CUSTOMERS' CHOICE TOWARDS AFTERSALES SERVICEABILITY OF COUNTERFEIT SPARE PARTS: A CASE STUDY

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ABSTRACT

A case study was conducted to examine Malaysian perceptions of product origin in connection to counterfeit components of Perusahaan Otomobil Nasional Sdn Bhd (PROTON). Some consumers regard the price of spare parts at service centres as costly, while others find it affordable. This view is formed based on individuals' prior experience with original equipment manufacturer (OEM) components and the imitation parts found at non-certified service centres. The study evaluates the customers' perception levels and the correlations of customer choice characteristics (CCC) with country of origin (COO) image towards countries that produce counterfeit spare parts, such as China, Taiwan, and Thailand. This paper adopts a phenomenological perspective and measures how customers perceive the value of their choice towards the selected country of origin. We conducted a survey among 201 PROTON customers. The findings of the study revealed that PROTON customers are more favourable towards accepting counterfeit automotive spare parts from Taiwan compared to China and Thailand in both categories, CCC and COO. The correlation evaluation was done according to Pearson's Coefficient, which affirmed that Taiwan earns a moderate positive correlation coefficient between +0.5 and +0.7 of all 6 variable components of both CCC and COO, namely willingness to buy, attitude towards products, product evaluation, country belief, people's affect, and desired interaction. While correlation for both China and Thailand indicated a weak relationship between CCC and COO of coefficient less than 0.5 for similar variable components, all components of the CCC have a positive relationship with the COO, with all variables moving in the same direction for all three countries. Also, Taiwan's counterfeit spare parts scored high positive perceptions among the respondents on the level of agreement and satisfaction attributes. On the contrary, this customer acceptance grants Taiwan's spare parts manufacturers the opportunity to consider investing in the Malaysian market.

Keywords*: Country of Origin, Customer Choice Characteristics, Counterfeit, Perception, Spare Parts.*

1. Introduction

Former Malaysian prime minister Tun Dr. Mahathir Mohamed spearheaded the unification of the Perusahaan Otomobil Nasional Sdn Bhd (PROTON) on May 7, 1983, with a paid-up capital

of RM150 million. PROTON has positioned itself as a driving force for economic growth in Southeast Asia's automotive heavy sector, gaining global recognition. It promotes the growth of heavy industry in the domestic market by supporting the development of local vendors and small industries, which in turn provides employment opportunities and encourages private sector investment. PROTON has engaged in company growth by exporting automobiles to over 50 nations in the worldwide market (Amiya Bhaumik et al., 2021; Jasin & Cheah, 2010). Certain customers perceive PROTON replacement parts as pricey and unaffordable, while others consider it to be within their budget. PROTON made a concerted effort to cater to customers who are sensitive to pricing while still ensuring safety, as opposed to counterfeit items, for customers whose warranty has expired (Lim, 2011; Noranee, Abdul Aziz, et al., 2021).

In the automotive industry, Original Equipment Manufacturer (OEM) parts sales in the aftermarket are important for business sustainability (Mohd Jawi et al., 2017). As such, customers' acceptance and continuous service or purchase of its products depend on its competitive price and acceptable quality. This further exposes the risk of applying counterfeit parts to customer vehicles, which pose a danger to themselves. The acceptance by customers of counterfeit automotive parts for post-warranty is detrimental to spare parts sales and damages the OEM brand and supply chain (Lim, 2011).

Counterfeit parts imply meeting the manufacturer's specification and deception with similar packaging and brand. Consumers are not able to 1790uthorize parts based on their appearance but realise it once they experience inferior quality or deficient performance. Consumers may be at risk for injury due to system and mechanical failures caused by counterfeit parts (Mohd Jawi et al., 2017).

According to statistics from the Ministry of Domestic Trade, Co-operatives, and Consumerism (MDTCC), there were a total of 13 recorded incidents of counterfeit automobile spare parts in 2016, with an estimated value of about MYR 35,703. Considering the limited number of instances and the low value of the confiscated items, it is worth questioning if the problem of counterfeit spare parts has a substantial impact on automobile maintenance or if the issue lies in the lack of reporting. The National Consumer Complaints Centre (NCCC) received a total of 2,244 complaints in 2015 (Abdul Wahab et al., 2017). These complaints were classified into three categories: components, accessories, and cars. The allocation of grievances was as follows: 21.4% of the reported cases were associated with problematic new vehicles, 11.8% were linked to faulty accessories, 9.1% were connected to defective equipment, and 1.6% were attributed to the issue of 'airbags not deployed'. Interestingly, just 0.5% of the complaints were specifically about counterfeit components (Abdul Wahab et al., 2017).

Other research by Quoquab et al.'s (2017) findings indicated that the ethical dimension, encompassing factors such as eligibility, ethical concern, and the impression of lawfulness, had both a direct and indirect impact on customers' propensity to purchase counterfeit items. The study's results deepen marketers' and regulators' comprehension of consumers' buying intentions about counterfeit items. Ultimately, this will assist them in formulating more efficient marketing strategies to encourage the sale of counterfeit items and motivate the purchase of genuine products (Quoquab et al., 2017).

The objective of this paper is to study the perception of PROTON customers towards their choice of using counterfeit spare parts, which include:
1. To study the customer choice characteristic (CCC) of their perception towards product evaluation, attitude towards the product, and willingness to buy.
2. To evaluate the level of customers' perceptions towards country of origin's (COO) image of country belief, people's affect and desired interaction.
3. To assess correlations between the components of the country of origin (COO) image and the customer choice characteristic (CCC).

1.1 Literature Review

In modern industrialisation, companies compete in the globalisation era by having a shorter

product development lead time to market, securing their customer base, and expanding their businesses. The importance of the right investment, technological rights, intellectual property rights, ideas, and international trade rules are the main attributes of a successful industry (Altenburg et al., 2006).

A study on purchase intention towards counterfeit products has conclusive findings demonstrating that attitude, perceived behavioural control, product participation, and brand image are pivotal factors that influence the propensity to acquire counterfeit items. Furthermore, it was shown that brand image played a crucial role in influencing the connection between product participation and the propensity to repurchase counterfeit items. To enhance their sales and marketing strategies, the owner of authentic brand products can Improve their awareness of consumers' intentions to buy or rebuy counterfeit items. This knowledge will allow them to develop superior products and employ more effective tactics to persuade customers to choose their original products (Bupalan et al., 2019).

With the contemporary type of development operations, leveraging reverse engineering in producing the parts towards the right product helps gain market position. These outcomes lead to intense competition within the same channels of downstream operations with regard to volume and margins for suppliers, distributors, retailers, and service centres. Thus, the non-authorised service centre significantly increased by 94% compared to the 1791uthorized service centre, which operates in small and lean operations (Fernihough & Gyimesi, 2008). In Malaysia's context, there are mixed opinions regarding PROTON's spare parts price, which is perceived to be expensive compared to non-authorised service centres. Thus, cost-conscious customers opt for alternative service centres to service their vehicles. However, there are customers who feel satisfied with the spare part price that is reasonable within the same brand but are looking for an overall service maintenance (Lim, 2011; Noranee, Abdul Aziz, et al., 2021; Samsudin et al., 2021).

In contrast to the service business, customer perceptions encompass factors such as job quality, efficiency, and productivity, which ultimately contribute to customer pleasure. Customer satisfaction refers to the subjective evaluation made by a customer on the extent to which their expectations have been met (Aqmal Azhar Abd Aziz et al., 2022).

1.2 Development of Counterfeit Spare Parts

Emerging markets such as China and India have aggressively exported aftermarket parts targeting brands that have similar quality from the spare parts importer (Fernihough & Gyimesi, 2008). The other context, like the market appearance, is known as grey market. In the United States of America, the definition of the grey market is defined as market goods that are legitimate brands for sale without the consent of the United States trademark owner and applied outside the United States but imported and sold within the country, which is similar to domestic products (Zhao et al., 2021).

Similar to Frost & Sullivan's (2009) finding, distinct grey market goods are manufactured with the authority of the owner of the genuine trademark, which imports and trades the product in a non-approved country or region by the owner of the brand (Frost & Sullivan, 2009). Further elaboration is related to counterfeit products, which is the trade of goods with a spurious mark that is ambiguous to genuine products and trademarks. The car manufacturers face a loss of sales to counterfeit parts due to the fact that the goods often sold at 50% to 85% of the genuine car manufacturer parts, with 20% to 30% of the of the delivered performance. Thus, the compromised quality leads to the limited life of replacement parts (Fernihough & Gyimesi, 2008).

Frost & Sullivan (2009) further explained to the World Trade Organisation (WTO) in their International Trade Statistics 2008 that 8.7% of total global trade in automotive products was valued at US$1,182.9 billion. Approximately $266.7 billion annually in the United States comes from the trade of counterfeit products. This accounts for 70.8%, or $376.7 billion, of the trade consumption from global counterfeit product trades. According to Automotive Component Counterfeiting and Grey Market Research by Frost & Sullivan (2009), the top

producers of counterfeit products are from China, India, Pakistan, Indonesia, Thailand, Taiwan, Brazil, the Philippines, Hong Kong, Mexico, Uruguay, Russia, Colombia, and the United Arab Emirates. These countries of manufacturers are more likely to produce counterfeit automotive spare parts with fewer technical barriers and a high volume of consumption replacement rates (Frost & Sullivan, 2009).

1.3 Consumer Preference Characteristic

Four typical stages describe the customer's purchasing behaviour, which relates to beliefs, attitudes, purchase intention, and behaviour. This relationship is based on Carter (2009) theoretical model of customer choice characteristics. Starting with the first stage of product evaluation is the overall customer's perspective or cognitive evaluation of the products. Attitudes towards the products are the second stage of customers' purchasing behaviours that relates to customers' overall feelings or affective assessment towards the product. The third stage is the willingness to buy or reluctance to buy, which is a subjective consideration regarding customers' likelihood of future purchase intentions. Finally, stage four refers to the customer's actual purchase behaviour towards the products. The models described brand associations held in the customer's belief as a perception towards the brand image in which the establishment of a consensus or undisputable is not established. Combining the influence of attitude and behaviour force, solidify the customers' loyalty towards the purchase intention (Carter, 2009).

Once consumers understand the true origin of the product, they adjust their understanding of both cognitive and affective brand evaluation after experiencing misclassification of its origin (Mandler et al., 2023).

1.4 Process Outline of Customers' Purchase Decision

The model process is outlined based on the main components that affect the customer's purchase decision for foreign products. The preliminary stage that affects the customer purchase decision stage is the country of origin image, consumer ethnocentrism, and animosity towards foreign countries, as per Figure 1 (Carter, 2009). It is followed by the direct influence of foreign product evaluation on customers' attitudes and willingness to purchase foreign products (Mandler et al., 2023). Thus, justify the established model of segregating relationships that have a high proportion of support.
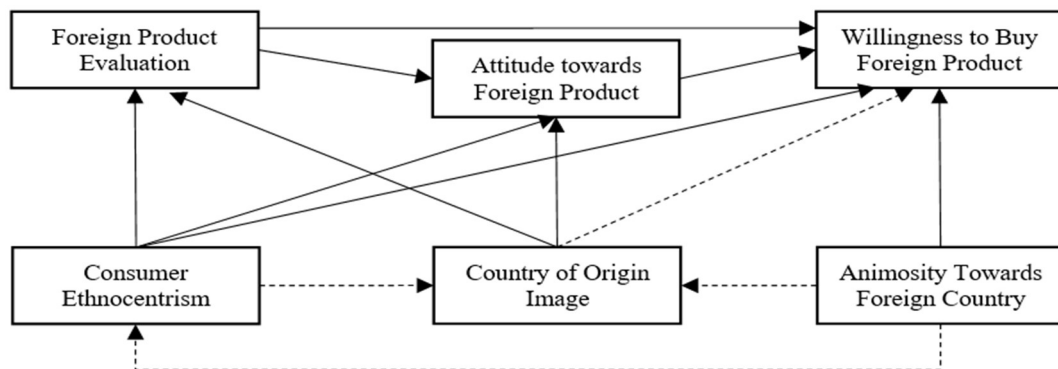

Figure 1. Outline of Preceding Empirical Mark

For this study, the same base process outline is applied, but adjustments are required to meet the objective of the study, which focuses on one main variable, the country of origin image.

2. Method

In this study, an explanatory simple survey is designed to investigate and distinguish the level of PROTON customers' perceptions towards counterfeit spare parts of the component's customer choice characteristic and elements component of the country of origin image evaluation (Aqilah Bohani et al., 2024; Zulkifli et al., 2023). Further correlation analysis between customer choice characteristic components and the country of origin image evaluation components is applied. This questionnaire survey is to assess the overall image of customer perceptions of automotive counterfeit spare parts.

The output of the study may prompt PROTON to strategies overall business plans in curbing counterfeit parts for their customers. Statistical Package for the Social Sciences (SPSS) software is applied to analyse the survey response data. In this study, the approach of the empirical evidence process outlined by Carter (2009) is adopted and adapted. The outline process is similar except the main variable country of origin image is applied to fit to the research objective of this study. The outline of the study is visualized as per Figure 2 below.
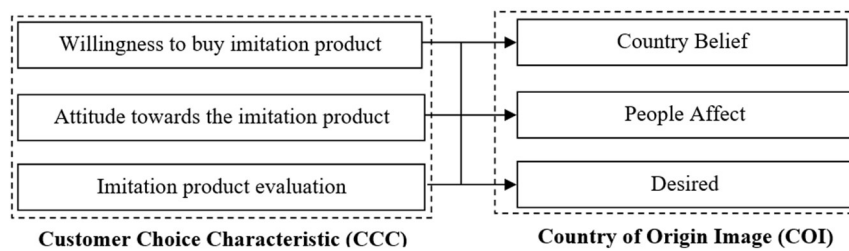

Figure 2. The schematic diagram for the research process outline

Further, the survey population is a customer that visits the 1793uthorized and non-authorised PROTON service centres with genuine involvement in buying automotive spare parts. The scope of the study is based on the fact that eligible respondents were individuals aged 18 and older who exist in the Klang Valley area, namely Shah Alam and Klang, Selangor, Malaysia. The overall research process is as per Figure 3.
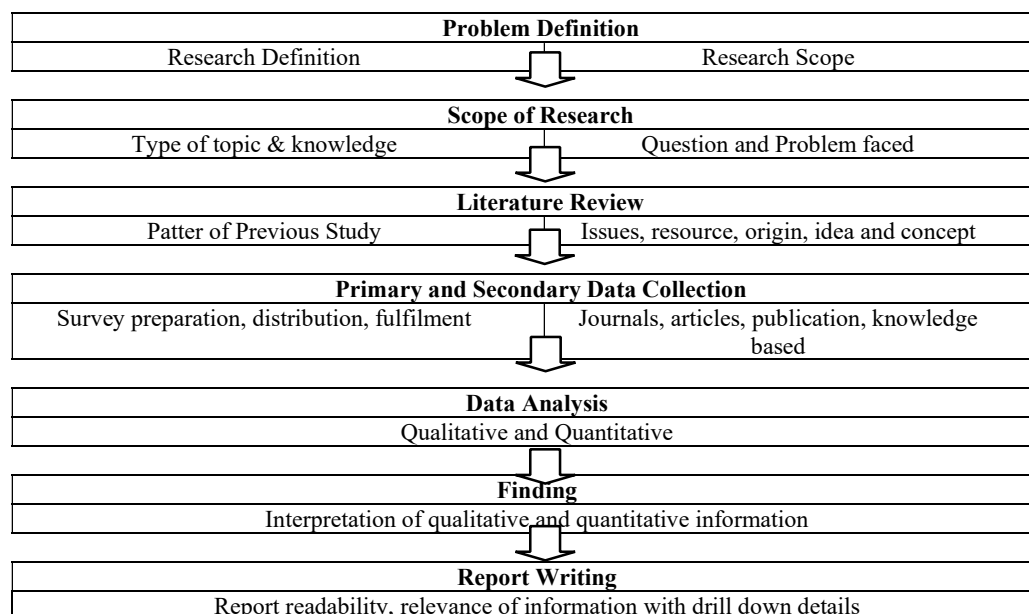

Figure 3. Flow Chart of Research Process

3. Results & Discussions

A total of 201 surveys were collected from the target population of respondents who owned PROTON cars and serviced them at PROTON 1794uthorized and non-authorised service centers. Each respondent was interviewed and assisted in satisfying the questionnaire's country assessment, namely China, Taiwan, and Thailand. In addition, to achieve uniform Likert scale questionnaire analysis, several reverse-coded items were arranged through the construction of data entry modifications. This allows consistent interpretation of positive statements through strongly disagreeing or strongly agreeing feedback. Interpretation of the level of perceptions on the components of customer choice characteristics and country of origin image based on the segregation cut-off point. The interpretation classifies the level of respondents' perception according to 'low' if the score is between 1.00 and 2.99, 'moderate' in the range of 3.00 and 3.99, 'high' at the range of 4.00 and 5.99, and finally 'very high' at 6.00 and 7.00.

3.1 Results of Perception on the Customer Choice Characteristic (CCC)

The perception level of customer choice characteristics relates to the country of origin, as indicated in Table 1. The results for China indicated that the respondents are not satisfied with the evaluation components: (i) willingness to buy, (ii) attitude towards products, and (iii) product evaluations. The perception level is low, ranging between 2.111 and 2.512 compared to other countries, thus indicating that the respondents are not satisfied and not in favour of automotive spare parts made in China. Response feedback indicates that the spare part from China is of poor quality and not reliable. Also, the repair cost is more expensive to compensate for China's spare part prices.

Conversely, the perception level of customer choice characteristics in Taiwan indicates a high-level perception ranging from 4.446 to 4.639. It has the highest results compared to the other evaluated countries, Thailand and China. The respondents agreed and were satisfied with the purchased spare parts made in Taiwan because they seldom cause problems with their vehicles. The spare part products refer to both automotive mechanical and electronic parts.

However, for Thailand, the level of perceptions of the average mean score is at a moderate level, ranging from 3.836 to 4.021. This result indicates that the respondents were not fully satisfied with their willingness to buy, attitude towards products, and product evaluation components. Made in Thailand spare parts products, including others such as clothes, gave overall satisfaction with the usability of the products. The survey response, however, indicates that the counterfeit product in Thailand has much better and higher acceptance compared to Chinese products. Based on the above analysis, respondents are more favourable towards spare parts made by Taiwanese manufacturers than Thailand and China. However, the results are not siding with the spare parts from China, where respondents are not accepting the product due to the bad experience that happened to them.

Table 1. Mean Value of Components Customer Choice Characteristic

Customer Perception Category	Evaluation Components	Average Mean		
		China	Taiwan	Thailand
Customer choice characteristic	Willingness to buy	2.453	4.543	3.836
	Attitude towards products	2.111	4.446	3.980
	Product evaluations	2.512	4.639	4.021

3.2 Results of Perception on the Country of Origin (COO) Image

The degree of perception about consumer choice characteristics is influenced by the country of origin image, as shown in Table 2. The majority of PROTON respondents accept Taiwan's counterfeit automotive spare parts other than those from Thailand and China. The level of perception of a country of origin in Taiwan exhibits all components: (i) country beliefs, (ii)

people's affect, and (iii) desired interaction, which are well accepted with a score of 4.610 to 4.922. Survey results also represent the consumer's acceptance of products made in Taiwan for various types of automotive part components. Such promising acceptance is an indicator for business expansion strategy, procuring the potential supplier to provide better service and high-quality products.

Table 2. Mean Value of Components Country of Origin Image

Customer Perception Category	Evaluation Components	Average Mean		
		China	Taiwan	Thailand
Country of origin image	Country beliefs	3.449	4.776	3.569
	People affect	3.629	4.610	3.743
	Desired interaction	3.862	4.922	4.027

As for Thailand, the total component mean values for country beliefs, people's affect, and desired interaction are 3.569, 3.743, and 4.027, respectively. In detail, the results of the country of origin image components for Thailand in (i) country beliefs and (ii) people affect are moderate, 3.569 and 3.743, respectively. However, component (iii) desired interaction scores high-level perceptions of 4.027. Thus, the level of perception indicates that the respondents are satisfied with the country of origin image component.

Finally, the country of origin image component for China's perception level score falls below Taiwan's and Thailand's scores. The results direct to a moderate level of perceptions of all components, namely country beliefs, people's affect, and desired interaction, at 3.449, 3.629, and 3.862, respectively. There is a consistency in PROTON respondents' perceptions of Chinese products that they do not fully agree with all the components of the country of origin image. However, there is an indication that they have a high desired interaction (score of 3.862) with China by having close ties in economics. The PROTON respondents believe that in the future, China has the potential to become a better producer of consumer products. Based on the overall assessment of the perception survey, respondents are skewered to accept Taiwan's products other than those from China and Thailand.

3.3 Correlation between Customer Choice Characteristics Components and Country of Origin Image Components

Table 3 presents the correlation analysis using Pearson's coefficient, where all dependent and independent variables must be quantifiable and normally distributed. The interpretation of correlation coefficients is defined by r ($\rangle$ or rho). It indicates the strength of the connection between variables. The coefficient strength ranges from -1 for perfect negative correlation up to +1 for perfect positive correlation. It is also known that if two variables are moving in the same direction, it is known as a positive correlation, while a negative correlation is moving in the opposite direction.

The relationship between components shows an inconsistent correlation between evaluation countries, namely China, Taiwan, and Thailand. China indicates a weak or low correlation ranging from r = 0.336 to r = 0.464 for components (i) between country beliefs, (ii) people's affect, and (iii) desired interaction against (a) willingness to buy, (b) attitude towards products, and (c) product evaluation. The results reveal that diverse categories of customer choice characteristics influenced the respondents. However, Taiwan exhibits most of the evaluation components' results ranging from r = 0.484 to r = 0.614. It implies a moderate correlation between (a) willingness to buy, (b) attitude towards products, and (c) product evaluation, respectively. Product evaluation has the highest correlation with the desired interaction at r = 0.614. This is followed by product evaluation towards country belief and people affect at r = 0.564 and r = 0.572, respectively. Lastly, Thailand has a weak correlation ranging from r = 0.085 to r = 0.484 for customer choice characteristic components (a) willingness to buy, (b) attitude towards products, and (c) product evaluation against country of

origin image components (i) between country beliefs, (ii) people's affect, and (iii) desired interaction. Willingness to buy does correlate with the desired interaction in a low category (r = 0.484). Further results were recorded at r = 0.431 and r = 0.394 for willingness to buy with country beliefs and product evaluation with people's affect, respectively.

Table 3. Correlation Coefficient (ρ) between Components of CCC and Components of COO

	(a) Willingness to Buy			(b) Attitude Towards Products			I Product Evaluation		
	China	Taiwan	Thailand	China	Taiwan	Thailand	China	Taiwan	Thailand
(i) Country Belief	.464*	.484*	.431*	.361*	.508*	.223*	.337*	.564*	.364*
(ii) People Affect	.441*	.509*	.387*	.412*	.547*	.213*	.355*	.572*	.394*
(iii) Desired Interaction	.389*	.534*	.484*	.336*	.562*	0.085	.436*	.614*	.363*

*. Correlation is significant at the 0.01 level (2-tailed)

4.0   Conclusion

In conclusion, PROTON respondents accept the usage and application of counterfeit parts made in Taiwan. The study revealed that PROTON customers are more favourable towards accepting counterfeit automotive spare parts from Taiwan compared to China and Thailand in both categories, customer choice characteristics (CCC) and country of origin (COO). Taiwan's evaluation of the mean value of component customer perception is the highest, ranging between 4.446 and 4.922. While Thailand's and China's average mean values range between 3.569 and 4.027 and 2.111 and 3.862, respectively, The Taiwan customer choice components show a high correlation coefficient at desired interaction with product evaluation at r = 0.614 and willingness to buy at r = 0.534, respectively. The respondent's level of agreement is also high, with a high positive perception and well acceptance of Taiwan's counterfeit products. Thus, Malaysian consumers are willing to spend money on Taiwanese products because they perceive the value of their quality and reliability. This feedback gave an insider perspective for Taiwan's spare parts manufacturers considering investing in the Malaysian market.

Author Contributions

Author 1 conducted the literature review, authored the manuscript, developed the research methodology, and analyzed and discussed the results. Authors 2 and 3 reviewed the literature and offered constructive feedback on the manuscript. All authors have reviewed and approved the final version of the manuscript.

Conflict of Interest

The authors affirm that there are no conflicts of interest to disclose.

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