

Factors Influencing Consumer Acceptance of Cross-Border Electronic Commerce

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Abstract

From the beginning of electronic commerce, the ability to buy from foreign online stores across the world was identified as one of its great potentials. However, even now when domestic online shopping has become commonplace in many countries, cross-border electronic commerce has not gained in popularity at the same rate. From the consumer side, an important reason for this situation is related to trust: consumers have difficulties trusting foreign online stores. The barriers that exist in cross-border contexts make it so that the perception of risk is greatly increased. Another problem is that existing models of consumer acceptance of electronic commerce have, for the most part, focused on the domestic market. Previous studies have identified several critical factors affecting trust and intention of use of domestic online stores, but less research has been conducted on specific factors of cross-border online shopping.

The objective of this dissertation is to address these problems by identifying the factors unique to the cross-border context that have a positive influence on trust and its antecedents, within a model of consumer acceptance. In order to do this, three characteristics of the cross-border online shopping experience were established: the difference of nationality in users, language difference and the foreign country itself. The factors affected by these characteristics were identified as nationality information contained in feedback, translation quality of the website, country presence and country-of-origin image. To validate the effect of these proposed factors, separate studies were conducted by surveying Japanese consumers and analyzing their responses using structural equation modeling.

In the first study, the effect of indicating nationality information of the user in the feedback of the foreign online store on trust was analyzed. Three experimental conditions were created, based on the nationality of the majority of users giving feedback: (1) feedback from Japanese users, (2) feedback from Thai users and (3) a control condition of no feedback. The results showed that feedback from users of the same country as the consumers' improves trust in comparison to feedback from foreign users. And that, on the other hand, feedback from foreign users does not improve trust compare to showing no feedback at all.

In the second study, related to the language difference, the influence of translation issues on the foreign online store was investigated. The experiment considered two types of translation issues, related to the adequacy of translation (correct or incorrect) and to the completeness of translation (full or partial). Four experimental conditions with different combinations of translation issues were evaluated. The results showed that

correct use of Japanese language positively affects perceived ease of communication, ease of use and trust, compared to all other conditions with incorrect translation, partial translation, or a mixture of both. These findings highlight the importance of language and translation quality assurance.

In the third study, related to information about the foreign country itself, it was hypothesized that foreign websites may be able to improve trust by increasing the association with their country-of-origin. In order to test this hypothesis, the factor of country presence was introduced. Two experimental conditions were considered: country-related pictures and generic pictures, each one evaluated for Thailand and Singapore mockup online stores. The results showed that including country-related pictures has a positive effect on country presence, but that trust was not directly affected by country presence. Instead, the effect of country presence was mediated by the visual appeal of the online store.

In the fourth and final study, also related to the foreign country itself, the extrinsic factor of country-of-origin image was introduced. It was defined as the cognitive and affective perception of the foreign country that the consumer holds in mind. It was hypothesized that the image of the foreign country would have an effect on the perception of an online store from that country. The results showed that country-of-origin image does have a positive influence, but that this influence is not equal for all countries. In general, the image of Thailand as a country has a wider influence on the Thai online store, than the Singapore image has on the Singaporean online store.

This dissertation contributes to the study of consumer acceptance in cross-border electronic commerce by providing evidence of the importance of considering the unique variables that exist in a cross-border context. The findings indicate that in order to improve the trust and acceptance of foreign online stores it is important to consider how they may be affected by the differences that exist in consumers and the differences in the context itself, and how these two components interact to affect consumer perception on different dimensions. The findings also contribute evidence that pre-existing perceptions of one country from the perspective of consumers from another country have influence on the evaluation of the foreign online store. Online stores may be able to utilize the image of their country-of-origin to their advantage. In addition, institutions or organizations, especially in developing countries, could consider strategies to promote country image with the goal of improving the overall perception of their electronic commerce markets.

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Chapter 1

Introduction

1.1 Statement of the problem

An essential characteristic of electronic commerce is its potential global reach ([Zwass, 1996](#)). However, even though in many countries online shopping is no longer an uncommon activity for consumers and adoption rates continue to improve all over the world, for the most part this is the case for domestic online shopping only. The potential of cross-border electronic commerce has not yet been realized for the most part. In Europe, for example, consumer scoreboards reports from 2009 ([Commission of the European Communities, 2009a](#)) and 2011 ([European Commission, 2011](#)) indicated that cross-border electronic commerce had not advanced as much as was expected. On the other hand, improvement for domestic electronic commerce was on track for reaching their specified target.

Cross-border electronic commerce allows consumers to find better prices, even when including the extra costs related to foreign purchase, and wider selection for purchases ([Commission of the European Communities, 2009a](#); [Trübenbach, 2009](#)). However, a cross-border context presents additional challenges compared to the domestic one; these challenges are the reason why international online shopping has not improved at a comparable rate.

One of the main challenges is negative perception by the consumers. Consumers perceive higher barriers and risks in cross-border online shopping compared to domestic online shopping ([Commission of the European Communities, 2009a](#)). They indicate a belief that shopping on foreign websites is associated with a higher level of risk than shopping on local websites ([European Commission, 2011](#)) and have high concern with potential fraud or problems ([European Commission, 2012](#)). This perception results in a reluctance to try cross-border online shopping.

Though it is only one region, the case in Europe is illustrative of the problems and barriers that exist in this type of context, with multiple countries, cultures and languages. In Japan, for example, consumers indicate language difficulties, communication barriers, and difficulty to ascertain the trustworthiness of foreign online stores ([Cross-Border Consumer Center Japan, 2011](#)). In a similar way to European consumers, Japanese consumers who have not had previous experience with cross-border online shopping have a negative expectation that troubles will occur ([Consumer Affairs Agency of Japan, 2011](#)).

Another problem is the lack of research in cross-border electronic commerce. Research on consumer behavior in electronic commerce has identified the factors that affect consumer attitudes and intention of use, such as usefulness, ease of use and trust factors ([Gefen et al., 2003](#)). However, the majority of studies have focused on the domestic market only. Studies that have considered cross-border contexts often have cultural adaptation and localization as their focus ([Vyncke and Brengman, 2010](#)). Cultural adaptation is important to improve the foreign consumer perception of the website ([Sinkovics et al., 2007](#)); however, this approach is not without issues, such as cost and complexity ([Collins, 2002](#)).

1.2 Objectives

In order to address the problems identified, the general objective of this dissertation is to investigate the factors that influence consumer acceptance in cross-border electronic commerce, where the consumer and the online store are from different countries. Logistical and time constraints do not allow for a comprehensive study of all the variables that comprise the differences in cross-border electronic commerce. Therefore, the objective is to establish the unique characteristics of the cross-border context, identify relevant factors and validate their effect on the consumer's perception of different dimensions of the online store. The studies contained in this dissertation consider the social, visual and textual dimensions of the online store, and considers factors both intrinsic and extrinsic to the website.

In particular, the objective is to identify and validate factors that affect trust in the cross-border context. The specific focus on trust follows the understanding that it is, at the same time, one of the most important factors affecting intention of use of an online store and one of the factors that become critical in a situation of high perceived risk, such as the one which results from the barriers that exist for buying in foreign online stores.

Finally, this dissertation has the objective to incorporate the new factor of country-of-origin image into cross-border electronic commerce research.

1.3 Contribution

This dissertation contributes new knowledge about consumer acceptance of foreign online stores, which is an area that has not enjoyed as much research as the domestic context. By focusing on variables that are unique in the cross-border situation, a new understanding of the factors that affect trust and its antecedents, and intention of use of foreign online stores is introduced. By validating country-of-origin image, a new factor in the investigation of consumer acceptance of cross-border electronic commerce is introduced. Country-of-origin image is a factor whose effects on the evaluation of foreign products and services have been widely investigated in the marketing and business research areas, but have not been empirically tested in an electronic commerce context. As far as it is possible to ascertain, this is the first quantitative study to investigate how the image of the country-of-origin of a foreign online stores affects consumer perception in a cross-border context. The results of this dissertation may open new venues of research that consider the country perception and how to leverage it. As the image of a country can change over time, the study of the effects of that perception on online shopping can help identify possible improvements.

1.4 Dissertation outline

This dissertation is structured as follows: in Chapter 2, a literature review of studies related to consumer behavior in electronic commerce, cross-border electronic commerce and country-of-origin image will be presented and discussed. Chapter 3 will present the theoretical framework of this dissertation. Chapter 4 will describe the methodology used, although certain details that correspond to particular studies will be described in their respective section. Chapter 5 will present the details of each study that was conducted, including the research model to be tested, the details of the methodology used, the analysis and results, and the discussion of the particular study. Chapter 6 will present a general discussion, summarizing the findings of each study as well as indicating their general limitations. Finally, Chapter 7 will present the conclusions and implications of this dissertation and the future work.

Chapter 2

Literature Review

This chapter is divided into three sections. The first section will present a review of important factors identified in the literature on consumer acceptance of electronic commerce. The second section will introduce the limitations and challenges of research in a cross-border context. The third section will introduce the concept of country-of-origin image, indicating its origins and evolution, effects and limitations.

2.1 Consumer behavior in electronic commerce

2.1.1 Technology acceptance model factors

The technology acceptance model (TAM) introduced by [Davis \(1989\)](#) has been extensively investigated in the area of electronic commerce research ([Benbasat and Barki, 2007](#)). The original model proposed that the most important factors that influence a user's intention of using a software program were perceived usefulness and perceived ease of use. Perceived usefulness was originally defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" ([Davis, 1989](#)). It is mostly operationalized in terms of performance, effectiveness and productivity ([Gefen et al., 2003](#)). Perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort." ([Davis, 1989](#)).

These two original TAM factors represent a utilitarian perspective of the use of software technology. The original study by [Davis \(1989\)](#) considered technology such as productivity software, used in a business setting. The focus of perceived usefulness as productivity and ease of use as straight-forward interaction makes sense in such context. Nevertheless, both factors have been validated as important for the

acceptance of electronic commerce also (Gefen et al., 2003; Pavlou, 2003; Chang et al., 2005; Benamati et al., 2010). Even though the effect of perceived ease of use on intention of use is relatively lower than the effect of perceived usefulness (Pavlou, 2003; Gefen et al., 2003), this construct is important for being the way in which consumers can assess a website and become experienced in it (Gefen et al., 2003) and also for the influence it has on trust in the online store.

2.1.2 Trust

As mentioned before, TAM was originally validated using business productivity software. However, in the case of electronic commerce, additional characteristics need to be considered that do not exist in a purely business-related context. One of the most important ones is the perception of risk in online shopping transactions. Risk is defined as the uncertainty perceived by the consumer when considering the possible negative consequences of their behavior (Dowling and Staelin, 1994; Featherman and Pavlou, 2003). Perception of risk reduces the perception of control in the consumer (Jarvenpaa et al., 1999), which then has a negative effect on the intention of use of the online store (Jarvenpaa et al., 1999; Pavlou, 2003).

Trust becomes relevant in risk situations (Mayer et al., 1995). Therefore, the existence of risk factor in online shopping led to extensions of the original TAM model which included the factor of trust, and its relationship to the factors of perceived usefulness and perceived ease of use factors (Benbasat and Barki, 2007). It has been found that, by considering positive characteristics that indicate the trustworthiness of the vendor, the users can reduce that perception of risk (Pavlou, 2003). While there are different understandings of trust throughout the literature (Wang and Emurian, 2005), in consumer behavior in electronic commerce literature, trust is defined as the belief that the vendor will act in a favorable way towards the consumer (Gefen, 2000; Pavlou, 2003) and indicates confidence in the online store (Cyr et al., 2009). Trust is frequently characterized as multidimensional and composed of (1) benevolence, the belief that the vendor will act in the consumers' best interest; (2) integrity, the belief that the vendor will keep its commitments; and (3) competence, the belief that the vendor will be able to perform their task correctly (McKnight et al., 2002a; Gefen, 2002).

Trust continues to be considered an important issue in the research of consumer acceptance of electronic commerce (Corritore et al., 2003; Grabner-Kräuter and Kaluscha, 2003; Gefen et al., 2008; Karimov et al., 2011). Trust is important because the belief that the vendor will act favorably can affect the consumers' decision to use

an online store (Gefen, 2000; McKnight et al., 2002a; Gefen et al., 2003; Pavlou, 2003), and it plays a role in improving online shopping acceptance, as higher trust results in higher intention of use (McKnight et al., 2002a; Gefen et al., 2003; Pavlou, 2003). As a consequence, studies in the area of consumer acceptance of electronic commerce have investigated the different antecedents of trust and potential ways of improving the perception of trustworthiness of online stores. In the following sections, important antecedents of trust will be discussed.

Feedback

According to a Nielsen (2012) report, consumers all over the world trust the opinions of other online consumers and the opinions of people they know. Showing feedback on the website allows consumers to have access to these opinions and the information they contain. User-generated feedback is one of the mechanisms used in order to build trust (Ba and Pavlou, 2002), which has been implemented widely in online stores. Feedback is important in electronic commerce, because positive opinions from previous users can affect consumer behavior towards the online store (Dellarocas, 2003). In addition to the information about the content of the feedback, information about the characteristics of the user giving the feedback can also have an effect on the consumer's judgment (Forman et al., 2008).

Two types of social influence are involved in feedback: informational social influence and normative social influence. Informational social influence, which is "an influence to accept information obtained from another as evidence about reality" (Deutsch and Gerard, 1955), operates in the case of product evaluation by consumers, where previous ratings are taken as a reliable indicator of the characteristics of a product (Burnkrant and Cousineau, 1975). In situations where the consumer cannot directly evaluate a product, the opinions of other consumers may be helpful to infer their value (Burnkrant and Cousineau, 1975). Normative social influence is "an influence to conform with the positive expectations of another" (Deutsch and Gerard, 1955). This type of influence may work through compliance with the opinions or actions of other, or through identification with others which are considered a positive reference (Burnkrant and Cousineau, 1975).

Visual appeal

First impressions of the website are critical in the evaluation by consumers (Fogg et al., 2003). The design of an online store provides cues to the consumer, affecting their evaluation on different dimensions. . Characteristics of the design can influence consumer perception of factors such the credibility of the website (Fogg et al., 2003), risk (Park et al., 2005) and trust (Wang and Emurian, 2005; Cyr et al., 2009; Ganguly et al., 2009). Design is important because its manipulation has been found to have

positive, or negative, effect on the perception of trustworthiness of a website (Karimov et al., 2011). Previous research has considered design elements, such as images (Cyr et al., 2009) or colors (Cyr et al., 2010) for example, and how they can have a positive influence the perception of an online store.

Visual appeal is defined as the perception of the aesthetics of the design of the website (Loiacono et al., 2002). Because online shopping is still a shopping activity, consumers may have utilitarian and/or hedonic motivations for using an online store (Childers et al., 2001) and aesthetic considerations are related to the hedonic dimension. In addition to aesthetic considerations, websites also rely on the visual dimension of the design to transmit information to the consumer (Cyr et al., 2009). As a consequence, consumer evaluation of the aesthetic appeal of a website is influenced not only by order and clarity but also by the expressiveness of the design (Lavie and Tractinsky, 2004). In a study that compared the responses of subjects from different countries (Cyr et al., 2005), it was indicated that Japanese users in particular had a preference for more pictures and brighter colors in the website, which was identified as a more emotional approach to the design, instead of a "cold" website design.

Presence

Presence is a feeling of transportation (Lombard and Ditton, 1997) which can occur in technologically mediated environments. Although more closely associated with virtual environments (Steuer, 1992), even television, cinema or paintings can provide a sense of presence, though to a different degree than virtual reality (Ijsselsteijn et al., 2001). Presence has two general categories: social and physical (Ijsselsteijn et al., 2000). Social presence is the feeling of being and communicating with other people. Physical presence is the feeling of being in another place or feeling that another place "is here" (Lombard and Ditton, 1997). There are also additional categories of presence, such as co-presence for example, which is a combination of social and physical presence (Ijsselsteijn et al., 2001).

The physical and temporal separation of consumers and vendors is a source of wariness in the consumer (Brynjolfsson and Smith, 2000) and as a consequence of their physical separation, websites can be perceived by consumers as distant and impersonal (Pavlou and Chai, 2002). Distance results in a lower sense of sociability and physicality than in conventional shopping. Therefore, in order to improve the perception of closeness with the online store, research on consumer acceptance of electronic commerce has looked into the concept of presence (Steinbrück et al., 2002; Grabner-Kräuter and Kaluscha, 2003; Park et al., 2005). The sense of presence, that is, the sense of being psychologically transported to another place or with other people through a technological medium (Lombard and Ditton, 1997), can help reduce the

perception of distance (Cyr et al., 2007). Two types of presence, social presence (Steinbrück et al., 2002) and physical presence (Park et al., 2005) have been identified as important factors for bringing back the feeling of sociability and physicality, respectively, that is lost in online shopping.

Trust in a website can be improved by social presence, by increasing the information richness of the medium (Hassanein and Head, 2007; Cyr et al., 2007, 2009; Karimov et al., 2011). The content of the medium can influence the sense of presence (Steuer, 1992; IJsselsteijn et al., 2000). For example, showing places, people or events can bring a sense of presence. In the case of electronic commerce, the sense of presence can be affected by the manipulation of the visual design of a website (Suh and Chang, 2006), because it is possible to manipulate user response by modifying visual elements of the design (Kim and Moon, 1998). Previous studies have investigated for example how the inclusion of pictures of people (Steinbrück et al., 2002; Hassanein and Head, 2007; Cyr et al., 2007, 2009) can improve social presence.

2.2 Cross-border electronic commerce

Turban et al. (2011) identifies the barriers of cross-border electronic commerce such as cultural differences (colors, icons, graphics, social/religious mores, information presentation style-text vs image), language translation, localization (currency, formats like date, measurement standards), geographical issues (delivery), economic and legal issues (taxes and regulation/restrictions, payment systems). These characteristics of the cross-border context may have an effect of the known factors of consumer acceptance.

In addition, consumers in each country have different preferences. For example, Japanese online users are different even from other users in Asia (Lynch and Beck, 2001). Consumers also are different in how they interpret the different characteristics of a website (Collins, 2002). Localization (Collins, 2002) and cultural adaptation of websites (Sinkovics et al., 2007; Vyncke and Brengman, 2010) are considered as the solution for overcoming the barriers that exist in the cross-border context. Localization deals with fundamental differences between countries, but ones that are more easily classifiable. For example, currency and formatting of date information (Turban et al., 2011). Cultural adaptation, on the other hand, is harder to identify. One approach taken by studies is to consider the characteristics of consumers along cultural dimensions, as proposed by Gladwin and Hofstede (1981), such as uncertainty avoidance (Vance et al., 2008), for example. Studies use these cultural dimensions to conduct cross-cultural studies, where the preferences of consumers in terms of website design are compared

with those of other countries (Smith et al., 2004; Lim et al., 2004; Sinkovics et al., 2007; Cyr et al., 2010). Therefore, even though these studies consider multiple countries, they are essentially about domestic contexts. In only a few cases, cross-cultural validations have also been used for cross-border validations (Jarvenpaa et al., 1999). The country and cultural differences affect online stores on almost all dimensions. For example, foreign websites that appeal to an international audience often have to deal with the issue of language translation. Language barriers are prominent in online transactions, but trying to overcome them is costly to the website (Martens and Turlea, 2012).

The factors presented in the previous section on consumer behavior in electronic commerce have been widely investigated in the domestic market. However, there is less knowledge about how they are affected by the characteristics of an international setting. Trust, as mentioned before, is a factor that becomes relevant in situations of risk (Mayer et al., 1995), and therefore it is critical in cross-border electronic commerce, where there is a strong perception of risk (Consumer Affairs Agency of Japan, 2011). However, there are very few studies related to trust in cross-border electronic commerce. The study by Jarvenpaa et al. (1999) is one of the few considering a model of trust in foreign websites. In the study, Israeli, Australian and Finnish participants evaluated websites from the USA and their own local websites. Jarvenpaa et al. (1999) concluded that the proposed trust model for local websites was generalizable to foreign websites. Cyr et al. (2005) conducted a comparison between trust towards a local website and trust towards a foreign website from Hong Kong, but found no significant differences for respondents of four different countries, including Japan. However, even though the perception of design characteristics was also addressed, the study did not consider any antecedents or influencing factors of trust. In offline settings, attitudes in consumers have been found to be more favorable when the rating of a product comes from users of the same nationality as the consumer (Bilkey and Nes, 1982). With regard to online shopping, Sia et al. (2009) found that users trusted the endorsement of local peers more than they trusted foreign peers, but study did not identify the country-of-origin of the online store used for the experiment. Therefore it is not possible to know if the context of the study is cross-border or if users assumed the online store was local or foreign, and if the latter, from which country. The influence of culture on website design has received more attention in studies related to international websites. Symbols, icons and colors may have a completely different meaning for a foreign consumer than for a domestic consumer, websites have to be localized to the country of the audience to avoid inappropriateness (Collins, 2002). Symbols that are considered innocuous in one country may be misinterpreted or may be unacceptable in other countries. In addition, the preference for layout, colors and other design features can vary from culture to culture (Cyr et al., 2005). In a study conducted in a cross-border setting, Singh et al.

(2006) found that in general, consumers preferred culturally adapted websites but that only German users considered the use of graphics, colors and design to be significantly better in such websites. Presence is important in electronic commerce because if the spatial and temporal separation of user and vendor (Brynjolfsson and Smith, 2000). Consequently, it should be important also for cross-border electronic commerce and consequently, where this separation can be even greater since consumers and vendors are located in different countries. However, it has not been considered in cross-border electronic commerce, as far as it was possible to determine.

Another important limitation of research in cross-border electronic commerce is that it has rarely included extrinsic variables specific to the context. Previous studies have, for the most part, considered website or user variables, but extrinsic factors have been overlooked. The business and marketing research areas, on the other hand, have a long history of considering an extrinsic factor, country-of-origin, in studies related to the perception of foreign products and services. The concept of country-of-origin image has been studied may be relevant to cross-border electronic commerce too. This concept is introduced in the next section.

2.3 Country-of-origin image

2.3.1 Definition

Country-of-origin image is an extrinsic cue for the evaluation of foreign products (Verlegh and Steenkamp, 1999; Dinnie, 2004). The study on product bias by Schooler (1965) is considered the first empirical study on the effects of country-of-origin on product evaluation (Verlegh and Steenkamp, 1999). Schooler (1965) found that identical products purported to be from different countries had a significantly different evaluation based on the perception of the country's government and people.

The definition of country-of origin image has evolved. In an early study, Nagashima (1970) conducted a survey of the perception of imported products among business men in the USA and Japan. Nagashima defined image as "the ideas, emotional background, and connotation associated with a concept". In the study, the "Made in" label was used to indicate the country; though the image was related not to the country itself, but to the products made in that country. Nevertheless, it was indicated that the "Made in" image is influenced by different aspects of the country, such as economic background and traditions. The "Made in" image was measured on different dimensions such as price, value, style and reputation, for example. The study found that Japanese and USA businessmen held different opinions on products of the

same origin. For example, products from England were thought to be high in prestige by the Japanese, but not by the USA businessmen. Nagashima indicated that stereotypes about the foreign country, as well as familiarity and availability of the products affect the "Made in" image. In a follow-up study conducted eight years later, Nagashima (1977) found that the "Made in" image could change with time, either positively or negatively.

Bilkey and Nes (1982) considered the country-of-origin attribute of a product as an extrinsic information cue, similar to price or brand name. The study reported that country-of-origin, as communicated by the "Made-in" information, had an influence on quality perceptions, and affected industrial and consumer purchasing decisions. This influence was present in consumers from different countries all over the world, but the image of a country's products itself changed depending on the country of the consumer. Studies then focused on addressing the limitations brought up by Bilkey and Nes (1982), using the scale developed by Nagashima (1970), with the definition of country image remained linked to product characteristics. For example, (Roth and Romeo, 1992) proposed a definition of country image as "the overall perception consumers form of products from a particular country", based on the production and marketing strengths of the country. In a literature review study, Peterson and Jolibert (1995) briefly discussed the problems in the operationalization of the country-of-origin image construct, pointing out the ambiguousness of its definition. And in a qualitative meta-analysis, Verlegh and Steenkamp (1999) indicated that general characteristics such as the country's economy and culture affected consumers' evaluation of product quality, in addition to the characteristics related to products of that country.

A more recent study by Roth and Diamantopoulos (2009) proposed that the research could be classified into three groups, based on the focus of the definition of image: (1) the country itself, (2) the country and its products, and (3) the products of the country. Roth and Diamantopoulos (2009) argued that only the first definition accurately referred to the image of the country. In the definitions of the second group there was a separation of country and product, indicating the existence of both concepts as independent but related. In the case of the third group, they argued that the operationalization of the construct did not include measures of the country itself, and therefore could not be considered an image of the country but rather of the product as affected by the country image.

2.3.2 Dimensions

Country-of-origin image is considered to have two main dimensions (Laroche et al., 2005), though there are still some issues in the literature about their exact operationalization (Roth and Diamantopoulos, 2009). These dimensions are cognitive, which "includes consumers' beliefs about the country's industrial development and technological advancement" (Laroche et al., 2005) and affective, which "describes the country's emotional value to the consumer" (Roth and Diamantopoulos, 2009). Most studies have concentrated on the cognitive dimension of the country-of-origin image, even though the non-cognitive factors such as attitude towards the people of a country were included in the initial study by Schooler (1965). Others have considered the affective dimension, but have focused not on the country but on the feelings towards the people of the country (Laroche et al., 2005). Laroche et al. (2005) proposed a hierarchical image structure for country-of-origin, where a second-order country-of-origin image factor is composed of the cognitive and affective factors. On the other hand, (Roth and Diamantopoulos, 2009) considered the dimensions within an attitudinal framework, where the relationship between them may change depending on the context of the study. This was in line with the relationship proposed by Brijs (2006), who had also considered an influence of the cognitive image dimension on the affective dimension.

2.3.3 Effects

The effects of country-of-origin have been validated in consumer products for the most parts: automobiles (Johansson et al., 1985; Han and Terpstra, 1988), television sets (Han and Terpstra, 1988), bicycles (Roth and Romeo, 1992), dvd players (Brijs, 2006) and beer (Roth and Romeo, 1992; Brijs, 2006), among others. Country-of-origin image also affects the perception of services (Pecotich and Ward, 2007), such as life insurance and mobile service contracts (Michaelis et al., 2008).

Country-of-origin image has been investigated mainly as a halo effect, where consumers rely on their image of the country for the evaluation of a product when they are not familiar with the product or the product category (Verlegh and Steenkamp, 1999; Dinnie, 2004). Han (1989) proposed that when consumers were familiar with a country's products, the image of this products would have a "summary effect". This meant that the image would be a summary of all of the consumer's previous experience or knowledge about the country's products and apply it towards a final attitudinal evaluation (positive or negative) of the product. However, this worked on the assumption that products of the same category from the same country would have

similar characteristics. [Laroche et al. \(2005\)](#) proposed instead that when the affective dimension was stronger than the effect of the cognitive dimension, country-of-origin image was stronger on behavior than beliefs; and that the reverse is true when the cognitive dimension is higher, regardless of familiarity.

Both beliefs and behavior towards the product are affected by country-of-origin image, though the influence on intention is thought to be less strong ([Verlegh and Steenkamp, 1999](#)) and highly susceptible to brand effects ([Pharr, 2005](#)). The effect of the image of products of a country is specific to particular dimensions ([Han and Terpstra, 1988](#)). Products from the same country can be evaluated highly on prestige value but may be perceived as low on economy, such as in the case of Germany ([Han and Terpstra, 1988](#)). If the product is made in one country but belongs to a brand from a different country, both images affect its perception of quality. [Han and Terpstra \(1988\)](#) found that the image of the source country had stronger effect than the image of the brand.

[Bilkey and Nes \(1982\)](#) indicated that one of the limitations of the studies was the use of country-of-origin as the only information cue. [Johansson et al. \(1985\)](#) addressed this limitation by using well-known automobile brands and models as the target, though the study used the country-of-origin itself as a factor rather than the image of the country. The study found that the country-of-origin did not affect the general rating of the product, and suggested that country-of-origin effects may not be as significant as previously when considering familiarity or previous experience with the product. However, [Laroche et al. \(2005\)](#) found that country-of-origin image significantly affects the perception and evaluation of product, regardless of a low or high level of familiarity. In addition, perceptions of the characteristics of one category of a country's products can be shared by other categories. [Han and Terpstra \(1988\)](#) found that two categories of products, television sets and automobiles, had similar evaluations on the same dimensions.

2.3.4 Limitations

The study of country-of-origin effects remains a popular topic in research in marketing and business ([Magnusson and Westjohn, 2011](#)), due to the increasing internationalization of business. There have been calls to extend the study of country-of-origin effects in targets other than products, such as services ([Dinnie, 2004](#); [Pharr, 2005](#)), but electronic commerce has not been considered. One qualitative study by [Safari \(2012\)](#) found that country-of-origin image can affect trust in foreign online store. The study also found that the influence of country-of-origin decreases when the consumers has knowledge about

the online store and considers it trustworthy. However, country-of-origin image has not yet been quantitatively analyzed with regard to its effect on the perception of foreign online stores.

Chapter 3

Theoretical Framework

In this chapter, the theoretical framework and main hypotheses of the dissertation are presented.

3.1 Characteristics of a cross-border context

As indicated in the literature review, research in cross-border is limited. In addition, the perspective for establishing unique characteristics of the cross-border context also seems limited, as it ignores extrinsic variables.

Even though online shopping is global, its users and vendors still exist in their own physical environments. In particular, they have a country-of-origin. This characteristic determines cultural, language, localization, economic and legal differences and issues (Turban et al., 2011) to some extent. It also identifies users and vendors.

For the user, the characteristic of nationality as different from the nationality of other users can become relevant in offline cross-border contexts (Bilkey and Nes, 1982). In a similar way for the vendor, the country-of-origin of the online store differentiates it from online stores in other foreign countries. In addition to nationality and country-of-origin itself, language was also considered as a characteristic, since language quality issues have been considered in previous research, but in domestic contexts (Everard and Galletta, 2006).

From the characteristics established (nationality, language and country) and previous research on trust, critical factors of consumer acceptance in electronic commerce and country-of-origin, the following factors were identified: feedback and the information it contains, translation quality of the website, country presence and country-of-origin image.

3.2 Nationality of consumers

As indicated in Chapter 2, research in electronic commerce has established that trust in a website can be positively influenced by feedback (Ba and Pavlou, 2002; Dellarocas, 2003; Kwahk and Ge, 2012). Feedback is a way of showing the opinion of other users, and this information can be used by consumers as a basis for their own evaluations (Burnkrant and Cousineau, 1975).

Not only is the content of the feedback important, but also its source. If consumers perceive that they share some similarities with the user giving feedback, then the influence of that feedback can be stronger (Forman et al., 2008). Deutsch and Gerard (1955) found that when a group situation is clear, normative social influence on individual judgment increases. Their study suggested that informational social influence may also increase if the members of the group are thought to be reliable (Deutsch and Gerard, 1955).

The influence of feedback is greater when the users giving feedback share some similarities or can be grouped along some dimension with the consumer (Williams, 2001). This effect is also present across cultures. Yuki et al. (2005) found that both USA and Japanese respondents indicated higher trust when the users shared the same group membership than when they did not. In a study conducted in Japan, it was found that similarities in value with other consumers increase trust, although demographic similarities did not (Kobayashi and Okada, 2013).

In a cross-border context, visitors to an online store can come from any country in the world. Nationality is a salient characteristic that can be used to make a logical association of users. Therefore, showing nationality information in user's feedback would give the consumer a clear indication of whether they share the same group membership or not. Based on nationality, consumers could classify themselves as being part of a group with users of the same country, and this information could similarly differentiate foreign users as being outside of the group.

Therefore, indicating the nationality of the users giving feedback would act to increase the perception of trustworthiness of the foreign online store in the case where the nationality was the same as the consumer's, through a group membership effect. The information of positive feedback by members of the same nationality group would result in a higher perception of trustworthiness of the foreign online store when compared with feedback from foreign users.

Hypothesis 1.1a: Feedback from Japanese users results in higher trust than feedback from Thai users and no feedback.

Additionally, the positive effect of feedback on trust would be present even when the feedback is from members of another group, when compared with a situation where no feedback was shown in the website.

Hypothesis 1.1b: Feedback from Thai users results in higher trust than no feedback.

These hypotheses are tested in study 1 on the effect of nationality information in feedback, detailed in Chapter 5.

3.3 Language and translation

As introduced in Chapter 2, the perception of quality of a website can be undermined by errors in the textual content (Everard and Galletta, 2006). However, the type of errors considered in previous literature have not included those introduced by the process of translation, which exists in a cross-border context where language is an important barrier (Martens and Turlea, 2012).

Ease of communication

Ease of communication is defined as the degree to which a user perceives that it would be easy to contact and communicate with the vendor. Being able to communicate with the online store is important for the consumer (Loiacono et al., 2002) in order to have access to further information or in the case of any problems. Therefore, the lack of direct interaction with the online vendor that is characteristic of electronic commerce is one of the reasons for uncertainty in the consumer (Gefen, 2000; Koufaris and Hampton-Sosa, 2004). Ease of communication, as well as ease of use, are dimensions of quality in online stores (Loiacono et al., 2002; Barnes and Vidgen, 2002; Jun et al., 2004). As such, they may be affected by perceived faults in the translation, such as an inadequate or partial translation.

Hypothesis 2.1: Translation issues result in lower perceived ease of communication with the foreign online store.

Hypothesis 2.2: Translation issues result in lower perceived ease of use of the foreign online store.

Gefen et al. (2003) indicates that ease of use and trust share antecedents. Contact with the online store, in this case direct use, is how consumers obtain information about it and learn to trust it. Similarly, contact may also indicate communication with online store. Therefore, improving perception of ease of communication could increase the perception of trustworthiness of the online store.

Hypothesis 2.3: Perceived ease of communication has a positive effect on trust in the foreign online store.

These hypotheses are tested in study 2 on the effect of translation issues, detailed in Chapter 5.

3.4 Country-of-origin

3.4.1 Country-of-origin related pictures

In electronic commerce there is a lower sense of sociability and physicality than in conventional shopping. In order to address this problem, research has evaluated the effect of social presence (Steinbrück et al., 2002) and physical presence (Park et al., 2005) on the perception of the online store.

Country presence

In the case of cross-border electronic commerce, However, the influence of presence as related to country has not been previously considered and there is no research on how to reduce a perception of distance between countries.

In the case of cross-border electronic commerce, the fact that the online store is from another country brings an added dimension to the perception of distance. This distance between the consumer and the foreign vendor can also result in a lower sense of the country-of-origin of the online store. Therefore, the factor of country presence, or the sense of the country of the online store, is proposed. Country presence can be defined as the sense of a website's country-of-origin transmitted to the user, based on the type of transportation "in which another place and the objects within it are transported to the user" (Lombard and Ditton, 1997), where place refers to the country. This definition also considers the limitations of applying the concept of presence in an electronic commerce context, in a similar manner as previous research in this area (Cyr et al., 2007, 2009).

The feeling of presence can be influenced by the content that is being represented by the medium (Steuer, 1992; IJsselsteijn et al., 2000), such as people, places, events or

interactions. In the case of electronic commerce, this may be accomplished through the design of the website, as user response can be manipulated by modifying visual elements of the design (Kim and Moon, 1998). For example, visual content such as photos of people (Steinbrück et al., 2002) or human pictures (Hassanein and Head, 2007; Cyr et al., 2009) can be included in the design to improve social presence in a website. Similarly, country-related content in pictures may be able to increase country presence in the foreign online store.

Hypothesis 3.1: Displaying country-related pictures in a foreign online store results in higher country presence than displaying generic pictures.

An online store can be considered a communication medium. Increased richness in communication media is related to increased understanding of the message (Daft et al., 1987). Physical presence and graphic symbols are cues that improve richness in communication media (Daft et al., 1987). The sense of presence can decrease uncertainty about the vendor by increasing information richness, and therefore also increasing understanding. By increasing information richness, social presence can improve trust in a website (Hassanein and Head, 2007; Cyr et al., 2007, 2009; Karimov et al., 2011). For Japanese users in particular, information about the vendor is an important consideration for trust (Cyr et al., 2009), otherwise they are more likely to avoid purchase. In a scenario of initial trust where the user does not know of the website, and with the added characteristic of a cross-border context, providing the consumer with added knowledge and information about the vendor in the form of country presence may have a positive effect on trust.

Hypothesis 3.2: Country presence has a positive effect on trust in the foreign online store.

By transporting the consumer, a sense of presence can increase the feeling of closeness and emotional investment, thereby increasing the perception of visual appeal of a website. A high social presence condition leads consumers to describe the design of a website as interesting and appealing; on the contrary, in a lower social presence condition they described it as plain, boring and unappealing (Hassanein and Head, 2007; Cyr et al., 2007). Increased physical presence in a website can also influence the aesthetic dimension of consumer attitude, such as the perceived attractiveness and visual appeal of products (Suh and Chang, 2006). By increasing country presence, the consumer may feel more emotionally involved in the foreign online store and perceive it as having an attractive design. Therefore, it is clear that presence influences not only

the enjoyment of the shopping experience, but also the perceived aesthetic appeal of the design of the website.

Hypothesis 3.3: Country presence has a positive effect on visual appeal of the foreign online store.

These hypotheses are tested in study 3 on the effect of country-related pictures, detailed in Chapter 5.

3.4.2 Country-of-origin image

As mentioned in Chapter 2, the literature search found no previous quantitative studies on the effect of country-of-origin image on online stores. The cognitive and affective image of a country has been found to affect the perception of products (Verlegh and Steenkamp, 1999) and services (Pecotich and Ward, 2007). However, their effect on the evaluation of foreign online stores has not been empirically validated previously. Nevertheless, common points can be found from the studies on products, services and other targets. The hypotheses that will be presented are based in the theoretical findings related to other targets of evaluation, with an indication of how the effect of country-of-origin is relevant to this new context.

The structure of country-of-origin image considered is one where the cognitive and affective image dimensions both influence the evaluation and intention towards the target (Roth and Diamantopoulos, 2009), instead of a hierarchical image structure, where a second-order country-of-origin image factor is composed of the cognitive and affective factors (Laroche et al., 2005). There are two reasons for this choice. First, a hierarchical model implies that the first-order factors are highly correlated with each other. However, this may not be true for all countries. One dimension, affective or cognitive, may be stronger and this could change depending on the country-of-origin of the consumer. Second, one of the reasons for using hierarchical models is to improve parsimony. However, as Roth and Diamantopoulos (2009) indicates, parsimony is not the goal of all studies, and the use of the type of structure should be adequate for those aims. In the case of the study, the aim is to evaluate the effects of the country-of-origin image dimensions separately. Nevertheless, the two dimensions of the country-of-origin image are not completely unrelated, with the cognitive component influencing the affective component (Brijs, 2006), since emotional response to the country is to some extent a result of the processing of positive characteristics of the country.

Hypothesis 4.1: Country cognitive image has a positive effect on the country affective image.

Country-of-origin image has been shown to affect the evaluation of external perceptions of product, such as design and style Nagashima (1970, 1977); Roth and Romeo (1992); Leonidou et al. (2007). Cognitively, since an appealing design characteristic is a part of the quality of the website (Loiacono et al., 2002), it implies a certain ability of the online store to realize a competent design. Cognitive characteristics of country can affect the perception of quality in products (Hamzaoui and Merunka, 2006), as in the case of Germany, for example. Visual appeal, as an aesthetic component, is not only related to quality, but also to the hedonic dimension of online stores (Childers et al., 2001) and to affective responses (Cyr et al., 2010).

Hypothesis 4.2: Country affective image has a positive effect on visual appeal of the foreign online store.

Hypothesis 4.3: Country cognitive image has a positive effect on visual appeal of the foreign online store.

In an initial trust situation, the evaluation of the trustworthiness of the website depends both on intrinsic and extrinsic factors (Gefen et al., 2008). In situations of initial trust, consumers have to evaluate the online store based on information other than experience, such as the general situation of electronic commerce or trust in institutions that support electronic commerce (Grabner-Kräuter and Kaluscha, 2003). Consumers decide to trust a particular online store based on their beliefs that there are the assurances and infrastructure that is in place, which may be trustworthy (McKnight et al., 2002b), when they lack other information. This perception has some influence on whether they perceive a particular online store as trustworthy (Mcknight and Chervany, 2001).

In the case of cross-border electronic commerce, the institutional trust factors are not the same as those that exist for the domestic market. There is no centralized authority, and consumers may be less certain, or less knowledgeable, about international institutions for protection of consumers, of institutions within their country or in the country of the online store (Commission of the European Communities, 2009b). In the absence of such institutional support, other extrinsic factors may become more relevant. Country-of-origin image is extrinsic or contextual information that influences perception of trust about products (Jiménez and San Martín, 2010; Safari, 2012). In particular, the cognitive dimension of the country-of-origin image has an effect on trust. The infrastructure and economic advancement of the country give a good indication

that it is possible to trust in the performance of the product (Verlegh and Steenkamp, 1999). Considering that trust as defined for an online store is composed of a competence component, the cognitive image may influence this belief. In addition, trust in an online store is also composed of a belief of the goodness of will or integrity (McKnight et al., 2002b). A store may be able fulfill an order logistically, but it also may not have the consumer's best interest or the best ethical practices in their service. The expectation of beneficial behavior can be based on affective responses (Williams, 2001).

Hypothesis 4.4: Country affective image has a positive effect on trust in the foreign online store.

Hypothesis 4.5: Country cognitive image has a positive effect on trust in the foreign online store.

Hypothesis 4.6: Country affective image has a positive effect on intention of use of the foreign online store.

The literature on country-of-origin image posits an influence on the intention of buying a product (Jiménez and San Martín, 2012) though literature reviews have that the effect is less stronger than for evaluation (Verlegh and Steenkamp, 1999). However, the effect of country-of-origin is increased when there is fewer information about the product or service (Pharr, 2005), which fits the situation of initial trust in cross-border electronic commerce of this study.

Hypothesis 4.7: Country cognitive image has a positive effect on intention of use of the foreign online store.

These hypotheses are tested in study 4 on the effect of country-of-origin image, detailed in Chapter 5.

Chapter 4

Methodology

This chapter introduces the data collection process, measurement instrument and experiment design used in the studies of this dissertation, as well as the statistical methods used in the analysis of the data.

Only the methodology shared by all studies is described in this chapter; additional details which apply to each particular study are explained in the next chapter.

4.1 Data collection

The data for all experiments was collected in Japan, using Japanese online survey companies. Two different survey companies were used, one for the first study and another for the other three studies, but the procedure followed for data collection was the same.

In each case, an invitation to participate in a survey was distributed online to the survey company's registered members. As an incentive, the survey companies gave points to members as a reward for completing each survey. Members who responded to the invitation and answered a simple preliminary survey were considered as potential participants in the experiment. From these, respondents who fulfilled a certain criteria were selected as the initial pool of participants and were asked to take part in the main survey. This initial pool was limited to a number pre-specified with the survey company. The different selection criteria for each study are explained in the next chapter.

The survey companies did not provide any personal identifiable information about the participants. This ensured the protection of the participant's anonymity from the point of view of this research. In addition, using survey companies also allowed the collection of a large sample in a relatively short time.

4.2 Experiment design

The studies were conducted following a between-subjects experimental design. The factor of interest in each study was manipulated as an independent variable, with the exception of the last study on country-of-origin image. A between-subjects design was used to avoid leading the respondent into artificial comparisons between experimental conditions (Verlegh and Steenkamp, 1999).

The initial pool of participants were randomly assigned to one experimental condition; the number of conditions varied according to the study. Once the participants had been assigned into their random groups, they were given access to the main survey that corresponded to their experimental condition. The survey included an explanation of the experiment scenario, the images of the mockup website for the experimental condition and the measurement items. The experimental conditions and survey details for each study are described in the next chapter.

4.3 Mockup websites

Different versions of a mockup website, a fictitious B2C foreign online store, were developed specifically for the experiments using free website design tools. Each version corresponded to an experimental condition.

The design, layout and content were as similar as possible for all versions, with the exception of the characteristics corresponding to the factor manipulated in each study, in order to control for the influence of any other website variables. The mockup website versions for each study are described in the next chapter.

4.4 Measurement instrument

As mentioned before, the main survey consisted of an explanation of the experiment scenario, the images of the mockup website and the measurement items. The measuring items for all factors in this research were obtained and adapted from previous studies. All items were measured on a five-point Likert scale ranging from "strongly disagree" to "strongly agree", with the exception of risk items which ranged from "very high" to "very low". In all the studies, intention of use was operationalized as the intention to perform two trust-based actions necessary to buy from an online store (Gefen et al., 2003). Other measures items used in each study are detailed in the next chapter.

All items were originally written in English. As the experiments were conducted with Japanese participants, the items were translated to Japanese language. The translation procedure consisted of a forward translation by a bilingual subject expert and a revision. First, the items were translated by a native Japanese speaker, who was familiar with survey methodology and with electronic commerce research. Then, the content of the translated items was reviewed by a second native Japanese speaker, who checked the items for naturalness of language.

4.5 Countries selection

The experimental studies conducted required the selection of two foreign countries to act as the country-of-origin of the online stores. Four main criteria were considered for choosing the countries. The criteria took into consideration that the studies would be conducted in Japan with Japanese participants.

First, the countries should be a popular travel destination for Japanese people. This would ensure some degree of cultural exchange and interest from the Japanese participants, which in turn would help increase the plausibility of the scenario proposed by the experiments. Second, the countries should be geographically close to Japan. Similarly to the first criteria, this would ensure some degree of knowledge about the country, just by virtue of its closeness. In this case, the selection was also limited to Asia Pacific countries. Third, the countries should, for the most part, have a positive or neutral political relationship with Japan. This was to avoid any controversies in conducting the experiment and to limit possible negative image effects. Fourth, the two countries should have a different level of development in order to allow for comparisons in the effect of country-of-origin image of a developed country and a developing country at the cognitive level. A similar comparison on the affective dimension was not considered a priori since there were no similar country classifications on that dimension.

The two countries selected for the experiments were Thailand and Singapore. Thailand is the third most-visited country in Asia for Japanese people, after South Korea and China ([Japan Tourism Marketing Co., 2013](#)). It is considered a developing country, based on its classification as a developing economy by [The World Bank \(2013b\)](#). Thailand has a positive economic and political relationship with Japan, as well as a high level of cultural exchange ([Ministry of Foreign Affairs of Japan, 2014](#)). Singapore is located close to Thailand, and it is the fourth most-visited country in Asia for Japanese people ([Japan Tourism Marketing Co., 2013](#)). In contrast to Thailand, Singapore is considered a developed country, classified as a high income country by [The World Bank \(2013a\)](#). Singapore also has a positive relationship with Japan ([Ministry of Foreign](#)

[Affairs of Japan, 2012](#)), though cultural exchange appears to be lower compared to Thailand.

The statistics for Japanese outbound travelers were obtained from [Japan Tourism Marketing Co. \(2013\)](#), which pools the information from each of the countries' tourism authorities statistics. The numbers were then verified directly from the sources ([Singapore Tourism Board, 2013](#); [Department of Tourism \(Thailand\), 2012](#)).

Although South Korea and China also fulfilled some of the criteria, neither of them were selected because the political situation at the time the experiments were planned was deemed negative.

4.6 Statistical analysis

4.6.1 Data validation

The data was examined for suspicious response patterns by calculating variation of the responses of a single participant. If the variation was zero for various sections of the survey, this gave good evidence to believe that the responses were not reliable. Participants with no variation in their responses were removed. Age outliers were also removed.

ANOVA tests were conducted to verify that the random assignment of experimental conditions was successful. No statistically significant differences in the mean or distribution of age or sex between the experimental condition groups would indicate that the random assignment was successful at the level of demographic characteristics.

Since the hypothesized models of the studies were validated using structural equation modeling, the assumption that the data has a multivariate normal distribution was validated. This was done following the approach suggested by [Kline \(2011\)](#), which was to verify univariate normality in all the variables involved. If all variables followed a normal distribution, then it could be assumed there was no deviation from multivariate normality.

In order to verify univariate normality, the skewness and kurtosis indices (SI and KI, respectively) were examined. The acceptable limits for assuming no large deviations from normality are $SI < 3.0$ and $KI < 10.0$ ([Kline, 2011](#)). In addition, multivariate outliers were identified based on the Mahalanobis distance measure (D2) ([Kline, 2011](#)).

Data validation analyzes were performed using SPSS v18 and Amos v18.

4.6.2 Exploratory factor analysis

Exploratory factor analysis (EFA) is a statistical technique that evaluates measurement models (Kline, 2011). EFA determines how the observable items are related to the latent factors (Byrne, 2010). It is a data-driven approach, where there is no previous specification of the latent factors to uncover (Brown, 2006). EFA is not a strict requirement for conducting structural equation modeling analysis, but it is typically used for purposes of construct validation and cross-validation before confirmatory factor analysis (Brown, 2006).

The estimation method used for factor extraction was Maximum likelihood estimation. Principal components, and a rotation of the solution was applied to improve interpretation of results. An oblique rotation, Promax, was used to allow for intercorrelation between the factors (Brown, 2006). Maximum likelihood estimation can be prone to Heywood cases (Brown, 2006), so a Principal components analysis was conducted for validation in such cases.

In a purely exploratory analysis, the number of factors obtained is typically based on an eigenvalue higher than 1. However, in cases where the EFA is conducted under theoretical assumptions as a previous step to CFA, such as these studies, it is a common practice to indicate the number of factors to extract (Brown, 2006). In order to arrive at an acceptable factor solution, items with low loadings (<0.70) and items with cross-loadings (>0.40) on other factors were examined and considered for elimination (Hair et al., 2009). EFA was conducted using the SPSS v18 statistical software.

4.6.3 Confirmatory factor analysis

Confirmatory factor analysis (CFA) is a hypothesis-driven approach to evaluating measurement models (Brown, 2006) as a step before structural equation modeling analysis. In contrast to EFA, the number of factors and the items related to them must be specified a priori, based on theoretical assumptions. CFA was conducted using a maximum likelihood estimation. In the study where a hierarchical model was used, the first-order measurement model was validated first, followed by the analysis of the second-order measurement model (Brown, 2006).

The criteria used for determining a good model fit was the following: the root mean square error of approximation (RMSEA) should be lower than 0.06 and non-significant ($p>0.05$), the standardized root mean square residual (SRMR) should be lower than 0.08, and the comparative fit index (CFI) and the Tucker-Lewis index (TLI) should both be higher than 0.95 (Brown, 2006). In addition, the goodness-of-fit index (GFI)

should be higher than 0.95 (Hair et al., 2009). The normed chi-square (χ^2/df) should be less than 3.0, although a value between 3.0 and 5.0 is considered acceptable (Taylor and Todd, 1995; Hooper et al., 2008). The model chi-square value and degrees of freedom ($\chi^2(\text{df})$) are not part of the fit criteria, but are presented for reference (Kline, 2011). The test of the model chi-square is not considered as part of the fit criteria due to its sensitivity to larger samples (Kline, 2011) but the p value is presented for reference.

The measurement models were specified according to the theoretical assumptions behind the variables and with consideration to the results of the EFA. In cases where the model did not achieve a good fit, it was re-specified until a good fitting solution was found. Low loading items and modification indices were examined to identify sources of strain in the model and consider whether new parameters should be added or items should be removed from the model (Byrne, 2010).

CFA was conducted using the Amos v18 statistical software.

Reliability and validity analysis

In order to conduct structural equation modeling analysis, it is important to confirm that the measures selected have strong psychometric characteristics (Kline, 2011). In practice, this means that the constructs must show good reliability and validity, a condition which was evaluated in all studies. SPSS v18 and Amos v18 were used to conduct these analyzes.

Construct reliability indicates whether the items consistently measure the intended factor (Gefen et al., 2000). It was evaluated by calculating the Cronbach's alpha and composite reliability (CR) values for each factor, and verifying that both had a value of 0.70 or higher (Hair et al., 2009; Kline, 2011).

Construct validity indicates whether the items measure the hypothesized construct (Kline, 2011). There are two types: convergent and discriminant validity. Convergent validity evaluates if the items that measure the same construct are intercorrelated (Kline, 2011). It was determined by calculating the average variance extracted (AVE) for each factor and verifying that their values were higher than 0.5 (Hair et al., 2009).

Discriminant validity indicates whether the items of different constructs are not too highly intercorrelated (Kline, 2011). It was evaluated by verifying that the square root of the AVE of a factor was higher than the absolute value of the correlations with all other factors (Gefen et al., 2000).

4.6.4 Structural equation modeling

Structural equation modeling (SEM) analysis with a maximum likelihood estimation was conducted to test the hypothesized relationships in the models. SEM is used to examine dependence relationships where a variable can be dependent and independent at the same time (Hair et al., 2009).

SEM requires a large sample; a rule of thumb is a minimum of 20 cases for each parameter in the model (Kline, 2011). The sample size in all the studies was higher than this minimum value. In addition, SEM requires that the data should follow a multivariate normal distribution (Byrne, 2010); this condition was validated as explained in the Data validation section. The Amos v18 statistical software with a maximum likelihood function was used to conduct the analysis.

4.6.5 Mediation analysis

Mediation analysis was conducted to estimate the indirect effects in the models, within the framework of SEM. In order to do this, a bootstrap of the model was conducted using 2000 bootstrap samples, and the significance of the effects was calculated using 95% bias-corrected bootstrap confidence intervals (Shrout and Bolger, 2002). The analysis was conducted with the Amos v18 statistical software.

4.6.6 Multiple group analysis

A multiple group analysis was conducted to compare the models for the studies that included two countries. This section describes the procedure that was followed. The Amos v18 statistical software was used to conduct the analysis.

In order to test invariance at the structural level, which was the final objective of the multiple group analysis, the measurement model is required to be invariant. That is, that the items should measure the factors equally in the groups that are being compared (Kline, 2011). Two conditions have to be met in order to conclude that measurement invariance exists. First, the freely estimated model for both groups needs to show good fit (Kline, 2011) according to the criteria already explained in the confirmatory factor analysis section. Second, the chi-square difference test comparing the fits of the freely estimated model and the equal factor loadings model should be non-significant. A non-significant results indicates that the fit of the model where the unstandardized factor loadings are equal across groups is not worse than the fit of the freely estimated model

and therefore the equal factor loadings model can be retained (Kline, 2011). This is termed metric invariance.

A third condition is required only if the goal of the analysis also includes a comparison of the factor latent means. This condition requires that the equal factor intercepts model should also be retained (Brown, 2006). This means that the fit of the equal intercepts model, where the intercepts are constrained to be equal across groups, is not worse than the equal factor loadings model. In other words, that the chi-square difference test comparing these two models is not significant. This is termed scalar invariance. As mentioned, scalar invariance is required for latent factor means comparison, but is not critical for a subsequent structural invariance analysis (Steenkamp and Baumgartner, 1998). With metric invariance, or scalar invariance, it can be concluded that there is measurement invariance in the model across groups and the structural model can then be compared.

The invariance of the structural model is tested in a similar way to that of the measurement model (Kline, 2011). First, the freely estimated group structural model needs to show good fit according to criteria. The structural invariance will then depend on whether the equal path coefficients model is retained. In other words, if the chi-square difference between the fits of the equal path coefficients model and the freely estimated group structural model is non-significant. In addition, the individual paths were compared using a chi-square difference analysis between the groups, to obtain additional information on how the models are different.

Chapter 5

Factors Influencing Consumer Acceptance of Cross-Border Electronic Commerce

This chapter presents the details of the four studies conducted for this dissertation. Each section follows the same structure. First, the hypotheses and research model for the study are presented. Next, the methodology used is presented, with the details of the particular study that were not yet explained in the general methodology chapter. Then, the analysis and results are presented. Finally, the results obtained are discussed for each study.

5.1 Study 1: Effect of nationality information in feedback

5.1.1 Hypotheses

The following are the hypotheses tested in this study. The development of the main hypotheses was detailed in Chapter 3, but they are presented here again for easier reference. The secondary hypotheses are also presented for the sake of completeness of the model.

Main hypotheses

Hypothesis 1.1a: Feedback from Japanese users results in higher trust than feedback from Thai users and no feedback.

Hypothesis 1.1b: Feedback from Thai users results in higher trust than no feedback.

Secondary hypotheses

Perceived risk becomes a high barrier that must be overcome to some extent, in order for the consumer to use an online store. Trust becomes important in such risky situations (Mayer et al., 1995), and it helps lessen the perception of risk associated with the vendor by considering their positive or trustworthy characteristics (Pavlou, 2003).

Hypothesis 1.2: Trust has a negative effect on perceived risk of using the foreign online store.

Jarvenpaa et al. (1999) suggest that perceived risk reduces the consumer's perception of having control over the results of their shopping behavior, and therefore has a direct negative effect on the intention of use of the online store, a result that was validated by Pavlou (2003). Trust also has a direct effect on intention of use (McKnight et al., 2002a), as the characteristics of trustworthiness of the vendor induce the consumer to perceive that a transaction would result in a positive outcome.

Hypothesis 1.3: Risk has a negative effect on intention of use of the foreign online store.

Hypothesis 1.4: Trust has a positive effect on intention of use of the foreign online store.

Gefen et al. (2003) proposes that if a vendor cannot be trusted to fulfill their promise to the consumer, that is, if the vendor is not trustworthy, then the online store is not useful to the consumer because they would not be able to obtain the desired product or service. Thus, the perceived usefulness of the online store would increase with higher trust in the website. In addition, following the relationship proposed by TAM, the more useful an online store is perceived to be, the more the consumer will use it (Gefen et al., 2003).

Hypothesis 1.5: Trust has a positive effect on perceived usefulness of the foreign online store.

Hypothesis 1.6: Perceived usefulness has a positive effect on intention of use of the foreign online store.

The proposed model is presented in Figure 5.1.

5.1.2 Methodology

Participants

The participants were gathered through a Japanese online survey company, as

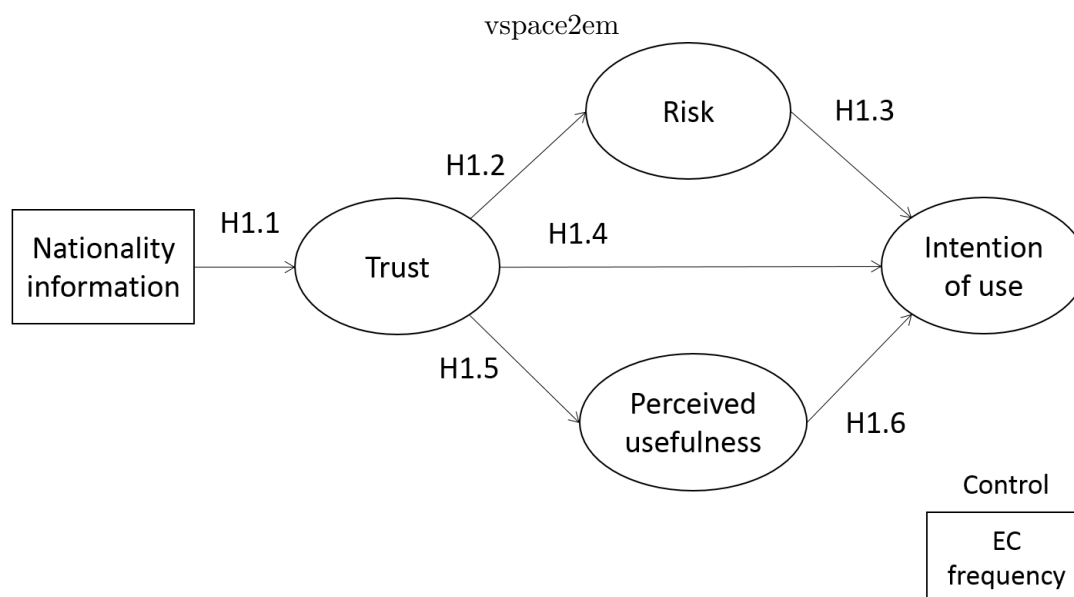


FIGURE 5.1: Research model

explained in Chapter 4. In the preliminary selection survey, information about the participants' online shopping frequency, credit card ownership and demographics was gathered. Participants who had shopped online at least once in 6 months, owned a credit card and were 21 years old or older were selected to take the main survey.

Experiment design

The participants selected in the preliminary survey were randomly assigned into one of three experimental condition: (1) Japanese feedback condition, where the majority of users giving feedback were identified as Japanese; (2) Thai feedback condition, where the majority of users were identified as Thai and (3) No feedback condition, where no feedback information was shown in the website. The No feedback condition was chosen as the control, to avoid including other feedback information that could potentially imply the nationality of the user. Participants were then asked to view the survey corresponding to their experimental condition (Japanese feedback, Thai feedback or No feedback) and to answer questions about their perception of the website.

Mockup website

Three versions of a fictitious B2C Thai online store were developed to correspond to each experimental condition. The content of the mockup websites was written in Japanese. The design and content were identical for all versions, with the exception of the feedback information included for each condition.

The feedback shown in the website was a simple positive feedback without textual content, the equivalent of a "like" to the website in the manner of social network sites (SNS) such as Facebook. In the conditions where the feedback was

shown, the information included was a list of the people who had "liked" the website, along with their names and profile pictures. SNS-type feedback was used in the experiment because of the simplicity of presentation, which allowed a basic positive feedback without the need of text or rating-based information. The feedback from the users had no other textual content besides the names. The nationality information was indicated through the names of the users giving feedback. Japanese names were written in Chinese characters (kanji) and Thai names were written in Thai script and Latin alphabet. The names were reviewed for naturalness by a native Japanese person and a native Thai person.

Measurement instrument

The survey had the following structure: first, participants were asked about their online shopping frequency. Then, a text which described the scenario for the experiment was presented to participants in all experimental conditions: "Please read the following text and imagine the situation described. You are planning to buy a gift for a friend but you are too busy to go out shopping. Therefore you decide to buy it online. After doing some searching, you find an online store selling Thai products that would be perfect for the gift. The online store delivers internationally to Japan."

For participants in the Japanese feedback condition, the following text was added: "In addition, it can be seen that many Japanese users of a famous SNS have rated this online store with a 'like'." For participants in the Thai feedback condition, the following text was added: "In addition, it can be seen that many Thai users of a famous SNS have rated this online store with a 'like'." For participants in the No feedback condition, no text was added.

Finally, the participants were asked to look carefully at the images of the online store, which corresponded to their experimental condition, and answer the questions about them. The measurement items were adapted from previous studies: (1) intention of use (Gefen, 2000; Gefen et al., 2003); (2) perceived usefulness (Koufaris, 2002); (3) trust (benevolence, competence and integrity dimensions) (McKnight et al., 2002a); and (4) risk (Featherman and Pavlou, 2003).

Because of the characteristics of online shopping, there are different sources of uncertainty and different consequences for the consumer. Featherman and Pavlou (2003) proposed that risk had a number of facets, corresponding to the consequences of using online services, based on previous work on risk dimensions that had been validated in the context of mail-order catalog shopping (Festervand et al., 1986). The facets proposed were (1) performance, related to the functional aspect; (2) financial, related to the monetary risk (3) security, related to the risk of private information loss; (4) time, related to the waste of time; (5) psychological, related to a negative psychological

effect on the users well-being; and (6) social risk, related to the loss of standing among a social group. These facets can be more parsimoniously categorized into two groups according to the type of consequence: material risk (performance, financial, security) and psychological risk (time, psychological and social). The operationalization of risk used in this study considers these two risk dimensions.

The details of the measures are presented in Appendix A.

5.1.3 Analysis and results

Sample

The survey obtained a total of 915 responses: 303 for the Thai feedback condition , 301 for the Japanese feedback condition and 311 for the No feedback condition. The characteristics of the sample are summarized in Table 5.1. There were no statistically significant differences in the mean or distribution of age, sex or online shopping frequency between the conditions, indicating that the random assignment was successful at the level of demographic characteristics.

TABLE 5.1: Sample summary

		n	%
Sex	Male	503	55.0
	Female	412	45.0
Age	21-29	85	9.3
	30-39	263	28.7
	40-49	297	32.5
	50-59	174	19.0
	60 and older	96	10.5
Education	Middle school	16	1.7
	High school	206	22.5
	University	407	44.5
	Two year junior college	90	9.8
	Graduate school	64	7.0
	Technical school	128	14.0
	Foreign university	3	0.3
Online shopping frequency	Other	1	0.1
	Around once in 6 months	56	6.1
	Around once in 2-3 months	189	20.7
	Around once a month	289	31.6
	2-3 times a month	329	36.0
	One or more times a week	52	5.7

Data validation

No deviations from normality were found: absolute values for skewness indices (SI) and kurtosis indices (KI) were within the acceptable limits of $SI < 3.0$ and $KI < 10$ (Kline, 2011). The maximum absolute values were $SI=0.69$ and $KI=1.17$. Multivariate outliers were identified using the Mahalanobis distance measure (D2) and removed: 8 cases were eliminated from the Thai feedback condition, 5 cases from the Japanese feedback condition and 2 cases from the No feedback condition, leaving 900 valid cases (295, 296 and 309 cases respectively). There were no missing data.

Exploratory factor analysis

The expected number of factors was extracted, but the results showed that the items from different trust dimension were cross-loading. These results can be explained by considering that in initial trust scenarios, such as the one in this study, users lack enough experience to differentiate between the trust dimensions (Mcknight and Chervany, 2001). Therefore, number of factors was reduced to consider trust as a one-dimensional factor. From this specification, items with low loadings and cross-loadings were identified and removed. One item from perceived usefulness and four items from trust were eliminated. The resulting solution showed the items loading into their respective factors, with the risk items separating into the material risk and psychological risk factors. The results of the EFA are presented in Table 5.2.

TABLE 5.2: Exploratory factor analysis

Factor	Item	1	2	3	4	5
Intention of use	I1	0.01	0.21	-0.09	0.04	0.71
	I2	0.03	-0.06	0.02	-0.02	0.95
Perceived usefulness	PU2	0.00	0.94	-0.10	0.12	-0.01
	PU3	0.01	0.97	-0.01	0.06	-0.04
	PU4	0.08	0.68	0.06	-0.18	0.12
Trust	TB2	0.84	-0.04	-0.05	0.13	0.13
	TB3	0.86	0.15	0.12	-0.12	-0.16
	TI1	0.84	-0.06	0.09	-0.03	0.19
	TI2	0.62	-0.01	-0.04	0.04	0.37
	TI4	0.85	-0.08	-0.33	0.14	-0.14
	TC2	0.79	0.02	-0.16	0.01	-0.05
Material risk	TC2	0.63	0.13	0.24	-0.34	-0.05
	R1	-0.13	-0.01	0.73	0.16	0.12
	R2	0.04	-0.08	0.83	0.10	-0.02
Psychological risk	R3	0.02	0.00	0.84	0.01	-0.09
	R4	0.06	-0.02	0.16	0.78	-0.07
	R5	0.06	0.09	0.15	0.77	-0.17
	R6	-0.08	0.04	0.01	0.90	0.15

Confirmatory factor analysis

From the results of the EFA, a high correlation between the trust dimensions was predicted. Indeed, a CFA modeling the separate trust dimensions showed a correlation higher than 0.90 between them. Therefore, trust was modeled as a single construct (Gefen et al., 2003). The results of CFA model with first-order risk factors showed that all items had a standardized loading higher than 0.70 but the model did not return a good fit. After inspecting the modification indices and identifying the sources of strain, the model was re-specified by removing three items from the trust factor and adding residual covariances. The re-specified model showed a good fit ($\chi^2(76)=248.73$ (p=0.0), $\chi^2/df=3.27$, RMSEA=0.05 (p=0.46), SRMR=0.027, CFI=0.98, GFI=0.97, TLI=0.98).

A CFA was then conducted on the model with the second-order latent variable of risk, modeled as a reflective construct with the indicators of material risk and psychological risk latent variables. The specification of risk as a second-order construct was congruent to the definition by Featherman and Pavlou (2003) and would increase the parsimony of the model while accounting for the different types of risk. The correlation between the risk factors was 0.78, but a single construct specification of risk did not achieve good fit, giving further support for the hierarchical specification. The second-order model showed good fit ($\chi^2(78)=276.2$ (p=0.0), $\chi^2/df=3.54$, RMSEA=0.05 (p=0.21), SRMR=0.03, CFI=0.97, GFI=0.96, TLI=0.98). Standardized factor loadings for the first and second-order latent variables are shown in Table 5.3.

As can be seen in Table 5.3, all factors showed good construct reliability, with values for Cronbach's α and composite reliability above 0.7, and convergent validity, with AVE values above 0.5. For all factors, the square root of the AVE was higher than absolute value of the correlations with all other factors, indicating appropriate discriminant validity (Table 5.4).

Structural equation modeling

Two dummy variables were used in order to represent the three experimental conditions in the structural model (MacCallum and Austin, 2000). The dummy variables for the Japanese feedback and No feedback condition were represented. The Thai feedback condition was used as the reference, and therefore its dummy variable was not included in the model. The frequency of online shopping variable was included in the model as control, influencing trust and intention of use (Pavlou, 2003). The structural model specified according to the hypothesized model showed a good fit ($\chi^2(120)=305.55$ (p=0.0), $\chi^2/df=2.55$, RMSEA=0.04 (p=0.99), SRMR=0.03, CFI=0.98, GFI=0.96, TLI=0.98). The results show that all hypotheses of the model were confirmed with the exception of the hypothesis of the effect of the No feedback

TABLE 5.3: Confirmatory factor analysis

Factor	Item	Std. factor loading	Cronbach's α	CR	AVE
Intention of use	I1	0.86	0.81	0.82	0.69
	I2	0.81			
Perceived usefulness	PU2	0.79	0.90	0.87	0.70
	PU3	0.80			
	PU4	0.90			
Trust	TB2	0.80	0.91	0.91	0.71
	TI1	0.87			
	TI2	0.93			
	TI4	0.73			
Material risk	R1	0.80	0.87	0.89	0.73
	R2	0.89			
	R3	0.87			
Psychological risk	R4	0.88	0.86	0.86	0.68
	R5	0.87			
	R6	0.71			
Risk*	Material risk	0.92	0.90	0.88	0.78
	Psychological risk	0.84			

TABLE 5.4: Discriminant validity

	Intention of use	Perceived usefulness	Trust	Material risk	Psychological risk
Intention of use	0.833				
Perceived usefulness	0.804	0.835			
Trust	0.831	0.772	0.841		
Material risk	-0.742	-0.560	-0.692	0.852	
Psychological risk	-0.648	-0.598	-0.653	0.776	0.824

condition on Trust as compared to the Thai feedback condition (H1b). The details of the results are presented in Table 5.5. The standardized path coefficients (β) are also presented in Figure 5.2.

Because the trust items removed in the CFA included all the items of the competence dimension, an additional analysis was conducted to test if the results were affected by this elimination. The model with the trust items obtained from the EFA resulted in a worse model fit, as expected, but the sign and statistical significance of all relationships remained the same, indicating that the lack of competence items in the trust factor did not change the structure of the model. In addition, a SEM analysis was conducted using all the data obtained from the survey, including outliers and any

data removed in the initial validation. The results of this analysis did not contradict the results obtained with the processed data.

TABLE 5.5: Structural equation modeling

Hypothesis	β	Path coefficient	Std. error	p
H1.1a: Japanese feedback (dummy) \rightarrow Trust	0.08	0.11	0.05	0.04
H1.1b: No feedback (dummy) \rightarrow Trust	-0.02	-0.03	0.05	0.62
H1.2: Trust \rightarrow Risk	-0.76	-0.81	0.04	<0.001
H1.3: Risk \rightarrow Intention of use	-0.35	-0.43	0.06	<0.001
H1.4: Trust \rightarrow Intention of use	0.28	0.36	0.08	<0.001
H1.5: Trust \rightarrow Perceived usefulness	0.78	0.98	0.04	<0.001
H1.6: Perceived usefulness \rightarrow Intention of use	0.38	0.39	0.05	<0.001
EC frequency \rightarrow Trust (control)	0.09	0.05	0.02	0.01
EC frequency \rightarrow Intention (control)	0.02	0.02	0.02	0.31

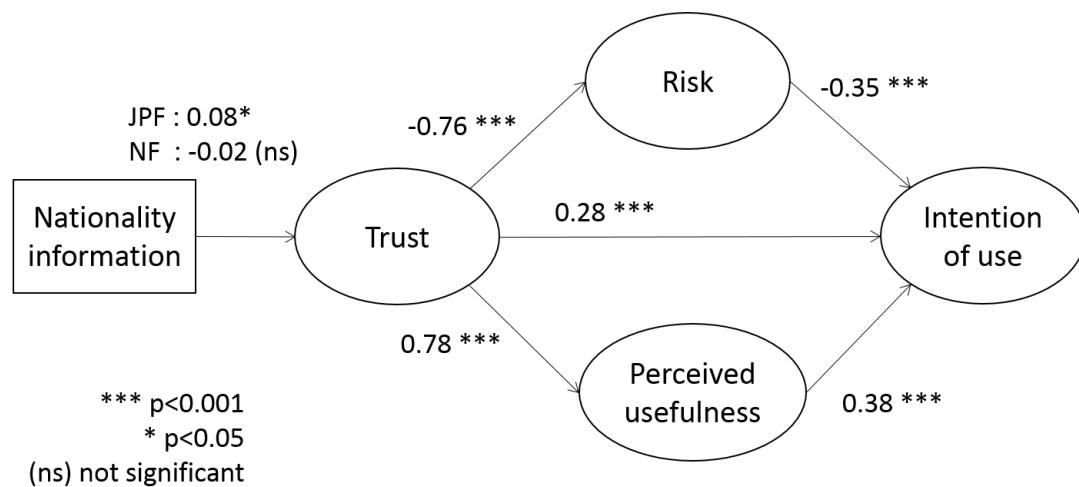


FIGURE 5.2: Result model

Regression analysis

As an additional test of the direct effect of the experimental manipulation, a linear regression analysis was conducted for each of the dependent variables in the model, including the ones not hypothesized to be affected. Composite variables were created from the factor scores of each latent factor validated in the CFA. Two dummy variables were used to represent the three experimental conditions, and the Thai feedback condition was used as the reference. The results of the regressions are detailed in Table 5.6. They show that, in comparison to Thai feedback, Japanese feedback had a significantly stronger direct effect on trust and risk, but not on

perceived usefulness or intention of use. On the other hand, the no feedback condition was not significantly different from the Thai feedback condition for any of the factors.

TABLE 5.6: Regression analysis

	Trust		Risk		Perceived usefulness		Intention of use	
	β	p	β	p	β	p	β	p
Japanese feedback (dummy)	0.08	0.04	-0.08	0.04	0.07	0.08	0.07	0.07
No feedback (dummy)	-0.02	0.54	0.01	0.86	-0.01	0.83	-0.01	0.84

5.1.4 Discussion

The most important result of this investigation, corresponding to the first hypothesis, was that feedback from Japanese users resulted in higher trust towards the foreign online stores than showing Thai feedback or showing no feedback in the website. This result indicates that similarity of nationality in cross-border contexts can have a positive effect on the consumer, and corroborates previous findings on the perception of similarity with the users giving feedback (Williams, 2001; Forman et al., 2008) in this new context. Surprisingly, the standardized path coefficient corresponding to the effect on trust for the Japanese feedback was rather low. This may be due to the fact that only very simple positive information was provided by the feedback, as it did not include a rating system or a review.

The results also confirmed the relationship between trust and the other factors in the model. Trust had a lowering effect on perceived risk, and improved the perception of usefulness and the intention of use of the website. The standardized path coefficients show that, for this cross-border context, the absolute effect of trust on risk and perceived usefulness was more or less equal, with a lower direct effect on intention of use partially mediated by the other two variables. The standardized path coefficients for the effect of risk and perceived usefulness on intention of use were similar, and they were stronger than the direct trust effect. These results are in line with previous studies on the direct effect of trust (McKnight et al., 2002a; Gefen et al., 2003; Pavlou, 2003) and add to the work of Jarvenpaa et al. (1999) to validate trust effects in a cross-border context.

There was only one hypothesis which was not confirmed by this study: feedback from Thai users did not have a stronger effect on trust than showing no feedback in the website. That is, there were no differences found in the effect on trust between these two experimental conditions. This is a surprising result that contradicts previous studies, which indicate that positive feedback improves trust in the website (Ba and

Pavlou, 2002; Dellarocas, 2003; Kwahk and Ge, 2012). One possible explanation for this result is that the cross-border context and the use of a foreign online store in the experiment resulted in greater uncertainty about the trustworthiness of the vendor, and so the presence of feedback alone was not enough to increase trust. Another possibility is that whatever positive effect feedback has on trust is being negated by dissimilarity effects.

Limitations

There are some limitations to this study. First, no manipulation checks were conducted for this study, for the perception of the information in the feedback. Therefore, it is difficult to know how much the participants noticed the nationality characteristic. However, other variables were controlled for by making the mockups identical except for the feedback, and therefore, the results found can be attributed to that information. Second, in this study the nationality was indicated by the user name, but in real situations this may not necessarily correspond to the actual nationality of the user. Moreover, while it may be relatively easy for a Japanese native to identify Japanese or Thai names, names in other countries may not be as easily identified. Still, even an incorrect perception of country can have an effect on consumer evaluation (Magnusson et al., 2011) because the consumer uses the information as they perceived it, and so valid conclusions can be drawn. Additional limitations that affect all studies are presented in Chapter 6.

5.2 Study 2: Effect of translation issues

5.2.1 Hypotheses

The following are the hypotheses tested in this study. The development of the main hypotheses was detailed in Chapter 3, but they are presented here again for easier reference. The secondary hypotheses are also presented for the sake of completeness of the model.

Main hypotheses

Hypothesis 2.1: Translation issues result in lower perceived ease of communication with the foreign online store.

Hypothesis 2.2: Translation issues result in lower perceived ease of use of the foreign online store.

Hypothesis 2.3: Perceived ease of communication has a positive effect on trust in the foreign online store.

Secondary hypotheses

Though previous studies have considered ease of use and communication related factors as different dimensions of quality in the website (Loiacono et al., 2002; Jun et al., 2004), the relationship between them has been less studied. Nevertheless, being able to obtain the resources in order to be able to use a system, that is, having a perception of internal or external control, has been identified as a determinant of ease of use (Venkatesh, 2000). The perception of being able to communicate with the vendor may act as a facilitating condition to gain knowledge or control of the system, and therefore would have a positive effect on ease of use.

Hypothesis 2.4: Perceived ease of communication has a positive effect on perceived ease of use of the foreign online store.

In turn, perceived ease of use has been found to affect trust in the website (Gefen et al., 2003).

Hypothesis 2.5: Perceived ease of use has a positive effect on trust in the foreign online store.

The proposed model is presented in Figure 5.3.

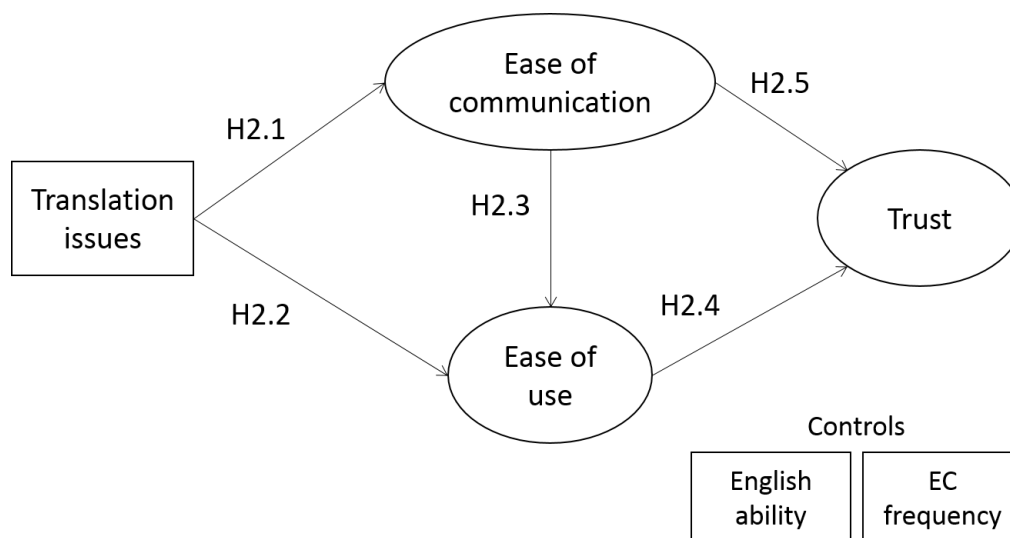


FIGURE 5.3: Research model

5.2.2 Methodology

Participants

The participants were gathered through a Japanese online survey company, as explained in Chapter 4. A preliminary selection survey gathered information about the participants' travel experience to Thailand, their cross-border online shopping experience and demographics. Participants with and without cross-border online shopping experience and with and without Thai travel experience were selected in equal numbers to take the main survey.

Experiment design

Participants selected in the preliminary survey were randomly assigned into one of four experimental condition. In order to examine how different type of translation issues and their combination affect the perception of a foreign online store, two types of issues with two levels each were considered. The types of issues were defined by errors in the translation to Japanese language and the completeness of that translation. For the error in the translation to Japanese language, the levels were correct translation and incorrect translation. For the completeness of translation, the levels were full translation (all Japanese language) and partial translation (a mix of Japanese and English language in the website). The types of issue and their levels resulted in four combinations: (1) correct and full translation, (2) incorrect and full translation, (3) correct and partial translation, and (4) incorrect and partial translation. Participants were then asked to view the survey corresponding to their experimental condition and to answer questions about their perception of the website.

Mockup website

Four versions of a fictitious B2C Thai online store were developed to correspond to the four conditions of the experiment. The textual content was different according to the characteristics of the experimental condition, but the design and layout were identical for all versions.

Measurement instrument

The survey had the following structure: first, the survey showed a text which described the scenario for the experiment to participants in all experimental conditions: "Please read the following text and consider the situation presented. You would like to buy a gift for a friend, but you are busy and do not have time to go shopping. So you decide to buy the gift online. After searching, you come across a Thai online shop that delivers to Japan. The online shop is based in Thailand and they deliver their products from Thailand to all over the world, including Japan. The online shop has information about the products they sell, and how to purchase and receive the products."

Then, the participants were asked to look carefully at the images of the online store, which corresponded to their experimental condition, and answer questions about their perception. The measurement items were adapted from previous studies: trust (Cyr et al., 2009), ease of use (Gefen et al., 2003), and ease of communication (Loiacono et al., 2002; Jun et al., 2004). The details of the measures are presented in Appendix A.

The survey also included questions that measured online shopping frequency, self-perceived English language ability and manipulation check questions. There were two items measuring self-perceived English ability: "My English reading ability is sufficiently good to be able to use an English language online store" and "Reading the text in an English language online store would be possible for me".

5.2.3 Analysis and results

Sample

The survey obtained 2064 responses in total. From these, 147 cases were identified and removed for having a suspicious response pattern, that is, there was no variation in the answers for all questions. An additional 38 cases were identified as age outliers and eliminated. The resulting sample had a total of 1919 cases: 482 for the correct and full translation condition, 487 for the incorrect and full translation condition, 474 for the correct and partial translation condition, and 476 for the incorrect and partial translation condition. The characteristics of the sample are summarized in Table 5.7. No statistically significant differences were found in the mean or distribution of age, sex or online shopping frequency between the experimental condition groups, indicating a successful random assignment at the level of demographic characteristics.

Data validation

Respondents who answered negatively to the question of whether the online store was from a Thai company and to the question of whether the online store delivered from Thailand (manipulation checks) were identified. From this validation, 158 respondents were eliminated.

The Mahalanobis distance measure (D2) was used to identify multivariate outliers: 15 cases from the correct and full translation condition, 18 from the incorrect and full translation condition, 19 from the correct and partial translation condition, and 23 from the incorrect and partial translation condition. These were eliminated, leaving 1686 valid cases (431, 434, 405 and 416 cases, respectively). There were no missing data.

TABLE 5.7: Sample summary

		n	%	
Sex	Male	980	51.1	
	Female	939	48.9	
Age	19 and under	104	5.4	
	20-29	248	12.9	
	30-39	363	18.9	
	40-49	374	19.5	
	50-59	423	22.0	
	60 and older	407	21.2	
	Occupation	Manager/Executive	45	2.3
Clerical employee		234	12.2	
Technical employee		202	10.5	
Employee (other)		192	10.0	
Civil servant		55	2.9	
Self employed		120	6.3	
Freelancer		48	2.5	
Part time worker		215	11.2	
Homemaker		387	20.2	
Student		149	7.8	
Other occupation		100	5.2	
Unemployed		172	9.0	
EC frequency		None in the past year	141	7.3
		Once a year	80	4.2
	Twice a year	151	7.9	
	2, 3 times in 6 months	385	20.1	
	Once a month	467	24.3	
	2, 3 times a month	482	25.1	
	Once a week	161	8.4	
	2,3 times a week	43	2.2	
	4 or more times a week	9	0.5	

Absolute values of skewness indices (SI) and kurtosis indices (KI) were within the limits of $SI < 3.0$ and $KI < 10$ (Kline, 2011) for all items, indicating that there were no deviations from normality. The maximum absolute values were $SI=0.47$ and $KI=0.91$.

Exploratory factor analysis

Specifying the expected number of factors (four factors, including the control factor of self-perceived English ability) resulted in all the items loading on their respective factors. All loadings were above 0.70, with the exception of one loading at 0.64 which was retained, as there were no cross-loadings. The results of the EFA are presented in Table 5.8.

Confirmatory factor analysis

TABLE 5.8: Exploratory factor analysis

	1	2	3	4
TR1	-0.02	0.83	0.01	0.04
TR2	0.11	0.78	0.00	-0.03
TR3	0.00	0.82	0.00	0.06
EOU1	0.84	-0.09	0.02	0.09
EOU2	0.85	-0.09	0.04	0.01
EOU3	0.70	0.09	-0.02	0.06
EOU4	0.75	0.12	-0.01	-0.05
EOU5	0.71	0.14	-0.05	-0.04
EOC1	-0.05	0.25	0.01	0.64
EOC2	0.04	0.11	0.00	0.71
EOC3	0.17	-0.03	0.00	0.73
ENG1	-0.04	-0.01	0.82	0.06
ENG2	0.03	0.02	0.97	-0.06

The initial model did not show a good fit. An inspection of the factor loadings and modification indices revealed the sources of strain in the model and residual covariances were added. The re-specified model showed good fit: $\chi^2(53)=215.19$ ($p=0.0$), $\chi^2/df=4.06$, RMSEA=0.04 ($p=0.98$), SRMR=0.02, CFI=0.99, GFI=0.98, TLI=0.98. The value for χ^2/df was higher than 3.0, though that limit is conservative considering that chi-square is sensitive to sample size. In the case of this study, the sample size is large, all other fit indices are well within the limits and the normed chi-square (χ^2/df) is still below the limit of 5.0 (Taylor and Todd, 1995; Hooper et al., 2008). All factor loadings were significant and their standardized values were equal or above 0.70. The standardized factor loadings are shown in Table 5.9.

Cronbach's α and composite reliability values were above 0.70, indicating good construct reliability, and AVE values were above 0.50, indicating good convergent validity. The details are shown in Table 5.9. For each factor, the square root of the AVE was higher than the absolute value of the correlations with all other factors, indicating good discriminant validity (Table 5.10).

Structural equation modeling

Three dummy variables were created to represent the four experimental conditions in the structural model (MacCallum and Austin, 2000). The correct and full translation condition was used as the reference. The self-perceived English ability factor and frequency of online shopping variable were included in the model as controls. The initial structural model, specified according to the hypotheses of the study, showed a good fit: $\chi^2(94)=311.39$ ($p=0.0$), $\chi^2/df=3.31$, RMSEA=0.04 ($p=1.0$), SRMR=0.02, CFI=0.99, GFI=0.98, TLI=0.98. The results of the SEM analysis are detailed in Table

TABLE 5.9: Confirmatory factor analysis

Factor	Item	Std. factor loading	Cronbach's α	CR	AVE
Trust	TR1	0.85	0.89	0.90	0.75
	TR2	0.86			
	TR3	0.88			
Ease of use	EOU1	0.78	0.90	0.90	0.63
	EOU2	0.73			
	EOU3	0.84			
	EOU4	0.82			
	EOU5	0.80			
Ease of communication	EOC1	0.83	0.86	0.87	0.69
	EOC2	0.83			
	EOC3	0.83			
English ability	ENG1	0.91	0.89	0.89	0.80
	ENG2	0.88			

TABLE 5.10: Discriminant validity

	Trust	Ease of use	Ease of communication	English ability
Trust	0.858			
Ease of use	0.719	0.795		
Ease of communication	0.802	0.770	0.829	
English ability	0.116	0.165	0.205	0.897

5.11 and the standardized path coefficients (β) are represented in Figure 5.4. All the hypotheses of the study were confirmed. An additional SEM analysis was conducted using all the data obtained from the survey, including outliers and any data removed in the initial validation. The results of this analysis did not contradict the results obtained with the processed data.

Regression analysis

As an additional test of the direct effect of the experimental manipulation, a linear regression analysis was conducted for each of the dependent variables in the model, including the ones not hypothesized to be affected. Composite variables were created from the factor scores of each latent factor validated in the CFA. Three dummy variables were used to represent the four experimental conditions, and the correct and full translation condition was used as the reference. The results of the regressions are detailed in Table 5.12. They show that, in comparison to a correct and complete translation, all other experimental conditions that represented some issue in the

TABLE 5.11: Structural equation modeling

Hypothesis	β	Path coefficient	Std. error	p
H2.1a: Incorrect-Full (dummy) \rightarrow Ease of communication	-0.13	-0.21	0.05	<0.001
H2.1b: Correct-Partial (dummy) \rightarrow Ease of communication	-0.13	-0.21	0.05	<0.001
H2.1c: Incorrect-Partial (dummy) \rightarrow Ease of communication	-0.16	-0.26	0.05	<0.001
H2.2a: Incorrect-Full (dummy) \rightarrow Ease of use	-0.14	-0.24	0.04	<0.001
H2.2b: Correct-Partial (dummy) \rightarrow Ease of use	-0.12	-0.20	0.04	<0.001
H2.2c: Incorrect-Partial (dummy) \rightarrow Ease of use	-0.14	-0.23	0.04	<0.001
H2.3: Ease of communication \rightarrow Trust	0.62	0.58	0.04	<0.001
H2.4: Ease of communication \rightarrow Ease of use	0.75	0.75	0.03	<0.001
H2.5: Ease of use \rightarrow Trust	0.25	0.23	0.03	<0.001
English ability (control) \rightarrow Ease of communication	0.21	0.14	0.02	<0.001
English ability (control) \rightarrow Ease of use	0.02	0.02	0.01	0.24
English ability (control) \rightarrow Trust	-0.05	-0.03	0.01	<0.01
EC frequency (control) \rightarrow Trust	0.02	0.01	0.01	0.25

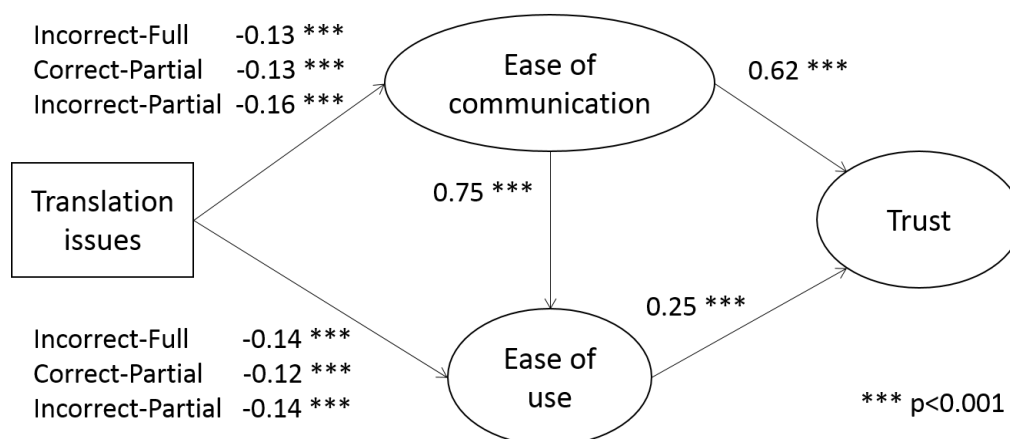


FIGURE 5.4: Result model

translation had a significant negative direct effect on ease of communication, ease of use and trust.

TABLE 5.12: Regression analysis

	Ease of communication		Ease of use		Trust	
	β	p	β	p	β	p
Incorrect-Full (dummy)	-0.13	<0.001	-0.21	<0.001	-0.15	<0.001
Correct-Partial (dummy)	-0.13	<0.001	-0.19	<0.001	-0.11	<0.001
Incorrect-Partial (dummy)	-0.17	<0.001	-0.24	<0.001	-0.14	<0.001

Mediation analysis

Mediation analysis was conducted to estimate the indirect effects on trust. A bootstrap of the model with 2000 bootstrap samples was conducted, and the significance of the effects were calculated using 95% bias-corrected bootstrap confidence intervals ([Shrout and Bolger, 2002](#)). The standardized indirect effects and their significance are presented in Table 5.13. The results show that ease of communication partially mediates the effect of the independent variables on ease of use and that ease of use partially mediates the effect of ease of communication on trust. In addition, there is an indirect negative effect on trust for all the independent variables of translation issues.

TABLE 5.13: Mediation analysis

	Ease of use		Trust	
	β	p	β	p
Incorrect-Full (dummy)	-0.10	<0.01	-0.14	<0.01
Correct-Partial (dummy)	-0.10	<0.01	-0.14	<0.01
Incorrect-Partial (dummy)	-0.12	<0.01	-0.17	<0.01
Ease of communication			0.19	<0.01

5.2.4 Discussion

The main result of the study was the confirmation of the hypothesis that issues in the translation of the textual content of a foreign online store have a negative impact on perceived ease of communication and perceived ease of use. Compared to the experimental condition of correct and full translation, the websites for the conditions that included at least some type of translation issue were perceived as less easy to communicate with and use. These results are in line with previous research ([Everard and Galletta, 2006](#)), as these are factors that indicate quality in the website ([Barnes](#)

and Vidgen, 2002). It is interesting to note that the difference between the standardized path coefficients for the dummy variables representing the error conditions was very small and statistically insignificant. This indicates that even one type of translation issue in the online store was enough to have a negative impact on consumers' perception, regardless of whether other textual content components were correct or not. It also suggests that the negative effect of the combination of the issues used in the experiment does not have an additive effect.

In addition, the analysis confirmed the effect of ease of use on trust, in line with Gefen et al. (2003), and the effect of ease of communication on ease of use and trust. The results show that the standardized direct effect of ease of communication on trust was higher than the effect of ease of use. This indicates that challenges of communication with the vendor may be more salient for consumers because of the cross-border context of the experiment. In a situation where the consumer does not share the same language as the vendor, there is a heightened perception of the difficulties of being able to communicate with the online store in case of trouble. The statistically significant positive effect of self-perceived English ability on ease of communication also points to this. Consumers consider ease of use in the context of a normal interaction with an online store, but ease of communication becomes relevant in problem situations. Therefore, the greater effect of ease of communication suggests that consumers may have the possibility of trouble as foremost in their minds. This is in line with reports by Commission of the European Communities (2009a) and Consumer Affairs Agency of Japan (2011), which indicate that consumers have a high expectation of trouble occurring in situations of cross-border online shopping, even though the probability of any problem happening is similar as for domestic online shopping (European Commission, 2011).

Limitations

There are some limitations to this study. Only two types of translation issues were considered in the experiment, and only two levels for each. In reality, translation is a complex process, and that complexity was not completely replicated in this study because of practical limitations. Another limitation was the use of English as the language for the partial translation, instead of Thai language. While the use of English is considered standard for international websites, the effect of other languages in the perception of consumers should also be validated. Additional limitations that affect all studies are presented in Chapter 6.

5.3 Study 3: Effect of country-related pictures

5.3.1 Hypotheses

The following are the hypotheses tested in this study. The development of the main hypotheses was detailed in Chapter 3, but they are presented here again for easier reference. The secondary hypotheses are also presented for the sake of completeness of the model.

Main hypotheses

Hypothesis 3.1: Displaying country-related pictures in a foreign online store results in higher country presence than displaying generic pictures.

Hypothesis 3.2: Country presence has a positive effect on trust in the foreign online store.

Hypothesis 3.3: Country presence has a positive effect on visual appeal of the foreign online store.

Secondary hypotheses

For the goal of improving trust in electronic commerce, the design of a website is an important consideration. The design and look of a website is one the most important characteristics that users mention when asked to make an evaluation of the credibility of a website (Fogg et al., 2003). Consideration to the visual aesthetics of a website can improve consumer trust (Riegelsberger et al., 2003; Vance et al., 2008), even in scenarios of initial trust where the consumer is unfamiliar with the vendor (Karimov et al., 2011).

Hypothesis 3.4: Visual appeal has a positive effect on trust in the foreign online store.

The proposed model is presented in Figure 5.5

5.3.2 Methodology

Participants

The participants were gathered through a Japanese online survey company, as explained in Chapter 4. A preliminary selection survey gathered information about the participants' travel experience to Thailand and Singapore, their cross-border online shopping experience and demographics. Participants with and without cross-border online shopping experience were selected in equal numbers. These included participants with and without travel experience to Thailand or Singapore.

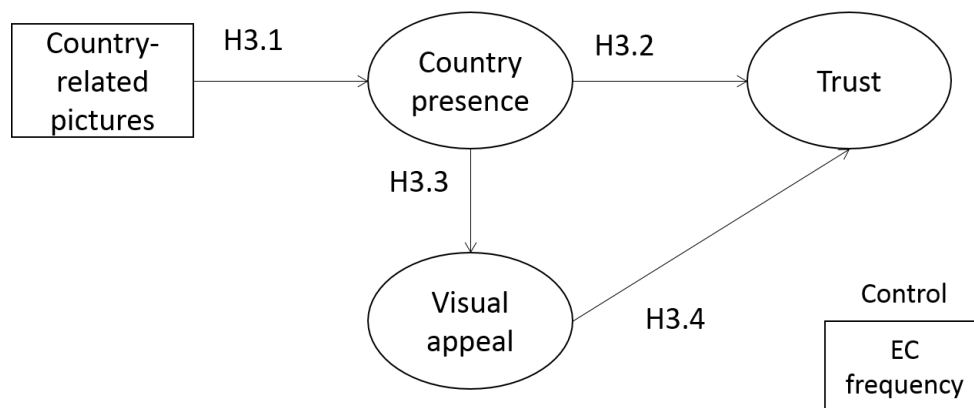


FIGURE 5.5: Research model

Experiment design

A between-subjects experiment design was used, with two experimental conditions: one where the design of the online store included country-related pictures, and another that included generic pictures. These were considered for two countries: Thailand and Singapore. Therefore, selected in the preliminary survey were randomly assigned into one of four groups. Participants were then asked to view the survey corresponding to their experimental condition and to answer questions about their perception of the website.

Mockup website

The experimental conditions were represented in four mockup websites of a fictitious foreign B2C online store, from Thailand or Singapore depending on the condition. The design and content were identical for all versions, with the exception of the country-of-origin and experiment pictures. In one condition, country-related pictures were included as part of the website graphic design. In the other, abstract shape pictures were shown instead.

The country-related pictures were selected after obtaining information from the websites of the tourism authorities of each country. The pictorial content to represent the country included the flag of the country, symbols, and places. The Thai pictures were reviewed by a Japanese person for identification with the country and aesthetic appeal and a Thai person for authenticity. The Singapore-related images were only reviewed by a Japanese person. The generic pictures were abstract shapes and colors, and were the same for both country conditions. All pictures obtained were under a creative commons license. Multiple pictures were used in order to increase country presence rather than identify a particular picture as the source of the change.

In contrast with the research by [Cyr et al. \(2009\)](#) the condition used for comparison was not that of blank images, which lead in that study to negative reactions and a perception of "unfriendliness". In any case, blank images in this case would have made the website perception as less real. Pictures of people were not included, to avoid unintended social presence effects.

Measurement instrument

The survey had the following structure: first, the survey showed a text which described the scenario for the experiment to participants in all experimental conditions: "Please read the following text and consider the situation presented. You would like to buy a gift for a friend, but you are busy and do not have time to go shopping. So you decide to buy the gift online. After searching, you come across a [country] online shop that delivers to Japan. The online shop is based in [country] and they deliver their products from [country] to all over the world, including Japan. The online shop has information about the products they sell, and how to purchase and receive the products." Either "Thailand" or "Singapore" was shown where [country] is written on the text, depending on the experimental condition.

Then, the participants were asked to look carefully at the images of the online store, which corresponded to their experimental condition, and answer questions about their perception. The items included in the survey were adapted from previous studies: trust ([McKnight et al., 2002a](#)) and visual appeal ([Loiacono et al., 2002](#)). With consideration of the context of the study, country presence items were adapted from [Hassanein and Head \(2007\)](#). In the case of trust, only items from the integrity and competence dimensions were included. In general, trust is considered a multidimensional construct ([McKnight et al., 2002a](#)), but in scenarios of initial trust, where the consumer has limited exposure to the website, trust beliefs are not as clearly defined along their three dimensions ([McKnight et al., 2002a](#)). In particular, benevolence and integrity dimensions may be redundant in an initial trust scenario ([McKnight et al., 2002a](#)), because both dimensions are indicators of a perception that the vendor will do no harmful behavior to the user ([McKnight et al., 2002a](#)). In the beginning of the relationship between consumer and vendor, benevolence is particularly hard to determine; unlike the other two dimensions it is more difficult to determine benevolence from indirect sources rather than direct interaction ([Mayer et al., 1995](#)). This results in the dimensions of benevolence and integrity being highly correlated and hard to separate ([Schoorman et al., 2007](#)). Integrity and competence dimensions are more likely to be relevant in a first impression of a website.

The details of the measures are presented in Appendix A.

5.3.3 Analysis and results

Sample

2064 participants were initially obtained by the survey. The characteristics of the sample are summarized in Table 5.14, grouped by country-of-origin of the foreign online store. From these, 33 cases were identified and removed for having a suspicious response pattern, that is, there was no variation in the answers for all questions. An additional 40 cases were identified as age outliers and eliminated. The resulting sample had a total of 1991 cases. For the Thai online store group, the country-related pictures condition had 498 cases and the generic pictures condition had 500 cases. Similarly, for the Singaporean online store group there were 498 cases in the country-related pictures condition and 495 cases in the generic pictures condition. No statistically significant differences were found in the mean or distribution of age, sex or online shopping frequency, either between the online store groups or between the experimental condition groups. This indicates a successful random assignment at the level of demographic characteristics.

Data validation

Respondents who answered negatively to the manipulation check items for the country-of-origin of the online store were identified and 186 cases were eliminated. Absolute values of skewness and kurtosis indices (SI and KI, respectively) for all items were lower than the limit of $SI < 3.0$ and $KI < 10.0$ (Kline, 2011), which indicates that the items do not show deviations from the normal distribution. Maximum values were $SI=0.29$ and $KI=1.45$. There were no missing data.

Exploratory factor analysis

EFA with a maximum likelihood estimation was conducted separately for the Thai and Singaporean online store groups. Two items from the trust factor had low loadings and another showed cross-loading, for both groups. Removing these three trust items returned a correct solution for the Thai online store group but not for the Singaporean one. In the case of the Singaporean online store group, communality estimates greater than 1 (Heywood case) were obtained, although the factor solution was equal to the one for the Thai online store group. Maximum likelihood estimation can be prone to Heywood cases (Brown, 2006), so a principal components analysis (PCA) with Promax rotation was conducted as verification for both groups. The PCA returned the same factor structure, and the solution was retained. The results of the EFA for both groups and the PCA for the Singaporean online store group are presented in Table 5.15.

Confirmatory factor analysis

The CFA was conducted for the Thai and Singaporean online store groups separately,

TABLE 5.14: Sample summary

		Thai online store		Singaporean online store		
		n	%	n	%	
Sex	Male	542	54.3	520	52.4	
	Female	456	45.7	473	47.6	
Age	19 and under	27	2.7	50	5.0	
	20-29	111	11.1	126	12.7	
	30-39	187	18.7	194	19.5	
	40-49	225	22.5	185	18.6	
	50-59	225	22.5	220	22.2	
	60 and older	223	22.3	218	22.0	
Occupation	Manager/Executive	36	3.6	26	2.6	
	Clerical employee	151	15.1	130	13.1	
	Technical employee	107	10.7	101	10.2	
	Employee (other)	81	8.1	104	10.5	
	Civil servant	26	2.6	35	3.5	
	Self employed	94	9.4	67	6.7	
	Freelancer	28	2.8	28	2.8	
	Part time worker	103	10.3	113	11.4	
	Homemaker	182	18.2	191	19.2	
	Student	66	6.6	73	7.4	
	Other occupation	41	4.1	41	4.1	
	Unemployed	83	8.3	84	8.5	
	EC frequency	None in the past year	89	8.9	99	10.0
		Once a year	45	4.5	48	4.8
Twice a year		78	7.8	90	9.1	
2, 3 times in 6 months		183	18.3	165	16.6	
Once a month		258	25.9	266	26.8	
2, 3 times a month		223	22.3	221	22.3	
Once a week		87	8.7	74	7.5	
	2,3 times a week	26	2.6	27	2.7	
	4 or more times a week	9	0.9	3	0.3	

using the items identified from the EFA. The initial model showed a good fit for the Thai online store group ($\chi^2(51)=164.20$, $\chi^2/df=3.22$, RMSEA=0.05 ($p=0.51$), SRMR=0.04, CFI=0.99, GFI=0.97, TLI=0.98) and for the Singaporean online store group ($\chi^2(51)=152.30$, $\chi^2/df=2.99$, RMSEA=0.05 ($p=0.71$), SRMR=0.04, CFI=0.99, GFI=0.97, TLI=0.98). All factor loadings were significant and their standardized values were equal or above 0.70, with the exception of a trust item for the Singaporean online store group, which loaded at 0.67. Standardized factor loadings for both groups are shown in Table 5.16.

Cronbach's α and composite reliability values were above 0.70, indicating good

TABLE 5.15: Exploratory factor analysis

	Thai online store			Singaporean online store			Singaporean online store (PCA)		
	1	2	3	1	2	3	1	2	3
TI1	0.86	0.01	0.00	0.88	-0.04	-0.02	0.91	-0.06	0.00
TI2	0.86	-0.03	0.02	0.88	-0.04	0.00	0.91	-0.03	-0.01
TI3	0.89	-0.02	-0.02	0.82	0.03	0.00	0.85	0.03	0.01
TI4	0.90	-0.03	0.01	0.83	0.02	0.00	0.86	0.03	-0.01
TC2	0.68	0.13	-0.01	0.61	0.10	0.02	0.70	0.07	0.02
VA1	-0.04	0.91	0.01	0.02	0.87	0.01	0.04	0.87	0.02
VA2	0.04	0.75	0.07	0.08	0.73	0.06	0.08	0.79	0.05
VA3	0.06	0.85	-0.05	0.02	0.83	-0.05	0.00	0.91	-0.07
VA4	-0.02	0.84	0.00	-0.06	0.83	0.03	-0.07	0.89	0.03
CP1	-0.01	0.13	0.67	0.04	0.11	0.63	0.04	0.03	0.80
CP2	-0.01	-0.07	0.97	0.00	-0.08	1.01	-0.01	-0.03	0.95
CP3	0.01	0.00	0.88	-0.02	0.04	0.82	-0.03	0.01	0.90

construct reliability, and AVE values were above 0.50, indicating good convergent validity. The details are shown in Table 5.17. For each factor, the square root of the AVE was higher than the absolute value of the correlations with all other factors, indicating good discriminant validity (Table 5.18).

TABLE 5.16: Confirmatory factor analysis

Factor	Item	Thai online store	Singaporean online store
		Std. factor loading	Std. factor loading
Trust	TI1	0.86	0.85
	TI2	0.85	0.86
	TI3	0.87	0.84
	TI4	0.89	0.85
	TC2	0.75	0.67
Visual appeal	VA1	0.89	0.89
	VA2	0.81	0.82
	VA3	0.85	0.81
	VA4	0.83	0.80
Country presence	CP1	0.73	0.72
	CP2	0.92	0.93
	CP3	0.90	0.86

Structural equation modeling

A dummy variable was created to represent the experimental conditions (MacCallum and Austin, 2000): country-related pictures condition (value=1) or generic pictures condition (value=0). The initial model, specified according to the hypotheses of the

TABLE 5.17: Convergent validity

Factor	Thai online store			Singaporean online store		
	α	CR	AVE	α	CR	AVE
Trust	0.93	0.93	0.72	0.90	0.91	0.67
Visual appeal	0.91	0.91	0.72	0.90	0.90	0.69
Country presence	0.88	0.89	0.73	0.87	0.87	0.70

TABLE 5.18: Discriminant validity

	Thai online store			Singaporean online store		
	Trust	Visual appeal	Country presence	Trust	Visual appeal	Country presence
Trust	0.846			0.816		
Visual appeal	0.519	0.848		0.587	0.829	
Country presence	0.263	0.438	0.852	0.312	0.544	0.838

study, showed a good fit for both groups. For the Thai online store group: $\chi^2(73)=188.19$, $\chi^2/df=2.58$, RMSEA=0.04 (p=0.97), SRMR=0.04, CFI=0.99, GFI=0.97, TLI=0.98. For the Singaporean online store group: $\chi^2(73)=187.27$, $\chi^2/df=2.57$, RMSEA=0.04 (p=0.97), SRMR=0.04, CFI=0.98, GFI=0.97, TLI=0.98. All hypotheses were confirmed for both Thai and Singaporean online store groups, with the exception of the direct effect of country presence on trust (H2). The results are presented in Table 5.19 and Table 5.20, and the standardized path coefficients (β) are represented in Figure 5.6.

Additional analysis

T-tests on the means of country presence, visual appeal and trust were conducted to compare these variables between the country-related pictures and generic pictures conditions for the Thai and Singaporean online store groups. The variables used for the t-test were obtained by adding up the items for each factor. The t-tests were conducted using SPSS v18. The results show that the mean of country presence was significantly higher for the website with country-related pictures for both groups. The mean difference was 0.68 (p <0.001) for the Thai online store group and 0.53 (p <0.001) for the Singaporean online store group. There were not significant difference in the mean of trust or visual appeal for either groups. However, the mean of the visual appeal of the generic condition was higher than for the country-related condition, for both groups. This is in contrast to the results for country presence and trust, where the means were higher for the country-related pictures conditions. An additional SEM analysis was conducted using all the data obtained from the survey,

including outliers and any data removed in the initial validation. The results of this analysis did not contradict the results obtained with the processed data.

TABLE 5.19: Structural equation modeling - Thai online store

Hypothesis	β	Path coefficient	Std. error	p
H3.1: Country-related pictures (dummy) → Country presence	0.15	0.24	0.06	<0.001
H3.2: Country presence → Trust	0.05	0.04	0.03	0.21
H3.3: Country presence → Visual appeal	0.44	0.44	0.04	<0.001
H3.4: Visual appeal → Trust	0.50	0.39	0.03	<0.001
EC frequency (control) → Trust	0.09	0.03	0.01	<0.01

TABLE 5.20: Structural equation modeling - Singaporean online store

Hypothesis	β	Path coefficient	Std. error	p
H3.1: Country-related pictures (dummy) → Country presence	0.11	0.17	0.06	<0.01
H3.2: Country presence → Trust	-0.01	-0.01	0.03	0.80
H3.3: Country presence → Visual appeal	0.54	0.54	0.03	<0.001
H3.4: Visual appeal → Trust	0.59	0.45	0.03	<0.001
EC frequency (control) → Trust	-0.01	0.00	0.01	0.86

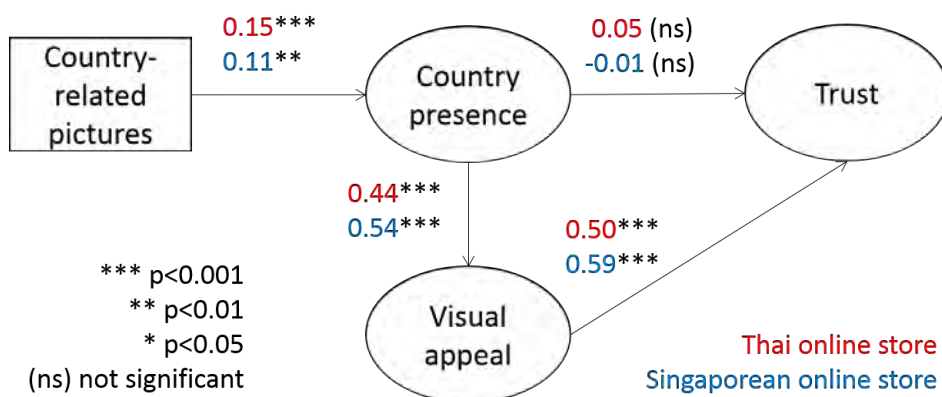


FIGURE 5.6: Result model

Regression analysis

As an additional test of the direct effect of the experimental manipulation, a linear regression analysis was conducted for each of the dependent variables in the model,

including the ones not hypothesized to be affected. The analysis was conducted on the Thai and Singaporean online store groups separately. Composite variables were created from the factor scores of each latent factor validated in the CFA. One dummy variable was used to represent the two experimental conditions for each country-of-origin of the online store. The generic pictures condition was used as the reference. The results of the regressions are detailed in Table 5.21 and 5.22, for the Thai and Singaporean online store respectively. In both cases, the results show that the country-related pictures condition had a significant positive effect on country presence, compared to the generic pictures condition. However, there was no significant direct effect on either visual appeal or trust.

TABLE 5.21: Regression analysis - Thai online store

	Country presence		Visual appeal		Trust	
	β	p	β	p	β	p
Country-related pictures (dummy)	0.15	<0.001	-0.02	0.58	-0.01	0.68

TABLE 5.22: Regression analysis - Singaporean online store

	Country presence		Visual appeal		Trust	
	β	p	β	p	β	p
Country-related pictures (dummy)	0.10	<0.01	-0.05	0.16	-0.03	0.16

Mediation analysis

Mediation analysis was conducted to estimate the indirect effects on visual appeal and trust, using a model with additional direct paths from the experimental manipulation to visual appeal and trust. A bootstrap of the model using 2000 bootstrap samples was conducted, and the significance of the effects were calculated using 95% bias-corrected bootstrap confidence intervals (Shrout and Bolger, 2002). The standardized indirect effects and their significance are presented in Tables 5.23. The results show that there is a positive indirect effect of country presence on trust, and therefore a complete mediation by visual appeal, for both groups. However, the results also show that country-related pictures had a significant positive indirect effect on visual appeal. This appeared to contradict the results of the regression analysis, so a direct structural path from the country-related pictures (dummy) variable to visual appeal was tested. This direct path was significant but negative. This indicates that there is inconsistent mediation (MacKinnon et al., 2007).

TABLE 5.23: Mediation analysis

	Thai online store				Singaporean online store			
	Visual appeal		Trust		Visual appeal		Trust	
	β	p	β	p	β	p	β	p
Country-related pictures (dummy)	0.07	<0.01	-0.01	0.77	0.06	<0.01	-0.04	0.08
Country presence			0.23	<0.01			0.33	<0.01

Multiple group analysis

A multiple group analysis was conducted to compare the model between the Thai and Singaporean online store groups. First, the invariance of the measurement model was tested. The freely estimated model was confirmed to have a good fit ($\chi^2(102)=316.50$, $\chi^2/df=3.10$, $RMSEA=0.03$ ($p=1.0$), $SRMR=0.04$, $CFI=0.99$, $TLI=0.98$), and the chi-square difference between the freely estimated model and the equal factor loadings model was non-significant ($\Delta\chi^2(9)=11.32$, $p=0.25$), indicating that the equal factor loadings model could be retained. The chi-square difference between the equal factor loadings model and the equal factor intercepts model was also non-significant: $\Delta\chi^2(12)=13.43$, $p=0.34$, indicating that the equal intercepts model could be retained. Thus, the three conditions for measurement model invariance (scalar invariance) were satisfied and the structural model invariance could be tested.

The invariance of the structural model was tested in a similar way to the measurement model invariance (Kline, 2011). The freely estimated structural model had a good fit ($\chi^2(146)=375.46$, $\chi^2/df=2.57$, $RMSEA=0.03$ ($p=1.0$), $SRMR=0.04$, $CFI=0.99$, $TLI=0.98$) and the equal path coefficients model was retained ($\Delta\chi^2(5)=10.67$, $p=0.06$). These results indicate that the models for the Thai and Singaporean online store groups were invariant overall. A further chi-square difference test for the relationships between factors confirmed that none of the differences between path coefficients across groups were statistically significant at $p<0.05$.

5.3.4 Discussion

The results of this study confirm that pictures which content is related to the country-of-origin of the foreign online store can have a positive influence on country presence. For both Thai and Singaporean online store groups, the presence of country-related pictures in the website design resulted in higher country presence compared to only including generic pictures. According to the standardized path coefficients, this effect was slightly

higher for the Thai online store group than the Singaporean online store group, though the difference was not statistically significant.

These results were corroborated by the mean difference analysis, which showed a significantly higher mean of country presence for the conditions with country-related pictures. The difference was slightly larger for the Thai online store group, which, as with the standardized path coefficients, indicates that the effect of the country-related pictures was slightly stronger than in the case of the Singaporean online store group. These results contribute additional evidence of the effect that pictures can have in the perception of a website, and how the content of pictures can generate a sense of presence in an online store (Hassanein and Head, 2007; Cyr et al., 2009).

The results also indicated a positive effect of country presence on the perception of the website, though there were differences for trust and visual appeal. There was a positive indirect effect of country presence on trust, but the hypothesis of direct effect was not confirmed. The results showed that the influence on trust was completely mediated by the visual appeal of the website. This result contradicts previous findings about the effect of presence on the perception of trustworthiness of trust (Hassanein and Head, 2007; Cyr et al., 2007, 2009). However, the previous studies did not include aesthetic elements (Hassanein and Head, 2007; Cyr et al., 2007) or overall appeal of the website (Cyr et al., 2009). In contrast, we can see by looking at the standardized path coefficients (direct effects) and the standardized indirect effects that the total effect of country presence on visual appeal was higher than the effect on trust, which indicates the relevance of including visual appeal in the model. Also, no significant differences were found in the mean of trust either between the websites of the foreign countries or between the versions with or without country-related pictures for both countries. However, this result is in line with previous research on differences in trust between similar websites, which have also failed to find such differences (Cyr et al., 2005, 2009).

The results also show the value of considering country presence for improving the aesthetic perception of the foreign online store, as country presence had a positive influence on the overall visual appeal for both the Thai and Singaporean online store groups. On the other hand, the results showed that the mean of visual appeal was lower in the country-related pictures conditions than in the generic conditions, although the difference was not statistically significant. This is a surprising result considering the positive effect, direct and indirect, of country presence on visual appeal, and indicates that the evaluation of visual appeal of the website with country-related pictures can be less positive when not mediated by the sense of country presence. One possible explanation for this result is that the interaction between the pictures and website design was not positive, or that the information richness of the content in the higher

country presence condition may have induced complexity (Michailidou et al., 2008) and therefore a negative perception when not mediated by the effect of country presence. Further research should be done to validate these possibilities.

Considering that visual appeal was the same for the generic pictures version of both Thailand and Singapore, the difference seems to suggest that Japanese consumers consider pictures of Singapore not congruent with a Singapore website. Because the content of the pictures was related mainly to the cultural aspect of Singapore, it may be this is not in line with strongest dimension of the Japanese perception of Singapore as a country. This suggests that there needs to be a consisted approach that takes in consideration the aesthetics of the design while at the same time striving to improve country presence. By validating the influence of country presence on two countries it can be seen that while the effect of country presence is in general positive, there may be characteristics of the country that could moderate the effect of the pictures in the perception of the website.

Another important finding was the fact that the structural model remained invariant between the Thai and Singaporean online store groups. The successful corroboration of the proposed model on two countries indicates that the effect of pictures on country presence, and the effect of country presence on other factors, is not limited by country. These results give initial evidence to suggest that country presence is relevant for any foreign online store. However, further research should be conducted to take into account additional control conditions such as the familiarity or distance with the foreign country.

Finally, the results showed that the appeal or attractiveness of the visual design aspects of the website had a positive effect on trust, which is consistent with the findings of previous research (Cyr, 2008).

Limitations

There are some limitations to this study. There was not an exact correspondence between the content chosen to indicate country presence for the Thai and Singaporean online stores. In principle, identical content for both countries was not possible because of the fact that the countries used in the experiment were different. However, care was taken to select close matches in terms of the content depicted in the pictures. In addition, the country-related pictures themselves were not directly compared to the generic pictures on aesthetic value independent of the website, nor was a pre-test conducted. Therefore, the picture's subjective aesthetic appeal was not controlled for, although they were considered in different contexts and participants only viewed one type. Future studies should consider measuring and controlling for aesthetic perception of the pictures themselves. The study also did not consider the case where the content

depicted in the pictures may result in a negative association by the consumer. However, the content of the pictures chosen was cross-checked with the content that appears in Japanese tourism and travel websites. Additional limitations that affect all studies are presented in Chapter 6.

5.4 Study 4: Effect of country-of-origin image

5.4.1 Hypotheses

The following are the hypotheses tested in this study. The development of the main hypotheses was detailed in Chapter 3, but they are presented here again for easier reference. The secondary hypotheses are also presented for the sake of completeness of the model.

Main hypotheses

Hypothesis 4.1: Country cognitive image has a positive effect on the country affective image.

Hypothesis 4.2: Country affective image has a positive effect on visual appeal of the foreign online store.

Hypothesis 4.3: Country cognitive image has a positive effect on visual appeal of the foreign online store.

Hypothesis 4.4: Country affective image has a positive effect on trust in the foreign online store.

Hypothesis 4.5: Country cognitive image has a positive effect on trust in the foreign online store.

Hypothesis 4.6: Country affective image has a positive effect on intention of use of the foreign online store.

Hypothesis 4.7: Country cognitive image has a positive effect on intention of use of the foreign online store.

Secondary hypotheses

For the goal of improving trust in electronic commerce, the design of a website is an important consideration. The design and look of a website is one the most important characteristics that users mention when asked to make an evaluation of the credibility of a website (Fogg et al., 2003). Consideration to the visual aesthetics of a website can improve consumer trust (Riegelsberger et al., 2003; Vance et al., 2008), even in scenarios of initial trust where the consumer is unfamiliar with the vendor (Karimov et al., 2011).

Hypothesis 4.8: Visual appeal has a positive effect on trust in the foreign online store.

Hypothesis 4.9: Trust has a positive effect on intention of use of the foreign online store.

The proposed model is presented in Figure 5.7

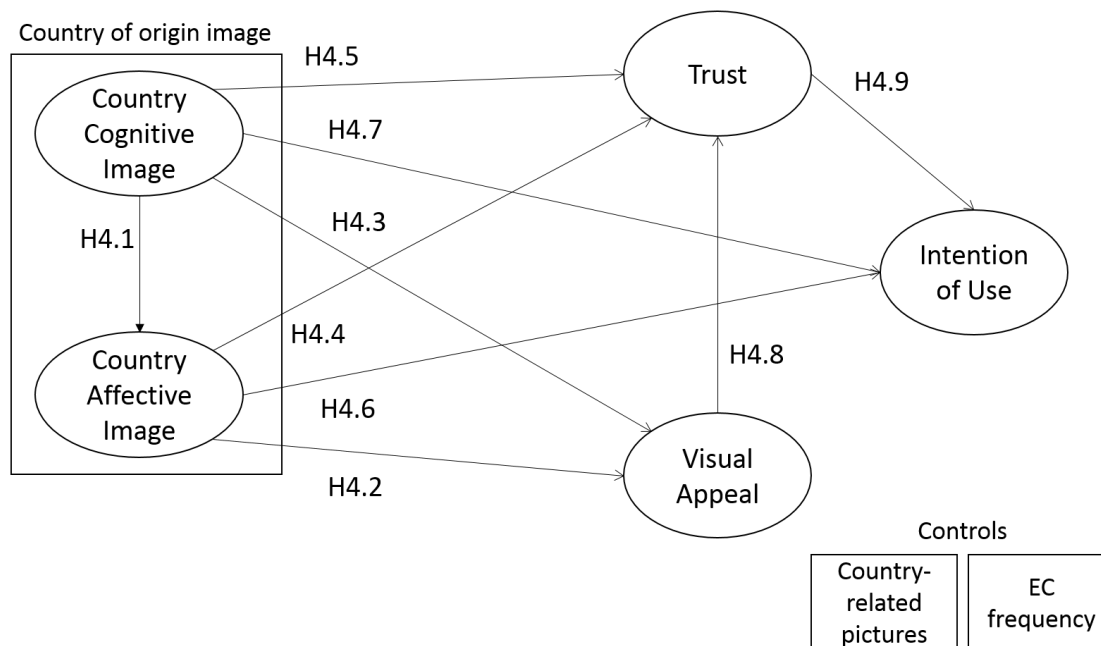


FIGURE 5.7: Research model

5.4.2 Methodology

As mentioned, the data for this study was obtained simultaneously with the study of the effect of country-related pictures introduced in the previous section. Additional information on the experiment design and measurement instrument relevant to this study is indicated, but all other details are described in the methodology section of the previous study.

Measurement instrument

In addition to the measurement items described in the previous study, this study considered items for the country cognitive and affective image, adapted from Beerli and Martín (2004), which measure the image of the country itself on these dimensions.

5.4.3 Analysis and results

Sample

The sample used for this study was the same as the one for the study on the effect of country-related pictures, described in the previous section. The details of the sample are presented in Table 5.14.

Data validation

Respondents who answered negatively to the manipulation check items for the country-of-origin of the online store were identified and 186 cases were eliminated. The Mahalanobis distance measure (D2) was used to identify multivariate outliers: 27 cases from the Thai online store group and 28 from the Singaporean online store group. These were eliminated, leaving 1750 valid cases (874 and 876 cases, respectively). There were no missing data. Absolute values of skewness indices (SI) and kurtosis indices (KI) were within the limits of $SI < 3.0$ and $KI < 10$ (Kline, 2011) for all items, indicating that there were no deviations from normality. The maximum absolute values were $SI=0.44$ and $KI=1.50$.

Exploratory factor analysis

EFA with a maximum likelihood estimation was conducted separately for the Thai and Singaporean online store groups. In the solution obtained, two trust items loaded separately and were removed to maintain a unidimensional trust factor. Then, the solution showed all items loading into their correct factors for the Singaporean online store group. For the Thai online store group, two items from the country cognitive image loaded as a separate factor. These were removed from both groups to allow for comparisons between the models. In addition, one trust item with low loading was also removed.

The resulting solution showed all items loading into their correct factors for both groups. One intention of use item in the Thai online store group and one country affective item in the Singaporean online store group showed a loading lower than 0.55. However, the difference with the highest loading on any other factor was higher than 0.20, that is, there was no cross-loading, so they were retained for further analysis. The results of the EFA are presented in Table 5.24.

Confirmatory factor analysis

The CFA was conducted for the Thai and Singaporean online store groups separately, using the items identified from the EFA. The initial model did not show a good fit. After inspecting the modification indices and identifying the sources of strain, the model was re-specified by removing one country affective image item and adding residual covariances. The re-specified model showed a good fit for the Thai online store

TABLE 5.24: Exploratory factor analysis

	Thai online store					Singaporean online store				
	1	2	3	4	5	1	2	3	4	5
I1	0.15	0.04	0.02	0.01	0.51	0.12	0.02	0.06	-0.08	0.56
I2	0.02	-0.02	-0.02	-0.02	0.87	0.01	0.00	-0.03	0.06	0.90
TI1	0.85	0.01	-0.02	0.00	0.02	0.90	-0.05	-0.01	0.02	-0.03
TI2	0.88	-0.01	-0.03	0.00	-0.04	0.88	-0.01	0.00	0.00	-0.02
TI3	0.87	-0.04	-0.01	0.01	0.04	0.81	0.04	0.00	-0.01	0.02
TI4	0.93	-0.01	0.04	-0.03	-0.06	0.84	0.02	-0.01	0.01	0.01
TC2	0.62	0.11	-0.01	0.04	0.10	0.57	0.07	0.02	0.02	0.10
VA1	-0.01	0.93	0.00	0.01	-0.06	0.04	0.88	-0.06	0.04	-0.04
VA2	0.10	0.81	0.00	0.00	-0.11	0.11	0.79	0.04	-0.03	-0.09
VA3	0.02	0.80	0.03	-0.03	0.08	0.00	0.80	0.05	-0.07	0.04
VA4	-0.07	0.82	-0.01	0.03	0.09	-0.10	0.81	-0.03	0.06	0.08
CO1	-0.04	0.04	-0.08	0.78	0.02	0.02	-0.01	0.83	-0.04	0.00
CO3	0.06	-0.04	0.08	0.61	0.03	0.00	-0.02	0.77	-0.01	0.02
CO4	-0.01	0.03	-0.08	0.84	-0.03	0.00	0.02	0.70	0.03	0.08
CO5	0.00	-0.04	0.12	0.60	-0.03	-0.04	0.01	0.72	0.04	-0.06
AF1	0.01	-0.02	0.87	-0.04	0.00	0.02	-0.01	0.04	0.79	-0.02
AF3	-0.01	0.02	0.85	-0.06	-0.01	0.04	-0.02	-0.09	0.85	0.02
AF2	0.00	-0.04	0.62	0.23	0.03	0.05	-0.01	0.30	0.48	-0.07
AF4	-0.01	0.05	0.81	-0.02	-0.01	-0.08	0.05	0.09	0.71	0.03

group ($\chi^2(124)=310.57$, $\chi^2/df=2.51$, RMSEA=0.03 ($p=0.99$), SRMR=0.03, CFI=0.98, GFI=0.96, TLI=0.98) and for the Singaporean online store group ($\chi^2(124)=293.48$, $\chi^2/df=2.37$, RMSEA=0.04 ($p=1.00$), SRMR=0.03, CFI=0.98, GFI=0.97, TLI=0.98). All factor loadings were significant and their standardized values were equal or above 0.70, with the exception of one trust item for the Singaporean online store group, which had a loading of 0.68, and two country cognitive image items for the Thai online store group, which had significant loadings of 0.67 and 0.69. Standardized factor loadings for both groups are shown in Table 5.25.

Cronbach's α and composite reliability values were above 0.70, indicating good construct reliability, and AVE values were above 0.50, indicating good convergent validity. The details are shown in Table 5.26. For each factor, the square root of the AVE was higher than the absolute value of the correlations with all other factors, indicating good discriminant validity (Table 5.27 and 5.28).

Structural equation modeling

The initial model, specified according to the hypotheses of the study, showed a good fit for both groups. The difference due to the mockup website was controlled for in the model. For the Thai online store group: $\chi^2(154)=389.96$, $\chi^2/df=2.53$, RMSEA=0.04

TABLE 5.25: Confirmatory factor analysis

Factor	Item	Thai online store	Singaporean online store
		Std. factor loading	Std. factor loading
Intention of use	I1	0.71	0.70
	I2	0.76	0.83
Trust	TI1	0.87	0.85
	TI2	0.85	0.86
	TI3	0.87	0.84
	TI4	0.89	0.86
	TC2	0.76	0.68
Visual appeal	VA1	0.89	0.88
	VA2	0.81	0.81
	VA3	0.86	0.81
	VA4	0.83	0.80
Country cognitive image	CO1	0.73	0.79
	CO3	0.67	0.76
	CO4	0.81	0.77
	CO5	0.69	0.76
Country affective image	AF1	0.83	0.81
	AF2	0.85	0.80
	AF4	0.80	0.77

TABLE 5.26: Convergent validity

Factor	Thai online store			Singaporean online store		
	α	CR	AVE	α	CR	AVE
Intention of use	0.69	0.70	0.54	0.73	0.74	0.58
Trust	0.92	0.93	0.72	0.91	0.91	0.67
Visual appeal	0.91	0.91	0.72	0.90	0.90	0.68
Country cognitive image	0.80	0.87	0.68	0.84	0.83	0.62
Country affective image	0.86	0.81	0.52	0.83	0.85	0.59

TABLE 5.27: Discriminant validity - Thai online store

	Intention of use	Trust	Visual appeal	Country cognitive img.	Country affective img.
Intention of use	0.735				
Trust	0.678	0.846			
Visual appeal	0.533	0.520	0.847		
Country cognitive image	0.291	0.276	0.203	0.724	
Country affective image	0.188	0.277	0.253	0.377	0.827

TABLE 5.28: Discriminant validity - Singaporean online store

	Intention of use	Trust	Visual appeal	Country cognitive img.	Country affective img.
Intention of use	0.765				
Trust	0.334	0.820			
Visual appeal	0.546	0.606	0.828		
Country cognitive image	0.225	0.294	0.233	0.770	
Country affective image	0.196	0.632	0.323	0.663	0.790

($p=1.0$), SRMR=0.03, CFI=0.97, GFI=0.96, TLI=0.97. For the Singaporean online store group: $\chi^2(154)=350.85$, $\chi^2/df=2.28$, RMSEA=0.04 ($p=1.00$), SRMR=0.03, CFI=0.98, GFI=0.96, TLI=0.97. In the case of the Thai online store group, all the hypotheses were confirmed with the exception of the effect of country affective image on intention of use. However, in the case of the Singaporean online store group, the country-of-origin image had less effect on the other factors in the model. Country affective image had a significant effect only on visual appeal, and country cognitive effect only had a significant effect on trust. The detail of the the results are presented in Table 5.29 and Table 5.30, and the standardized path coefficients (β) are represented in Figure 5.8. An additional analysis was conducted to test a model with a second order country-of-origin factor. For the Thai online store group, the $\chi^2(158)$ of the second-order model was 396.94, giving a $\Delta\chi^2(4)=6.98$ ($p=0.14$). For the Singaporean online store group, the $\chi^2(158)$ of the second-order model was 361.83, giving a $\Delta\chi^2(4)=10.98$ ($p=0.03$). A non-significant chi-square difference indicates that the models are invariant and that the more constrained model, in this case the second-order model, can be retained. A chi-square difference analysis of the covariance between the country-of-origin image components also showed that the covariances were statistically different at $p < 0.01$. The correlation for Singapore was higher at 0.66 than for Thailand, at 0.38. An additional SEM analysis was conducted using all the data obtained from the survey, including outliers and any data removed in the initial validation. The results of this analysis did not contradict the results obtained with the processed data.

Mediation analysis

Because of some non-significant effects of country-of-origin image on other factors of the model, a mediation analysis was conducted to estimate any indirect effects that may exist. A bootstrap of the model with 2000 bootstrap samples was ran, and the significance of the effects were calculated using 95% bias-corrected bootstrap confidence intervals (Shrout and Bolger, 2002). The standardized indirect effects and

TABLE 5.29: Structural equation modeling - Thai online store

Hypothesis	β	Path coefficient	Std. error	p
H4.1: Country cognitive image \rightarrow Country affective image	0.38	0.47	0.05	<0.001
H4.2: Country affective image \rightarrow Visual appeal	0.20	0.23	0.05	<0.001
H4.3: Country cognitive image \rightarrow Visual appeal	0.13	0.18	0.06	<0.01
H4.4: Country affective image \rightarrow Trust	0.09	0.08	0.03	0.01
H4.5: Country cognitive image \rightarrow Trust	0.14	0.15	0.04	<0.001
H4.6: Country affective image \rightarrow Intention of use	-0.04	-0.05	0.04	0.27
H4.7: Country cognitive image \rightarrow Intention of use	0.13	0.18	0.06	<0.01
H4.8: Visual appeal \rightarrow Trust	0.48	0.35	0.03	<0.001
H4.9: Trust \rightarrow Intention of use	0.66	0.86	0.06	<0.001
EC Frequency (control) \rightarrow Trust	0.07	0.02	0.01	0.01
EC Frequency (control) \rightarrow Intention of use	0.05	0.02	0.01	0.13
Country-related pictures (control) \rightarrow Country affective image	0.02	0.02	0.05	0.66
Country-related pictures (control) \rightarrow Country cognitive image	-0.04	-0.05	0.04	0.23
Country-related pictures (control) \rightarrow Visual appeal	-0.03	-0.05	0.06	0.41
Country-related pictures (control) \rightarrow Trust	-0.01	-0.01	0.04	0.83
Country-related pictures (control) \rightarrow Intention of use	-0.03	-0.05	0.05	0.32

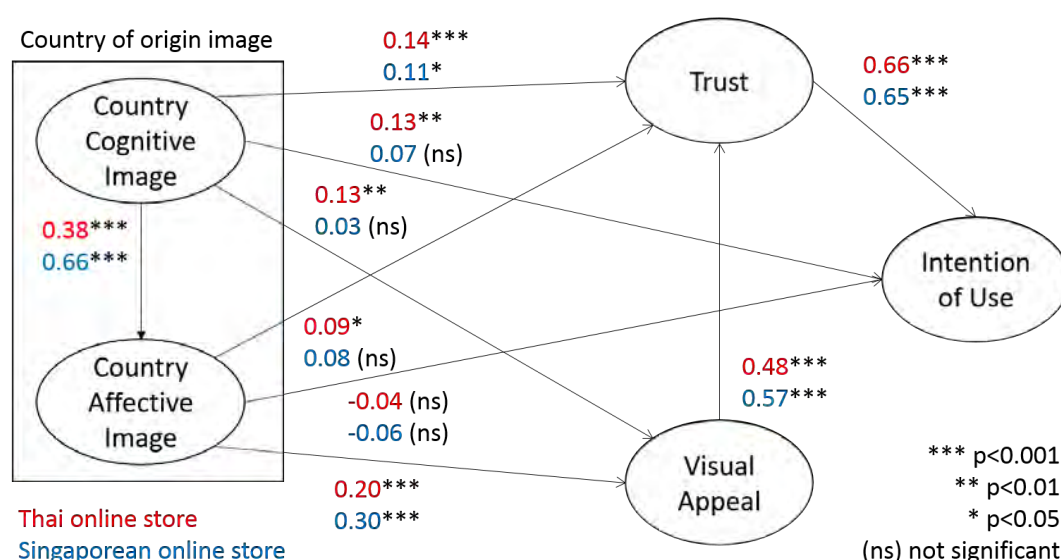


FIGURE 5.8: Result model

TABLE 5.30: Structural equation modeling - Singaporean online store

Hypothesis	β	Path coefficient	Std. error	p
H4.1: Country cognitive image → Country affective image	0.66	0.67	0.04	<0.001
H4.2: Country affective image → Visual appeal	0.30	0.37	0.07	<0.001
H4.3: Country cognitive image → Visual appeal	0.03	0.04	0.07	0.54
H4.4: Country affective image → Trust	0.08	0.07	0.04	0.11
H4.5: Country cognitive image → Trust	0.11	0.10	0.04	0.02
H4.6: Country affective image → Intention of use	-0.06	-0.07	0.06	0.26
H4.7: Country cognitive image → Intention of use	0.07	0.08	0.06	0.21
H4.8: Visual appeal → Trust	0.57	0.43	0.03	<0.001
H4.9: Trust → Intention of use	0.65	0.81	0.06	<0.001
EC Frequency (control) → Trust	-0.01	0.00	0.01	0.64
EC Frequency (control) → Intention of use	0.12	0.05	0.01	<0.001
Country-related pictures (control) → Country affective image	0.05	0.07	0.04	0.08
Country-related pictures (control) → Country cognitive image	0.00	0.01	0.05	0.92
Country-related pictures (control) → Visual appeal	-0.08	-0.13	0.05	0.01
Country-related pictures (control) → Trust	0.01	0.02	0.03	0.62
Country-related pictures (control) → Intention of use	-0.04	-0.05	0.05	0.27

their significance are presented in Tables 5.31 and 5.32.

TABLE 5.31: Mediation analysis - Thai online store

	Visual appeal		Trust		Intention	
	β	p	β	p	β	p
Country cognitive image	0.08	<0.01	0.13	<0.01	0.17	<0.01
Country affective image			0.10	<0.01	0.15	<0.01

Multiple group analysis

A multiple group analysis was conducted to compare the model between the Thai and Singaporean online store groups. First, the invariance of the measurement model was tested. The freely estimated model was confirmed to have a good fit ($\chi^2(214)=560.26$, $\chi^2/df=2.62$, $RMSEA=0.03$ ($p=1.0$), $SRMR=0.03$, $CFI=0.98$, $TLI=0.98$). The chi-square difference between the freely estimated model and the equal factor loadings model was non-significant: $\Delta\chi^2(12)=16.66$, $p=0.16$, indicating that the equal factor

TABLE 5.32: Mediation analysis - Singaporean online store

	Visual appeal		Trust		Intention	
	β	p	β	p	β	p
Country cognitive image	0.21	<0.01	0.18	<0.01	0.13	0.01
Country affective image			0.17	<0.01	0.20	<0.01

loadings model could be retained. However, the chi-square difference between the equal factor loadings model equal factor intercepts model was significant: $\Delta\chi^2(17)=579.24$, $p<0.001$, indicating that the equal intercepts model could not be retained. In this situation, the recommended approach is to free the intercepts that show differences, leaving the marker variable and an additional intercept constrained (Steenkamp and Baumgartner, 1998). But doing so did not achieve non-significance. The intercepts from the country cognitive image factor remained significantly different. In this case, scalar invariance was not confirmed. For the purposes of the multiple group analysis, the metric invariance (equal factor loadings) is considered sufficient (Steenkamp and Baumgartner, 1998), but without scalar invariance the latent factor means between the countries cannot be compared. The invariance of the structural model was tested in a similar way to the measurement model (Kline, 2011). The freely estimated group structural model had a good fit ($\chi^2(270)=683.79$, $\chi^2/df=2.53$, RMSEA=0.03 ($p=1.0$), SRMR=0.03, CFI=0.98, TLI=0.97) and the equal path coefficients model was retained ($\Delta\chi^2(16)=24.10$, $p=0.09$). These results show that the relationships between the factors in the model were equal for the Thai and Singaporean online store groups. A further chi-square difference test showed that there were only two paths significantly different: the effect of the country cognitive image factor on visual appeal was significantly higher for the Thai online store group, where it was also significant in contrast to the non-significant effect in the Singaporean online store group. On the other hand, the effect of the country affective image factor on visual appeal was significantly higher for the Singaporean online store group.

5.4.4 Discussion

Thai online store group

In the case of the Thai online store group, the results of the analysis indicate that the effect of country-of-origin image appears to be generalized and affects almost all factors in the model. However, there were differences in how the cognitive and affective dimensions affected the evaluation of the website. The country affective image of Thailand, related to the emotional reaction to the country, had significant direct effects on trust and visual

appeal, but not on the intention of use of the online store. This indicates that consumers' evaluation of the website is being affected by their positive emotional perception of the country. In particular, the direct standardized path coefficient for the effect on visual appeal was much higher than for trust, though the effect on trust was partially mediated by visual appeal. Previous studies on country-of-origin image have validated its effects on external characteristics (Roth and Romeo, 1992; Leonidou et al., 2007), but less research has been done with regards to trust in particular, so the relative effects are not well established. In the case of the intention of use of the online store, there was a significant indirect effect completely mediated by visual appeal and trust. The country cognitive image of Thailand, that is, the aspects of the country that are related to their infrastructure and economical development, had a significant direct effects on visual appeal, trust and intention of use.

Considering the structure of the model, the result indicates that cognitive and affective factors were not uncorrelated, but the affective dimension does not completely mediate the effect of the cognitive dimension on other factors, which is in line with findings by Brijs (2006). This indicates that the structure of the image of Thailand, from the point of view of Japanese consumers, is only partially based on the perception of its economical development. This is not surprising, as the image of Thailand in Japan is that of a culturally rich country, and there is interest in the cultural offerings of the country. Therefore, this cultural dimension may have more to do with the affective image of the country.

An interesting result among the hypothesized relationships was the direct effect of the cognitive image on intention of use. As previous research has identified (Verlegh and Steenkamp, 1999), the effects of country-of-origin image are stronger on the beliefs about a product, rather than on the actual behavior, or intention to purchase or use the product. This is understandable given the many other characteristics that may influence the decision to buy in a consumer. However, in this case, it is not likely that the consumer would have enough knowledge about foreign online stores in Thailand to make that decision. In this case, it may be that in the absence of other type of information, especially brand (Pharr, 2005), a positive opinion of the infrastructure and development required for having a successful purchase had influenced the decision.

In comparing the effects of the affective image and the cognitive image, it can be seen that the cognitive effects were greater in general, though with only slight differences in the standardized path coefficient. Trust was slightly less strongly affected by the affective image than the cognitive image, for example. This may be due to the risk situation in the context of cross-border, where consumers may rely more heavily on the perception of concrete assurances rather than being guided by emotional

response. In the case of Thailand, it may be that the positive perception of its economic development and infrastructure is more influential than the positive emotions consumers may have about it. As the online store is a technology based service, it follows that infrastructural concerns have a higher impact. At the same time, it may be that Thailand, as a developing country, is perceived as having limitations on the ability of its online stores to fulfill their service, and therefore a positive perception of the characteristics related to such ability would have an impact on the final decision of the consumer. However, as the difference is very small, the results should be validated to confirm this.

Singaporean online store group

In the case of Singapore, the dimensions of country-of-origin image had a reduced effect compared to the case of Thailand. The affective image only had a significant effect on visual appeal of the online store, and neither trust nor intention of use were directly affected. However, the mediation analysis showed that there were indirect effects on both of these factors. These results suggest that the positive emotions that Japanese consumers have about Singapore were only affecting their evaluation of the visible characteristic of the website, and does not directly affect whether or not they believe the online store is trustworthy, nor whether they would want to make a purchase in it. In the case of the cognitive component, there was also a limited effect on the evaluation of the online store. The cognitive image only had a significant effect on trust but not on visual appeal or intention of use. The positive perception of the state of Singapore's infrastructure and economic development influences the belief that the online store will have integrity and competently fulfill the service, which is congruent with previous research ([Jiménez and San Martín, 2010](#); [Safari, 2012](#)). Interestingly, it does not affect whether they perceive the online store to be visually appealing or the intention of use.

These results contradict previous findings about the effect of country-of-origin image for developed and developing countries ([Verlegh and Steenkamp, 1999](#)). One explanation for these results may be that, in the case of Singapore, the country-of-origin image is acting as a threshold variable ([Van der Heijden, 2003](#)). This means that the factors were not contributing to the evaluation because a certain level has been reached. Singapore is a developed country, and the means from the variables that were part of its cognitive image were higher than they were for Thailand. It may be that, once a certain level of assurance about the economic and infrastructural development of the country, these may no longer be relevant or salient information for the consumer, who might take them as granted in a way, and the online store is then evaluated on other grounds. The standardized effect of visual appeal on trust for Singapore was higher than for Thailand, which seems to point out to this explanation. In addition, the cognitive and affective image of Singapore were more highly correlated than for Thailand. That is,

a greater part of the emotional response is explained by the cognitive information, which may also be the reason for the lack of significant results for the affective dimension. In the case of the significant effect on visual appeal, a reason for this may be that an aesthetic perception in the case of the online store of a more developed country would not be based on the purely cognitive aspects of their image, which has been already established as positive, but rather on more affective related preferences. The individual characteristics of the website may be more important or more closely evaluated as the consumer does not need to concern themselves with other extrinsic cognitive issues. In the case of more developed country, whether or not they have an affective component related to other dimensions rather than cognitive may be influential for a positive response to the website. In the case of Thailand, the situation of a less-developed country brings concerns related to performance to the forefront of the evaluation. An indication that these issues are important for the consumer can be found in the results of the factor analysis for the country-of-origin image for Thailand, where the factor structure for Thailand initially showed a security-related component.

Limitations

There are some limitations to this study. The cognitive component of the country-of-origin image only considers the economic and infrastructure background. While this is in line with previous research, it is a general approach that was developed for the evaluation of products and destinations (Roth and Diamantopoulos, 2009; Beerli and Martín, 2004). In the case of electronic commerce, the image of the country that affects it may contain other dimensions, such as a one explicitly related to technology. In addition, the model is based on correlation analysis only, and the country-of-origin image was not experimentally manipulated. Additional limitations that affect all studies are presented in Chapter 6.

Chapter 6

Discussion

6.1 General discussion

Although the detailed discussion of the results of each study is presented in Chapter 5, the following is a general discussion of the results of all studies taken as whole, and of the general limitations for the dissertation.

In the first two studies, the effect of experimental conditions corresponding to characteristics identified as "ideal" was found to be positive, in comparison to other conditions, as hypothesized. In the study related to nationality information, feedback from users of the same nationality as the consumer resulted in higher trust than feedback from foreign users or no feedback. And in the study on the effect of translation issues, the correct and fully translated foreign online store was perceived as being easier to use and easier to communicate than the online stores with incorrect or partially translated textual content, or a combination of both.

Interestingly, the findings of these two studies also show a common aspect regarding the other experimental conditions. All other conditions were not significantly different from each other. In other words, conditions different from the ideal were all perceived as equally negative. In the first study, feedback from foreign users did not improve trust even when compared to showing no feedback at all in the website. And in the second study, the existence of translation issues of any type had a negative effect on the perception of ease of communication, ease of use and trust in the foreign online store, without significant differences between each condition. This suggests that Japanese consumers are very sensitive to website characteristics and that their negative perception of any flaws, imperfections or foreign elements affects their overall evaluation, to the point that they may ignore any positive characteristics. In other

words, foreign online store characteristics perceived as negative seem to dictate how the website is evaluated. As mentioned before, this may be a consequence of a higher perception of risk.

Studies three and four were related to country-of-origin. In the third study on the effect of country-related pictures, it was found that showing this type of pictorial content resulted in a higher sense of country presence for both Thai and Singaporean online stores. In addition, it was found that country presence had a positive effect on the perceived visual appeal of the website design. In the fourth study on the effect of country-of-origin image, the effect of the cognitive and affective dimensions of this image on the perception of foreign online stores was proposed and validated. The results showed that, for the Thailand online store, that country cognitive image dimension had an effect on visual appeal, trust and intention of use. The country affective image also had a positive effect on visual appeal and trust, but did not affect intention of use. On the other hand, the results showed that the effects were more limited in the case of the Singapore online store. The country cognitive image only had a significant effect on trust, and the affective image only had a significant effect on visual appeal.

Both studies indicate that the country-of-origin of the online store can affect the perception of the consumer. For both countries, the affective dimension of country-of-origin was positive, and so was the effect of country-related pictures and country presence. The content of the pictures was related to the culture and tourism of the country, and consequently to the affective dimension. Therefore, it is unlikely that there was a negative emotional response towards the country-related content in the pictures. Nevertheless, the third study showed that country presence was an inconsistent mediator. The direct effect of country-related pictures on visual appeal was negative, even though the indirect effect was positive.

Even though country-related pictures had a positive indirect effect on visual appeal, the fact that the direct effect was negative is important. The aesthetic perception of the website is an important antecedent that affects other dimensions of perception of the website, and it should be considered as a priority in the development of the website. A negative effect on visual appeal is adverse to the overall perception of the online store, even if country presence is positively affected. It is possible that the reason for the negative effect on visual appeal could be clarified by taking country-of-origin image into consideration in the model. For example, the negative effect on visual appeal was slightly higher for Singapore, whose cognitive image was higher than that of Thailand. While it was not the objective of either study, introducing country-of-origin image might help explain the inconsistent mediation results. Future research should consider analyzing how can country-related pictures, or

other design elements, can help induce country presence and improve visual appeal at the same time.

6.2 Limitations

The studies presented in this dissertation have some common limitations.

6.2.1 Non-probabilistic sampling

As mentioned in Chapter 4, the samples for all studies were obtained through an online survey company, which gathered the participants among their registered members. This meant that a non-probabilistic sampling method was used. As the population that could be reached was only a subset of the Japanese population and not the whole, the existence of bias in the sample cannot be discounted and the generalizability of the results to the population cannot be guaranteed completely. Nevertheless, the sample demographic characteristics and the reported frequency of online shopping indicates that they were adequate targets for this type of study. However, the proportion of participants with at least some cross-border online shopping experience was probably higher than in the population, although no official statistics could be found for the Japanese population. The samples also had the advantage of including participants from groups other than a student group, which is the most commonly used in studies of this type. The method used also facilitated the gathering of a large sample necessary for structural equation modeling analysis (MacCallum and Austin, 2000).

6.2.2 Parsimonious models

The scope of the models was very limited, as it did not include other important factors of consumer acceptance of electronic commerce as controls. This was done in the interests of parsimony, as the objective was to validate the effects of the experimental manipulations rather than present a full consumer acceptance model. However, it is possible that the proposed factors could have an effect on other factors not included here, or that the estimated effects might change. In the future, a more comprehensive model for cross-border electronic commerce should be considered.

6.2.3 Use of mockup websites

Due to practical limitations, all the studies used mockup websites for the experiments. A real website was not used, nor the mockup websites were based on designs of real websites. Participants were only shown static images of certain pages of the mockup website. This situation did not allow for a completely accurate test of perception of a foreign website, because of their non-interactive nature and the limited realism of the situation. The response of the participants could not be assured to be the same as it would have been towards a real foreign online store. However, the use of mockup websites allowed flexibility in the manipulation of the website and avoided any possible reputation effects of real brands. In this way, an scenario of initial trust could be ensured. In the future, however, it would be important to validate the results with a variety of real websites.

6.2.4 Country-of-origin image complexity

In designing the experiments, no separation of the country-of-origin of the product and the online store was considered. In real situations, the complexities of cross-border electronic commerce in terms of the countries and cultures involved are much greater. For example, products may be sourced from a country different from that of the online store. The product could even have a manufacturing country different from the country-of-origin of their brand, and both of these could be different from country of the online store. In addition, regarding the countries used in the experiment, only countries with a positive relationship with Japan were chosen. Therefore, the findings of the studies might not be applicable to situations where there is a negative or mixed image of the foreign country. In that case, the negative perception itself may overwhelm any other consideration, in a similar way to the effect of brand reputation. While these studies do not consider these added complexities, future work should take into account or control for those effects.

Chapter 7

Conclusions

7.1 Practical implications

The studies in this dissertation have validated the effect of factors that become relevant in a cross-border context. The findings of these studies have some practical implications for the design and promotion of foreign online stores. In general, these findings provide evidence of possible ways for foreign vendors to improve trust in their online stores and highlight the importance of identifying the unique characteristics of cross-border electronic commerce.

With regard to nationality, it may be useful for foreign online stores to show feedback differentiated by country when that information is available. Vendors could identify the country of the consumer, through their access location or profile information, for example, and clearly indicate the nationality information in their feedback. International online stores may be able to use that information to show consumers feedback from users of the same country, prioritizing it over feedback from users of other countries. However, vendors should carefully consider if and how to show feedback when it comes from users of a different nationality from the consumer. In this case, it may be better to de-emphasize nationality information, in order to avoid negative effects brought on by an out-group perception.

With regard to textual content, international vendors should strive to carry out translation quality assurance in a comprehensive manner. Consumers appear to be very sensitive to language issues, to the point where they may ignore any positive characteristics if a negative characteristic is present. This may be due to the high risk situation perceived for cross-border electronic commerce. Therefore, even though translation is a costly process, vendors should take into consideration the

disadvantages of a low quality or partial translation in relation to their particular target international audience.

In addition, to increase the perception that foreign online vendors are trustworthy and capable, it is important not only to provide an easy to use website, but also to facilitate contact with the online store. Consumers are more likely to trust a foreign online store that they believe can help them in case there are any problems. The language barrier increases the perception of risk in case of trouble; therefore, vendors should emphasize that they are available to respond to requests for information or help.

With regard to the country-of-origin, it may be possible for foreign vendors to use the cultural aspect of their country to their advantage. Foreign online stores could provide consumers a sense of their country-of-origin, by including country-related pictures in the design of their website. In cross-border electronic commerce, it is not always easy for consumers to identify the country-of-origin of online stores, with the possible exception of vendors with high brand reputation. This means that consumers have less knowledge about the vendor. Even though the sense of physical presence of the online store may not be relevant to the consumer in domestic contexts, the additional context and information obtained from country presence could be beneficial in cross-border electronic commerce. Clearly identifying and reinforcing country-of-origin by showing country-related pictures or symbols could help encourage a stronger association of online store and country, psychologically transporting the consumer to the foreign country. However, it is also important to consider whether the country-related pictures will have a positive effect on overall visual appeal of the design and not only on the country presence.

The practical implications of the last study on country-of-origin image are more relevant to institutions or organizations, rather than to individual vendors. In particular, they are relevant to organizations involved in the improvement of international electronic commerce in a country or region. The image of the country should be considered in the strategies for the development of international online shopping. Promoting the image of a country, of its economic development or cultural aspects, can aid in the perception of trust of its online stores, which is critical for consumer acceptance. Not only the economic development, but also the consumer emotional response toward the country can help improve the evaluation and even the intention to buy from that country's online stores. This is particularly encouraging for developing countries that have a strong cultural component to their image. Both cognitive and affective dimensions of the country-of-origin image should be considered in the development of strategies or policies for the promotion of cross-border electronic commerce. These strategies should also take into consideration how the influence of the country-of-origin image may be

affected by its structure, whether one dimension is stronger than the other and the relationship between these dimensions.

7.2 Future research

As mentioned before, research on cross-border electronic commerce is still limited when compared to research in domestic contexts; therefore, there are multiple avenues for additional research. With regard to the study on the effects of nationality information, future studies could consider the combination of country-of-origin of the user with more complex feedback information and with positive or negative feedback content. A third nationality could also be added to the analysis, in order to test country-of-origin effects. With regard to the study on language in the perception of the foreign online store, the effects of other issues in translation could be considered, such as the errors in output provided by machine-translation. For the study on the effect of country-related pictures and country presence, future work should consider including different types of media elements, different types of pictorial content or a combination of both to induce country presence. In addition, it should be investigated whether country presence has an influence on other factors of consumer acceptance of the foreign online store.

Finally, with regard to further research on the effect of country-of-origin image in cross-border electronic commerce, the model proposed in the study could be validated using an experimental study design, to investigate how the manipulation of the country-of-origin image can influence the perception of the website. This could be done considering not only a positive image, but also a negative or mixed image of a country. The model could validate how positive and negative aspects affect the perception of the online store and if there are any differences in that effect.

In addition, future work should consider factors such as animosity, which has been investigated in business and marketing research areas in relation to the perception and behavior towards foreign products and services. The political situation or conflicts, either historical or recent, that affect the relationship between countries can cause a negative perception, that is, animosity towards a country, has been found to directly influence the decision of not purchasing products from a country, regardless of a positive evaluation of the product's quality (Klein et al., 1998). Animosity can affect consumer perception of factors such as trust in the behavior towards foreign companies (Jiménez and San Martín, 2010). Consumer ethnocentrism, which is defined as the belief about the morality of purchasing foreign products (Shimp and Sharma, 1987), is another factor that can also negatively affect consumer behavior. These factors should be validated as negative extrinsic influences on the perception of foreign online stores.

In a more general sense, further research on consumer acceptance of cross-border electronic commerce should consider two paths. First, additional unique factors should be identified, not only focusing on those factors that may have the greatest impact on the antecedents of trust and intention of use, but also on other factors such as enjoyment and perceived risk based on logistical challenges and security concerns. Second, different country combinations for consumers and vendors should be considered. The studies could be replicated by analyzing the models with variations of the foreign online store country and the country of the respondents, using foreign websites from other countries besides Thailand and Singapore and/or other country population besides Japan. This would help to validate the factors proposed and identify any country differences.

Appendix A

Measurement items

Intention of use (adapted from Gefen (2000); Gefen et al. (2003))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

I1 Given the chance, I would provide this online store with the information necessary to make a purchase.

I2 Given the chance, I would use my credit card to shop from this online store.

Perceived usefulness (adapted from Koufaris (2002))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

PU1 Using this online store would improve my performance in my shopping.

PU2 Using this online store in my shopping would increase my productivity.

PU3 Using this online store would enhance my effectiveness in my shopping.

PU4 I would find this online store to be useful in my shopping.

Ease of use (adapted from Gefen et al. (2003))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

EOU1 It would be easy to become skillful at using this online store.

EOU2 Learning to operate this online store would be easy.

EOU3 This online store is flexible to interact with.

EOU4 The interaction with this online store is clear and understandable.

EOU5 In general, this online store is easy to use.

Ease of communication (adapted from [Loiacono et al. \(2002\)](#); [Jun et al. \(2004\)](#))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

EOC1 It would be easy to contact this online shop in case of any trouble.

EOC2 I would not find any problem in contacting this online shop.

EOC3 It would be easy to contact with this online shop to obtain more information about their products.

Trust (adapted from [Cyr et al. \(2009\)](#))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

TR1 I can trust this online store.

TR2 I trust the information presented on this online store.

TR3 I trust the transaction process on this online store.

Benevolence (adapted from [McKnight et al. \(2002a\)](#))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

TB1 I believe that this online store would act in my best interest.

TB2 I required help, this online store would do its best to help me.

TB3 I believe that this online store would act in my best interest.

Integrity (adapted from [McKnight et al. \(2002a\)](#))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

TI1 This online store is truthful in its dealings with me.

TI2 I can trust this online store site to process and deliver my shopping correctly.

TI3 This online store would keep its commitments.

TI4 This online store is sincere and genuine.

Competence (adapted from [McKnight et al. \(2002a\)](#))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

TC1 This online store is competent and effective in selling products online.

TC2 This online store performs its role of selling products online very well.

TC3 Overall, this online store is a capable and proficient online store.

TC4 In general, this online store is very knowledgeable about shopping online.

Material risk (adapted from [Featherman and Pavlou \(2003\)](#))

(Response scale: 1: Very high - 5: Very low)

R1 The possibility that the products delivered by this online store may fail to meet my expectations is:

R2 The possibility that I stand to lose money if I use this online store is:

R3 The possibility that using this online store will cause me to lose control over the privacy of my payment information:

Psychological risk (adapted from Featherman and Pavlou (2003))

(Response scale: 1: Very high - 5: Very low)

R4 The possibility of losing or wasting time by using this online store is:

R5 The possibility that using this online store will cause me frustration is:

R6 The possibility that using this online store will cause people I know to think less highly of me is:

Visual appeal (adapted from Loiacono et al. (2002))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

VA1 The design of the website is appealing.

VA2 The website has a good and well-realized design.

VA3 I like the design of the website.

VA4 The design of the website is interesting.

Country presence (new measure, adapted from Hassanein and Head (2007))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

CP1 The online store brings the image of [country].

CP2 The online store has a feeling of [country].

CP3 The online store conveys a sense of [country].

Country cognitive image (adapted from Beerli and Martín (2004))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

CO1 Well-developed general infrastructures

CO2 Offers personal safety

CO3 Reliable businesses

CO4 Reliable technological infrastructure

CO5 Economic development

CO6 Stable country

Country affective image (adapted from Beerli and Martín (2004))

(Response scale: 1: Strongly disagree - 5: Strongly agree)

AF1 Fun

AF2 Enjoyable

AF3 Pleasant

AF4 Interesting

Appendix B

Website mockups - Effect of nationality information in feedback



FIGURE B.1: Japanese feedback condition



FIGURE B.2: Thai feedback condition

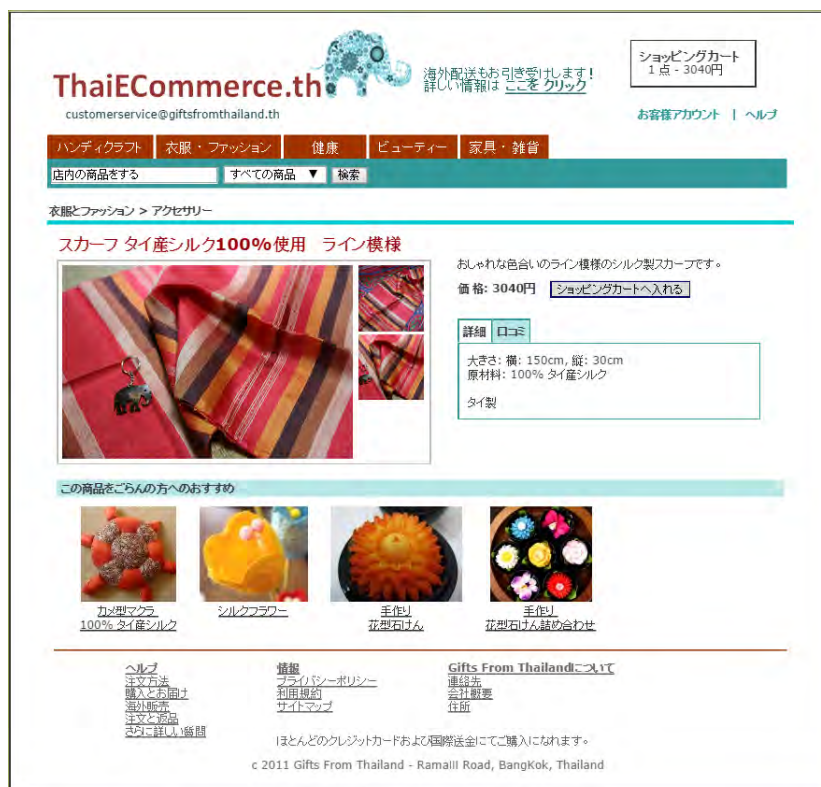


FIGURE B.3: No feedback condition

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Appendix C

Website mockups - Effect of translation issues

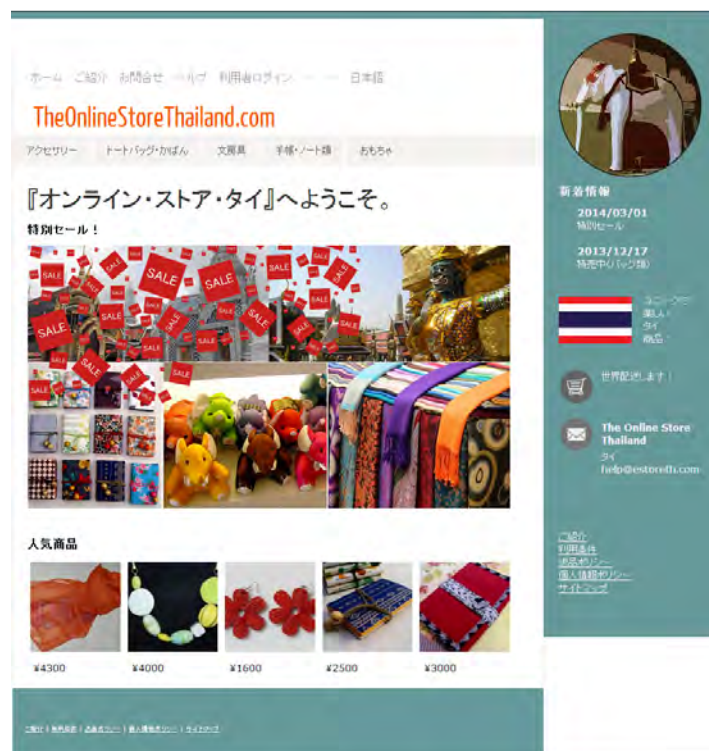


FIGURE C.1: Correct and full translation condition

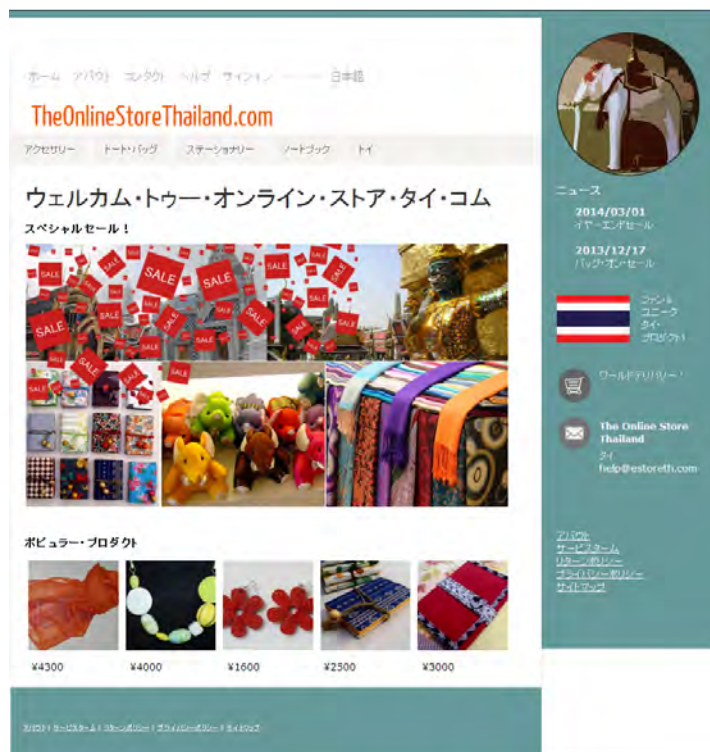


FIGURE C.2: Incorrect and full translation condition

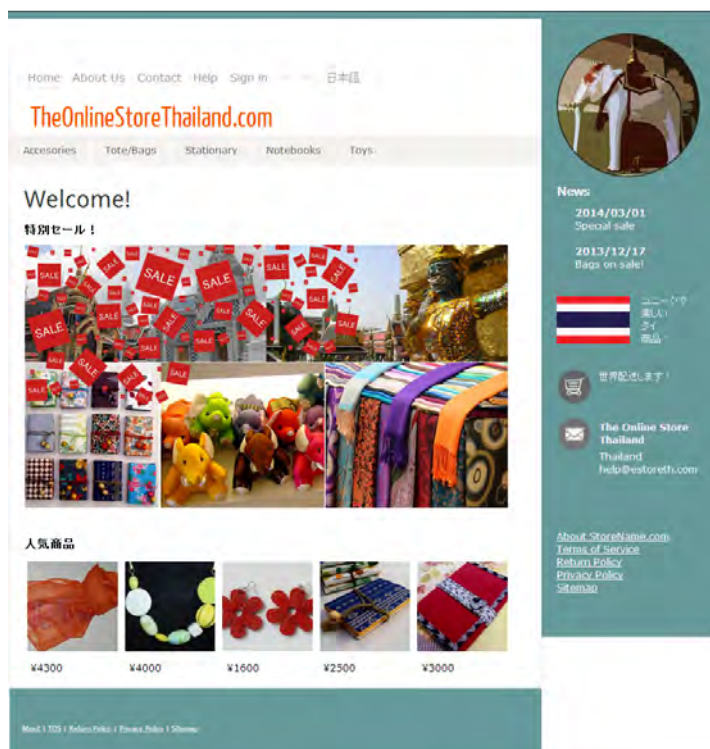


FIGURE C.3: Correct and partial translation condition

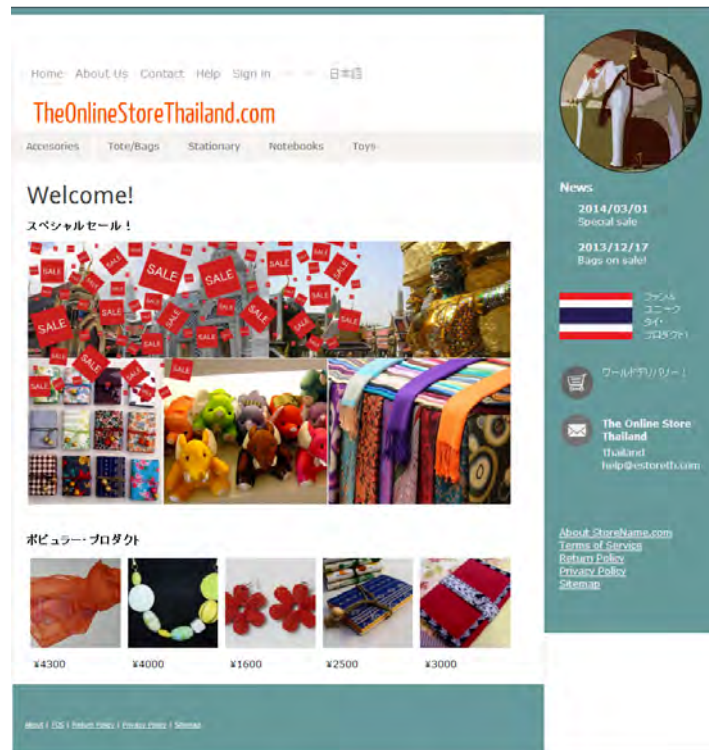


FIGURE C.4: Incorrect and partial translation condition

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Appendix D

Website mockups - Effect of country-related pictures

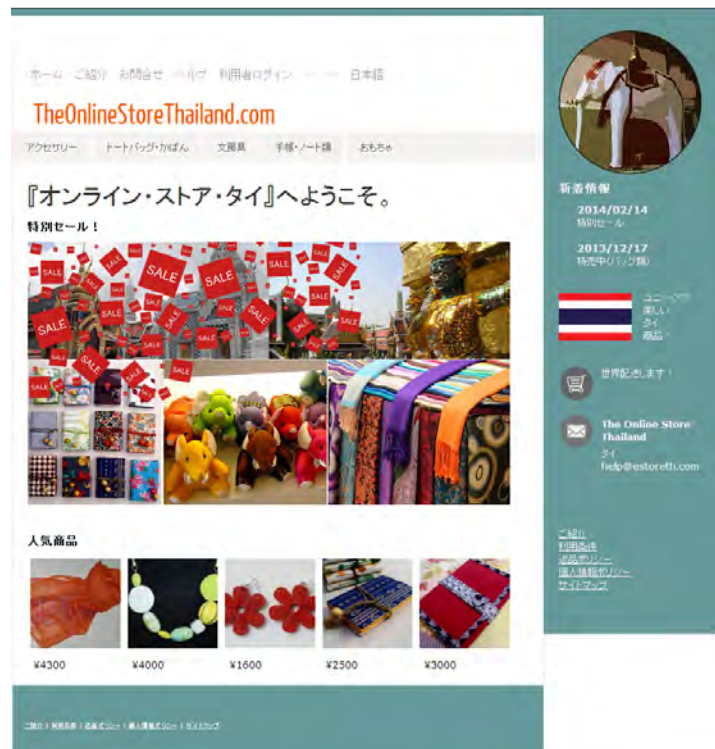


FIGURE D.1: Country-related pictures condition (Thai online store - Homepage)



FIGURE D.2: Generic pictures condition (Thai online store - Homepage)

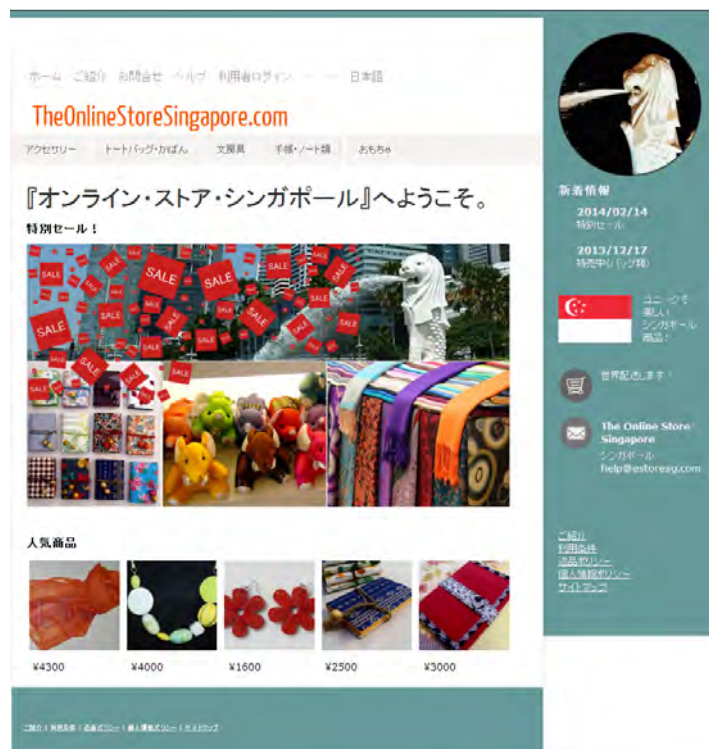


FIGURE D.3: Country-related pictures condition (Singaporean online store - Homepage)



FIGURE D.4: Generic pictures condition (Singaporean online store - Homepage)

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Related publications

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V. Bracamonte and H. Okada, "Evaluating the Influence of Country-related Pictures on the Perception of a Foreign Online Store," *IEICE Transactions on Information and Systems, Special Section on Enriched Multimedia*, Vol.E99-D, No.1, (9 pages), Jan.2016.

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Declaration of Authorship

I, Vanessa Rocio Bracamonte Lesma, declare that this thesis titled, 'Factors Influencing Consumer Acceptance of Cross-Border Electronic Commerce' and the work presented in it are my own. The material has not been submitted, either in whole or part, for a degree at this or any other universities.

