

## **The Influence of Customer Value Co-Creation Behavior on SME Brand Equity: An Empirical Analysis**

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### **Abstract**

Competition in the service industry is intense. To deliver value-added services, more companies are focusing on consumers as a powerful means of establishing firm performance through dialog, participation, and engagement. However, scant research has been conducted to examine whether customer value co-creation can boost brand equity, particularly among SMEs. To address these shortcomings in the literature, this paper investigates the impact of customer value co-creation on brand equity among SME consumers of service industries. A theoretical model is developed and tested using survey data from 548 customers in Malaysia. Structural equation modeling (SEM) is employed to simultaneously test the hypothesized relationships. The results demonstrate a positive relationship between information seeking, responsible behavior, personal interaction, advocacy, tolerance and brand equity. This study contributes to the development of knowledge regarding the transfer of the concept of customer value co-creation to an SME service context.

### **Keywords**

Customer value co-creation behavior, brand equity, SMEs, services.

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**Introduction**

Rapid advancements of technologies related to information and communication have encouraged the involvement of many small and medium enterprises (SMEs) in service industries. Service industries have become the backbone of most countries and make a significant contribution to a nation's economy (Olah et al., 2018). The service sector in Malaysia continues to be the primary propeller in economic growth. The development of the service sector among SMEs is primarily a result of the government's significant role in SMEs as a key driver of economic growth. SMEs play an important role, particularly in providing employment opportunities, generating income for many households, and producing inclusive and balanced growth in Malaysia (SME Corporation, 2012). As a result, various programs have been implemented to assist SME retailers with financial access, labor supply, marketing, information and communications technology (ICT), and research and development (R&D) funding, as well as technology transfers. In 2014, a total of 133 programs were implemented by the government to develop SMEs, with a financial commitment of nearly RM7 billion, transferring benefits to 484,000 SMEs (SME Corporation, 2014). Conversely, SME enterprises, especially those owned by Bumiputera, are facing many challenges to compete with the continuous development of large format growth stores in urban and semi-urban areas, as well as new development townships (Ahmad, Abdul Rani, & Mohd Kassim, 2010).

The challenges faced by SME enterprises include accessibility related to finance assistance (Abdullah, Ahsan & Alam, 2009), inadequate working capital (Ekanem & Wyer, 2007), lack of skilled human capital, lack of accessibility to technology (Dervitsiotis, 2003; Linnenluecke & Griffiths, 2010), lack of innovativeness (Omar, Kassim, Shah Alam, & Zainol, 2018), non-conducive government policies, and stiff business competition, particularly with regard to large retail organizations (Saleh, Caputi & Harvey, 2008; Saleh & Ndubisi, 2006). Numerous studies have been carried out on SMEs' strengths and weaknesses in innovation, which require innovative approaches due to SMEs' lack of financial support and resources (Farsi & Toghraee, 2014; Van de Vrande, De Jong, Vanhaverbeke, & De Rochemont, 2009). Social media developments have further

accentuated major changes in how SME retailers strive to be cooperative and innovative when interacting with customers (Flavián, Guinalú, & Gurrea, 2006). Some scholars have proposed co-creation ideas in the innovation field, which is an extension of experience marketing (Prahalad & Ramaswamy, 2000). According to Hatch and Schultz (2010), the DART model has been introduced, consisting of dialogue, access, transparency and referred risk as part of the innovation-based co-creation model. It has become a central concern in the developing brand co-creation theories. Lusch, Vargo, and Gustafsson (2016) argued that this new phenomenon is a result of the introduction of service dominant logic (S-D Logic), which has a strong focus on the impact of value co-creation among customer-service providers.

Basically, the value co-creation process can improve retailers' brand equity, as it nurtures a situation that equally benefits retailers and customers (Zhang, Jiang, Shabbir, & Du, 2015). In other words, the approach is different when compared to the traditional market construct, which is 'active firm versus passive consumer' (Ng, Nudurupati, & Tasker, 2010). The co-creation process enables customers and retailers to cooperatively contribute their expertise and knowledge throughout service interaction in order to gain benefits (Vargo & Lusch, 2004). Moreover, Grisseemann and Stokburger-Sauer (2012) believe that co-creation can influence the brand equity of SME retailers because the practice of customer-company interactions in larger businesses might be less intense and require other communication tools when compared to small enterprises. Implementing co-creation practices in SMEs' daily operations may improve the self-enhancement aspects of consumers.

Earlier studies on SME retailers' competitiveness found that most small retailers lack a competitive edge because of critical resource inadequacy (Roslin & Melewar, 2008). However, flexibility, quick decision making, and being responsive to changes represent the behavioral advantages of SMEs (Dominguez & Mayrhofer, 2017; Nieto & Santamaría, 2010). Therefore, it is vital for retailers to leverage these advantages to strengthen their brand equity, which can be cultivated through relationship marketing efforts, the instillation of brand knowledge into customers' minds, and the creation of

memorable service values (Zhang et al., 2015; Zhang, Guo, Hu, & Liu, 2016).

Past studies by Nieto and Santamaría (2010) examined external networks in the innovation process and identified advantages gained by small organizations through learning from partners in new product applications. However, several scholars have pointed to the lack of studies on how SMEs can strengthen their brand equity via value creation with customers (McGee et al., 1995; BarNir & Smith, 2002). Thus, as suggested by many scholars (e.g., Ramaswamy & Ozcan, 2016; France, Merrilees, & Miller, 2015), this study further concentrates on value co-creation practices among SME retailers in brand building strategy.

Retail branding and its relationship with the co-creation process represent an emerging and significant focus area in current relationship marketing circles (Ramaswamy & Ozcan, 2016). This new interest is based on the argument that involving customers in the value creation process and brand building is an important source of brand equity (Keller, 2008), since customers play their roles by integrating resources in the production of valuable output (Vargo, Maglio, & Akaka, 2008). Various attempts also have been made to explore the brand co-creation concept and its major effects from the perspectives of strategic marketing studies (France et al., 2015; Shao & Ross, 2015; Ramaswamy & Ozcan, 2016) and management issues (Ind, 2014). However, Fisher and Smith (2011) argued there is no concrete evidence that co-creation will result in a satisfactory outcome for the brand or the company, as it could lead to a chaotic situation. The inconsistency of findings has led marketing and management scholars to explore how to effectively implement, manage, and strategize the co-creation process in building brand strength, which will in turn improve the overall brand equity of retailers. The role of co-creation and its impact on retailer brand equity is inadequately studied, particularly among SMEs in service industries. Hence, this study aims to improve our comprehension of customer value co-creation and how it influences retailer brand equity. In this sense, literature reviews and research hypotheses linking all the dimensions of customer value co-creation to SME brand equity are put forward. Next the methodological aspects of this research are explained. A data

analysis using SEM is carried out to test the proposed research hypotheses. Finally, we discuss the managerial implications based on the results obtained and describe a research agenda for the future.

## **Literature Review and Theoretical Framework**

### **Customer Value Co-creation Behavior and Brand Equity of Retailers**

Branding and brand equity are imperative in marketing fields, as they have been proven to help business entities improve their sales, perception, and cognitive behavior beyond loyalty (Aaker & Keller, 1993). Recent studies pertaining to SMEs prove that investments in building strong brands have a positive influence on the competitiveness and the performance of the brand owner (Agostini, Filippini & Anna 2015). Based on the concept proposed by Aaker (1991), brand equity is defined as “a set of brand assets and liabilities linked to a brand, its name, and symbol, that add to or subtract from the value provided by product or service to a firm and/to that firm’s customers.” Keller (1993, p.2) presented a conceptual model of brand equity from a customer-based perspective, which he defines as the “differential effect of brand knowledge on consumer response to the marketing of the brand.” Customer-based brand equity occurs when the firm succeeds in establishing a high level of brand awareness and a positive brand image in consumer memory. Jinfeng and Zhilong (2009), on the other hand, proposed the concept of retail equity to be more closely related to branding, which is conceptualized as the incremental utility of value added to a retailer by its brand name.

These seminal studies on brands and brand equity provide us with a greater understanding of brand management strategies and, consequently, enable SMEs to co-evolve with the co-creation concept, particularly in the consumer market. According to Bharti, Sharma, Agrawal and Sengar (2014), co-creation practices, especially at the bottom level of the consumer pyramid, are not an optional strategy. However, it is actually a necessity for SME retailers to be profitable, sustainable, and capable of creating a strong brand in the market for a longer run.

In this study, customer value co-creation behavior can be understood as the high involvement of customers in product or service co-creation and customization (Kristensson, Matthing, & Johansson, 2008). Business efficiency and customer engagement can be obtained

through the co-creation concept. This concept is an extension of the concept of 'customization' introduced by Fuat Firat, Dholakia, and Venkatesh (1995). A study conducted by Lusch and Vargo (2004) revealed that consumers are involved as co-producers or operant resources during the service or product offering.

This idea is more closely akin to a buyer-centric approach in a mass-customization process. Several scholars have argued that the postulation of substantial customization under co-production might happen only when customers have the know-how to co-create services relevant to their liking (Bendapudi & Leone, 2003). In this regard, this research focuses on basic service retail by SMEs, which is highly related to customer preference. This is further supported by several scholars who offered comprehensive reviews on customer participation and roles when they are at the transactional process, for instance: as a partial employee, as an auditor (Mills & Morris, 1986), in human resources (Bowen & Jones, 1986), in productive resources (Bitner, Faranda, Hubbert, & Zeithaml, 1997), as an innovator (Ulwick, 2002), as an advocate (Von Hippel, 2001), as a co-producer (Martin Jr, Horne, & Chan, 2001), as an instructor (Wibe & Narula, 2001), and as a competent source (Prahalad & Ramaswamy, 2000, 2003).

Moreover, these roles will build customer relationships with retailers, both of whom benefit, for instance, from more desirable customer feedback, which leads to improvements in two-way communications (Kelley, Donnelly & Skinner, 1990), perceived service quality (Bitner et al., 1997), new product development and service innovation (Matthing, Sanden, & Edvardsson, 2004), as well as the service development process (Prahalad & Ramaswamy, 2003).

Customer citizenship behavior is considered an extra-role behavior, where a customer acts beyond loyalty during the co-creation process with the firm. It represents an added advantage for other customers and the firm to experience further value co-creation if it is implemented (Shamim, Ghazali, Jamak, & Sedek., 2015).

Customer value co-creation behavior (CVCB) in this research context is conceptualized as voluntary or extra-role behavior that provides extraordinary value to the firm and consumers (Yi & Gong, 2008; Yi, Natarajan, & Gong, 2011). It is a multidimensional concept that consists of two overarching dimensions: customer participation

behavior and customer citizenship behavior. Customer participation behavior comprises four dimensions, namely: (1) information seeking, (2) information sharing, (3) responsible behavior, and (4) personal interaction. The first dimension of customer participation is information seeking, which refers to customers who seek information about how to perform their tasks as value co-creators, as well as what they are expected to do and how they are expected to perform during a service encounter (Yi and Gong, 2013). The second dimension is information sharing, which refers to customers' willingness to provide information for use in value co-creation processes (Lengnick-Hall, 1996). The third dimension is responsible behavior, which refers to customer behavior related to cooperation, following rules and policies, and accepting employees' directions (Yi & Gong, 2013). The fourth dimension is personal interaction, which refers to interpersonal relations between customers and employees (Yi & Gong, 2013).

Customer citizenship behavior is also comprised of four dimensions, namely: (1) feedback, (2) advocacy, (3) helping, and (4) tolerance (Yi & Gong, 2013). The first dimension, feedback, refers to solicited and unsolicited information customers provide to employees to improve the service process (Groth, Mertens & Murphy, 2004). The second dimension is advocacy, which refers to recommending and promoting the business to others (Groth et al., 2004). The third dimension, helping, refers to customer behaviors in assisting other customers (Yi & Gong, 2013). The fourth dimension is tolerance, which refers to customer's willingness to be patient when the service does not meet the customer's expectations (Lengnick-Hall, Claycomb, & Inks, 2000). Several researchers even mentioned the importance of this process to service retail research since it is based on knowledge regarding the intertwined fabric of organizations and individuals (Lusch, Vargo, & O'Brien, 2007).

As a matter of fact, co-creation focuses on the processes of value-creation, where customers' involvement as value co-creators leads to unique customer experiences (Payne, Storbacka, & Frow, 2008). Several scholars have postulated that the co-creation process is designed to nurture a business culture based on connectedness, curiosity, and collaboration (Lafley & Charan, 2008). Shaw et al. (2011) identified the importance of S-D Logic to the notions of the

experience economy and its contributions to new products and service developments. Similarly, Pine and Gilmore (1999) suggested the importance of economy dimensions or characteristics, where service experience is tangible and can define the connection as well as the ecosystem of the relationship that unites customers with services that have been delivered.

In other theoretical concepts, Dabholkar (1996) found that the co-creation of experiences considers the consumer as an active actor during the process of consumption and production of values and regards customer involvement as well as participation as a co-creator of the experience. In addition, the social exchange theory helps in clarifying the importance of understanding customer-service provider interactions in value co-creation (Thibaut, 2017; Homans, 1958). The theory explains how co-created value occurs in the form of customers' unique and personalized experiences that could enhance their relationships, loyalty, as well as word of mouth. The result shapes the situation to draw a strong result of repeat purchases (Bolton, 2011). Cheng, Chang, and Li. (2013) argued that firms which focus on the customer are those that ensure continuous delivery of superior value throughout the relationship life-cycle by offering customized products and services to customers.

New ideas in relationship marketing research reveal that customers are no longer passive entities in value creating interactions. Rather, they co-jointly create offerings made by firms, co-create value, and co-produce and co-innovate with firms (Payne et al., 2009). In terms of community interaction, several studies have found that value co-creation strengthens positive communication among members of a brand community (Carlson, Suter & Brown, 2008).

Likewise, Lemon, Rust, and Zeithaml (2001) and Zaglia (2013) found that co-creation is very helpful because it brings members closer together to exchange ideas, to develop mutual interests, and to increase members' affective connection toward the brand, which is crucial in brand selection. Additionally, a recent study by Kristal, Baumgarth, Behnke, and Henseler (2016) empirically found that co-creation had a positive effect on observer-based brand equity. Millspaugh and Kent (2016) also proposed that co-creation practices and positive interaction with customers lead to brand equity

development of SME designer fashion enterprises. Based on the above discussion, the following hypotheses are proposed:

H1: Information seeking has a positive relationship with the brand equity of retailers.

H2: Information sharing has a positive relationship with the brand equity of retailers.

H3: Responsible behavior has a positive relationship with the brand equity of retailers.

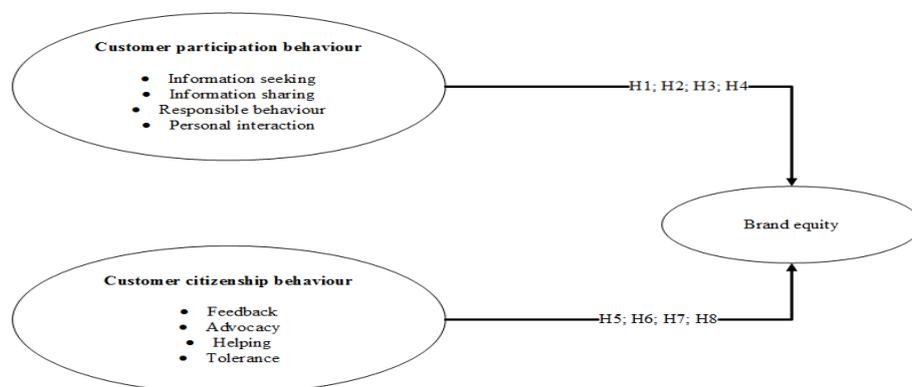
H4: Personal interaction has a positive relationship with the brand equity of retailers.

H5: Feedback has a positive relationship with the brand equity of retailers.

H6: Advocacy has a positive relationship with the brand equity of retailers.

H7: Helping has a positive relationship with the brand equity of retailers.

H8: Tolerance has a positive relationship with the brand equity of retailers.



**Fig. 1. The research conceptual model**

**Methodology**

**Sampling Design and Procedures**

The target population of this study is customers who patronize small and medium enterprise (SME) service retailers who have business operations at selected business complexes situated at six different

locations in Malaysia. The locations of the six business complexes are the Northern region (Kangar), the Central region (Kuala Lumpur and Shah Alam), the Southern region (Johor Bahru), as well as the East Coast region (Kota Bharu). All retailers involved in this study are given various entrepreneurial development support, including financial facilities, business consultations, marketing grants, and rental rates below market price.

All measurement items were derived and directly adapted from their original scales. Moreover, the items were originated in English and then translated into Bahasa Melayu using a back-to-back translation approach because the respondents were primarily Malaysian (Hayashi et al., 1992). The first-stage translation was conducted in order to clarify the conversational context and determine sufficiently high reliability and validity before the review process by proofreaders. At the pre-test stage, there were three appointed experts who refined the content validity of the questionnaire (Malhotra, 2011).

The data collection process took three months to complete (August to October 2017). This study used purposive sampling, and the sample was recruited by using personally administered questionnaires. Purposive sampling is a common sampling design in consumer research, especially in the context of the retail industry, where the conformance of a sample to certain criteria is required (Bernard, 2002). The drop-and-collect method was adopted in questionnaire distribution, where the researcher and/or the trained research assistants hand-delivered them to the owners or managers of service SMEs located at the business complexes of the four major regions in Peninsular Malaysia. The questionnaires were also distributed to customers at the business premises, and later all of the completed questionnaires were compiled (Ibeh, Brock, & Zhou, 2004). The questionnaires were to be collected after three weeks. Some 700 copies of questionnaires were disseminated among the target population, and 548 completed questionnaires were returned, thus constituting a response rate of 78%.

### **Research Instruments**

All the questions in the survey were formulated based on measures revised from previous studies. Several areas of wording in the questionnaires were changed to accommodate the requirements of the

target sample. To confirm the content validity of the measurements, the final questionnaire was pre-tested among academics and non-participating consumers. The questionnaire was translated into Bahasa Malaysia and afterward back-translated to English by a different translator in order to confirm language compatibility.

In this study, customer value co-creation behavior (CVCB) was measured from the research by Yi and Gong (2013) as a multidimensional concept that consists of two major dimensions: customer participation behavior and customer citizenship behavior. Customer participation behavior comprises four dimensions, namely (1) information seeking, (2) information sharing, (3) responsible behaviour, and (4) personal interaction, while customer citizenship behavior comprises (1) feedback, (2) advocacy, (3) helping, and (4) tolerance (Yi & Gong, 2013). Consistent with past studies, brand equity was measured as a unidimensional construct that consists of four reflective indicators (Gil-Saura, Ruiz-Molina, Michel, & Corraliza-Zapata, 2013; Yoo, Donthu & Lee, 2000). All measurement items were on a five-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree.” Appendix A lists all of the measurement items and related literature.

### **Common Method Bias (CMB)**

A few tests were conducted to assess any threat of common method bias (CMB) as the data were collected via self-reported questionnaires from SME customers (single source). First, the questionnaire was organized in such a way that an introduction was included, informing individuals that the study was investigating consumer behavior without suggesting any connectedness of independent and dependent variables (Das & Joshi, 2007). Respondents were also informed about no “right or wrong” answers to minimize the chances of receiving socially desirable responses (Podsakoff & Organ, 1986). Second, Harman’s one-factor test was used to check for the existence of CMB (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The Harman’s one-factor was 34.5%, confirming there was no substantial CMB (Podsakoff & Organ, 1986). Third, the correlations between the constructs were evaluated. The correlation results show that none of the correlations among the research constructs are higher than the

value of 0.90. Hence, the results revealed that CMB is not likely to compromise the findings of the study ( Bagozzi, Yi, & Phillips, 1991).

**Table 1. Demographic profile of respondents**

Demographic Profile		Respondents (n=548)	
		Frequency	Percentage
Gender	Male	286	52.1
	Female	262	47.9
Ethnicity	Malay	467	85.2
	Chinese	44	8
	Indian	27	5
	Others	10	1.8
Age	Less than 20 years	45	8.3
	20 - 29 years	164	29.9
	30 -39 years	188	34.3
	40 - 49 years	105	19.1
	50 - 59 years	42	7.6
Marital status	Single	201	36.8
	Married without children	59	10.7
	Married with children	272	49.7
	Widowed/divorced/separated	16	2.9
Income	Less than RM 1,000	99	18.1
	RM 1,000 - RM 1,999	90	16.3
	RM 2,000 - RM 3,999	152	27.7
	RM 4,000 - RM 5,999	106	19.2
	RM 6,000 - RM 7,999	56	10.5
	RM 8,000 and above	45	8.2
Education	Primary School	22	4.1
	High School	85	15.5
	Certificate/Diploma	270	49.3
	Bachelor's Degree	111	20.2
	Postgraduate Degree	60	10.9

### Data Analysis and Results

Based on Table 1, the majority of the 548 respondents are male (52%). The sample also includes individuals of varying age levels: 164 (30%) are in the category of 20-29 years of age, 188 (34%) are in the category of 30-39 years of age, and 105 (19%) are in the category of 40-49 years of age. Most of the respondents are Malay, accounting for almost 85% of the sample. Some 272 respondents are married with

children, accounting for 49.7% of the sample. Additionally, 27.7% of the respondents have a monthly income bracket between RM2, 000 to RM3, 999. The results also reveal that approximately 290 respondents chose food and beverage SME retailers, accounting for 53%, while 154 (28%) and 55 (10%) of the respondents chose retailers in tailoring and ICT/mobile business, respectively. In addition, approximately 228 (41.6%) of the respondents have been customers of these SMEs for about one to two years.

### **Measurement Model Analysis**

The data was analyzed using the partial least squares structural equation modelling (PLS-SEM) version SmartPLS 3.0. Following the suggestions of Anderson and Gerbing (1988) and Venkatesh, Thong, and Xu (2012), the measurement model was tested prior to the assessment of the structural model. In the measurement model, the reliability and validity of the constructs and the indicators were assessed using Cronbach's alpha, factor loadings, composite reliability (CR), and average variance extracted (AVE).

First, the Cronbach's alpha values for all of the variables were found to be within the range of 0.73 to 0.92; this clearly indicates that the scales used in this study were highly reliable Hair Jr, Hult, Ringle, and Sarstedt (2017). Second, item loading and cross loading were assessed, where the common rule of thumb for item loading is 0.60 or higher (Chen & Myagmarsuren, 2011). Due to low loading, one item each was deleted from responsible behavior, information sharing, personal interaction, helping, and brand equity.

Third, scale convergence and discriminant validity in the measurement model were evaluated (Venkatesh et al., 2010). To measure convergent validity at the construct level, this research used the average variance extracted (AVE), where its value should be higher than 0.50. In addition, the composite reliability (CR) of all of the constructs must be above 0.70 (Hair et al., 2017). The composite reliability results reveal that the value exceeds the cut-off value of 0.70; and the average variance extracted (AVE) is above 0.50 (Fornell & Larcker, 1981). As depicted in Table 2, the AVE and the CR of the constructs ranged from 0.64-0.86 and from 0.84 to 0.95, respectively,

which exceeded the cut-off level, indicating there is no major issue in the convergent validity of the scales.

Next, discriminant validity is assessed by examining the Fornell-Larcker criterion, cross-loadings and the Heterotrait-Monotrait (HTMT) criteria of the items. To check the discriminant validity, all items were further examined for cross-loading. The cross-loading results indicated that all of the loadings are higher in corresponding constructs than in other constructs. The HTMT results of this study also specified that the findings satisfy the threshold criteria of HTMT of .85. Furthermore, all correlations between the variables were lower than their respective AVE square root estimates, as shown in Table 3. As a result, this study concludes that discriminant validity has been ascertained.

**Table 2. Result of measurement model**

Variables and Items	Cronbach's alpha	CR	AVE	Mean	Standard Deviation	Factor Loadings
Information Seeking	0.797	0.881	0.712	3.57	0.79	0.870
INSEEK1						
INSEEK2				3.45	0.88	0.851
INSEEK3				3.52	0.80	0.808
Information sharing	0.811	0.889	0.729			
INSHARE1				3.50	0.82	0.892
INSHARE2				3.53	0.83	0.905
INSHARE3				3.50	0.88	0.755
Responsible Behavior	0.800	0.842	0.640			
RESB2				3.60	0.76	0.823
RESB3				3.76	0.80	0.869
RESB4				3.62	0.79	0.841
Personal Interaction	0.924	0.952	0.869			
PINT2				3.94	0.75	0.927
PINTx 3				3.97	0.77	0.942
PINT4				3.96	0.77	0.927
Feedback	0.801	0.883	0.715			
FEEDB1				3.81	0.78	0.847
FEEDB2				3.76	0.79	0.864
FEEDB3				3.64	0.78	0.825
Advocacy	0.742	0.853	0.661			
ADVO1				3.70	0.77	0.825
ADVO2				3.81	0.79	0.850
ADVO3				3.61	0.84	0.760
Helping	0.778	0.871	0.693			
HELP1				3.67	0.76	0.768
HELP3				3.41	0.85	0.847
HELP4				3.44	0.83	0.879
Tolerance	0.731	0.842	0.640			
TOL1				3.26	0.98	0.730
TOL2				3.63	0.78	0.827
TOL3				3.47	0.90	0.839
Brand Equity	0.836	0.901	0.661			
BEQ1				3.68	0.77	0.854
BEQ2				3.77	0.75	0.900
BEQ3				3.69	0.80	0.849

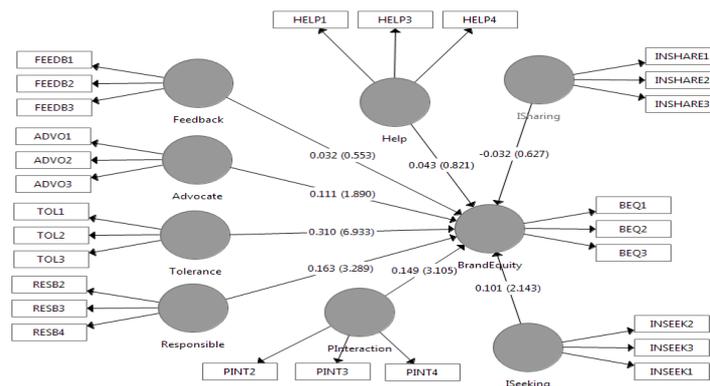
### Structural Model

Before the assessment of the structural model, the variance inflation and the tolerance values were initially calculated. The Variance Inflation Factors (VIFs) were found to be in the range of 1.839 and 2.593. According to Venkatesh et al. (2012), VIF values that are less than the suggested threshold of 5 do not indicate a major problem. Thus, collinearity among predictor constructs in this study is not an issue. Generally, Hair et al. (2017) indicated that the path coefficient, effect size ( $f^2$ ), the variance explained ( $R^2$ ), as well as predictive relevance ( $Q^2$ ) are normally applied to assess the structural model and the hypotheses. A bootstrapping procedure with 1,500 samples was applied to test the significance of the path coefficients. The value of  $R^2$  for brand equity is 0.473. According to several scholars,  $R^2$  values at 0.67, 0.33, and 0.19 are indicated as substantial, moderate and weak, respectively (Chin, 1998; Hair et al., 2017). Therefore, the model demonstrates moderate to strong explanatory capability based on the above result.

**Table 3. Discriminant validity assessment**

	Advocate	Brand Equity	Feed back	Help	Info Seeking	Info Sharing	Personal Interaction	Respo	Tolerance
Advocate	<b>0.813</b>								
Brand Equity	0.535	<b>0.868</b>							
Feedback	0.720	0.492	<b>0.846</b>						
Help	0.631	0.520	0.580	<b>0.833</b>					
Info Seeking	0.498	0.457	0.463	0.516	<b>0.844</b>				
Info Sharing	0.529	0.438	0.537	0.528	0.625	<b>0.854</b>			
Personal Interaction	0.578	0.507	0.622	0.450	0.400	0.442	<b>0.932</b>		
Respo	0.611	0.544	0.618	0.536	0.466	0.589	0.632	<b>0.845</b>	
Tolerance	0.500	0.578	0.428	0.641	0.479	0.472	0.403	0.478	<b>0.800</b>

Note: Square root of the AVE for each construct is given at the diagonal entries



**Fig. 2. Structural Model with Direct Effect**

A closer look reveals that information seeking is positively related to brand equity ( $\beta=0.101$ ,  $p<0.05$ ,  $t=2.143$ ). Thus, hypothesis H1 is supported. Moreover, the results indicate that responsible behavior, ( $\beta = 0.163$ ,  $t = 3.289$ ,  $p < 0.01$ ), personal interaction ( $\beta = 0.149$ ,  $t = 3.105$ ,  $p < 0.01$ ), advocacy ( $\beta = 0.111$ ,  $t = 1.89$ ,  $p < 0.05$ ), and tolerance ( $\beta = 0.31$ ,  $t = 6.933$ ,  $p < 0.001$ ) have significant positive effects on brand equity. As such, this study concludes that H3, H4, H6, and H8 are supported.

However, the direct relationships between information sharing ( $\beta = -0.032$ ,  $t = 0.627$ ,  $p > 0.05$ ), feedback ( $\beta = 0.032$ ,  $t = 0.553$ ,  $p > 0.05$ ), helping ( $\beta = 0.043$ ,  $t = 0.821$ ,  $p > 0.05$ ) and brand equity are not significant. Thus, H2, H5, and H7 are not supported. In addition, the findings indicate that all of the exogenous variables jointly explained 47.3% of the variance in brand equity (refer to Figure 1 and Table 4). After evaluating the  $R^2$  value, the researchers evaluated the effect size of  $f^2$ . The  $f^2$  effect size helps to determine if the exogenous constructs have an important influence on the endogenous construct (Hair et al., 2017). According to Cohen (1988), effect sizes of 0.02, 0.15, and 0.35 represent small, medium and large, respectively. Based on Table 4, the effect size results indicate that customer value co-creation behavior has a medium effect on brand equity ( $f^2 = 0.236$ ).

**Table 4. Path coefficients and hypothesis testing**

	Hypotheses	Std Beta	Std Error	t-value	P value	Results
H1	Information Seeking – Brand Equity	0.101	0.047	2.143	0.016	Supported
H2	Information Sharing – Brand Equity	-0.032	0.051	0.627	0.265	Not Supported
H3	Responsible Behavior – Brand Equity	0.163	0.05	3.289	0.001	Supported
H4	Personal Interaction – Brand Equity	0.149	0.048	3.105	0.001	Supported
H5	Feedback – Brand Equity	0.032	0.057	0.553	0.29	Not Supported
H6	Advocacy – Brand Equity	0.111	0.059	1.89	0.029	Supported
H7	Helping – Brand Equity	0.043	0.052	0.821	0.206	Not Supported
H8	Tolerance – Brand Equity	0.31	0.045	6.933	0.000	Supported

## **Discussion and Conclusions**

This study aims to shed light on the impact of customer value co-creation behavior (CVCB) on brand equity. Following the extant literature (Yi & Gong, 2008; Yi et al., 2011), CVCB consists of eight dimensions. Hence, we modeled CVCB as the first-order construct of information seeking and sharing, personal interaction, advocacy, feedback, helping, and tolerance, as well as responsible behavior. Furthermore, we developed and tested theoretical linkages between the dimensions of CVCB and the brand equity of retailers. The positive relationship between CVCB and BE supports prior studies, such as the work of Ramaswamy and Ozcan (2016), Merrilees (2016), and Xie, Tsai, Xu, and Zhang (2018). Tables 3 and 4 reveal that the findings are associated with the proposed relationships between the variables. The findings offer significant insights for SMEs involved in service businesses. First, Hypothesis 1 pertains to the relationship between information seeking and brand equity. It was found to be statistically significant ( $p < 0.05$ ) with an effect of 0.101. The finding is consistent with previous research suggesting that most customers engage in information-seeking behavior to clarify service requirements and satisfy other cognitive needs (Johnson, 1996). Similarly, in the context of an organization, employees seek information to determine their role in the organization and to understand the nature of the services and their role in the delivery process (Kellogg, Youngdahl, & Bowen., 1997). In addition, this finding confirmed the proposition by Gromark and Melin (2013) which suggests that public organizations should adopt a brand orientation strategy to build brand equity using a holistic, interactive, and co-creative approach.

Second, Hypotheses 3 and 4 propose that responsible behavior and personal interaction are related to brand equity. The results show a statistically significant relationship ( $p < .001$ ), and the effects identified stand at 0.163 and 0.149, respectively. Therefore, it can be concluded that responsible behavior and personal interaction have a positive and significant relationship with brand equity. Relationship loyalty between a service provider and a customer is attributable to the customer's personal interaction and responsible behavior. Customer interaction and participation allow for the discovery of opportunities to develop relationships and enhance loyalty (Cossío-Silva, Revilla-

Camacho, Vega-Vázquez, & Palacios-Florencio, 2016). In addition, Millspaugh and Kent (2016) proposed that co-creation practices and positive interaction with customers lead to brand equity development in SMEs. In this respect, this finding empirically supports suggestions by scholars (Cambra-Fierro, Melero-Polo, & Vázquez-Carrasco., 2014; Grisseman & Stokburger-Sauer, 2012) that SMEs should engage in frequent active dialogue and personal interactions with customers, which will in turn improve the engagement process.

Hypotheses 6 and 8 set out to investigate whether customer advocacy and tolerance are related to brand equity. The findings suggest that a customer's extra roles, such as advocacy and tolerance, are significantly related to brand equity. The study empirically provides insight regarding the social exchange theory (Homans, 1961) and service-dominant logic (Vargo & Lusch, 2008), as buyers and sellers are willing to co-create and interact to realize exchange benefits and ensure mutual well-being. As discussed extensively by scholars (Burke, 2006) from the perspective of customers, the co-creation and joint practices between buyers and sellers could only possibly happen when both parties believe that reciprocal benefits will be exchanged. Companies that consistently maintain service quality will create high tolerance and increase customers' active loyalty and satisfaction (Yap & Sweeney, 2007). Service firms that advocate for the best interests of customers will be reciprocated with their trust, repeat purchases, and loyalty for the firm and its brands. As such, several researchers have suggested that customer advocacy is a major step forward in creating enduring relationships between a firm and its customers (Lawer & Knox, 2006; Urban, 2005). Our results confirm previous findings that advocacy participation is seen as an essential form of participation and acts as the means for brand equity development by engaging members in interactive communication with other members and with the brand (Karjaluoto, Munnukka, & Tikkanen, 2014). This is particularly important for firms using social media such as Facebook. Several studies have identified a positive linkage between brand community participation and brand loyalty (e.g., McAlexander, Schouten, & Koenig, 2002; Royo-Vela & Casamassima, 2011). In addition, when consumers are able to form an

emotional bond with a brand, they will have greater tolerance (Giovanis & Athanasopoulou, 2018).

Thereby, it is crucial for SME retailers to strengthen positive communication with related community brands (in this study we are focusing on the Bumiputera community) to enable them to be closely related with service organization based on the psychological, behavioral, and emotional aspects of the customers. According to Choo (2010), with regard to the density of retailers in Malaysia, a decline in the number of small-scale retailers is expected due to the expansion of a large-scale retailing format. In addition to policies and regulatory approaches to tackle this issue, SME retailers should adopt a co-creation strategy in the service delivery process in order to enhance their competitiveness.

Furthermore, Jaakkola and Alexander (2014) suggested that co-innovation and co-invention practices have predictive effects and lead to a positive brand image for SMEs. Thus, the findings from this study contribute to the body of knowledge by proving that there is a significant relationship between value co-creation behavior and brand equity among SME retailers. To safeguard the willingness of customers to co-create in an innovative retail service offering, customers must first be engaged and participating to ensure that interactions between sellers and buyers are easier during the co-creation process (Vargo & Lusch, 2016). Other practical approaches, which should be taken into consideration, include proper planning for training programs, particularly for frontline employees, the creation of ambiance that is conducive to service co-creation and co-innovation, and improvements in the overall capabilities of delivering an exceptional and memorable service experience.

### **Managerial Implications**

This research study, along with several theoretical implications, has interesting implications for managers and owners of SMEs who face severe challenges in leveraging their brand equity due to the lack of financial support, limited resources, and other challenges (Farsi & Toghraee, 2014; Van de Vrande et al., 2009). This research study suggests that promoting a co-creation culture and a more interactive

business format will help to leverage the brand equity of SMEs and will also promote a positive brand image of a company.

This research study further analyses precise spheres of co-creation that will specifically help managers in leveraging SMEs' brand equity. Among those factors specifically identified, information seeking, responsible behavior, personal interaction, advocacy, and tolerance have a significant effect on SMEs' brand equity. SMEs need to develop more interactive information-sharing strategies to engage prospective customers in more effective ways. These strategies may include the use of social media, which can make information seeking more entertaining and build a passionate, engaged consumer base who have a propensity to initiate their own brand-supportive co-creation, including user-generated content and short video messages. Moreover, there is a need to promote more responsible behavior among customers by providing a sense of ownership and relatedness to make co-creation more effective, because without responsible customer behavior, little value co-creation occurs in the service encounter (Yi et al., 2011).

SME owners and managers also need to develop a more conducive, interactional atmosphere between customers and employees in their business culture, which includes interactional aspects such as courtesy, friendliness, and respect. The more pleasant, positive, and amiable the social environment, the more likely customers are to interact and engage in value co-creation (Lengnick-Hall et al., 2000). Furthermore, this research study suggests that the co-creation process can improve SMEs' brand equity because it nurtures a situation that benefits both customers and service providers, as they co-create and interact to exchange mutual benefit (Zhang et al., 2015). Whereas co-creation will continuously upgrade the service provided, it will also in turn create high tolerance, augment customer loyalty, and aid in the development of emotional bonds (Yap & Sweeney, 2007) to increase SMEs' brand equity and customer base.

#### **Limitations and Recommendations for Future Research**

There are a few limitations to the study that should be highlighted. One of the limitations of the research is the demographic profile of the respondents. A majority of the respondents were patronizing food and beverage (F&B) or computer-less service (a hybrid of product and

service) retailers. Thus, investigating SME retailers operating in other specific industries that are under-researched from the perspective of co-creation and relationship marketing should be considered – for instance, fashion design and tailoring, technical services, e.g., automotive workshops, machine maintenance, construction, and electrical and mechanical work. Additional research should also be carried out in creative industries such as interior design, multimedia content service providers, and landscaping services. It would also be worthwhile to extend this research to educational institutions and training consultants since these business segments are highly related to service customization and also require a high level of customer management. Finally, this study is based on cross-sectional data from a sample of Malaysia consumers. Thus, using a longitudinal research design is recommended for future studies to better grasp the nature of and the relationships among constructs.

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## Appendix A: Measurement Items

<b>Items</b>	<b>Questions</b>	<b>Source</b>
Information seeking	I have asked others for information on what this retailer offers. I search for information on where this retailer is located.	Yi and Gong (2013)
Information sharing	I pay attention to how others behave to use this retailer products/services well. I clearly explain what I wanted the retailer to do. I give the retailer proper information. I provide necessary information so that the retailer could perform his or her duties. I answer all the retailer's service-related questions.	Yi and Gong (2013)
Responsible behavior	I perform all the tasks that are required in getting the products/services. I adequately complete all the expected behaviors in getting the products/service. I fulfil my responsibilities to the retailer/service provider in getting the service. I follow the retailer's/service provider's directives or orders.	Yi and Gong (2013)
Personal interaction	I am always friendly to the retailer/service provider. I am always kind to the retailer/service provider. I am always polite to the retailer/service provider. I am always courteous to the retailer/service provider.	Yi and Gong (2013)
Feedback	If I have a useful idea on how to improve the service, I let the retailer know. When I receive good service from the retailer, I comment about it. When I experience a problem, I let the retailer know about it.	Yi and Gong (2013)
Advocacy	I say positive things about the retailer services and the retailer to others. I recommend the retailer products/services and the retailer to others. I encourage friends and relatives to use this retail's products/services.	Yi and Gong (2013)
Helping	I assist other customers if they need my help on this retail's products/services. I help other customers if they seem to have problems with their retailer/service provider. I teach other customers to use the retailer	Yi and Gong (2013)

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	products/services correctly. I give advice to other customers on this retail's products/services.	
Tolerance	If the retail's products/services are not delivered as expected, I would be willing to put up with it. If the retailer makes a mistake during service delivery, I would be willing to be patient. If I have to wait longer than I normally expected to receive the retailer service, I would be willing to adapt.	Yi and Gong (2013)
Brand equity	It makes sense to go to retail store X instead of any other store, even if they are the same. Even if another retail store has same features as store X, I would prefer to go to buy in retail store X. If there is another retail store as good as store X, I prefer to go to buy in retail store X. If another retail store is not different from store X in any way, it seems smarter to go to buy in retail store X.	Gil-Saura et al. (2013); Yoo, Donthu, and Lee (2000)

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