Exploring Consumer Value Path of Cross-Border E-Commerce: A Perspective of Means-End Theory

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ABSTRACT

Despite the explosive growth of CBEC, research into the phenomenon has not increased proportionally. Prior studies mainly discuss the opportunities, challenges and critical elements in CBEC on the organizational level. Little research has explored the individual consumer's psychological processes of joining and the benefits derived from purchasing on CBEC. Filling the research gap identified above, the objective of this study is to construct the hierarchical value map (HVM) of CBEC illustrating how consumers pursue their end through the decision making process consisting the linkage from perceived attributes to desired benefits and the eventual customer value when using CBEC. For this purpose, a qualitative rather than a quantitative approach ought to substantiate prior findings by uncovering the key defining components of CBEC context. The HVM presents 4 important benefits obtaining paths marked as boldfaced, referred as economic oriented path, efficacy oriented obtaining path, choice optimization path, and shipping progress oriented path.

Keywords: Cross-border e-commerce, means-end-chain theory, hierarchical value path

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INTRODUCTION

Cross-border e-commerce (CBEC) retailing is experiencing the enormous growth and significant impacts on electronic commerce marketplaces. A survey of global online shoppers by Ipsos and PayPal found that China was the No. 1 cross-border e-commerce (CBOS) destination in 2017. eMarketer (2017b) indicates that cross-border retail ecommerce sales in China has climbed 29.1% in 2017 to total $110.68 billion. Actually, One-quarter of digital buyers in China made a cross-border purchase in the past 12 months in 2016 (eMarketer 2017a). While purchasing via the CBEC channels, individual customers purchase the products from different countries and regions, conducting international payment and cross-border logistics for goods delivery (Li *et al.* 2016). According to the survey report of Alibaba Academy (2016) and China Internet Network Information Center (CNNIC 2016), there are mainly three channels for individual consumers to conduct CBEC, domestic platform, international platform and agents. In other words, customers can use domestic online shopping platform specialized in cross-border transaction, such as KAOLA in China which occupies 30% of the overall market (reference) and Taobao (its international channel); go to international online shopping platform, such as Amazon and eBay, and purchase through the CBEC trade agents.

However, despite the explosive growth of CBEC, research into the phenomenon has not increased proportionally. Prior studies mainly discuss the opportunities, challenges and critical elements in CBEC on the organizational level, such as the cultural adaptation of online messages to local culture Sinkovics *et al.* (2007)., and the challenge for a corporation to create a global online dispute resolution system to develop cross-border e-commerce. Little research has explored the individual consumer's psychological processes of joining and the benefits derived from purchasing on CBEC. However, successful marketing strategies are based on understanding consumers and the characteristics and benefits they pursue in the products and they buy, and the channels or platforms they choose to purchase on; as well as the values derived from their own personality and the society that they project through these products and purchasing channels (Barrena *et al.*, 2017). Therefore, in order to explore the consumer' decision process, it is important to focus on the structured value chain exploring the linkages of consumer values, benefits of consumption, and the perceived attributes. Previously, a number of studies have explored the factors determining consumptions, utilizing various techniques, such as interviewing, questionnaires, observing users, analyzing documents, and others. But little studies have concerned with how users perceive the benefits produced by the system attributes (features), and what personal values the benefits reinforce (Chiu, 2005), especially in the context of CBEC.

Filling the research gap identified above, the objective of this study is to construct the hierarchical value map (HVM) of CBEC illustrating how consumers pursue their end through the decision making process consisting the linkage from perceived attributes to desired benefits and the eventual customer value when using CBEC. For this purpose, a qualitative rather than a quantitative approach ought to substantiate prior findings (Coursaris & Kim, 2011) by uncovering the key defining components of CBEC context. Therefore, the following research questions are proposed:

RQ1. What are the means-end elements (e.g. attributes, consequences, and values) in CBEC?
RQ2. How do these elements interweave and construct the hierarchical value map?
RQ3. What are the dominant paths (including attribute and consequence) leading to consumer value?

Accordingly, this study takes a means–end approach (Gutman, 1982) and laddering interview methodology to examine user perceptions of the attributes, consequences, and values associated with the consumption through CBEC. 'Means' are objects that facilitate actions and activities in which people engage. 'Ends' are valued states of being, such as pragmatism and self-esteem (Pai & Arnott, 2013). MEC theory, has been suggested as a suitable theoretical lens for differentiating lower-level attributes, consequences, and higher-level values (Botschen *et al.*, 1999). The organization of this paper is as follows: the next section provides theoretical background regarding customer value and means-end chain theory. In this section, we also illustrate how the means-end chain can be applied to study customer value. In section three, we describe the research methodology, including research process and sampling method, and present the results of the data analyses in section 3 and 4 respectively. Following, we discuss the research findings, the theoretical contributions, the implications of our findings. Eventually, we discuss the limitations of the study and future research.

THEORETICAL BACKGROUND

Cross-border E-commerce

A survey of global online shoppers by Ipsos and PayPal found that China was the No. 1 cross-border e-commerce (CBEC) destination in 2017 (eMarketer 2017a). There are mainly three CBEC channels, the domestic platforms specialized in CBEC retailing business, such as Kaola in China, and the international channels managed by Taobao and Jingdong; E-commerce websites in foreign countries, including international EC platform in different countries and a local EC platform in a certain country; and CBEC agents helps customers to purchase products abroad (offline and online) and deliver the product to the customer, these agents can be occupational or occasional (e.g. airline hostess or the people who often travels to other countries). However, there are some barriers of cross-border transactions creating more risks and difficulties for CBEC customers, and each channel has its disadvantages in the overall shopping process.

Although it would be interesting to study how consumer values potentially influence consumer behaviors, only few studies have investigated cross-border online operations. Freund & Weinhold (2000) examined how the increase of online trade is likely to have an impact on offline trade patterns. Hortaçsu *et al.* (2009) compared the features of online trade within US from eBay and cross-border trade from Mercadolibre. The findings showed that distance is an important factor in determining the volume of trade. Lendl *et al.* (2012) again collected the data from eBay on cross-border transactions between 62 countries over the period 2004-2007. They found that almost all explanatory factors related to trade growth such as distance, transport cost, legal regime, etc generated less costs on eBay than in offline trade. Gomez-Herrera *et al.* (2013) constructed a unique matrix of online B2C domestic and cross-border trade in goods between the 27 EU Member States, showing a significant role of institutional variables such as online payments facilities and cost-efficiency of parcel delivery systems in cross-border trade. Overall, most of the research has focused on testing the direct link between CBEC performance and various external factors (e.g. geographic managerial, social or technological features). However, little is known on its interaction with other behavior enhancing determinants such as customer value.

Customer Value

Consumer value plays an important role in marketing and consumer research (Overby *et al.*, 2004; Reynolds and Gutman, 1988; Vinson *et al.*, 1977). While marketing and consumer research provides several conceptualizations of consumer value, consensus exists among several aspects of these definitions. In general, consumer value is:

● Perceived by consumers subjectively (Gale, 1994; Sinha and DeSarbo, 1998);
● Related to products, services and contexts (Holbrook, 1999);
● A trade-off between benefits and costs (Holbrook, 1999; Zeithaml, 1988); and
● A preference that lies in the heart of the consumption experience (Holbrook, 1999).

Individuals often perform some goal-oriented shopping behaviors in order to achieve their values (Lai, 1995; Sheth *et al.*, 1999). Past studies have recognized that a shopping behavior may be motivated by utilitarian and hedonic values of a consumer (Babin *et al.*, 1994; Baumgartner and Steenkamp, 1996). Utilitarian value indicates that consumers tend to efficiently achieve their goals with minimal investments, whereas hedonic value denotes that consumers emphasize more on joyful aspects, which they experience from the shopping process (Hirschman and Holbrook, 1982). These aspects of consumer value are also important in the context of MCS (Dholakia *et al.*, 2010; Kwon and Jain, 2009). On one hand, MCS allows consumers to obtain product information, seek product assortment, and compare product prices (Noble *et al.*, 2005), which can achieve utilitarian and economic goals. On the other hand, Verhoef *et al.* (2007) suggest that consumers tend to believe that searching in one channel facilitates them to make

smart purchase decisions on another channel. Consumers may perceive desirable feelings of being smart shoppers in MCS. Moreover, MCS can be treated as a variety-seeking behavior, which is driven by the hedonic aspect of MCS experience (Kwon and Jain, 2009).

In addition to the dichotomy of utilitarian and hedonic values, other scholars also regard shopping safety and freedom as two important consumer values in the context of MCS (Alba *et al.*, 1997; Schoenbachler and Gordon, 2002; Wolfinbarger and Gilly, 2001). Although the internet is considered convenient for information seeking, it is also considered risky to purchase online due to its inability to touch, feel and experience the product. High shopping risks may attenuate consumers' willingness to shop online. They are likely to perform online-offline channel integration to ensure their safety regarding their purchases. Furthermore, multi-channel marketing is a consumer-centric approach to satisfying new consumers who want to shop whatever, wherever, and whenever on their own terms (Loewe and Bonchek, 1999). MCS is able to provide such location and time flexibilities compared to single-channel shopping, leading to the fulfillment of consumers' need for freedom.

Understanding the various consumer goals is essential but not sufficient for practitioners as CBEC businesses can only serve their customers well if they know not only what customers want but also how to offer what they want and why they want what they want, i.e., the paths leading to the ultimate goals. This type of research is even scarce in e-commerce contexts, though a large number of studies have provided motivations of consumer online shopping behavior (Bagdniene & Zemblyte; Chang *et al.* 2010). These motivation studies considered online shopping motives in isolation, with no relationship being identified among each other. This deeper level of understanding is fundamental to our understanding of the drivers of CBEC adoption. By employing a user-oriented goal hierarchy approach, our study adds additional insights into this phenomenon by not only identifying diverse consumer goals for this new e-commerce model adoption but also illustrating the goal fulfillment paths. Such insights into consumer behavior and consumer needs would give businesses huge advantages in providing customer-centric service, the key to attract new and retain existing customers

Means-end Chain Theory

The means–end chain is the cognitive structure that links the consumer's knowledge of products to his personal knowledge of certain consequences and values, as demonstrated in a series of studies of different markets. It was Gutman (1982) who first applied it in the field of marketing and consumer research; Ter Hofstede *et al.*, 1998; Zanoli and Naspetti, 2002; De Boer and McCarthy, 2003; Fotopoulos *et al.*, 2003; Leppard *et al.*, 2004; Russell *et al.*, 2004 are also worth highlighting. The main premise of MEC analysis is that consumers learn to select the products that possess the attributes that allow them to achieve their desired ends (Reynolds and Gutman, 1984; Ter Hofstede *et al.*, 1998; Grunert and Valli, 2001; Olson and Reynolds 2001; Fotopoulos *et al.*, 2003; Costa *et al.*, 2004).

It differentiates three hierarchical levels: product or service attributes (A), consequences of product usage and service consumption (C), and values as the desired end-states of consumers (V). The meansend perspective is analogous to the expectancy-value theory (Rosenberg, 1956), which delineates consumers' inclination to refer experienced consequences to attributes of past decision behavior in product encounters. Consequently, consumers learn to choose attributes that are instrumental to their desired consequences (Reynolds & Gutman, 1988), such as the selection of the most supportive channel to ensure a good product choice. Consequences are antecedents to desired "end"-values such as self-actualization (Xiao, Guo, D'Ambra, & Fu, 2014).

According to Gutman (1982), consumers learn to think about products or services in terms of attributes – physical or concrete. Attributes (means) are instrumental to achieving the desired consequences and values (ends). Consequences can be positive or negative. Positive feelings result from the benefits from consuming the product; therefore, benefits can be considered substitutes for desired consequences. The central aspect of the MEC model is that consumers choose actions that produce desired outcomes and minimize undesired outcomes (Gutman, 1982). Consumers learn which outcomes they desire and which to avoid. Once they learn which acts produce the desired consequences (benefits) and values, their choice behaviour is guided accordingly (Gutman, 1982). Consumer behaviour is generally goal oriented and can be regarded as a consumer's movement through a goal hierarchy. An MEC is a hierarchy of goals in which higher-level goals represent a deeper layer of consumer motivation. In such a hierarchy, values can be considered as the final goals that motivate consumers to engage in shopping behaviour, and benefits are the subgoals that are subordinate to values. MEC theory, indeed, has been suggested as a suitable theoretical lens for differentiating lower-level (benefits) and higher-level (values) goals (Botschen *et al.*, 1999).

Olson and Reynolds modified Gutman's model by distinguishing finer gradation of attributes, consequences, and values according to the levels of abstraction in terms of its relationships to personal values, as shown in Fig. 1. Concrete attributes are defined as being physical and concrete character- istics of a product/service that can be directly measured, such as the location of a store or color of a product. Abstract attributes are more subjective in nature, usually existing only in the minds of those who perceive the product/service, such as information quality of the website or service quality. Functional consequences refer to the practical benefits and performance outputs accrued directly to the consumers from consuming the products/service (e.g., save money), while psychosocial consequences refer to psychological feelings or social considerations (e.g., perceived risk, satisfaction) derived from

functional consequences. Instrumental values are defined as preferred modes of behavior or ways of behaving (e.g., be loyal, be polite), while terminal values are defined as preferred end states of being (e.g., self-esteem, sense of fulfillment). Thus, the MEC model is also viewed as representing the relationship between self and products, in which the means represent aspects of product/service knowledge and the ends represent aspects of consumer self-knowledge. Olson and Reynolds emphasize that not all of these links are present in every situation as consumers may not be able to always possess the abstract meanings of the products/services they use because of inactivation of self-relevant knowledge in the working memory during that decision situation.

Scholars emphasized the usefulness of the means-end approach in IS research (Chiu, 2005; Lin & Wang, 2008; Pai & Arnott, 2013), for example to shed light on resistance factors to adopt complex products such as online payment (Kuisma *et al.*, 2007). In the course of resistance research, the means-end relation might however cause confusion, since it captures the antagonists of certain goals, contrary to means in its original sense. Means are therefore referred to as antagonists in this article. Studies in consumer research have used the means–end approach to examine consumer perceptions of price and service quality (Voss, Gruber, & Szmigin, 2007; Zeithaml, 1998). Recent research has used means–end analysis to investigate users' behavior when adopting online applications, such as web-based document management systems (Chiu, 2005), online shopping (Lin & Wang, 2008), and e-learning systems (Sun, Cheng, & Finger, 2009). In particular, scholars have begun using the means–end approach to investigate user goals in social virtual worlds such as Second Life (Jung & Kang, 2010). Because these online contexts are similar in nature to SNSs in terms of satisfying users' social, functional, and hedonic needs, means–end analysis is applicable for understanding users' perceptions of and motivations for adopting SNSs.

RESEARCH METHOD

Laddering Interviews

Personal consumption choices are often driven by their personal values. People attend to classifies merchandise to reduce complexity of the selection, and give meaning to goods or services; those meanings are related to personal values. Theory of basic human values indicates that values influence purchase action when they are relevant in the context and important to the actor and also guides attitudes and behaviors (Schwartz, 1996). More in depth, expectancy value theory argues that people orient themselves to the world according to their expectations and evaluations. Behavior, behavioral intentions, or attitudes are as a function of expectancy that an object possesses a particular attribute or that a behavior will have a particular consequence (Palmgreen, 1984). Those theoretical conceptions views consumer as value-oriented decision makers who choose product attributes with that will most likely lead to desired outcomes.

The purpose of means end theory there is to explore the relevance of product or service attributes and consumer's personal values. Where "means" refers to the individual's perceptions and views of attributes of goods or services, "end" refers to the end status of results or the final value of the results provided by these attributes. Grunert and Grunert propose motivational view and cognitive structure view to explain the consumer's shopping behaviors with means-end theory. Motivational view concerns with obtaining insight into consumers' buying motives. Cognitive structure view is a model of consumers' consumption-relevant cognitive structure, where it is assumed that behavioral motivation is derived by linking cognitive categories corresponding to concrete objects, like products, with cognitive categories at a high degree of abstraction, like values. Therefore cognitive categories of different levels of abstraction are interlinked in chains and networks (Grunert & Grunert, 1995). Means-end chains technique is often been adopted to advertising or marketing of products or services, market positioning, new product development, and segmentation of consumer markets. (Bagozzi & Dabholkar 1994). And, some of researchers have used to study the consumer behaviors (Zeithaml, 1998) and online shopping (Lin & Wang, 2008).

Laddering technology could transforms attributes of a product into meaningful links, which is the most commonly used methodology for the purpose of structure the hierarchy of means-end chains (Gutman, 1982; Gutman & Miaoulis, 2003). Due to the difficulty in directly eliciting consumers' personal values at the highest level of means-end chains hierarchy, the top down approach is hard to do. Thus, laddering technology adopt bottom up process to draw out the consumers' personal value, start with collecting factors, which are attributes of products or services, at the lowest level of means-end chains hierarchy, and end in summarizing the factors, which refer to consumers' personal values, at the highest level of means-end chains hierarchy. It can be divided into soft laddering and hard laddering. The soft laddering technology refers to collect information with in-depth interviews (Gutman, 1982; Gutman & Miaoulis, 2003; Overby *et al.*, 2004). During the interview, respondents' responses were not subject to any restrictions or guidance. Interviewers must have the concept of "treating respondents as experts" to reduce the subjective bias of the interviewer and affect the interviewee's answer, so that you can really understand the products or services in the eyes of consumers. The hard laddering is applicable to popular subjects (Grunert & Grunert 1995), which collect information with a paper and pencil laddering task, or through mailing questionnaires (Walker & Olson, 1991; ter Hofstede *et al.*, 1998). Compare to the soft laddering, it is able to collect large numbers of samples and save manpower, but respondents are easily interfered with by the question items. Consequently, it is difficult to obtain personal subjective ideas of consumers. Furthermore, the process of laddering is also difficult to draw to a higher level (Phllips & Reynolds 2009).

In the early stage of exploratory research in cross border online shopping, we allow respondents to define their personal attributes and values in their own terms and contexts. Thus, this study used soft laddering, which is more flexibility and more easily to depth–in the contexts, to interview research respondents and collect research data. The procedure of analyzing laddering data involves five steps including, (1) elicit and select key distinctions to ladder means-end chains, (2) construct an implication matrix, (3) construct a hierarchical value map, (4) determine dominant perceptual orientations, and (5) make interpretation.

Interview procedure
The interview time ranged from about 30 to 45 minutes. All the interviewees were asked for the approval to record. The major topics in the interview include: "What are the cross-border online shopping platforms you often use?", "What is the difference between cross-border online shopping and domestic online shopping?", "What benefits do you get from cross-border online shopping?", And "What values of yours are in line with those benefits?"etc. During the interview, the questions were flexibly adjusted based on the respondents' answer, in order to collect more diverse information.

More in detail, in the pre-interview stage, this study illustrates the purpose of the study and introduces the interview process through chatting, in order to make the interviewee feel comfortable. In the meantime, respondents, while recalling the past experience of cross-border online shopping, create a relaxed and suitable atmosphere for sharing. And then, ask interviewee to answer questions about personal information, such as gender, age, education Level and consumption habits etc. After the completion of the basic information questionnaire, this study formally entered the laddering interview process.

At the beginning of laddering interview, start with question "What is the opportunity to start using cross-border online shopping?", let the interviewee to share their experience about recent or impressive cross-border online shopping by the way storytelling. In addition to enabling respondents to recall their initial motivation and quickly enter to the interviewed situation, this initial approach can also collect a lot of additional useful information. Technologies used to elicit the attributes that are important to interviewees while shopping online across the border, this study adopt three guideline proposed by Reynolds and Gutman, (1) Triadic sorting, (2) Preference-consumption differences, (3) Difference by occasion.

At second part of the laddering interview, based on the collected attributes, ask the interviewee in depth, keep asking "Why the specific attribute is important to you?", "What can you get from that specific attribute?" and other similar questions to understand why interviewee think these attributes are important. And then, collect those answers as consequences of those attributes, and values as final achieve of those attributes. In addition, this study refer to the six interview techniques proposed by Reynolds and Gutman to facilitate the interview until interviewee can no longer continue to provide any more information or information is sufficient. Those are (1) Memories of past situations, for example: What was the last time shopping at a foreign website? (2) Assuming the consequences of a lack of certain attributes, for example: What do you think if the shopping platform does not have free shipping promotion as well as full amount of specific amount. (3) Negative laddering, for example: Why do you not like the platform checkout process? (4) Compared with the past, for example: What are the different between cross-border online shopping and online shopping experience in the past? (5) The third-person method, for example: Do you think why other people want to choose this shopping website? (6) Silence or answer confirmation. If respondents refuse to think, it could keep silence to let respondents adjust their tempo and continue to think about the answers. If the respondents 'answers are difficult to understand, it could repeat the answer, so that interviewee could re-organize their thoughts and then use more precise terms to answer.

After that, switch to next ladder (attribute) at previous part. And repeat it all over again, until each attribute - consequences -value ladder is completed. The figure 1 shows the MEC interview procedure chart.

Sampling/Participants/Choice of respondents
The cross border online shopping adoption, and consumers motivation have recently received great attention from researchers, but most of the research has used data from the developed country. Thus, little is known about the factors that influence cross border online shopping consumers motivation in societies that are economically and culturally distinct from the developed countries, such as China or Taiwan. The same consumers' personal values may bring out different behaviors in another country, or behavior probably driven by the same motivation but through a different path. To study this phenomenon, interviews were conducted in Chain and Taiwan as this gives possibilities for cross-validation within a culturally fairly homogeneous part of Chinese. Two groups were held in two countries to explore the range of values held and to contrast the results between countries and between earlier and later adopters.

In this study, the population of interviewees is consumers with cross-border online shopping experience; thus a purposive sampling strategy was used to ensure the validity of the sample data. Furthermore, because of the in-depth interview process takes long time to do and also has restriction of interview venue, it's very difficult to sampling. Therefore, we further adopt convenience sampling and snowball sampling, in order to reach valid samples, and find next sample through the previous one.

Sample relevant is more critical then sample size, in the qualitative research (Denzin & Lincoln 1994). Previous studies using soft laddering show that the number of interviewees is from a signal digit to double digit(Manyiwa & Crawford 2002；Overby *et al.* 2004；Zeithaml 1988). Roynolds and Gutman suggest the appropriate number of interviewee is between 30 to 50, and Reynolds and Olson (2001) also indicate the number of interviewee should more than 20 at least. In the other hand, if there is no further attribute mentioned by a new interview, it could stop the sampling procedure (Denzin & Lincoln 1994).

In current study, a total number of 30 Taiwan interviewees were interviewed, it meet the sample size requirement suggested by past studies. More in detail, there is no longer update the attributes during the interview up to 22. Moreover, for the accuracy of the result, this study interview 8 more interviewees, a total of 30 interviewees, the final result is the same as the result elicit from 22 interviewees.

The demographics profile can be seen in Table 1. It was reveals an equal split between genders, the area of residence is mainly 76.7% of the northern part of Taiwan, and the distribution of age is 60% of the population aged 19 - 25 and 30% of the population aged 26-30. The graduate education level is dominated with the largest proportion (66.67%), followed by 30% of the college; the occupational classification is dominated by 66.7% of the students, and the average monthly disposable income below $700 accounting for 63.33%. In this study, it adopt purposive sampling, plus convenience sampling and snowball sampling to identify more of the 19 to 30 years-old internet generation interviewees. As a result, respondents were mostly students and average monthly disposable income was lower, and less than $700 accounting. Among the Taiwan interviewees in this study, there are 14 respondents are the most commonly used cross-border online shopping platform is Taobao (http://www.taobao.com/), followed by Amazon (https://www.amazon.com/), 6 respondents. There are 53.33% of the respondents, their cross-border online shopping experience is between 2 to 3 years, followed by less than 1 year (30%), and between 4 to 5 years (10% of buyers). The number of cross-border online shopping respondents who purchased twice or thrice every year accounted for the largest proportion of respondents (36.67%), followed by purchased more than 5 times every year (30%), 4 or 5 every year (23.33%), and only one time every year (6.67%). The average spending on a single shopping was mainly in the range of $10-$70 (66.67%), followed by $70-$150 (26.67%), and above $150 (6.67%), the most frequently purchased merchandises are clothing (50%), and followed by 3C products (16.7%).

In Mainland China, a total number of 30 interviewees were interviewed also, it is same sample size compare to previous sampling in Taiwan in this study. The demographics profile shows in Table 1. It was reveals that 63.33 % respondents were female, residential areas in East China accounted for the largest share of 23.33%, and the distribution of age is 80% of the population aged 19 - 25 and followed by the population aged 26 - 30. The largest proportion of education level is 66.67% having graduate degree; the occupational classification is dominated by 63.33% of the students, and the average monthly disposable income is below $700 accounting for 60%, and followed by between $700 to $1,400 (20%). Due to the purposive sampling, plus convenience sampling and snowball sampling to identify the internet generation interviewees, respondents were mostly students and average monthly disposable income was lower, and less than $700 accounting. Among the Mainland Chain interviewees in this study, there are 10 respondents are the most commonly used open platform such as Tmall (http://www.tmall.com/) or Jingdong Buy International (http://www.jd.hk/), followed by using self-operation shopping website such as NetEase kaola (http://www.kaola.com/), Xiaohongshu (http://www.xiaohongshu.com/) etc. There are 50% of the respondents, their cross-border online shopping experience is between 2 to 3 years, followed by less between 4 to 5 years (23.33% of buyers), and therefore most of them are represent experienced cross-border online shopping consumers. The number of cross-border online shopping respondents who purchased 2 to 3 times every year accounted for the largest proportion of respondents (36.67%). The average spending on a single shopping was mainly in the range of $10-$70 (63.33%), the most frequently purchased merchandises are cosmetics and personal care products (53.33%), and followed by clothing, shoes and bags (25.67%).

Table 1: Demographic

	China (n=30)	Taiwan (n=30)
Gender		
Male	36.67%	50.00%
Female	63.33%	50.00%
Age		
<18 years	0.00%	3.33%
19 ~ 25 years	80.00%	60.00%
26 ~ 30 years	10.00%	30.00%
31 ~ 35 years	6.67%	3.33%

36 ~ 40 years	0.00%	3.33%
>40 years	3.33%	0.00%
Education		
High School	3.33%	3.33%
College	30.00%	30.00%
Graduate School	66.67%	66.67%
Occupation		
Student	63.33%	66.67%
Manufacture	20.00%	13.33%
Service	10.00%	13.33%
Others	6.67%	6.70%
Years of use of cross-border online shopping		
< 1 year	20.00%	30.00%
2 ~ 3 years	50.00%	53.33%
4 ~ 5 years	23.33%	10.00%
> 5 years	6.67%	6.67%
Average number of purchases (annually)		
1 times	33.33%	6.67%
2 ~ 3 times	36.67%	36.67%
4 ~ 5 times	20.00%	23.33%
> 5 times	10.00%	30.00%
Average disposable income (monthly)		
<$700	60.00%	63.33%
$700~$1400	20.00%	26.67%
$1400~$2100	10.00%	10.00%
>$2100	10.00%	0.00%
Average spending on a single shopping		
<$10	3.33%	0.00%
$10~$70	63.33%	66.67%
$70~$150	20.00%	26.67%
> $150	13.34%	6.67%

DATA ANALYSIS

Refer to Reynolds and Gutman's data analysis method, the first step of content analysis is coding. Merge and give the similar elements an appropriate name, for example, merge "foreign goods are better" and "you can buy more durable things" into "quality of goods". The method of determining levels of each element can refer to the situation of source (from) and extended (to). The element that only has source must be attribute level; the one that has both source and extended must be consequence level and the one that only has extended must be value level. Categories results of elements are presented in table form. In order to minimize subjective factors. Coding by three coders (Grunert & Grunert 1995) that familiar with means-end chain theory, laddering and cross-border online shopping. Without interference in each other and then discussion for the divergent parts. After completion of coding all the elements, give each element a number and create a table for subsequent analysis steps. The second step is creating implication matrix, depiction the number of direct link and indirect link between elements. According to definition of link between elements, direct link is the link that between two adjacent elements, indirect link is that there are one or more elements between these two elements. The higher the number represents stronger relation between these two elements. Implication matrix displays the number of times each element leads to each element. Example is shown in table 2.

Table 2：Example of implication matrix

	(C5)	(C6)	(C7)	(C8)	(C9)	(V10)	(V11)	(V12)
(A1)	1:00		5:11		0:04			0:04
(A2)	4:00		0:04	0:02	0:03		0:08	
(A3)	6:00		3:04	1:02	1:07	1:08	0:05	0:05
(A4)		8:00	0:01		2:00		0:01	
(C5)		3:00	5:01	4:03	9:01	3:02	0:06	0:05
(C6)				7:00			1:03	0:04
(C7)					8:00		0:06	1:04
(C8)					9:00		4:02	5:04
(C9)							10:00	8:00

The third step is constructing the hierarchical value map (HVM), in order to avoid a too large and complex HVM, it must be set the cut-off level to remove the relatively weak relations. Reynolds and Gutman recommend that if the number of samples is 50 to 60, the appropriate cut-off level is 3 to 5, Grunert, and Grunert (1995) believes that there is no absolute standard-setting of cut-off level. This study set the cut-off level 3. Means researcher only put those relations that direct link number more than three times into HVM. And This study also refer to Reynolds and Gutman's five kinds of link relations to make the relationship between the elements clearer. The example of HVM is shown in figure 1.
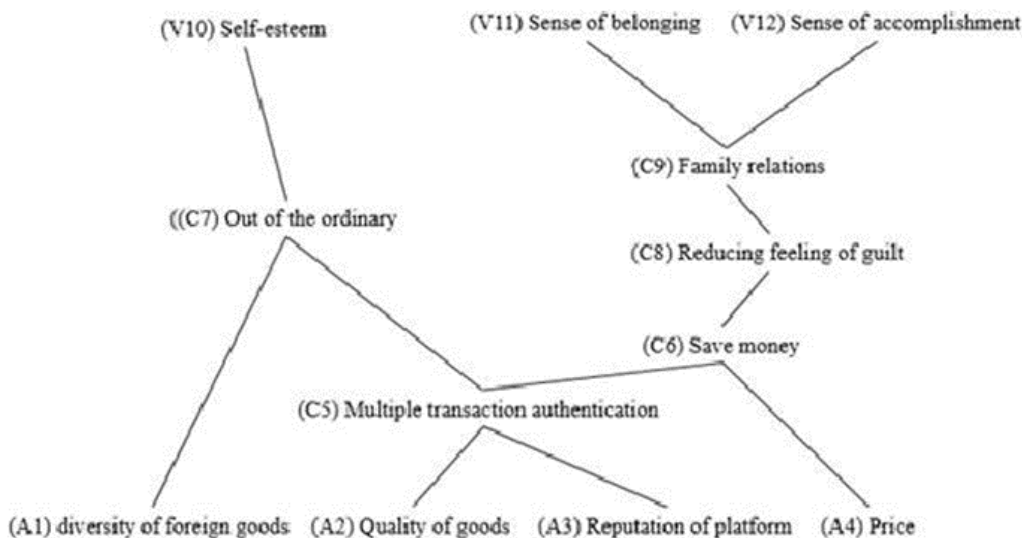

Figure 1：Schematic diagram of HVM

After finishing HVM, it can show a complete user cognitive architecture of cross-border online. Put the value level's elements into Maslow's hierarchy of needs, then researcher can sort these elements to find the value hierarchy. Researcher can also find the important attributes and consequences by their link relations with the values. For example, put (10) self-esteem, (11) sense of belonging and (12) sense of accomplishment into needs hierarchy, and it can be seen that (12) sense of accomplishment is in the highest level, next is (10) self-esteem and (11) sense of belonging is relatively low. According to Maslow's hierarchy definition (Maslow 1954), low-level needs must first be satisfied, before they can pursue the higher level needs. Showing that (11) sense of belonging must first be satisfied. And in order to satisfy (11) sense of belonging, the related attribute (4) price has the highest influence, next are (2) quality of goods and (3) reputation of platform (1) diversity of foreign goods has no influence to (11) sense

of belonging. This shows that cross-border online shopping service provider must pursue competitive prices, good quality and the credibility of its own platform first not the diversity of foreign goods.

RESEARCH RESULTS

Hierarchical Value Map in CBEC Consumers

This study uses Means-End Chain's "attribute-consequence-value" analysis to understand how Taiwanese consumers use cross-border online shopping service to match their personal values. First, create the HVM to understand the consumers' cognitive architecture of cross-border online shopping service. Next, apply these values in HVM to Maslow's hierarchy of needs to find the level positions of each value, then refer to the association relations of elements in HVM, find the important attributes in cross-border online shopping service.
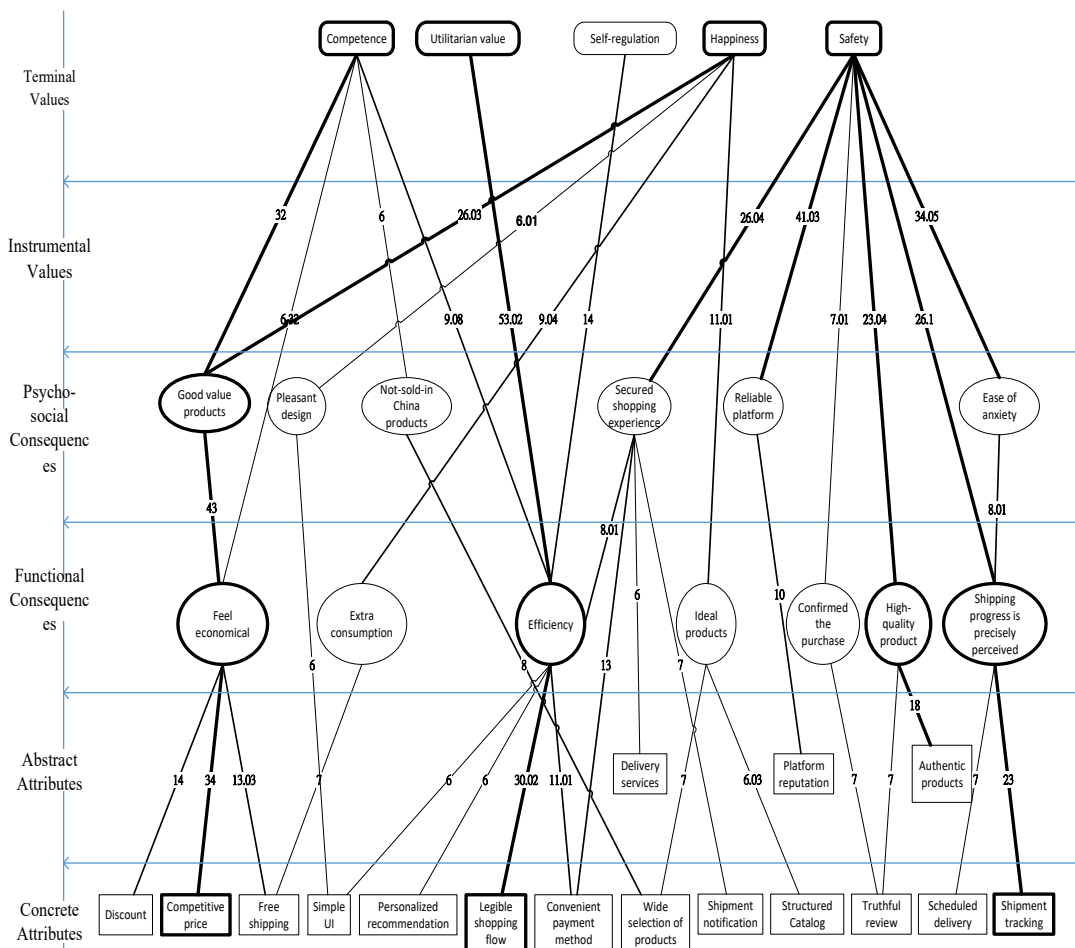

Figure 2：Hierarchical value map and value pathes

The HVM presents 4 important benefits obtaining paths marked as boldfaced, referred as economic oriented path, efficacy oriented obtaining path, choice optimization path, and shipping progress oriented path, those are shown in figure 2. Economic-oriented benefits are the one of the main important value obtaining path for CBEC consumers. It was evident that attributes such as "competitive price", "free shipment", and "discount" are the critical attributes perceived in economic driven path. Especially, the linkage of competitive price and feel economic are mentioned 34 times, and the linkage of good price value and feel economic are mentioned 34 times. The ultimate values are competence and happiness, referred as "consumers feel themselves to be capable to buy product with good price" and "consumers feel happy when they buy a product with low price".

Efficacy-oriented chain suggests another important value obtaining path in CBEC consumers. It was evident that attributes such as "legible shipping flow", "convenient payment method", "simple UI" and "personalized recommendation" are the critical attributes perceived in efficacy driven path. Especially, the linkage of legible shipping flow and efficacy are mentioned 30.2 times. The ultimate values is utilitarian, suggesting that the important value underpin of purchasing on CBEC is the utility of the shopping process.

Choice optimization-oriented chain suggest another important value obtaining path in CBEC consumers. It was evident that attributes of "authentic products". Especially, the linkage of authentic products and choice optimization are mentioned 18 times. The ultimate value is safety, suggesting that consumers value the safety of the products and shopping process while purchasing via CBEC channels.

Shipping progress perception-oriented chain suggest a last important value obtaining path in CBEC consumers. It was evident that attributes of "shipment tracking". The linkage of shipping progress perceived precisely and shipment tracking are mentioned 23 times. The ultimate values is safety, suggesting that consumers value the safety of shipment process while purchasing via CBEC channels.

IMPLICATIONS

Contribution to academic research: most of previous researches focus on domestic online shopping service. Fewer researches for cross-border online shopping service. In recent years, cross-border online shopping is on a vigorous development trend. This study takes the lead from perspective of consumers' personal value, combine with relevant theory basis, it will be more substantive and in-depth understanding of obstacles and opportunities that brought by the booming cross-border online shopping. The research results can be the future researches' reference.

Contribution to Practical application: online shopping websites are facing the difficulties of price and low-quality competition; cross-online shopping can be a good development direction. This study hopes to capture the deep inner thoughts and feelings of consumers, in order to deduce the behavior patterns of consumers, it can be reference of product development and marketing. Allowing manufacturers and brands can be output to the international market.

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