

Empirical Studies: COA Effects on Consumer Product Evaluation and Purchase Intention in Hong Kong Automobile Market

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Abstract

This study examines the effect of COA cues on consumers' product evaluations and purchase intentions in the Hong Kong automobile market. Two factors, namely consumer product involvement and consumer patriotism, are considered as the interaction effect in the research. Using Germany and China as the COA cues, responses from 240 Hong Kong automobile owners were generated from two sets of questionnaires. The findings show that COA has a significant effect on consumers' product evaluations and purchase intentions. However, with consumer product involvement and patriotism, consumers' product evaluations will be affected while their purchase intentions remain unchanged. This research assists automobile makers to understand the relationship between COA and consumers' product evaluations and purchase intentions in the domestic market. With the findings, automobile brands may formulate strategies in terms of the COA.

Keywords: Country of Assembly (C-O-A), Consumer Product Involvement, Consumer Patriotism, Product Evaluation; Purchase Intention

1. Introduction

With proliferating globalization and trade liberalization, consumers are increasingly exposed to a greater variety of multi-national material goods (Douglas, Craig, & Nijssen, 2001). In the decision-making process for purchases, consumers acquire information about products, including price, brand image, design, etc. Country-of-origin (COO) is one of the extrinsic cues that could possibly influence consumers' product evaluations and thereby impact the final purchase decision (Bilkey & Nes, 1982). Various COO studies have revealed that many consumers misclassify the COO of the brands and thus cast doubt over the COO effect on shaping consumers' consumption behaviors (Magnusson, Westjohn, & Zdravkovic, 2011; Balabanis & Diamantopoulos, 2008). Indeed, in today's integrated economy, COO can become unclear and difficult to define. With the adoption of internationalization strategy, automobile firms enjoy cost advantages by assigning the duties of assembly, design and manufacturing in developing countries where labor costs are reduced (Timmer, Dietzenbacher, Los, Stehrer, & Vries, 2015). For example, the German automobile industry, a key player in the market in terms of technological performance and car quality, usually separates and outsources assembly tasks to China (Herrigel, 2014). Although German cars are associated with positive perceptions, the assembly tasks performed in China might affect consumers' product evaluations and purchase intentions towards Germany's automobile brands.

The Chinese automobile industry has been developing rapidly since the announcement of the "Made-in-China 2025" plan in May 2015. The Chinese government raised concerns about the domestic electronic and technological industry and has consequently provided more support to local automobile brands to foster an industrial transformation from production to knowledge intensive manufacturing (Li, in press). With an increasing living quality, people in China now have a strong interest in the automobile industry.

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In the last decade, both the sales volume and the number of vehicles produced in China have increased sharply. Many Chinese automobile brands, like Geely, BYD and Chery, exist in the domestic automobile market (Chen, 2017). However, Holtbrügge and Zeier (2016) found that the Chinese cars are evaluated worse than the German cars due to the poor country image and product-related factors.

With different country images, consumers' product evaluations and purchase intentions towards cars assembled in China or Germany become uncertain. This is especially true in the case of Hong Kong, which is an important metropolitan hub with growing affluence and advanced telecommunication technology. Consumers' sensitivity to the COO of products thus becomes critical to many marketers. This study investigates the interactive relationship of Country-of-Assembly (COA), consumer product involvement and consumer patriotism in affecting Hong Kong automobile consumers' product evaluations and purchase intentions towards two automobile models under the same brand but assembled in two different countries, Germany and China.

1.1 Objectives of the Study

Numerous researchers (for example, Chinen & Sun, 2011; Josiassen & Assaf, 2010; Prendergast, Tsang, & Chan, 2010; Wang & Yang, 2008) have documented the effects of COO on various product categories and its interactive relationship with other moderating factors. However, the presence and strength of this relationship vary in different countries. Thus, there is a need to continuously develop new insights in this research area by studying the variables in different combinations and in different cultural contexts. In view of the growing car ownership and lack of research specifically on Hong Kong automobile consumers' purchase behaviors, this study investigates the following causal relationships by taking the automobile industry as the research field.

1. The effect of COA on consumers' product evaluation and purchase intention.
2. The moderating effect of consumer product involvement on the relationship between COA and consumers' product evaluation and purchase intention.
3. The moderating effect of consumer patriotism on the relationship between COA and consumers' product evaluation and purchase intention.

2. Literature Review

2.1 COUNTRY-OF-ORIGIN (COO)

The phenomena behind COO and the effect on consumers' brand preferences can be explained with the concept of product ethnicity. Roth and Romeo (1992) convincingly articulated the association between product category and country image, and subsequently defined it as "product ethnicity" in their COO research. Product ethnicity is the stereotypical association generated by stimuli such as product attributes and country image, which influence consumers' product evaluations and thereby affect the purchase intention (Usunier & Cestre, 2007). With product ethnicity, when products or brands are thought to originate from countries associated with high quality, consumers are more likely to perceive those as superior. For instance, Toyota, a Japanese automobile brand, is favorably perceived for technological competence because the country is specialized in electronics innovations; Volkswagen often promotes its cars by highlighting they are German designed because Germany is perceived to be highly competent at engineering (Fischer & Zeugner-Roth, 2017; Halkias, Davvetas, & Diamantopoulos, 2016; Aichner, Forza, & Trentin, 2017; Magnusson, Westjohn, & Zdravkovic, 2011). Products from certain origins are cognitively viewed as the best due to the specific resources and capabilities of that country.

However, some debates have criticized the effect of COO on consumers' purchase intentions when product category, globalization, consumer product involvement and consumer patriotism are being considered (Andéhn, Nordin, & Nilsson, 2016; Cilingir & Basfirinci, 2014; Guo & Zhou, 2017; Suh, Hur, & Davies, 2016). The usage of COO cue as an impacting factor is doubted when consumers fail to associate the brands or products with the image of the particular country (Samiee, Shimp, & Sharma, 2005). Under today's globalized economy, consumers find it difficult to identify the origin of the products when global sourcing and internationalization strategy are commonly adopted. Products with bilingual or translated information can possibly cause confusion regarding the product origin (Zhuang, Wang, Zhou, & Zhou, 2008; Tjiptono, Arli, & Rosari, 2015). Most consumers do not acquire the COO information and misidentify the brands' origins. Researchers have inferred that COO information is not taken into consideration in consumers' buying processes because consumers rarely accurately identify the brands' origins (Samiee, 2010). While some debates suggested that COO effect does not affect consumers' brand attitudes significantly.

Herz and Diamantopoulos (2017) have argued that consumers are in fact being affected by the COO in the decision-making process despite their disregard of the origins of the brands. Therefore, COO cue should be considered as one of the important factors that influence consumers' purchase intentions. There is also research to suggest that the level of importance consumers place on COO depends on the product type (Zhang, 1996; Ahmed & d'Astous, 1996). The majority of COO studies confirm that products that exhibit high complexity or are considered luxury items (i.e. cars, personal computers, cameras, and home theatre systems) are more likely to be affected by the product's made-in origin (Ahmed & d'Astous, 1996).

2.2 COUNTRY-OF-ASSEMBLY (COA)

Under a globalized economy, COO can no longer fully correspond to the home country of a specific type of product. Researchers have deconstructed COO effects into Country-of-Assembly (COA), Country-of-Design (COD), and Country-of-Manufacture (COM) for hybrid products (Rashid, Barnes, & Warnaby, 2016). COA refers to the country where the majority of the final assembly of the product takes place while COD and COM indicate the locations where the product is designed and manufactured respectively (Insch & McBride, 1999; Genç & Wang, 2017). They affect consumers' product evaluations and purchase intentions in different ways. With ongoing globalization, companies have shifted their assembly lines to other countries, such as China and Indonesia, to benefit from the low-cost production. COA thus becomes increasingly important when considering the COO effect towards consumers' product evaluations on products' functionality (Xing, 2016; Rashid, et al, 2016).

Wu, Ju and Dodoo (2016) explained COA effect on purchase intention with consumers' cognitive information processing. When consumers evaluate utilitarian products, information of COA will be considered as a cue to perceive the quality of the product. Under the Theory of Cognitive Dissonance (Festinger, 1962), if the COA information is consistent with consumers' existing cognitions, consumers tend to have a higher purchase intention and a favorable product evaluation. In the automobile industry, young generations are aware of the utility and functional features of the products (Shen, Chen, Liang, Pu, & Ma, 2012). Brands like BMW, Toyota and Honda have the majority of their assembly processes conducted in developing countries, such as China, to gain cost advantage (Xing, 2016). This study uses COA instead of COO to investigate more specifically its effects on Hong Kong automobile consumers' product evaluations and purchase intentions.

Although a significant number of studies have been carried out in the COA field, there are two major limitations that have been highlighted by some scholars. First, much of the past research works are wholly based on the made-in label or sometimes referred to as country of manufacture (COM) to investigate consumer behavior towards products from different countries. Fewer studies have considered the fact that global sourcing involves multiple sourcing locations/countries, although an increasing number are investigating COA as a multifaceted construct (Samiee, 1994). Second, the majority of COA research has been conducted in developed countries, mainly US, Canada and Europe (Zhang, 1996). There are limited studies relating to developing or non-western countries, especially Asian countries, although studies of these regions are growing. Consequently, the available knowledge of COA effects beyond western societies is limited.

2.3 Consumer Product Involvement

COO is not the only factor that affects consumers' evaluations on products. Researchers have explored the significance of COO effect with consumer product involvement and product knowledge. Some of them suggested that COO acts as a halo or a summary cue when consumers' degrees of familiarity towards the country's products are different (Han, 1989; Insch & McBride, 2004; Josiassen, Lukas, & Whitwell, 2008). Individuals experience different levels of product involvement in the decision-making process. Involvement is defined as consumers' levels of awareness and understanding of a product or brand (Dholakia, 2001). High-involved customers are more interested in acquiring product information and perceiving differences about product attributes than low-involved customers (Zaichkowsky, 1985). Cilingir and Basfirinci (2014) confirmed that COO effect on high-involved consumers is limited as they not only consider the perceptions of a certain country but also the physical attributes of the brand. As such, COO information should be utilized to target the low-involved, less-knowledgeable consumers, maximizing its effects on consumers' purchase intentions towards products made in a specific country. Automobiles are usually perceived as high-involved purchases due to their perceived high financial risk. Consumers tend to invest time and take into consideration other information, such as price and brand, rather than make purchases based on the COO cue only.

Therefore, product involvement levels determine whether the consumer will take the central route (rely more on factual information) or the peripheral route (rely more on images) to evaluate the product under the Elaboration Likelihood Model (Petty, Cacioppo, & Goldman, 1981). High-involved consumers tend to rely more on information processing and take the central route whereas low-involved consumers are more likely to be influenced by non-contextual factors like the attractiveness of the source during product evaluation and hence take the peripheral route in reaching the purchase decision (Zaichkowsky, 1986; Pansari & Kumar, 2017).

2.4 Consumer Patriotism

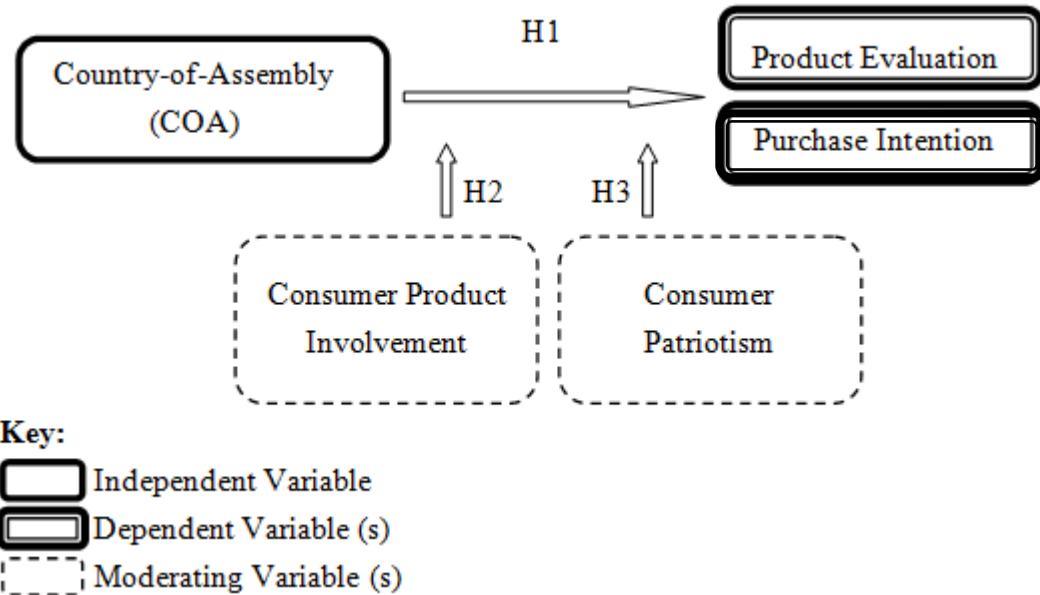
Although the positive impacts of product ethnicity increase consumers' purchase intentions and product evaluations, ethnocentric and patriotic consumers might normatively process COO information and purchase the local alternatives which are in fact inferior when compared with the foreign product. Individuals with ethnocentrism believe that it is morally inappropriate to consume imported goods (Shimp, & Sharma, 1987; Guo & Zhou, 2017; Acikdilli, Ziemnowicz, & Bahhouth, 2017). Nik, Noor, and Jamal (2015) suggested that ethnocentric consumers often overestimate the quality of domestic products, which are deemed as superior to protect the national economy and employment, while patriotic consumers appreciate products made in their home country without having negative or defensive emotions towards foreign goods. According to previous studies (Che, Syed, & Nor, 2015), instead of consumer ethnocentrism, consumer patriotism is the key driver that positively affects consumers' purchase intentions and actual purchasing behavior. COO effect on brand localness has a stronger impact on consumers' brand evaluations than the brand globalness (Halkias, Davvetas, & Diamantopoulos, 2016). The Chinese government has been striving to develop China's domestic market with its "Buy China" campaign since 2009 (Tsai, Yoo, & Lee, 2013). Under the patriotic promotion, China's automobile industry has been rapidly developed. Chinese automobile brands like BYD, Chery and the Great Wall are expanding their market share in the domestic market because Chinese consumers have an increasing expectation of these brands (Wu, 2015). Patriotism could be one of the factors that stimulates people's emotional behaviors and affects their decision-making processes. COO is a double-edged sword. With economic development and national culture, COO effect on consumers' product judgements can be different from place to place.

2.5 Transformation of the COO concept into COA with Consumer Product Involvement and Consumer Patriotism

Some studies have suggested that globalization has become necessary in today's competitive marketplace with firms often outsourcing various parts of their production and operations to different countries in search of the lowest possible cost and greater expertise. This phenomenon has led to products being designed, manufactured and component parts supplied from different countries, and to then be assembled in a labor-intensive country like China. As an illustrative example, a General Motors (GM) car could be designed in Italy, have the engine and transmission components produced in Japan and be assembled in Mexico. Such multinational production has generated a vast number of hybrid goods not only in the automobile sector but also for many electronic items such as televisions or components. The practice of global sourcing has motivated several researchers to focus on different facets of COO by making distinctions between countries where products were manufactured, designed or where parts/components were made. While various studies have confirmed that each of these production locations have different levels of influence on consumers' perceptions of product quality (Insch & McBride, 1999), it is becoming clear that a decomposition of COO into more specific parts, such as country-of-assembly (COA), is essential given the current global marketplace. In general, country-of-assembly (COA) can refer to where the product is assembled (Insch & McBride, 1999; Ahmed & d'Astous, 1996).

It is important to identify the origin of the different aspects of products as it may influence consumer decision-making and behavior. There is evidence to suggest that highly industrialized countries, such as Japan, US or Germany, are evaluated as superior in the case of design capabilities. In competition with the influence of such reputations, consumer product involvement and consumer patriotism play an important role in the Chinese market as Mainland Chinese are highly patriotic. However, Hong Kong Chinese are not the same as Mainland Chinese. Hong Kong Chinese refers to the people born and educated during the time Hong Kong was British colony. This lends a further uniqueness to this study as Hong Kong consumers do make a cognitive distinction on the COA in their product decision purchasing intention and evaluation under the influence of the consumer patriotic effect. Based on the above elaboration, we make use of the model to develop the hypotheses.

3. Conceptual Framework and Hypothesis



The above conceptual model was constructed to study the variables in this investigation with reference to the models adopted by Chao (2001) and Chao (1993). Although much of the early research had confirmed the significant and positive relationship among COO, product evaluation and purchase intention (Chinen & Sun, 2011; Tigli, Pirtini, & Erdem, 2010; Josiassen & Assaf, 2010; Wang & Yang, 2008; Kim, 2006; Lin & Chen, 2006; Ahmed, Johnson, Yang, Chen, Han, & Lim, 2004; Beverland & Lindgreen, 2002). Wu and Fu (2007) suggested that COO cue significantly affects consumers' product evaluations but not their ultimate purchase intentions. Insch (2003) and Chao (1993) specifically investigated the COA within the COO context and its positive relationship with purchase intention. However, the previous COA research was outdated and insufficient to explain the COA effects on consumers' consumption behaviors. Hence, further studies of the effect of COO/ COA on different product categories in different cultural contexts are required. In view of the change in magnitude of COA effect over time, and the lack of research in the Hong Kong automobile industry in this area, the following hypotheses were formulated to investigate the relationship.

H1a: COA and product evaluation are significantly related.

H1b: COA and purchase intention are significantly related.

Studies such as Josiassen and Assaf (2010) have found that consumers are more likely to process more information when they are more highly involved with the purchase. As such, COO effect would be weakened as COO would only be one of the cues in the purchase evaluation. It was found that the relationship between COO and consumers' product evaluations and purchase intentions would be influenced to a greater extent when consumers are of low product involvement (Josiassen & Assaf, 2010; Prendergast et al., 2010; Josiassenet al., 2008; Pharr, 2005; Verlegh & Steenkamp, 1999; Maheswaran, 1994). Since the relationship between COA and consumers' levels of product involvement has not been studied yet, it is unclear whether COA will affect consumers' product evaluations and purchase intentions when consumer product involvement is considered. This leads to the development of the second set of hypotheses.

H2a: COA affects product evaluation of consumers with low product involvement more than consumers with high product involvement.

H2b: COA affects purchase intention of consumers with low product involvement more than consumers with high product involvement.

There are studies that demonstrate a significant influence by consumer patriotism in moderating the relationship between COA and consumers' purchase evaluations and intentions (Chinen & Sun, 2011; Zafer Erdogan & Uzkurt, 2010; Maher, Clark, & Maher, 2010; Klein, 2002).

Consumers with a high level of patriotism were found to perceive their home countries' products more favorably than those with a low level of patriotism and to be more inclined to purchase products from their own countries (Zafer Erdogan & Uzkurt, 2010; Samiee, 1994).

Patriotism among Hong Kong people has raised some heated debates in recent years. After the return of Hong Kong to Mainland China, there has been much discussion regarding the national identity and whether the people consider themselves to be Chinese, Hong Kongers or Hong Kong Chinese. In the study of Hong Kong's cultural-political economy and the existence of patriotism, Ng and Lai (2011) argue that people who view themselves with the internalization of Western culture ignore China and exhibit patriotism towards Hong Kong only, whereas others have a higher level of patriotism towards China. Given the complex social environment and the inconsistent levels of patriotism, the effects of COA on consumers' purchase evaluations and intentions in the Hong Kong market may be different than the results from previous studies. These considerations lead to the third set of hypotheses.

H3a: COA affects product evaluation of consumers with high patriotism more than consumers with low patriotism.

H3b: COA affects purchase intention of consumers with high patriotism more than consumers with low patriotism.

4. Methodology

4.1 Design of the Study

Automobile was selected as the product category for the study due to the increasing importance of the automobile industry and private car ownership in Hong Kong.⁵ Germany was chosen as one of the study countries because there is a general stereotype that Germans are industrious and that cars manufactured in Germany are superior and of good quality (Tse & Wah, 1996; Milbank, 1994). On the other hand, China was selected to be the other country as it has an image of being a low-cost manufacturer (Chinen & Sun, 2011). With Chinese labeling, domestic Chinese automobile brands suffer from negative evaluation compared to other countries due to previous scandals of its manufactured products in terms of quality, workmanship and durability (Holtbrügge & Zeier, 2016). Consumers are also believed to be more receptive to products manufactured in more advanced countries, such as Germany, than those from less advanced countries like China (Chinen & Sun, 2011). Two sets of questionnaires were designed to discover the interactive relationship among COA, consumer product involvement, consumer patriotism, product evaluation and purchase intention.

4.2 QUESTIONNAIRE DESIGN

The research adopted the survey instrument suggested by Ahmed, Johnson, Pei Ling, Wai Fang and Kah Hui (2002). Two sets of nearly identical questionnaires were designed. Respondents were asked to complete one set of questionnaires which consisted of six parts. The first part of the questionnaires consisted of two screening questions asking the respondents about their car ownership situation and familiarity with automobiles (Wang & Yang, 2008) on a five-point semantic differential scale. In the second part, respondents were shown one automobile (Questionnaire Set 1 featured an automobile assembled in China while Set 2 featured an automobile assembled in Germany). All product specifications of the two models were held constant except their COA in order to test the COA effect on product evaluation and purchase intention. Four items which are applicable to the automobile evaluation in this study were selected to measure the respondents' product evaluations with reference to Roth and Romeo (1992)'s nine-item measurement and Han (1990)'s five-item measurement. Next, the study measured the purchase intention on the five-point scale by asking the respondents their overall purchase intention towards the stated automobile (Han, 1990; Erickson, Johansson, & Chao, 1984) and the influence of COA in affecting their decision. In the fourth part, the product involvement level of respondents was measured by a ten-item measurement (Zaichkowsky, 1994) with the five-point semantic differential scale. In the fifth section, a four-item five-point semantic differential scale (Consumer Ethnocentrism Scale: CETSCALE) was used to measure the consumer patriotism level of respondents (Zapata, Martínez, & Molina, 2002; Han, 1989). In the last section, four questions were designed to collect the demographic information, including gender, age, education level and personal monthly income, from respondents.

⁵According to 2018 figures by the Transport Department, HKSAR, the number of private cars per 1000 population in Hong Kong has risen steadily from 50.6 in 2010 to 58.4 in 2018.

4.3 Sampling Methodology

Hong Kong automobile owners above the age of 18 were selected as the unit-of-analysis of the study. A pretest questionnaire was conducted with 15 respondents by personal interview before the distribution of the final questionnaire to identify and eliminate potential problems. Question content, wording, and sequence of questions of the questionnaire were tested with the hope of making improvements on any potential problems.

A total of 240 questionnaires were collected from an online survey system and by convenient sampling in car parks through face-to-face interviews with respondents. The data was gathered between the 2015 and 2016.

4.3.1 Demographic Profile of Respondents

Table 1 shows the demographic profile of the respondents. Two versions of the questionnaire with 120 valid respondents for each set counted to a total of 240 valid questionnaires being received. All the respondents were Hong Kong automobile owners, with one half being male and the other half female. Most of them fell within the age range of 35-44 years old and 45-54 years old, which accounted for 37.5% and 35.8% respectively. In terms of education level, nearly two-thirds of the respondents were above tertiary level. For the personal monthly income, more than a third of the respondents earned HK\$40,000 or above, followed closely by over a quarter of the respondents falling within the range of HK\$30,000-39,999, while a number of respondents refused to reveal their monthly income.

Table 1. Respondents' Demographic Profile of Valid Samples

Variables		Frequency	Percent	Cumulative Percent
Gender	Male	130	54.2	54.2
	Female	110	45.8	100.0
	Total	240	100.0	
Age	18-25	10	4.2	4.2
	26-34	42	17.5	21.7
	35-44	90	37.5	59.2
	45-54	86	35.8	95.0
	55 or above	12	5.0	100.0
	Total	240	100.0	
Education Level	Primary level or above	0	0	0
	Secondary level	16	6.7	6.7
	Tertiary level	92	38.3	45.0
	Above tertiary level	132	55.0	100.0
	Total	240	100.0	
Personal Monthly Income (HKD)	<\$10,000	0	0	0
	\$10,000-14,999	8	3.3	3.3
	\$15,000-19,999	8	3.3	6.9
	\$20,000-24,999	34	14.2	21.6
	\$25,000-29,999	40	16.7	38.8
	\$30,000-39,999	68	28.3	68.1
	\$40,000+	74	30.8	100.0
	Total	232	96.7	
	Missing	8	3.3	

4.4 Data Analysis Methods

Analysis with the aid of PASW18 was conducted after data collection from the sample of Hong Kong automobile owners. To ensure the quality of the measurement, a reliability test was conducted. Two paired sample t-tests were employed to measure the strength and direction of the relationship between COA and product evaluation and purchase intention. With the use of between-subjects two-way ANOVA analysis, the interactive relationship between COA and consumer product involvement on product evaluation and purchase intention, as well as the relationship between COA and consumer patriotism on product evaluation and purchase intention, were analyzed.

5. Analysis and Finding

5.1 RELIABILITY TEST

To measure the internal consistency, reliability tests were conducted for the four product evaluation questions, 10 consumer product evaluation questions and four consumer patriotism questions. The results of Cronbach's Alpha of all the reliability tests are greater than the threshold of 0.7, indicating that all variables are reliably measured with a high internal consistency (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014).

5.2 hypothesis Testing

H1a: COA and product evaluation are significantly related.

Respondents were asked to evaluate two automobile models with the only difference being their COA (one was assembled in China; another was assembled in Germany). Respondents' product evaluations towards the automobile assembled in China has a mean of 2.50 (S.D.=0.632) whereas the product evaluations towards the automobile assembled in Germany has a mean of 4.34 (S.D.=0.558), which is much higher than that of the Chinese automobile model. A paired sample t-test was conducted to test whether the means of product evaluations toward the two automobile models are significantly different (see table 2 and table 3). The result reveals that respondents' product evaluations regarding the automobiles assembled in China and Germany are significantly different ($t_{(119)}=-23.60$, $p<0.05$). Respondents have more favorable product evaluations towards the German automobile than the Chinese one. Therefore, H1a is supported.

Table 2.Descriptive Statistics of Paired Sample t-test of Product Evaluation

	Mean	N	S.D.	SEM
Product evaluation of COA in China	2.50	120	0.632	0.058
Product evaluation of COA in Germany	4.34	120	0.558	0.051

Notes:

N = Number of response

S.D. = Standard deviation

SEM = Standard error of the mean

Table 3.Results of Paired Sample t-test for Significant Difference in Product Evaluation

	Mean	S.D.	SEM	CC	DF
Product evaluation of COA in China	-1.842	0.855	0.078	-23.596***	119
Product evaluation of COA in Germany					

Notes:

S.D. = Standard deviation

SEM = Standard error of the mean

CC = Correlation coefficient

DF = Degree of freedom

*** $p<0.000$

H1b: COA and purchase intention are significantly related.

In addition to the product evaluations, respondents were also asked to indicate their purchase intentions towards the two automobile models. Respondents' purchase intentions towards the Chinese automobile model has a mean of 1.94 (S.D.=0.781). On the other hand, respondents have a much higher purchase intention towards the German automobile model with a mean of 4.01 (S.D.=0.930) A paired sample t-test was conducted to compare the respondents' purchase intentions toward the two automobile models (see table 4 and table 5). The results show that there is a significant difference between the purchase intentions of the two automobiles ($t_{(119)}=-19.56$, $p<0.05$). Again, respondents show a higher purchase intention towards the German automobile than the Chinese automobile. Therefore, H1b is supported.

Table4. Descriptive Statistics of Paired Sample t-test of Purchase Intention

	Mean	N	S.D.	SEM
Purchase Intention of COA in China	1.94	120	0.781	0.071
Purchase Intention of COA in Germany	4.01	120	0.930	0.085

Notes:

N = Number of response**S.D.** = Standard deviation**SEM** = Standard error of the mean**Table 5. Results of Paired Sample t-test for Significant Difference in Purchase Intention**

	Mean	S.D.	SEM	CC	DF
Purchase Intention of COA in China	-2.067	1.158	0.106	-19.557***	119
Product Intention of COA in Germany					

Notes:

S.D. = Standard deviation**SEM** = Standard error of the mean**CC** = Correlation coefficient**DF** = Degree of freedom

***p < 0.000

H2a: COA affects product evaluation of consumers with low product involvement more than consumers with high product involvement.

According to the descriptive analysis of respondents' product involvement, one half of respondents belong to the group of high product involvement (49.2%) while the other half of respondents belong to the low product involvement group (50.8%).

A between-subjects two-way ANOVA was conducted to determine the interaction effects of COA and consumer product involvement on respondents' product evaluation towards the two automobile models. Both COA and consumer product involvement are between-subjects variables with product evaluation being the dependent variable. Descriptive statistics (see table 6) show that product evaluation of automobile assembled in China has a mean of 2.82 (S.D.=0.407) while the one assembled in Germany has a higher mean of 4.35 (S.D.=0.602) in the high product involvement group. In the low product involvement group, the evaluation of Chinese automobile model has a mean of 2.19 (S.D.=0.660) whereas that of the German model has a higher mean of 4.34 (S.D.=0.516). These figures indicate that both high and low product involvement groups tend to have a higher evaluation towards the automobile assembled in Germany than in China.

**Table 6.Descriptive Statistics of Two-way Between-Subjects ANOVA Analysis
(Dependent variable: product evaluation)**

COA	Product Involvement	Mean	S.D.	N
China	High Involvement	2.82	0.407	59
	Low Involvement	2.19	0.660	61
	Total	2.50	0.632	120
Germany	High Involvement	4.35	0.602	59
	Low Involvement	4.34	0.516	61
	Total	4.34	0.558	120

Notes:

S.D. = Standard deviation**N** = Number of response

The two-way analysis result (see table 7 and figure 2) shows that there is a significant interaction effect of COA and consumer product involvement on consumers' product evaluation ($F=18.32$, $p<0.05$). The mean difference of product evaluation towards Chinese and German automobiles among the high product involvement consumers is 1.53 (=4.35-2.82) while the mean difference among the consumers with low product involvement is 2.15 (=4.34-2.19).

Based on the mean difference of the respondents' product evaluation towards the two automobile models without taking product involvement into consideration (i.e. $1.84 = 4.34 - 2.5$), it can be concluded that COA has a higher effect on low-involved consumers than highly-involved consumers. It may due to the former group of consumers take more consideration of the COA effect when evaluating the two automobiles, while the latter group is less influenced by the COA cue. Therefore, H2a is supported.

**Table 7. Results of Two-way Between-Subjects ANOVA Analysis
(Dependent variable: product evaluation)**

Source	SS	DF	Mean ²	CC	η^2
COA	202.319	1	202.319	656.178***	0.735
COA & Product Involvement	5.649	1	5.649	18.322***	0.072
Error	72.766	236	0.308		

Notes:

SS = Sum of squares

DF = Degree of freedom

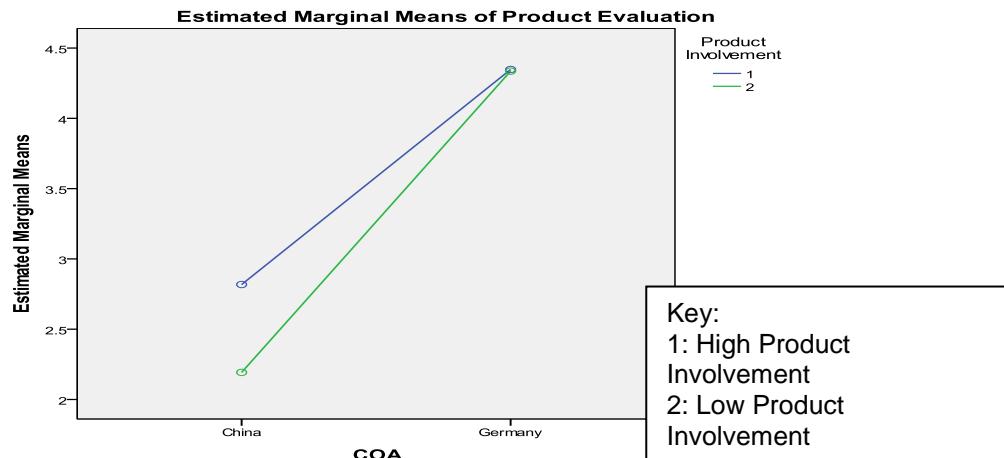
Mean² = Mean square

CC = Correlation coefficient

η^2 = Partial eta squared

*** $p < 0.000$

Figure 2. Results of Two-way ANOVA Analysis of Consumer Product Involvement and COA on Product Evaluation



H2b: COA affects purchase intention of consumers with low product involvement more than consumers with high product involvement.

Another between-subjects two-way ANOVA was conducted to test the interaction effects of COA and consumer product involvement on respondents' purchase intentions towards the two automobile models. COA and consumer product involvement are between-subjects variables while the purchase intention is the dependent variable. The descriptive statistics (see table 8) show the purchase intention towards the automobile assembled in China has a mean of 1.98 (S.D.=0.754) whereas the automobile assembled in Germany has a mean of 4.08 (S.D.=0.816) among high-involved consumers. On the other hand, the purchase intention of low-involved consumers towards the Chinese automobile model accounts for a mean of 1.90 (S.D.=0.810) while that of the German model is 3.93 (S.D.= 1.031). It shows both high and low product involved consumers have a higher purchase intention towards the German model than the Chinese model.

**Table 8. Descriptive Statistics of Two-way Between-Subjects ANOVA Analysis
(Dependent variable: purchase intention)**

COA	Product Involvement	Mean	S.D.	N
China	High Involvement	1.98	0.754	59
	Low Involvement	1.90	0.810	61
	Total	1.94	0.781	120
Germany	High Involvement	4.08	0.816	59
	Low Involvement	3.93	1.031	61
	Total	4.01	0.930	120

Notes:

S.D. = Standard deviation

N = Number of response

The two-way analysis result (see table 9 and figure 3) reveals that there is no significant interaction relationship between COA and consumer product involvement on consumers' purchase intentions ($F=0.10$, $p>0.05$). Although there is a significant COA effect on the respondents' purchase intentions ($t_{(119)}=-19.56$, $p<0.05$), the effect of COA does not have a significant difference between the consumers with high and low product involvement levels. Therefore, H2b is not supported.

**Table 9. Results of Two-way Between-Subjects ANOVA Analysis
(Dependent variable: purchase intention)**

Source	SS	DF	Mean ²	CC	$\eta^2 p^2$
COA	256.338	1	256.338	346.270***	0.595
COA& Product	0.071	1	0.071	0.096	0.000
Involvement					
Error	174.707	236	0.740		

Notes:

SS = Sum of squares

DF = Degree of freedom

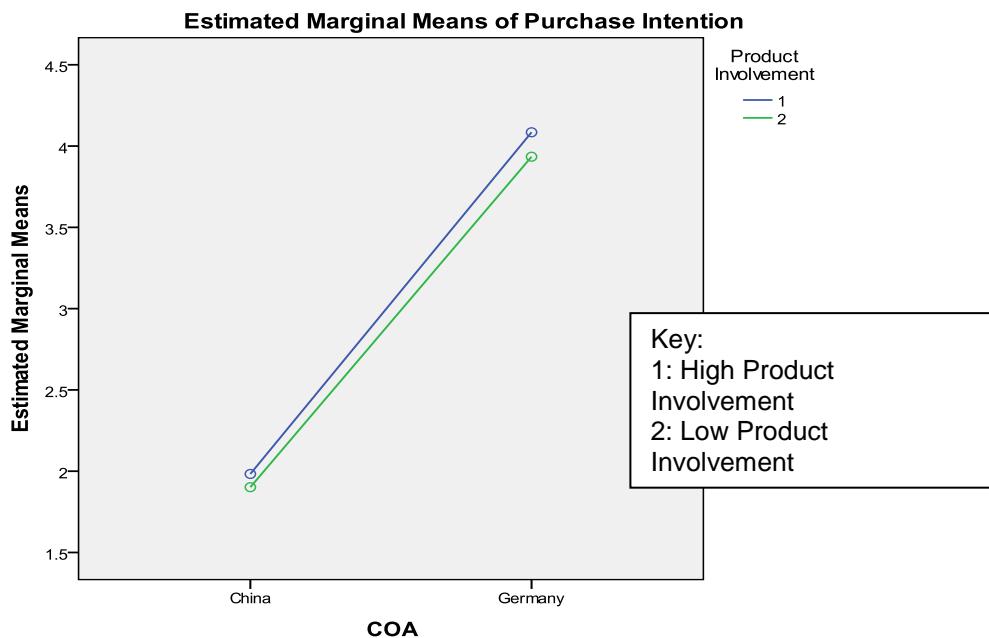
Mean²= Mean square

CC = Correlation coefficient

$\eta^2 p^2$ = Partial eta squared

*** $p < 0.000$

Figure 3. Results of Two-way ANOVA Analysis of Consumer Product Involvement and COA on Purchase Intention



H3a: COA affects product evaluation of consumers with high patriotism more than consumers with low patriotism.

The descriptive analysis of respondents' patriotism levels reveals that a little under half of the respondents belong to the high patriotism group (44.2%) whereas nearly two-thirds of the respondents are classified as possessing low patriotism (55.8%).

A between-subjects two-way ANOVA was conducted to find the interaction effects of COA and consumer patriotism on respondents' product evaluations towards the two automobile models. COA and consumer patriotism are between-subjects variables with product evaluation being the dependent variable. Descriptive statistics (see table 10) reveal that product evaluation of the automobile assembled in China has a mean of 2.92 (S.D.=0.404) while the one assembled in Germany has a higher mean of 4.38 (S.D.=0.590) among the high patriotism consumers. On the other hand, in the low patriotism consumer group, the evaluation of Chinese automobile model has a mean of 2.17 (S.D.=0.581) whereas the German model has a higher mean of 4.31 (S.D.=0.533). The figures show that both high and low consumer patriotism groups have a higher evaluation towards the automobile assembled in Germany than the one assembled in China.

**Table 10. Descriptive Statistics of Two-way Between-Subjects ANOVA Analysis
(Dependent variable: product evaluation)**

COA	Consumer Patriotism	Mean	S.D.	N
China	High Patriotism	2.92	0.404	53
	Low Patriotism	2.17	0.581	67
	Total	2.50	0.632	120
Germany	High Patriotism	4.38	0.590	53
	Low Patriotism	4.31	0.533	67
	Total	4.34	0.558	120

Notes:

S.D. = Standard deviation

N = Number of response

The two-way analysis result (see table 11 and figure 4) shows that there is a significant interaction effect between COA and consumer patriotism on consumers' product evaluations ($F=23.85$, $p<0.05$). Given the data presented in table 10, consumers with a high or low patriotism present a similar product evaluation towards the

German automobile model. However, consumers with high patriotism have a much higher evaluation towards the Chinese automobile model than the low patriotism consumers. The results reveal that consumers with higher patriotism have a more favorable impression towards the COA cue of the automobile assembled in China. Thus, they evaluated the Chinese model with relatively high points than the low patriotism consumers. In other words, consumers with high patriotism are more affected by the COA cue than those of low patriotism when evaluating the two automobile models. Therefore, H3a is supported.

**Table 11. Results of Two-way Between-Subjects ANOVA Analysis
(Dependent variable: product evaluation)**

Source	SS	DF	Mean ²	CC	η^2
COA	192.186	1	192.186	670.878***	0.740
COA& Consumer Patriotism	6.832	1	6.832	23.849***	0.092
Error	67.607	236	0.286		

Notes:

SS = Sum of squares

DF = Degree of freedom

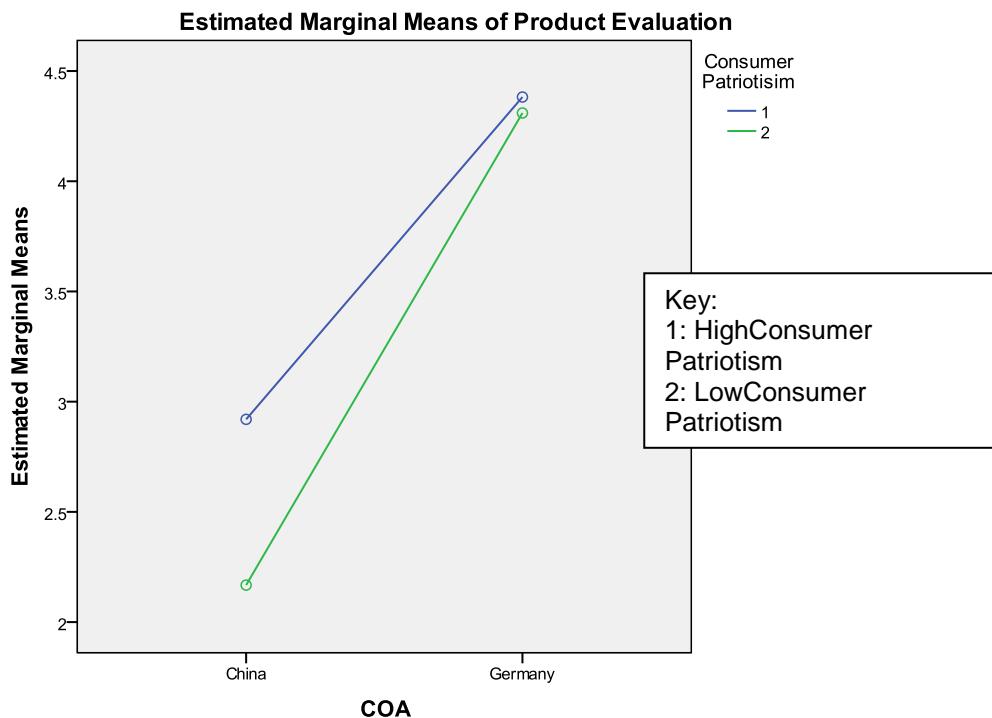
Mean²= Mean square

CC = Correlation coefficient

η^2 = Partial eta squared

***p < 0.000

Figure 4. Results of Two-way ANOVA Analysis of Consumer Patriotism and COA on Product Evaluation



H3b: COA affects purchase intention of consumers with high patriotism more than consumers with low patriotism.

Another between-subjects two-way ANOVA was conducted to determine whether there is an interaction effect between COA and consumer patriotism on respondents' purchase intentions towards the two automobiles. COA and consumer patriotism are between-subjects variables while purchase intention is the dependent variable. The descriptive statistics (see table 12) show the purchase intention towards the automobile assembled in China has a mean of 2.08 (S.D.=0.781) whereas the automobile assembled in Germany has a mean of 4.13 (S.D.=0.900) among

high patriotism consumers. On the other hand, the purchase intention of consumers with low patriotism towards the Chinese automobile model accounts for a mean of 1.84 (S.D.=0.771) while the German model is 3.91 (S.D.= 0.949). It reveals both consumers of high and low patriotism levels have a higher purchase intention towards the German model than the Chinese model.

**Table 12.Descriptive Statistics of Two-way Between-Subjects ANOVA Analysis
(Dependent variable: purchase intention)**

COA	Consumer Patriotism	Mean	S.D.	N
China	High Patriotism	2.08	0.781	53
	Low Patriotism	1.84	0.771	67
	Total	1.94	0.781	120
Germany	High Patriotism	4.13	0.900	53
	Low Patriotism	3.91	0.949	67
	Total	4.01	0.930	120

Notes:

S.D. = Standard deviation

N = Number of response

The two-way analysis result (see table 13 and figure 5) reveals that there is no significant interaction effect between COA and consumer patriotism on consumers' purchase intentions ($F=0.01$, $p>0.05$).

Although there is a significant COA effect on the respondents' purchase intentions ($t_{(119)}=-19.56$, $p<0.05$), the effect of COA does not have a significant difference between the consumers of high and low patriotism levels. Therefore, H3b is not supported.

**Table 13.Results of Two-way Between-Subjects ANOVA Analysis
(Dependent variable: purchase intention)**

Source	SS	DF	Mean ²	CC	ηp ²
COA	252.521	1	252.521	345.618***	0.594
COA & Consumer Patriotism	0.005	1	0.005	0.007	0.000
Error	172.430	236	0.731		

Notes:

SS = Sum of squares

DF = Degree of freedom

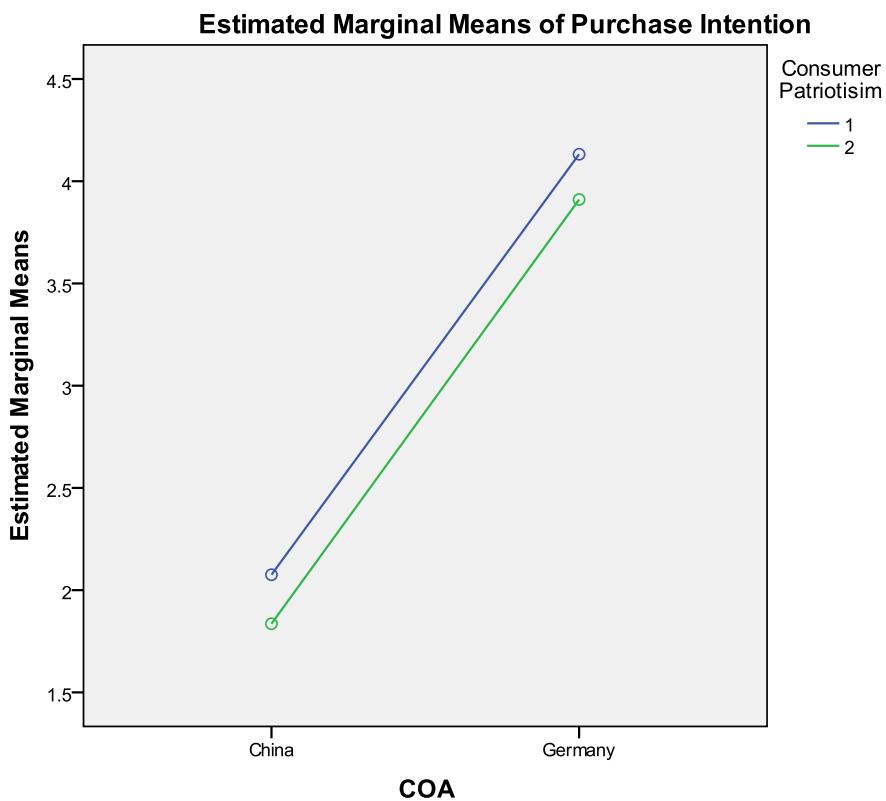
Mean²= Mean square

CC = Correlation coefficient

ηp² = Partial eta squared

***p < 0.000

Figure 5.Results of Two-way ANOVA Analysis of Consumer Patriotism and COA on Purchase Intention

**Table 14. Summarized Hypotheses Testing Results**

Hypothesis	Correlation Coefficient	P-Value	Results
H1a: COA and product evaluation are significantly related.	-23.596***	0.000	Supported
H1b: COA and purchase intention are significantly related.	-19.557***	0.000	Supported
H2a: COA affects product evaluation of consumers with low product involvement more than consumers with high product involvement.	18.32***	0.000	Supported
H2b: COA affects purchase intention of consumers with low product involvement more than consumers with high product involvement.	0.096	0.757	Not Supported
H3a: COA affects product evaluation of consumers with high patriotism more than consumers with low patriotism.	23.849***	0.000	Supported
H3b: COA affects purchase intention of consumers with high patriotism more than consumers with low patriotism.	0.005	0.935	Not Supported

Notes:

***p<0.000

6. Discussion and Implications

6.1 Discussion

Bilkey and Nes (1982) analyzed 25 COO studies and concluded that COO would influence consumers' perceptions of products in a quantitative approach. Results of the study reveal that COA cue is an important construct in consumers' minds in their product evaluations and purchase decision processes. The findings are consistent with the observation of early researchers such as Seidenfuss, Kathawala and Dinnie (2010), Insch (2003), Chao (2001), Ahmed and d'Astous (1996) and Chao (1993) on the study of the effect of COO or COA cue in making evaluation and purchase decisions. This proves that Hong Kong automobile owners are very likely to be influenced by the COA information when evaluating and purchasing automobiles. They tend to view automobiles assembled in more developed countries like Germany more favorably than those assembled in developing countries, such as China, as they would perceive automobiles from Germany have a higher quality and reputation than those from China (Seidenfuss et al., 2010).

Regarding the interaction effect of product involvement level on consumers' product evaluations and purchase intentions, the study results do not completely agree with the existing literature, such as Joiassen and Assaf (2010) and Chao (2001). Consumers' product evaluations are different from their purchase intentions. Product evaluation is concerned more with the attitudinal side, which is directly affected by product perceived value, while purchase intention is more about the behavioral side of consumers' purchase decisions (Dodds, Monroe, & Grewal, 1991). Much of the early research did not clearly separate the analysis of the COO effect on consumers' product evaluations and purchase intentions. Most of the research that clearly puts emphasis to test on both the product evaluation and purchase intention in the COO topic tends to have a consistent result. For example, a significant interaction relationship on both product evaluation and purchase intention was found in Lin and Chen (2006) and Chao (2001)'s studies whereas Joiassen and Assaf (2010) found there was an insignificant relationship.

The findings from this study are aligned with the argument proposed by Wu and Fu (2007). Consumer product involvement and COA have a significant interaction effect on consumers' product evaluations but not on their purchase intentions. Consistent with former literature, placing more attention on the image of the product when doing evaluation, low-involved consumers are more sensitive to the COA cue and tend to view automobiles assembled in China much less favorably than the high-involved consumers. However, results show that the two groups of consumers do not differ significantly when it comes to the purchase decision-making stage. In other words, the interaction effect of COA and product involvement diminishes from the evaluation stage to the decision-making stage.

Another moderating variable being studied is consumer patriotism. It is again shown that there is also a significant interaction effect of COA and consumer patriotism on product evaluation but not purchase intention. Consumers with higher patriotism levels are expected to evaluate the COA cue of China more favorably than those with lower patriotism levels, as they tend to exhibit greater support for their own countries' products (Chinen & Sun, 2011). Nevertheless, when it comes to their purchase intentions, the two consumer groups do not have any significant differences in making their purchase decisions.

It can be concluded that in the automobile industry, COA has a significant effect on consumers' product evaluations and purchase intentions. When consumers' product involvement levels and patriotism levels are also taken into consideration, the COA cue only has significantly different effects on the product evaluation of different groups of consumers, but not their purchase intentions. Consumers with lower product involvement levels and higher patriotism levels are more likely to evaluate automobiles based more on the COA cues. Both the interaction effects of COA with product involvement and patriotism level diminish from the evaluation to the purchase decision stage, which agrees with former studies. The results also indicate that COO effect on product evaluation may be not necessarily transfer to purchase intention. The relationship may be affected by factors such as the country image, cultural context and consumers' preferences. However, as the relationship between product evaluation and purchase intention is not the key focus of this study, further studies are required to better understand these findings.

6.2 Managerial Implications

In today's vibrant business environment, globalization and trade liberalization are inevitable trends. It is expected that many corporations will continue to have operations in different countries in order to achieve purposes such as minimizing operating costs, opening up new markets and so on.

The automobile industry is certainly one of these business fields in which its assembly lines are likely to be continuously spreading worldwide to gain cost advantages in the future. In accordance with the previous literature, such as Chao (2001), the study proved that COA is an important cue in influencing consumers' purchase evaluations and decisions. Understanding the effect of COA cue on product evaluation and purchase intention in consumers' minds could be of great assistance to the automobile industry, especially for marketing practitioners, in formulating appropriate marketing strategies to promote their products, or even influence the decision in choosing suitable locations to assemble the products. However, early researchers judged that consumers' evaluations of product quality may change over time (Verlegh & Steenkamp, 1999). Therefore, marketers should pay special attention to consumers' rapidly changing needs and perceptions. Automobile consumers usually evaluate car choices based on the COA cues, which are believed to be an indication of quality and reputation (Seidenfuss et al., 2010). A favorable COA cue should be clearly indicated and emphasized in marketing campaigns while a product with a less favorable one should be marketed with more focus on its functional values to avoid negative product evaluation.

Besides the COA effect alone, it is also essential to understand the interaction effects of COA and consumer involvement as well as consumer patriotism in determining consumers' product evaluations and purchase intentions. By gathering the relative information, industry players would know how to target different consumer segments. A positive COA cue can be especially emphasized when targeting low-involved consumers while marketers should avoid targeting these consumers with less favorable COA cues, since they are very cautious about the COA cue when evaluating products. On the other hand, other positive product attributes should also be conveyed to the high-involved consumers as they tend to evaluate different product attributes and not the COA cue only (Petty et al., 1981).

Regarding consumer patriotism, consumers with high patriotism levels should be targeted if the COA cues are also their COO. For instance, in Hong Kong, automobiles assembled in China should be especially targeted to consumers with high patriotism levels who tend to be more supportive of Chinese products.

Although the study revealed no significant difference among different segments of consumers in their purchase intentions, a more favorable evaluation among consumers should still be pursued to trigger greater customer satisfaction. This implies the automobile industry should make good use of COA cues to give a more positive impression of its products in consumers' minds and may especially target a specific consumer group to achieve a higher evaluation of its products.

6.3 Academic and Industrial Contributions

This research expands Chao's (2001, 1993) studies on COA effect by investigating the COA effect on consumers' purchase decisions in the Hong Kong automobile industry for the first time. Although many former studies on COO effect, like Tigli et al. (2010), can be found, the combination of the COA effect, consumer product involvement and consumer patriotism in this industry and in the Hong Kong market in particular is still new. As consumers' preferences and perceptions change rapidly overtime (Verlegh & Steenkamp, 1999), it is important to have this research to further the former studies. The unexpected result of the interaction effect of the variables on consumers' product evaluations and purchase intentions evokes an urgent need for the study of COO effect together with the study of the relationship between product evaluation and purchase intention. Although this observation is not supported with imperial data, this study still serves as a basis for further investigations into the relationship as their linkage may also have an effect on COO studies and marketers' success.

The results of the study can especially benefit automobile marketers in determining the most effective marketing strategies to be adopted when launching a new promotional campaign to induce consumers' adoptions or trials of automobiles assembled in different countries, especially in the Hong Kong market. Marketers generally believe that it is difficult for automobiles assembled in developing countries, which are more likely to have the negative country image, to boost sales. However, the results suggest that sales can be improved when marketers identify different customer segments and target them with different cues. In this highly competitive and affluent market, companies can gain a competitive advantage when they understand how their consumers behave in the decision-making process. By offering consumers the value they want, firms can expand their market share gradually in the marketplace.

7. Limitations and Further Research Directions

Undoubtedly, this study contributes some valuable insights to the understanding of Hong Kong automobile consumers by finding the interaction effects of COA, consumer product involvement and patriotism level on

consumers' product evaluations and purchase intentions. Nevertheless, caution should be exercised in the interpretation of results. There are several limitations which should be considered in future research.

First, automobile, a highly-involved single product category, was used in the study in order to maintain internal validity and limit the effects of extraneous variables, but external validity is in turn limited. Further research can be conducted on a multi-product approach in order to study the interaction effects of COA and various factors on different product categories.

Second, only two countries (one developed country in Europe and one developing country in Asia) were selected in the study. The results may be skewed since most people, even if they are not familiar with automobile products, view products from Europe more favorably than those from Asia. Further studies may consider more countries within the same continents to test whether a specific country would have a significant determining effect on consumers' product evaluations and purchase intentions.

Third, there is an interesting result revealing that there is a significant difference in the interaction effects between COA, consumer product involvement and patriotism on product evaluation but not on purchase intention. This may be a signal that consumers could be influenced by other factors such as price and the design of products when making the final purchase decision. It is hoped that this research can spur more efforts on this under-researched area to explain the relationship between product evaluation and purchase intention and gain a more comprehensive understanding of consumers' buying behaviors.

8. Conclusions

The ongoing trend of globalization leads to the need for a continuous study on the effect of COO. By focusing on the Hong Kong automobile industry, the study extends the work of Chao (2001, 1993) on the effect of COA and its interaction effects with consumer product involvement levels and patriotism on product evaluation and purchase intention. Out of the six hypotheses, four of them are supported by the findings of the study.

The research confirmed that COA, as an extrinsic cue, has a significant effect on influencing Hong Kong automobile consumers' product evaluations and purchase intentions. Two factors, namely consumer product involvement and patriotism, were found to have moderating effects on the relationship of COA and consumers' product evaluations, but not on purchase intentions. Notably, the moderating effects of these two factors diminish from consumers' product evaluation stage to the purchase decision-making stage, which proved the relationship between product evaluation and purchase intention is not necessarily positive.

Although the findings provide additional insights to the field of COA effect as well as its interaction effects on two moderating variables, research on COA effect should be a continuous work as consumers' preferences are rapidly changing. This study allows automobile marketers to formulate marketing strategies when they understand how Hong Kong automobile consumers evaluate and make purchase decisions on a variety of imported cars from different countries.

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