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CONSUMER CONFIDENCE INDEX PREDICT BEHAVIORAL
INTENTION TO PURCHASE

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Abstract

Despite widespread attention given to measuring consumer confidence index (CCI), the mechanism by which consumer's behavioural spending intention is influenced by the CCI is less well understood. We aim to evaluate the link between consumer confidence and consumer spending intention by proposing three objectives: (1) to identify different categories measuring consumer confidence, (2) to examine the correlation among the categories; perceived personal finance (PPF), perceived consumer price (PCP), and perceived economic situation (PES), and whether these correlations are significant, and (3) to examine the causal effects of PPF, PCP and PES on consumer's behavioural intentions: to buy house, to buy vehicle, and to go for holidays. This study collected data from 500 Malaysian consumers via survey monkey and used various statistical techniques; EFA, correlation, and logistic regression analysis, to analyse the data. The results reveal the significant correlation between these factors except the correlation of PCP with other factors. Additionally, the causal effects revealed that consumer's personal finance and general economic situation of the country made significant contributions to the prediction of consumer intentions to buy house and to go for holidays, whereas consumer price does not significantly predict the behavioural intention at all. The results suggest that consumers' personal finance is consistent and a significant predictor of behavioural intentions to buy products/services.

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Keywords: Consumer confidence, personal finance, consumer price, economic situation, behavioural intention, consumer spending.



1. Introduction

Consumer confidence is the degree of consumers' feelings about current and future economic conditions of the economy (Chatterjee & Dinda, 2015). The consumer confidence index (CCI) is a significant indicator of how people's financial condition, how they perceive overall economic condition in the country, and how they perceive that it is a good time to buy a car or a house (Hagerty & Land, 2012; Merkle, Langer, & Sussman, 2003). The more a consumer feels confident about the economy, the more he or she intends to make purchases. Generally higher consumer confidence indicates economic growth reflecting higher consumption while lower consumer confidence indicates slowing economic growth in which consumers spending likely to be decreased (Mazurek & Mielcová, 2017).

Government, banks, manufacturers, and retailers monitor changes in the consumer confidence for in aligning their decision-making (Chaterjee & Dinda, 2015; Merkle et al., 2004). Decreasing trend in consumer confidence index (CCI) indicates various expected activities. For example, consumers may not able to retain jobs. Manufacturers may expect consumers may not make purchases, especially the products require large investment. Similarly, banks may expect a reduction in lending activity such as lower credit card use or a fewer applications for mortgage. The government may take various steps to stimulate the economy such as tax discount. In contrast, an increasing trend in CCI indicates increased consumer spending such as may be rise in home construction or car financing. Likewise, manufacturers may hire more workers for increasing production. Government may expect increasing tax revenues and banks can anticipate increased demand for credit due to increased consumer spending.

The CCI is normally computed based on current condition index and consumer expectation index. It is can be said that CCI broadly cover following information; (1) current business conditions, (2) business conditions for the next six months, (3) current employment conditions, (4) employment conditions for the next six months, and (5) total family income for the next six months. However, the CCI is computed to evaluate consumer confidence on the business climate, personal finance, and spending. Consumer confidence is generally conducted using a survey instrument. Different countries used different instruments as there is no one accepted universal instrument. Curtin, (2007) stated that there are forty five countries that have conducted consumer confidence survey. The number has risen since then and many countries such as Malaysia, India and Japan have also begun collecting consumer confidence data. From the survey, the consumer confidence index is calculated and published.

2. Problem Statement

Since the Great Depression, the 2007-09 financial crises headed the global economic recession. Policy makers and academics were agreed that the longevity of the crisis was because of erosion of consumer confidence (Dees & Brinca, 2013). They also reported that in certain circumstances, the CCI can be a good predictor of consumer purchasing behavior. The literature discusses the role of confidence in modern consumption theories and provides explanations whether consumer confidence has any predictive power for making changes in the consumer spending behavior in future. Consumers' liquidity constraints or uncertainty deviation to their future income influences consumers' spending intention (Dees & Brinca, 2013). However, consumer confidence index could be useful to capture consumers' confidence and play an important role in predicting consumer' future spending.

Despite of the CCI importance, the mechanisms by which household attitudes or consumer's behavioral spending intentions are influenced by the CCI are less well understood (Dees & Brinca, 2013). Consumers' spending forms a large component of an economy. In Malaysia, private consumption expenditure in the gross domestic product (GDP) was 52% in 2014, and since 1995 growing at an average annual rate of 10% (Mohd Haniff, & Masih, 2016). Economic forecasters are interested in consumer confidence for predicting consumer spending. The concern is whether consumer confidence index consisting of variables such as income, inflation and economic situation, have any statistical significance in predicting consumers' future spending. Does consumer confidence index predict consumers' spending intention? Previous studies (e.g., Batchelor & Dua, 1998; Ludvigson, 2004; Matsusaka & Sbordone, 1995) have focused on the relationship between macroeconomic indicators and consumer confidence for developed countries. Based on our best knowledge, this is the first study that models consumer confidence as a function of personal finance, consumer price, and economic situation, for forecasting consumer behavioral intention.

3. Research Questions

This study has three main research questions. First, what are the different categories measuring consumer confidence index (CCI)? Second, what is the correlation between CCI categories and weather the correlation is significant? Third, what is the causal effect of the CCI categories; perceived personal finance (PPF), perceived consumer price (PCP), and perceived economic situation (PES) on consumer's behavioral intentions (i) to buy house, (ii) to buy vehicle, and (iii) to go for holidays.

4. Purpose of the Study

This study has three major research objectives: (1) to identify different categories measuring consumer confidence index (CCI), (2) to examine the correlation between the CCI categories such as perceived personal finance (PPF), perceived consumer price (PCP), and perceived economic situation (PES), and weather these correlations are significant, and (3) to examine the causal effects of PPF, PCP and PES on consumer's behavioral intentions (i) to buy house, (ii) to buy vehicle, and (iii) to go for holidays.

5. Research Methods

This study adopted a survey questionnaire approach. The questionnaire consists of nine items measuring consumer confidence from prior studies (The Conference Board, 2011; European Commission, 2016; University of Michigan, 1998). The items pertaining to consumer's expectations about financial and economic situations over six months were measured using scale (1 to 3) where 1 represents 'Better', 2 represents 'Same', and 3 represents 'Worse'. The items pertaining to the general economic situation were measured using scale (1 to 3) where 1 represents 'Good moment', 2 represents 'Neither good nor bad', and 3 represents 'Bad moment'. The items pertaining to the consumer price were measured using scale (1 to 3) where 1 represents 'Rise', 2 represents 'Remain the same', and 3 represents 'Fallen'. The study also employed three categorical variables to measure consumer's behavioral intentions to (i) buy house, (ii) buy care, and (iii) go for holidays, using scale (1 & 2) where 1 for 'Yes' and 2 represents 'No'.

The survey was distributed among Malaysian consumers through monkey survey, which is a professional platform for conducting online survey. Initially, we received total of 522 responses. Where, only 500 responses were valid and useable, remaining 22 responses containing missing values which were discarded from further data analysis.

6. Findings

6.1. Exploratory Factor Analysis

Exploratory factor analysis (EFA) was performed to drive various dimensions from the data set and also to measure construct validity (Hair, Black, Babin, & Anderson, 2010). A total of nine items of the study constructs were subjected to EFA using SPSS (version 20). As a prerequisite to EFA test, the appropriateness of data for factor analysis was examined. All the items were inserted together in SPSS and run factor analysis without rotation. The examination of the correlation matrix showed that the majority of the coefficients were above 0.30. The Kaiser Meyer- Olkin (KMO) value was 0.644, exceeded the recommended value of 0.60 (Kaiser, 1970), and Bartlett’s Test of Sphericity achieved statistical significance, indicating the suitability of the data factorability (Bartlett, 1954).

EFA was executed using the Eigen value cut off of 1.0 to drive possible number of factors, with “Varimax” as rotation method and the “principle component analysis” as the extraction method. In EFA test, each measurement should load more strongly on its key construct. The guideline for verifying the items using EFA as follows: (1) the item should strongly load on the predefined factor, (considerably greater than 0.50), and (2) items that did not cross-loaded above the predefined factor. The EFA results are presented in the Table 01.

Table 01. Exploratory Factor Analysis

Items	Components		
	1	2	3
PPF1. How has the financial situation of your household changed over the last 6 months? It is...		.549	
PES1. How do you think the general economic situation in the country has changed over the past 6 months? It is...	.801		
PES2. In view of the general economic situation, do you think that now is...?	.778		
PES3. In view of the general economic situation, do you think that now it is the right moment for people to make major purchases such as furniture, electrical/ electronic devices, etc.?	.522		
PCP1. How do you think the consumer prices have developed over the last 6 months? They have...			.754
PCP2. By comparison with the past 6 months, how do you expect the consumer prices will develop in the next 6 months? They will...			.819
PCP3. How do you expect unemployment opportunities to change over the next 6 months? The number will...			.557
PPF2. Over the next 6 months, how likely is it that you will save any money?		.775	
PPF3. Which of these statements best describes the current financial situation of your household?		.801	

Note: Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

As shown in the Table 01, EFA reveals three constructs as all items were loaded more than 0.5 on their respective factors. Based on the items loaded on the constructs, they were given names of Perceived Personal Finance (PPF), Perceived Economic Situation (PES), and Perceived Consumer Price (PCP) each having three items. The three constructs and related items were used in subsequent analysis.

6.2. Reliability and Validity Analysis

This study followed the guideline of the study by Hair et al. (2010) examine construct reliability and validity. As shown in Table 02, the values of Cronbach's Alpha are greater than 0.5, and composite reliability (CR) estimates are 0.755 or higher, indicating a good construct reliability (Hair et al., 2006). Whereas, convergent validity was assessed by looking on the values of the average variance extracted (AVE). The results showed that AVE estimates were exceeded than rules of thumb values 0.50 (Hair, et al., 2010), indicating that convergent validity is achieved among all constructs.

Table 02. Reliability and Validity Estimates

Constructs	No. of Items	Cronbach's Alpha Value	CR	AVE
Perceived Personal Finance (PPF)	3	0.588	0.757	0.512
Perceived Consumer Price (PCP)	3	0.524	0.755	0.514
Perceived Economic Situation (PES)	3	0.558	0.762	0.616

6.3. Correlation and Discriminant Validity Analysis

The study conducted a correlation test to examine whether the study constructs have strong correlation (more than .90). Strong correlation between variables indicates common method bias- CMB (Pavlou et al. 2006). The values of the correlation coefficients are between -1 and +1. However, there could be positive, negative, or no correlation among variables. From Table 03, it can be seen that most of the correlation coefficients show that there is significant relationship between study constructs, but less than 0.50, indicating that CMB is not a significant problem in this study. From the values of the correlation coefficients, it can also be observed that there is mixed result of positive and negative correlations. There are positive and significant relationships between "PPF and PES", "PPF and IBH", "PPF and IBV", "PPF and IGH", "PES and IBH", "PES and IGH", "IBH and IBV", and "IBV and IGH". It shows that there is positive relationship between consumers' optimism toward personal finance and economic situation, and how they feel regarding the products/services (i.e., house, car, holidays) they are intending/planning to buy. Some negative insignificant correlations are shown between "PCP and PPF", "PCP and IBH", and "PCP and IBV", indicating that increment in consumers price leads to decrease consumer intention for buying products/services, but small effect as the values of the negative correlation are quite small.

For examining the discriminant validity, we followed the Fornell Larcker (1981) criterion. The square root of the AVE values for each construct is compared with the correlation of the construct with others. As shown in Table 03, inter-construct correlation is lower than the square root of all the AVE values for each construct, indicate that discriminant validity among the constructs is achieved.

Table 03. Correlation Matrix and Discriminant Validity

	PPF	PCP	PES	IBH	IBV	IGH
Perceived Personal Finance (PPF)	.716					
Perceived Consumer Price (PCP)	-.016	.717				
Perceived Economic Situation (PES)	.289**	.046	.785			
Intention to Buy House (IBH)	.119**	-.005	.101*	1		
Intention to Buy Vehicle (IBV)	.120**	-.030	.066	.168**	1	
Intention to go on Holiday (IGH)	.252**	.030	.206**	.113*	.404**	1

Note:

The bold diagonal values are the square root of Average Variance Extracted (AVE)

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

* Correlation is significant at the 0.05 level (2-tailed).

6.4. Logistic Regression Analysis

Since the study employed categorical variables as dependent variables, a general logistic regression model presented by equation 1, is use to identify the significant factors influence consumers' behavioral intention.

$$\text{Logit} = \ln [P/(1- P)] = a_0 + a_1x_1 + a_2x_2 \dots\dots\dots + a_i x_i \dots\dots\dots (1)$$

Where P is the probability of event occurring, a₀ refers to a constant, and a_i denotes the coefficient of variable (x_i). In this study, P denotes the probability of a consumer's behavioral intention to buy house, vehicle, and go for holidays and x_i denotes theoretical factor i, for example, perceived personal finance.

Impact of PPF, PCP and PES on Intention to Buy House (IBH)

For examining the impact of PPF, PCP and PES on intention to buy house (IBH), the logistic regression is specified in equation 2.

$$\text{IBH} = a_0 + a_1\text{PPF} + a_2\text{PCP} + a_2\text{PES} \dots\dots\dots (2)$$

The regression results showed that the full logistic regression model containing PPF, PCP and PES predictors was statistically significant ($X^2 = 9.51$, $df = 3$, $N = 500$, $p < .05$). However, PPF, PCP and PES significantly predicted consumers' intention to buy house. Additionally, the results of Cox & Snell, and Nagelkerke R-squared estimates indicated that independent variables (i.e., PPF, PCP & PES) would thus explain somewhere between 1.9% and 2.6% of the variance in intention to buy house. Moreover, we also performed Hosmer and Lemeshow test for the goodness of model fitness. The test reveals non-significant chi-square result ($X^2 = 4.157$, $df = 8$, $p > 0.05$), supporting the good model fitness. The model also classified correctly 99.7% of the respondents who did not intend to buy house and 0.6% of intended to buy house with an overall classification success rate of 67.7%.

As results depicted in Table 04, all the predictors (except perceived consumer price) were statistically significant. Perceived personal finance ($b = 0.376, p < 0.05$) and perceived economic situation ($b = 0.386, p < 0.05$) made unique significant contributions to the prediction of consumer's intention to buy house. Whereas perceived economic situation (PES) showed stronger relationship to intention to buy house (IBH). It also computed an odds ratio of 1.47 indicating (keeping other predictors constant) that a consumer who perceived economic situation better is 1.47 times more likely to buy house than a person with lower perceived economic situation. The odds ratios presented in Table 04 predict the likelihood to buy house, for example, the odds ratio for perceived personal finance indicate that a consumer who perceived his personal finance better is 1.45 times more likely to buy house than a consumer who perceived his finance lower. Whereas, perceived consumer price ($b = -0.032, p > 0.05$) has insignificant impact on the intention to buy house. However, the final logistic regression equation is depicted in equation 3.

$$IBH = -0.904 + 0.376 PPF + 0.386 PES \dots\dots\dots (3)$$

Table 04. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	PPF	.376	.179	4.417	1	.036	1.457	1.026	2.069
	PCP	-.032	.192	.028	1	.866	.968	.665	1.410
	PES	.386	.251	2.367	1	.024	1.471	.900	2.406
	Constant	-.904	.689	1.722	1	.189	.405		

a. Variable(s) entered on step 1: PPF, PCP, PES.

Impact of PPF, PCP and PES on Intention to Buy Vehicle (IBV)

For examining the impact of PPF, PCP and PES on intention to buy vehicle (IBV), the logistic regression is presented in equation 4.

$$IBV = b_0 + b_1PPF + b_2PCP + b_3PES \dots\dots\dots (4)$$

The regression results showed that the full logistic regression model containing PPF, PCP and PES predictors was statistically significant ($X^2 = 8.292, df = 3, N = 500, p < .05$). The independent variables significantly predicted intention to buy vehicle. Additionally, the results of Cox & Snell, and Nagelkerke R-squared estimates showed that independent variables (i.e., PPF, PCP & PES) would thus explain somewhere between 1.6% and 2.2% of the variance in intention to buy vehicle. Moreover, we performed Hosmer and Lemeshow test for examining the goodness of model fitness. The test revealed non-significant chi-square result ($X^2 = 10.659, df = 8, p > 0.05$). However, it reveals the good model fitness. The model also classified correctly 1.6% of those who intended to buy vehicle and 99.7% of the respondents who did not intend to buy vehicle with an overall classification success rate of 63%.

As shown in Table 05, only one predictor; perceived personal finance ($b = 0.404, p < 0.05$) significantly influence the consumer's intention to buy vehicle (IBV), whereas perceived consumer price ($b = -0.123, p > 0.05$) and perceived economic situation ($b = 0.187, p > 0.05$) have non-significant effect on IBV. It also computed an odds ratio of 1.498 indicating (keeping all the other predictors constant), a consumer perceived personal finance better is 1.498 times more likely to buy vehicle than a person with lower perceived personal finance. The odds ratios presented in Table 05 predicts the likelihood to buy vehicle. The remaining two predictors have shown no significant impact on consumers' intention to buy vehicle. However, the final logistic regression model is depicted in equation 5.

$$IBV = - 0.546 + 0.404 PPF \dots\dots\dots (5)$$

Table 05. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1 ^a	PPF	.404	.172	5.512	1	.019	1.498	1.069	2.098
	PCP	-.123	.184	.446	1	.504	.885	.617	1.268
	PES	.187	.244	.588	1	.443	1.206	.747	1.946
	Constant	-.546	.670	.664	1	.415	.580		

a. Variable(s) entered on step 1: PPF, PCP, & PES.

Impact of PPF, PCP and PES on Intention to Go for Holiday (IGH)

For examining the impact of PPF, PCP and PES on intention to buy house (IBH), the logistic regression is presented in equation 6.

$$IGH = c_0 + c_1PPF + c_2PCP + c_3PES \dots\dots\dots (6)$$

The regression results showed that the full logistic regression model containing PPF, PCP and PES predictors was statistically significant ($X^2 = 43.895, df = 3, N = 500, p < .05$). However, it indicates that the independent variables significantly influence consumers' intention to go for holidays. Additionally, the results of Cox & Snell, and Nagelkerke R-squared measures showed that independent variables (i.e., PPF, PCP & PES) would thus explain somewhere between 8.4% and 11.6% of the variance in Intention to go for holiday (IGH). Moreover, we also performed Hosmer and Leme show test for examining the goodness of model fitness. The test revealed non-significant chi-square result ($X^2 = 8.506, df = 8, p > 0.05$). It supports the good model fitness. The model also classified correctly 92.4% of those who intended to go for holidays and 21.3% of the respondents who did not intend to go for holidays with an overall classification success rate of 68.4%.

As depicted in Table 06, all the predictors (except perceived consumer price) were statistically significant. Perceived personal finance ($b = 0.816, p < 0.001$) and perceived economic situation ($b = 0.917, p < 0.01$) caused significant impact on consumer's intention to go for holidays. Whereas perceived

economic situation (PES) showed stronger relationship to intention to go for holidays (IGH). It also computed an odds ratio of 2.501 indicating a consumer who perceived economic situation better is 2.501 times more likely to go for holidays than a person with lower perceived economic situation. The odds ratios predict the likelihood to go for holidays, for example, the odds ratio for perceived personal finance indicate that a consumer who perceived his personal finance better is 2.261 times more likely to go for holidays than a consumer who perceived his personal finance lower. Whereas, perceived consumer price ($b = 0.123, p > 0.05$) has no significant impact on consumers' intention to go for holidays. However, the final regression model is depicted in equation 7.

$$IGH = - 4.838 + 0.816 PPF + 0.917 PES \dots\dots\dots (7)$$

Table 06. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	PPF	.816	.182	20.119	1	.000	2.261	1.583	3.230
	PCP	.123	.192	.411	1	.521	1.131	.776	1.648
	PES	.917	.287	10.227	1	.001	2.501	1.426	4.385
	Constant	-4.834	.813	35.361	1	.000	.008		

a. Variable(s) entered on step 1: PPF, PCP, & PES.

7. Conclusion

This paper has empirically examined the link between consumer confidence and consumer spending. Normally, consumer confidence reflects the consumer's current and expected condition indices, if both indices are good it is possible that the consumer confidence would also be good (Mazurek & Mielcová 2017; Prasetyo & Yuliatiningsih, 2008). This study identified three factors; perceived personal finance (PPF), perceived consumer price (PCP), and perceived economic situation (PES) pertaining to consumer confidence. We found a significant correlation between these factors except the correlation of PCP with other study factors. Additionally, the causal effects revealed that consumer's personal finance and general economic situation of the country made significant contributions to the prediction of consumer intentions to buy house and to go for holidays, whereas consumer price did not significantly predict the behavioral intention at all. Overall consumers' personal finance plays consistent and significant role in predicting their behavioral intentions to buy house, vehicle, and go for holidays, indicating that a consumer who perceived his personal finance better is more likely to buy for buying products/services than a consumer who perceived his personal finance lower. However, it is concluded that consumer confidence is systematically related and a good predictor of consumer spending.

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