco-label attached (**H2**) is supported.

Table 4.6

Mean comparison between respondents' level of price premium for third-party certified and self-declared eco-labels

Variables	n = 386						
	Mean	Std. deviation	Mean of the paired differences	Std. deviation of the paired differences	t	d.f.	p
Level of price premium for third-party certified eco-label	2.13	1.020	0.345	0.960	7.048	385	0.000
Level of price premium for self-declared eco-label	1.78	0.789					

4.5.3 Influences of consumers' knowledge and trust in eco-label on price premium of eco-labeled clothing

Another aim of this research is to clarify whether the price premium of the eco-labeled clothing is related to the consumers' trust and knowledge in the eco-labels or not. In order to investigate this relationship, a multiple linear regression analysis was conducted. The computed scores of respondets trust and knowledge in eco-labels and price premium of eco-labeled clothing, in the scale of 1-5 were used for the regression analysis. The attained results regarding different types of eco-label have been separately used to be analysed

4.5.3.1 Effects of eco-label knowledge and trust in third-party certified eco-label on the price premium of third-party certified eco-labeled clothing

In order to investigate the effects of consumers' trust and knowledge in eco-labels on the price premium of clothing with a third-party certified eco-label attached, scores on consumers' trust in the third-party certified eco-label were considered. A multiple regression analysis was conducted to clarify these effects. Along with the multiple regression analysis, a multicollinearity analysis was conducted to ensure that relationship among the independent variables was not significant. Table 4.7a, 4.7b and 4.7c present the results from the multicollinearity and multiple regression analysis, regarding the influences of the respondents' eco-label knowledge and trust in the third-party certified eco-label on the price premium of third-party certified eco-labeled clothing.

Prior the results from the multiple regression were analysed, (Table 4.7a). The results from the multicollinearity analysis indicate that the value of Variance Inflation Factor (VIF) for all variables is 1.404, which is lower than 5.0 and the tolerance of 0.712, which is more than 0.10 (Daoud, 2017). Thus, the problem of multicollinearity in this research was insignificant.

According to Table 4.7b, The results from the multiple regression analysis have implied that the results indicate that the regression between these variables is statistically significant ($F(2, 383) = 12.365$, $p = 0.000$). However, Table 4.7c has shown that while respondents' trust in the third-party certified eco-label contributes significantly to the regression ($B = 0.387$, $p = 0.000$), eco-label knowledge does not ($B = -0.126$, $p = 0.169$). Besides, the unstandardized Beta coefficient for consumers' trust in the third-party certified eco-label has been revealed to be a positive value. Therefore, for eco-labels with third-party certification, the hypothesis that the consumers' trust in the eco-label is significantly related to higher price premium of eco-labeled clothing (**H3**) is supported for the consumers who are living in Thailand. In contrast, the hypothesis that the consumers' eco-label knowledge has significantly positive impact on the price premium of eco-labeled clothing (**H4**) is not supported

In exclusion of the insignificant variable, the analysis has also reported the regression equation of:

Price premium for third-party certified eco-labeled clothing = 0.387 (Trust in third-party certified eco-label) + 1.161

The analysis also notifies an R square value of 6.1 percent. This suggests that connsumers' trust on the eco-label may be one of the factors affecting the price premium of the eco-labeled clothing and that the price premium of eco-labeled clothing can be explained 6.1 percent by the consumers' trust in the label, regarding third-party certified eco-labels.

Table 4.7a

Results of multicollinearity analysis for the influence of eco-label knowledge and trust in third-party certified eco-label on the price premium of third-party certified eco-labeled clothing

Items	Unstandardised coefficients		Standardised coefficients	t	p	Collinearity statistics	
	B	Std. error	Beta			Tolerances	VIF
Intercept	1.161	0.344		3.377	0.001		
Trust in third-party certified eco-label	0.387	0.081	0.28	4.771	0.000	0.712	1.404
Eco-label knowledge	-0.126	0.92	-0.081	-1.377	0.169	0.712	1.404

Dependent variable: price premium for third-party certified eco-labeled clothing

Independent variable: trust in third-party certified eco-label, eco-label knowledge

Table 4.7b

Summary of ANOVA on the regression model for the influence of eco-label knowledge and trust in third-party certified eco-label on the price premium of third-party certified eco-labeled clothing

Items	Sum of squares	d.f.	Mean square	F	p
Regression	24.309	2	12.155	12.365	0.000
Residual	376.471	383	0.983		
Total	400.780	385			

Dependent variable: price premium for third-party certified eco-labeled clothing
Independent variable: trust in third-party certified eco-label, eco-label knowledge

Table 4.7c

Summary of the regression model for the influence of eco-label knowledge and trust in third-party certified eco-label on the price premium of third-party certified eco-labeled clothing

Variables	Unstandardised Beta coefficients	t	p
Trust in third-party certified eco-label	0.387	4.771	0.000
Eco-label knowledge	-0.126	-1.377	0.169

Dependent variable: price premium for third-party certified eco-labeled clothing
Independent variable: trust in third-party certified eco-label, eco-label knowledge
R = 24.6 percent; R square = 6.1 percent; Adjusted R square = 5.6 percent

4.5.3.2 Effects of eco-label knowledge and trust in self-declared eco-label on the price premium of self-declared eco-labeled clothing

In this research, the influences of respondents' eco-label knowledge and trust on the price premium of eco-labeled clothing, concerning the self-declared eco-labels were also studied. These effects were investigated by using a multiple regression

analysis between two independent variables, including eco-label knowledge and trust in the self-delcared eco-label, and one dependent variable as the price premium of clothing with a self-declared eco-label clothing attached. A multicollinearity diagnostic was also performed to confirm that there was no problem of multicollinearity among the independent variables.

Table 4.8a shows that the value of VIF and tolerances for the variables are 1.144 and 0.874. These indicate that problem of multicollinearity between these variables are insignificant (Daoud, 2017).

The results from the multiple regression analysis are presented in Table 4.8a, 4.8b and 4.8c. Accordingly, the regression model attained has been found to be a significant predictor to the price premium of self-declared eco-labeled clothing ($F(2, 383) = 16.232$, $p = 0.000$). The results also suggest that respondents' trust in the self-declared eco-labels are significantly related to the higher price premium of self-declared eco-labeled clothing as the p-value is shown to be less then 0.05 and the unstandardized Beta coefficeient is positive ($B = 0.287$, $p = 0.000$). This implies that the research hypothesis **H3a** is supported. In contradictory, the influence of respondents' knowledge in the eco-labels on the price premium of self-declared eco-labeled clothing has bee revealed to be insignificant. This can be attributed to the p-value of higher than 0.05 ($B = -0.075$, $p = 0.237$). Hence, the research hypothesis **H4a** is not supported.

Similar to the results of the model predicting the price premium of third-party certified eco-labaeled clothing, by excluding the insignificant variable, the analysis has reported the equation in predicting the price premium of self-declared eco-labaeled clothing as follow:

Price premium for self-declared eco-labeled clothing = 0.287 (Trust in self-declared eco-label) + 1.122

The results have also suggested an R square value of 7.8 percent. This implies that trust in the eco- label is one of the influencing factors in predicting price

premium of eco-labeled clothing and that the pice premium can be explained 7.8 percent by the consumers' trust in the label, regarding self-declared eco-labels.

Table 4.8a

Results of multicollinearity analysis for the influence of eco-label knowledge and trust in self-declared eco-label on the price premium of self-declared eco-labeled clothing

Items	Unstandardised coefficients		Standardised coefficients	t	p	Collinearity statistics	
	B	Std. error	Beta			Tolerances	VIF
Intercept	1.122	0.262		4.274	0.000		
Trust in self-delcared eco-label	0.287	0.051	0.295	5.631	0.000	0.874	1.144
Eco-label knowledge	-0.075	0.063	-0.062	-1.185	0.237	0.874	1.144

Dependent variable: price premium for self-declared eco-labeled clothing

Independent variable: trust in self-declared eco-label, eco-label knowledge

Table 4.8b

Summary of ANOVA on the regression model for the influence of eco-label knowledge and trust in self-declared eco-label on the price premium of self-declared eco-labeled clothing

Items	Sum of squares	d.f.	Mean square	F	p
Regression	18.731	2	9.366	16.232	0.000
Residual	220.989	383	0.577		
Total	239.720	385			

Dependent variable: price premium for self-declared eco-labeled clothing

Independent variable: trust in self-declared eco-label, eco-label knowledge

Table 4.8c

Summary of the regression model for the influence of eco-label knowledge and trust in self-declared eco-label on the price premium of self-declared eco-labeled clothing

Variables	Unstandardised Beta coefficients	t	p
Trust in self-delcared eco-label	0.287	5.631	0.000
Eco-label knowledge	-0.075	-1.185	0.237

Dependent variable: price premium for self-declared eco-labeled clothing

Independent variable: trust in self-declared eco-label, eco-label knowledge

R = 28.0 percent; R square = 7.8 percent; Adjusted R square = 7.3 percent

Corresponding to the results, the consumers' trust in the eco-labels was notified to positively impact the price premium of the eco-labeled clothing, regarding both types of eco-labels. This suggests that the consumers' trust in the eco-label, despite the type of the eco-labels, is significantly related to higher price premium of eco-labeled clothing for the consumers who are living in Thailand. This results analysis is in line with several literatures (Jaung et al, 2019; Khachatryan et al, 2021; Loo et al, 2011). Darnall et al (2016) have suggested that, regarding the environmental information, trust in the information source, tends to be one of the most essential antecedents of the individuals' attitude, social norms, perceived behavioral control and, hence, intention and behavior of that individuals. Besides, Brach et al (2018) have inferred that reduction in the consumers' perceived risk can promote the purchase intention of the products with a reliable source of environmental information. Therefore, these may cause the consumers who trust in the eco-labels tend to be willing to pay more for the eco-labeled products. Shen (2012) has also implied that consumers who do not believe that purchasing eco-labeled products are good for the environment are unlikely to be willing to pay a higher price for the products. On the other hand, the results indicates that the consumers' eco-label knowledge has no significant impact on the price premium of eco-labeled clothing. These results are in contrast to

previous research studies in different contexts (Mohamed et al, 2014; Mulazzani et al, 2020; Vecchio, 2013). However, Taufique et al (2017) have suggested that, despite high knowledge in the eco-labels, consumers are often skeptical about the eco-label information from the source that they do not perceive as reliable and, thus, the purchase behavior is hindered. This may cause the insignificant effect of the eco-label knowledge on the price that the consumers are willing to pay.

To sum up, according to the results of the hypotheses assessment of this research, the potential third-party certification of the eco-label in enhancing the pricep premium of eco-labeled clothing and consumers' trust in the eco-label has been confirmed, thus **H1** and **H2** are supported. Positive influence of consumers' trust in the eco-label on the price premium of eco-labeled clothing products has also been found to be statistically significant and, therefore, **H3** and **H3a** are also supported. In contradictory, the effect of consumers' knowledge of eco-label on the price premium of eco-labeled clothing is statistically insignificant. This means that **H4** and **H4a** are not supported. Correspondingly, the summary of the hypotheses assessment is presented in Table 4.11.

Table 4.9

Summary of the hypotheses assessment

Hypothesis	p	Summary
H1 Consumers' trust in the third-party certified is significantly higher than that in self-declared eco-label	0.000	Supported
H2 Third-party certified eco-labeled clothing has significantly higher price premium than self-declared eco-labeled ones	0.000	Supported
H3 Consumers' trust in the third-party certified eco-label is significantly related to higher price premium of the third-party certified eco-labeled clothing	0.000	Supported

Hypothesis	p	Summary
H3a Consumers' trust in the self-declared eco-label is significantly related to higher price premium of the self-declared eco-labeled clothing	0.000	Supported
H4 Eco-label knowledge is significantly related to higher price premium of the third-party certified eco-labeled clothing	0.169	Not supported
H4a Eco-label knowledge is significantly related to higher price premium of the self-declared eco-labeled clothing	0.237	Not supported

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

According to the results analysis of the obtained data in this research, the consumers' preference on the price premium of eco-labeled clothing in Thailand has been elucidated. The potential of third-party certification in enhancing consumers' trust in the eco-labels has also been confirmed. Besides, the influence of consumers' trust and knowledge in the eco-label on the price premium of eco-labeled clothing has been clarified. In this chapter, the conclusion on these findings is presented. Moreover, the findings of this research can be beneficial for both future research and clothing producers or retailers to develop their future marketing strategies. These can potentially lead to a step closer to enhancing sustainable consumption and production. Thus, the theoretical contribution and managerial implication suggested by this study are also discussed. Additionally, recommendations for future research are provided.

5.1 Discussion and conclusion

As mentioned earlier, this study has attempted to clarify the consumers' perception of the source of eco-label certification and price premium of eco-labeled clothing in Thailand, concerning their trust and knowledge in the eco-label. The following conclusions are discussed based on the results analysis of the collected data from 386 completed questionnaires.

5.1.1 Price premium of third-party certified and self-delcared eco-labeled clothing products

One of the main research questions of this study is to find out how much more are the consumers willing to pay for eco-labeled clothing products, in Thailand, as compared to conventional ones. Corresponding to the results analysis as discussed in the previous chapter, 59.1% and 72.5% of the consumers are willing to pay more for self-

declared and third-party certified eco-labeled clothing products, respectively, in Thailand. Regarding both types of eco-label, among the consumers who are willing to pay a higher price for eco-labeled clothing, the majority of them are willing to pay only up to 20% more. Žurga and Tavčer (2014) have also suggested similar findings among the Slovenian consumers, where more than 70% of the consumers are willing to pay more for the eco-labeled clothing but most of them are willing to pay up to only 10% more. Morevoer, this study has also found out that the average price premium of the clothing with a third-party certified eco-label attached is higher than that with a self-declared eco-label attached. This finding is in line with several literatures (Jaung et al, 2019; Loo et al, 2011). Thus, the research hypothesis **H1** was supported. Loo et al (2011) have attributed this to the likelihood that consumers' willingness to pay is strongly depended on their trust in the source of certfication and that the consumers trust in the eco-label with third-party certification more than that without one.

5.1.2 Potential of third-party certification in enhancing consumers' trust in the eco-labels

Since the consumers' trust in the eco-label tends is suggested to be one of the main factors affecting the consumers' behavior and willingness to pay towards the sustainable products (Jaung et al, 2019; Loo et al, 2011; Riskos et al, 2021; Taufique et al, 2017), this study has attempted to investigate whether third-party certification can promote consumers' trust in the eco-labels in Thailand or not. According to the results analysis, this research has revealed that consumers trust the eco-label that is certified by a third party more than that provided by the producers or the retailers themselves. Therefore, the research hypothesis **H2** was found to be supported. This confirms the potential of third-party certification in enhancing consumers' trust in the eco-labels. The similar finding has been suggested by various research works in different contexts (Brach et al, 2018; Darnall et al, 2016; Janssen & Hamm, 2012). Genç (2013) has suggested that certification by a third-party can reduce the consumers' perceived risk of greenwashing towards the environmental information from the eco-labels. Thus, this can be the main cause in enhancing the consumers' trust towards the third-party certified eco-labels.

5.1.3 Influence of consumers' trust and knowledge in eco-labels on the price premium of eco-labeled clothing products

In order to fulfill the aim of this research in understanding the factors affecting the price the premium of eco-labeled clothing in Thailand, the influence of consumers' trust and knowledge in eco-labels on the price premium of clothing has been clarified. As discussed in chapter 4, this was performed by the regression analysis on the collected and computed data. The conclusion on the effect of consumers' trust and knowledge in eco-labels on the price premium of eco-labled clothing products is then drawn based on the results from the analysis.

The results from the analysis can lead to the conclusion that, although with a very weak correlation, consumers' trust in the eco-labels can positively impact the price premium of the eco-labeled products, despite the types of eco-labels. Thus, the research hypotheses **H3** and **H3a** were supported. Various research works have suggested similar results in diverse contexts (Jaung et al, 2019; Khachatryan et al, 2021; Loo et al, 2011). This finding may be explained by the potential of trust in being a powerful antecedent of the main factors in predicting individuals' intention and behavior (Darnall et al, 2016). These include attitude, social norm and perceived behavioral control (Ajzen, 1991). Darnall et al (2016) have mentioned that trust can affect individuals' attitude as the individuals tend to accept the information, regarding consequences of the behavior, that is provided by trusted sources. Trust can also influence normative beliefs as people often choose to act to please people they trust. Besides, trust tends to affect perceived behavioral control of individuals as trust can reduce their perceived risk (Brach et al, 2018; Darnall et al, 2016). Thus, consumers who trust eco-label more are willing to pay more for eco-label clothing products.

In opposite to trust in eco-labels, the results analysis has led to the conclusion that the impact of consumers' knowledge in eco-labels on the price premium of the eco-labeled clothing is insignificant, despite the types of the eco-labels. Hence the research hypothese **H4** and **H4a** were not supported. Contrast finding was suggested by various previous research studies in different contexts (Mohamed et al, 2014; Mulazzani

et al, 2020; Vecchio, 2013). However, this can be explained by the suggestion from Taufique et al (2017) that, despite high knowledge in the eco-labels, consumers are often skeptical about the eco-label information from the source that they do not perceive as reliable This can hinder the consumers' purchase behavior and, hence, may be the reason that consumers with more knowledge in eco-labels are not always willing to pay more for the eco-labeled clothing.

5.2 Contributions

This study has attempted to close down certain research gaps regarding the price premium of eco-labeled clothing products. The findings in this research can be considrably beneficial for future research. As discussed earlier, the consumers' perception of the source of eco-label certification and price premium of eco-labeled clothing in Thailand, with regard to their trust and knowledge in the eco-label, have also been elucidated. This can be used as guidelines for marketing teams of the clothing producers or retailers in developing suitable marketing strategies, incorporating eco-labels, to promote the consumption of sustainable clothing. The contributions of this research are further discussed in the following sections.

5.2.1 Academic contribution

Corresponding to the findings revealed in this research, some research gaps, regarding the price premium of eco-labeled products, have been covered. This can lead to four main points of academic contribution.

First, this study has attemped to extend the research from Mungkung et al (2021) by revealing the price premium of a specific type, which is clothing in this case, of product with eco-labeled attached. The finding suggests that the price premium of eco-labeled products may depend on the type of the products as most of the consumers in Thailand are actually willing to pay a higher price for eco-labeled clothing, while the

previous study suggests the opposite for other types of products (Mungkung et al, 2021). Thus, it can be beneficial for future research to take the type of products into consideration.

Second, this research has confirmed that the source of certification is one of the main factors in affecting the consumers' trust in eco-labels in Thailand. Thus, the source of certification can be evidently added into future research in predicting consumers' trust towards eco-labels.

Third, although a very weak correlation has been found, consumers' trust in eco-labels is shown to positively impact the price premium of eco-labeled clothing, despite the eco-label types. This allows a better understanding of the consumers' perception towards the price premium of eco-labeled products in a certain context. Consequently, in line with various research works (Jaung et al, 2019; Khachatryan et al, 2021; Loo et al, 2011), this adds another predictor for the price premium of eco-labeled products in future studies. This can be considered valuable as the cost and price premium tend to be main barriers in the using eco-labels and, hence, promoting the consumption of sustainable products.

Lastly, this research has found out that, in the context of eco-labeled clothing in Thailand, the consumers' knowledge of eco-labels has no significant effect on the price premium. Eventhough this finding is contradicted to several previous studies (Mohamed et al, 2014; Mulazzani et al, 2020; Vecchio, 2013), it can be implied that, for consumers in Thailand, despite high knowledge in eco-label, they are not willing to pay more for the eco-labeled clothing as long as they do not trust the label. This leads to the necessity in confirmation of these results and also exploring reasons behind this finding among the consumers in Thailand.

5.2.2 Managerial implication

This research has led to various findings regarding consumers' perception on the price premium of eco-labeled clothing in Thailand. In addition to the academic contributions, the results of this study can also be beneficial to actual practice relating to business management. According to these findings, three main points of managerial implication can be suggested.

First, for the clothing producers or retailers to gain more trust, from the consumers, towards their eco-labeled products, the use of existing third-party certified eco-labels, such as the 'Thai Green Label', has been found to be an attractive option. Also, other institutions or associations that are related to the garment industry, such as the Thai Garment Manufacturer's Association, may consider setting up a new credible eco-label. This can effectively promote consumption and production of sustainable clothing as the eco-labels that are certified by experts in specific fields may be more trustworthy.

Second, the study has found out that although consumers are willing to pay a higher price for eco-labeled clothing, most consumers are not willing to pay more than 20% price premium for both third-party certified and self-declared eco-labels. Besides, consumers tend to be willing to pay a higher price, on average, for clothing products with eco-label that is certified by a third party than that provided by the producers or retailers themselves. According to the information from the Thailand Environment Institute (TEI), the cost in using the 'Thai Green Label' include the cost in applying for the label of 3,000-5,000THB per product, cost of on-site assessment of 15,000THB prior the use of the label and cost in maintaining the label of 24,000THB per 3 years for a product (80,000THB for new products). Therefore, the price premium of 20% for the third-party certified eco-labels can notably compensate the cost in using labels, which is approximately less than 40,000THB per year. This can be used as a guideline for the marketing of the clothing companies to effectively plan their marketing strategy for their eco-labeled clothing products. This can stimulate the use of credible eco-labels and consumption of sustainable clothing (Lee et al, 2020; Riskos et al, 2021; Song et al, 2019; Taufique et al, 2017; Wijekoon and Sabri; 2021) and, thus, fulfilling the United Nations (UN) sustainable goals in responsible consumption and production.

Lastly, the findings of this research have suggested consumers are willing to pay more for eco-labeled clothing when they trust the labels, despite the types of eco-labels. This implies that trust in eco-labels tends to be essential in promoting the price premium of eco-labeled clothing products. Subsequently, the clothing companies are suggested to consider using more credible eco-labels that are certified by trustworthy

parties. Thus, the parties that are responsible for the eco-label certification (e.g. NGOs and governmental organisations) must take some actions to develop their trustworthiness. These may be performed by setting up a traceable data collection system to enhance transpency of their database. The parties shall also create awareness of the consumers in the existence and transparency of their eco-labels. In the case that the clothing companies wish to provide the eco-labels by themselves, they need to ensure that their brand credibility is adequate.

5.3 Research limitations

Along with several findings, this research also has various limitations that are worth noted. Accordingly, four main points of limitation are discussed in this section.

First, for the obtained data to be suitable for the selected analysis method, close-ended questions on the price premium of eco-labeled clothing have been used. Since the answers in the scale used are in range with the highest scale of '>240THB more', an absolute value of the price premium cannot be attained. On the other hand, to acquire the price premium in an absolute value, open-ended questions may have to be used. However, other limitations, such as the ability of the data to represent actual price premium, may have to be addressed.

Second, regarding the illustration of the typical clothing product in the question for the price premium of eco-labeled clothing, in reality, the brand of the clothing has to be shown. Consumers' trust in the brand may affect the trust in the self-declared eco-label (Darnall et al, 2016). Nevertheless, in this research, trust in the unknown brand is deemed to be similar among the different consumers.

Third, apparently, third-party certified eco-labels have not been widely used in the clothing industry in Thailand. Thus, the used eco-labels have been designed specifically in this research. The actual design of the eco-labels may be different. Consequently, consumers may not be familiar with the illustrated eco-labels and, thus, they may have to put effort to imagine the existence of these labels.

Fourth, due to the shortage of time in collecting the data (5th to 20th of December 2021), the varieties in the characteristics of the respondents may be limited. More data from respondents with certain characteristics (e.g. age 18-30 and 41-60 years old, having monthly income in the range 0-10,000THB and more than 150,000THB) may have to be collected to enhance the reliability of the results to represent the targeted sample group.

Lastly, it should be noted that the data collection was conducted during the COVID-19 (Coronavirus Disease 2019) pandemic. This leads to the downside for various businesses as many shops have to be suddenly closed and the countries are under lockdown period. Subsequently, due to the numbers of uncertainties during this period, the price sensitivity and concern of some respondents may be influenced. Therefore, the price premium of the eco-labeled clothing may be different in the post-COVID-19 pandemic period.

5.4 Recommendation for future research

In extension to the findings of this research study, several recommendations for future research can be made. Four main points of suggestion for future research are discussed in this section.

First, in order to effectively enhance the sustainability of the clothing industry, social aspects of clothing production have to be considered, in addition to environmental aspects. Seemingly, few research works are found to take social aspects of sustainability into account when investigating consumers behaviour towards sustainable consumption (Bangsa & Schlegelmilch, 2020). Therefore, future research may take social sustainability labels (e.g. FairTrade Label) into consideration.

Second, other types of clothing product may influence the consumers' perception towards the price premium when there are eco-labels attached. Apparently, consumers are also using various types of clothing products (e.g. sportswear) for different activities (Nam et al, 2017). Thus, investigating this issue can be beneficial for the industry.

Third, according to the results of this research, although consumers' trust in eco-labels has been found to influence the price premium of eco-labeled clothing, other parameters need to be considered to predict the price premium. Hence, future research can utilize the findings of this research to develop the accurate predicting model, incorporating consumers' trust towards the eco-label alongwith other parameters such as price sensitivity, for the price premium of eco-labeled clothing products. This can be valuable in terms of both academic and actual practice in business management.

Additionally, future research is recommended to attain the data from more diverse respondents' characteristics within the targeted group. This can enhance the reliability of the obtained results.

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APPENDICES

APPENDIX A

RESULTS ANALYSIS OF THE PRETEST

Table 4.2 Reliability of the constructs

Variables	Scale item	n = 40 Composite reliability (α)
Eco-label knowledge	I know the meaning of the term 'recycled' I know the meaning of the term 'eco-friendly' I know the meaning of the term 'organic' I know the meaning of the term 'energy-efficient'	0.878
Trust in self-declared eco-label	The label is genuinely committed to environmental protection Most of what the label says about its products is true If the label makes a claim or promise about its product, it's probably true	0.928
Trust in third party-certified eco-label	The label is genuinely committed to environmental protection Most of what the label says about its products is true If the label makes a claim or promise about its product, it's probably true	0.893

APPENDIX B

SURVEY QUESTIONS ON RESPONDENT CHARACTERISTIC

1. Where do you live?
    - Inside of Thailand
    - Outside of Thailand

2. What is your gender?
    - Female
    - Male

3. What is your age
    - <18
    - 18-30
    - 31-40
    - 41-50
    - 51-60
    - >60

4. What is the highest education level you finished, or currently engaging?
    - Primary school
    - Secondary school
    - High school
    - Bachelor’s degree
    - Master’s degree
    - PhD
    - None

5. What is your monthly income?
    - 0-10,000THB
    - 10,001THB-60,000THB
    - 60,001THB-150,000THB
    - 150,001THB-300,000THB
    - >300,000THB

6. What is your current marital status?
    - Single
    - Married
    - Divorced
    - Widowed

7. How many children do you have?
    - None
    - One child
    - Two children
    - Three children or more

8. How often do you buy clothes?
    - 1-5 items per year
    - 6-15 items per year
    - 16-30 items per year
    - 31-50 items per year
    - >50 items per year

APPENDIX C

SURVEY QUESTIONS ON CONSUMERS' KNOWLEDGE IN ECO-LABELS

Please answer how much you agree with the following statements					
Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I know the meaning of the term "recycled."					
2. I know the meaning of the term "eco-friendly"					
3. I know the meaning of the term "organic."					
4. I know the meaning of the term "energy efficient."					

APPENDIX D

SURVEY QUESTIONS ON CONSUMERS' TRUST IN ECO-LABELS

Third-party certified eco-label

- The label is attached to a product to inform that the product is environmentally preferable
- The label is certified and awarded by third party (the Thailand Environmental Institute)

Regarding the eco-label above, please answer how much you agree with the following statements

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. The label is genuinely committed to environmental protection					
2. Most of what the label say about its product is true					
3. If the label makes a claim or promise about its product, its probably true					

Self-declared eco-label

- The label is attached to a product to inform that the product is environmentally preferable
- The environmental performance of the products is declared by the producer itself

Regarding the eco-label above, please answer how much you agree with the following statements

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
4. The label is genuinely committed to environmental protection					
5. Most of what the label say about its product is true					
6. If the label makes a claim or promise about its product, its probably true					

APPENDIX E
SURVEY QUESTIONS ON PRICE PREMIUM OF ECO-LABELED CLOTHING PRODUCT

Product information and illustration
 - Grey t-shirt with collar - Unisex - No eco-label attached - Price : 400THB

1. How much more are you willing to pay for the above t-shirt if there is a third-party certified eco-label (eco-label awarded by third party such as government or private non-commercial organization) attached?

- Nothing more
- Up to 80THB more
- 81-160THB more
- 161-240THB more
- More than 240THB more

2. How much more are you willing to pay for the above t-shirt if there is a self-declared eco-label (eco-label provided by the producer or the brand itself) attached?

- Nothing more
- Up to 80THB more
- 81-160THB more
- 16-240THB more
- More than 240THB more

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