

## MULTIPLE INDIRECT EFFECTS OF CUSTOMER EQUITY IN TELECOMMUNICATION INDUSTRY

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### ABSTRACT

In light of the growing interest in the use of mobile phones, this study set out to examine the relationships between customer equity and consumer purchase intention in the context of telecommunication. A cross-sectional study involving purposive sampling was used to collect data from 203 respondents. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the findings show that the multiple indirect effects of value equity and relationship equity significantly mediated the relationship between customization and purchase intention. Meanwhile, switching cost was found to moderate the link between brand equity-purchase intention. Finally, implications and future study are outlined and discussed.

**KEYWORDS:** Customization, Customer equity, Purchase intention, Malaysia, SEM-PLS

### INTRODUCTION

Mobile communication services are a recent phenomenon, where mobile devices have become increasingly essential in people's daily life; and its functions have also become similar as a desktop computer (Al-Debei & Al-Lozi, 2014; Kim, Park, & Jeong, 2004; Mazoni, castaldi, & Addeo, 2007). Over the last ten years, mobile phone services have changed from being a luxury item to an essential and important element in daily life. Nowadays, people rely heavily on mobile phones not just for business purposes but also personal needs. According to Gupta (2013) smartphone users spend approximately 82% of their mobile usage on apps and the rest on calling, e-mailing, and texting. In Malaysia, 9 out of 10 users access the internet via smartphone (Mcmc.gov.my, 2018).

Since 1987, the Malaysian government started to privatize the telecommunication industry. Privatization was intended to allow the telecommunication industry in Malaysia to become more competitive and liberal (Mohd Ali, 1998). Since then, the Malaysian telecommunication industry has experienced rapid growth and transformed into an economic commodity; for example in 2016, capital expenditure (Capex) in the telecommunication industry had increased by 17.5% (equivalent to RM6.98 billion) (Mcmc.gov.my, 2018). To date, the telecommunication providers have achieved 64% 4G LTE population coverage. The Malaysian Communications and Multimedia Commission (MCMC), an independent agency, coordinates and monitors activity for both telephone and broadband sectors. The Malaysian mobile market is currently growing with a mobile penetration rate of 141.3% in 2016 as compared to only 98.9%

subscribers in 2008 (Mcmc.gov.my, 2018). In addition, the market share among the telecommunication providers in Malaysia is almost 'neck-to-neck' with Digi (28%) capturing the largest market share, followed by Maxis and Celcom who have garnered around 26% and 24% respectively (Mcmc.gov.my, 2018).

Rising competition as well as changing external factors poses fresh challenges to the mobile service providers in Malaysia. In the third quarter of 2014, the total mobile subscriber base declined by 89,000 (Digital News Asia, 2018). Furthermore, during the first quarter of 2015, the Malaysian mobile industry decreased by more than 500,000 subscribers - one of the biggest quarterly declines in recent years (Goh, 2015). In addition, Malaysia's top mobile providers, also known as the Big Three, consisting of Maxis Bhd (Maxis), Celcom Axiata Bhd (Celcom), and Digi.Com Bhd (Digi), have always been highly competitive against each other in delivering products and price (Kong, 2015). The recent addition of telecommunication service providers such as Tune Talk and U Mobile has intensified the telecommunication market (Thestar.com.my, 2018). As a result, the Big Tree have recorded lower pre-tax profits in Q1 2015: Maxis recorded a 10% decline to RM590 million, Digi dipped 4% to RM626 million, and Celcom fell by 32% to RM690 million (Thestar.com.my, 2018).

In the current highly competitive market, mobile service providers should increase efforts to attract new customers to enhance their market share, as well as satisfy their existing customers (Hogan et al., 2003; Lee-Kelly et al., 2003). It is essential for the mobile service provider to identify what affects their potential and existing customers in selecting their preference of a mobile phone service because this is an effective strategy to increase market share and gain a competitive advantage (Turel & Serenko, 2006). Customer equity suggests that three core ideas are particularly crucial to building customer intention and behavior; which are value equity, brand equity and relationship equity (Rust, Lemon, & Zeithaml, 2004). Although previous researchers have highlighted customer equity that affects customer purchase intention (e.g., Thammawimutti & Chaipoopirutana, 2018; Evanschitzky et al., 2017; Chen & Chang, 2008), yet no study has examined the effects of value equity, brand equity and relationship equity simultaneously. Hence, the purpose of this paper is to address the deficiency in the research by examining the multiple indirect effects of customer equity and customization on purchase intention; with the moderator effect of switching cost.

The subsequent section discusses the research framework and hypotheses. Next, research methods are described and results of the analysis are presented. Finally, implications, limitations and suggestions for further research are discussed.

## LITERATURE REVIEW

### *Service Dominant Logic (S-D Logic)*

The marketing sector has undergone a tremendous change from the exchange of tangible value to the exchange of intangible value. In response to this scenario, experts have introduced a new marketing paradigm: Service-Dominant Logic (S-D Logic) (Vargo & Lusch, 2004). According to Vargo and Lusch (2004), S-D Logic is an evolution of marketing that change from the traditional model (i.e., company-centric or goods-centered view) to a fresh model (i.e., consumer-centric or service-centered view). 'Value' is re-framed as being created through "participation in a value creation network" (Tynan & McKechnie, 2009). Collectively, S-D Logic highlights customer-defined and co-created value, operant resources (knowledge and skills) as the fundamental source of competitive advantage, as well as two-way communication with customers and relationship management (Merz, He & Vargo, 2009). Although some key premises of S-D Logic remain controversial, yet it has been deemed as an instrumental

framework in understanding today's increasingly complex marketing phenomena especially in the service industry (Ballantyne & Varey, 2008).

A company develops intangible composites of resources and activities in order to create more compelling value propositions than competitors; and thereby achieve competitive advantage and superior financial performance (FitzPatrick et al., 2013). Relatively, intangibility also represents the essence of the telecommunication industry which is implicitly S-D Logic. It is widely recognized that the management of intangible assets will create value in the services industry; however, its applicability in the telecommunication industry has been under-researched. Therefore, this paper posits that, S-D Logic is appropriate for framing the research of this study.

#### *Customization and Value Equity*

Customization is the ability of a company to provide customers with tailored products or services based on a great understanding of their interests and preferences (Mulvenna et al., 2000). Based on S-D Logic, a market offering is interesting if it expresses the value-in-context for the customer (Vargo et al., 2009). In addition, Vargo et al. (2009) stressed that value does not exist until the customer combines and applies the service provider's resources with other resources in their own context. Accordingly, companies have started to treat their customers as collaborating agents when developing various offerings. Co-produced products or service increases the value of an offering (Kleijnen et al., 2007); this is consistent with the S-D Logic as proposed by Vargo and Lusch (2008). Therefore, the customization of telecommunication service will result in an increase of value equity to a customer. Hence, the hypothesis is developed as follows:

*H1: There is a positive relationship between customization and value equity.*

#### *Customization and Brand Equity*

The ability to customize a product can play an important role in determining company's brand equity; from the customer perspective. Payne et al. (2008) evaluated the principle of brand relationship experience in the context of co-creation and S-D Logic. In addition, Venkatesh et al. (2003) explained that the key to success in the mobile or wireless context is the capability to provide personalization services that are desired by customers. As a result, studies have suggested that customization assists in enhancing customer loyalty by building a one-to-one relationship, as well as improve customer views about product quality, and building favorable brand association by distinguishing a particular product from competitors (Fan & Poole, 2006; Riecken, 2000). Thus, the hypothesis is suggested:

*H2: There is a positive relationship between customization and brand equity.*

#### *Customization and Relationship Equity*

Relationship equity represents the tendency for a customer to retain a relationship with a particular brand; and beyond the customer's objective and subjective assessments of the brand (Rust et al, 2005). The significant relationship between customization and relationship equity has been well-established in prior studies: Zhou et al. (2007) posit that customization in services could enhance customer loyalty; meanwhile, Chang and Chen (2009)'s studies in e-commerce indicate that customization services impact positively on customer satisfaction. Specifically, through a co-produced service between a company and its customer, customers were found to have a strong relationship on attitude and usage intention for both mobile (Nysveen et al.,

2005) and technology-provided services (Dabholkar, 1996). Therefore, the hypothesis is proposed that:

*H3: There is a positive relationship between customization and relationship equity.*

#### *Customization and Purchase Intention*

Generally, higher customization can offer better services because customers' preferences are met more effectively (Komiak & Benbasat, 2006). Offering customers the opportunity to express their preferences during the buying process will assist in developing positive feelings which impact positively on purchase intention (Franke et al., 2009). When users are motivated by customized services, their intention to stay and use the particular services tend to be increased (Ho, 2012). In addition, consumers who often use personalized services tend to be more motivated to make purchases (Dabholkar & Sheng, 2011). Hence, the availability of customization is more likely to positively influence customers' intention to purchase services offered by a telecommunication company. The following hypothesis is proposed:

*H4: There is a positive relationship between customization and purchase intention.*

#### *Value Equity and Purchase Intention*

Value equity refers to customers' assessment of the product based on its utility. In addition, value equity is seen to be an objective viewpoint about products or services and regarded as independent assessment of a company's products or service capability (Rust et al., 2004). According to Lemon et al. (2001), value equity incorporates three types of elements namely quality, price and convenience; they are the key drivers that determine value equity. Furthermore, Holehonnur et al. (2009) have shown that there is a relationship between value equity and purchase intention. Thus, consumers' purchase intention will increase when customers value equity increase. Based on the above discussion, the following is hypothesized:

*H5: There is a positive relationship between value equity and purchase intention.*

#### *Brand Equity and Purchase Intention*

Aaker (1993) defined brand equity in terms of five elements of brand assets, namely brand loyalty, brand awareness, perceived quality, brand association and other proprietary assets such as trademarks and patents. Strong brand equity provides a competitive advantage to the company because customers are aware and confident of the company. Brand equity is viewed as a core factor in increasing purchase intention of a preferred product and stimulates positive word-of-mouth and purchase intention (Cobb-Walgren et al, 1995; Johnson et al, 2006). Certainly, a high level of brand equity acts as a deferent to customers to switch to competing brands (Vogel et al, 2008). Thus, a positive relationship is expected to exist between brand equity and purchase intention in the telecommunication context. The following hypothesis is developed:

*H6: There is a positive relationship between brand equity and purchase intention.*

#### *Relationship Equity and Purchase Intention*

According to Rust et al. (2000), relationship equity programs should be designed to encourage existing customers to repurchase products, increase purchase size and increase the switching cost of purchasing competitor' products and services. Vogel et al. (2008) explained that

relationship equity could provide additional value to customers, where customers would be more delighted with a specific brand when the brand met their expectations. If the perceived relationship equity is strong, customers believe that they are well treated and handled with particular care; eventually leading to more future transactions (Vogue et al., 2008). Thus, the hypothesis is developed:

*H7: There is a positive relationship between relationship equity and purchase intention.*

#### *Multiple Mediation Effects of Customer Equity*

Since customer equity may vary from one industry to another (Blattberg & Deighton, 1996; Rust et al., 2000) their drivers should be examined on an industry-by-industry basis. There are three drivers of customer equity namely, Value Equity, Brand Equity, and Relationship Equity. By allowing customers to customize the products and services based on their needs, it will indirectly increase the value of benefits that will accrue to the customers (Kleijnen et al., 2007). This is in line with the concept of S-D Logic which was developed by Vargo and Lusch (2004). Moreover, Holehonnur et al. (2009) have shown that there is a relationship between value equity and purchase intention, there is sufficient evidence to posit that value equity has a mediating effect on customization and purchase intention.

*H8a: Value equity mediates the relationship between customization and purchase intention.*

Payne et al. (2008) found that the brand equity dimension may exist in the context of co-creation and S-D Logic. Others have found that customization may enhance customers' intention by developing favorable brand association (Fan & Poole, 2006; Riecken, 2000). Relatively, the strong relationship between brand equity and purchase intention has been well demonstrated in various contexts (Cobb et al, 1995; Johnson et al., 2006; Vogel et al., 2008). Thus, it is proposed that brand equity could mediate the relationship between customization and purchase intention.

*H8b: Brand equity mediates the relationship between customization and purchase intention.*

Based on S-D Logic, Vargo and Lusch (2004) stressed that firms could enhance their relationships with customers via value co-creation. In addition, companies could develop customization programs to synchronize with customers' demands (Lemon et al., 2001). The strong relationship between companies and their customers could result in customer's willingness to purchase products or services from the same company. Thus, relationship equity could mediate the customization and purchase intention link. Therefore, by co-developing new products or services customization can increase customer relationship with the company that could result in higher intention to purchase among customers. This leads to the following hypothesis:

*H8c: Relationship equity mediates the relationship between customization and purchase intention.*

#### *Moderating Effect of Switching Cost*

Switching cost is defined as the cost that is perceived, anticipated and experienced by consumers when altering a relationship from one company to another (Pick & Eisend, 2014). According to Jones et al. (2002), switching cost is the perceived economic and psychological costs associated with changing from one alternative to another. In other words, switching cost occurs when a customer purchases a new product from a different company instead of remaining loyal to the current company. Previous studies have used switching cost as moderators (Chuah et al., 2017; Pourabedin et al., 2016; Nagengast et al., 2014).

Value equity enhances customers' intentions by influencing their switching propensity (Rust et al., 2004). Therefore, a company that provides greater value for customers will inhere higher switching cost; where its customers will not likely purchase from another company. Hence, higher switching cost occurs when value equity exists. The hypothesis is developed as:

*H9a: Switching cost moderates the relationship between value equity and purchase intention in telecommunication service, where switching cost's impact on purchase intention is stronger with low switching cost; than with high switching cost.*

Strong brand equity can increase customer willingness to purchase products and services as well as enable them to better visualize and understand intangible factors. Chen and Chang's (2008) study highlighted a moderation effect of switching cost in affecting the relationship between brand equity and purchase intentions. Therefore, the stronger brand equity in a customer's perception, the lowest the probability for them to switch towards competitor's offering. Thus, the following hypothesis is proposed:

*H9b: Switching cost moderates the relationship between brand equity and purchase intention in telecommunication service, where switching cost's impact on purchase intention is stronger with low switching cost; than with high switching cost.*

Customers tend to continue an existing relationship with a particular service provider even when not fully satisfied due to barriers to switching (Anderson & Narus, 1990). Furthermore, Frenzen and Davis (1990) proposed that benefits obtained from a relationship-specific investment are free from the benefits of acquiring the product or service. Higher switching costs translate into customers' willingness to maintain the current seller relationship because of the investment in the relationship that results in customers' willingness to purchase from the same company. Therefore, an increase in switching cost will result in an increase in a repeat purchase. The hypothesis is proposed:

*H9c: Switching cost moderates the relationship between relationship equity and purchase intention in telecommunication service, where switching cost's impact on purchase intention is stronger with low switching cost; than with high switching cost.*

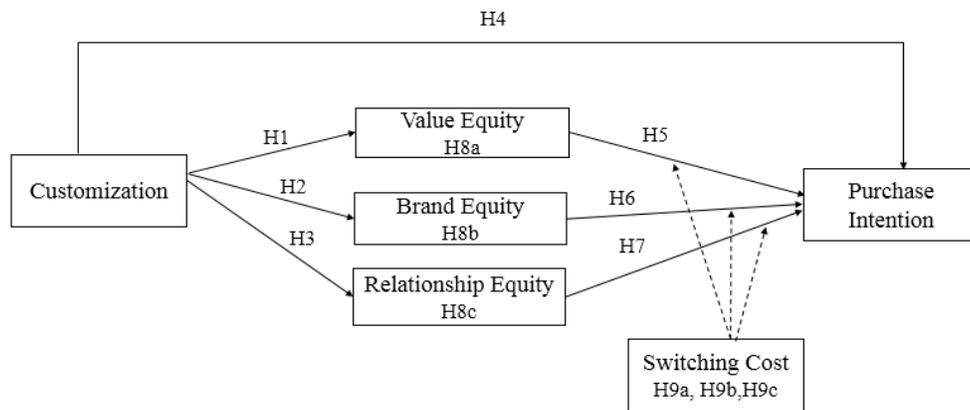


Figure 1. Conceptual Framework

## METHODOLOGY

### *Data Collection and Sample*

A total of 210 questionnaires were distributed through self-administered technique; this was beyond the suggested sample size of 153 as calculated via G\*Power 3 software with effect size of 0.15, margin error of 5% and power of  $(1-\beta) = 80\%$  (Faul, Erdfelder, Land & Buchner, 2007). Judgmental sampling was employed in this study to ensure a more representative sample. Respondents who fulfilled two criteria were invited to participate in this survey. The criteria were (1) respondent must be a subscribers of one of the Top 3 Telecommunication Service Providers in Malaysia (i.e., Digi Bhd, Maxis Bhd, or Celcom Axiata Bhd), (2) the respondent must have used the telecommunication service for a minimum of 2 years. Within one month of data collection (starting from November 2017 to December 2017), 203 usable responses were obtained and 7 respondents were deleted due to high missing values. Of the total of 203 respondents, most of the respondents were female (60.6%), Malay (52.2%) and 66.5% were in the age range of 21-30 years. With regards to the type of telecommunication service, 48.8% were subscribers to Celcom Axiata Bhd, 27.6% to Digi Bhd and 23.6% to Maxis. In addition, 50.7% of the respondents were prepaid users while 49.3% were postpaid users.

Table 1: Respondent Profile

Categories	Frequency	Percent (%)
<b>Gender</b>		
Male	80	39.4
Female	123	60.6
<b>Ethnicity</b>		
Malay	106	52.2
Chinese	70	34.5
Indian	21	10.3
Others	6	3.0
<b>Age</b>		
20 years and below	27	13.3
21 – 30years	135	66.5
31 – 40years	31	15.3
41 – 50years	4	2.0
51 years and above	6	3.0
<b>Type of Telecommunication Service</b>		
Digi Bhd	56	27.6
Maxis Bhd	48	23.6
Celcom Axiata Bhd	99	48.8
<b>Type of Telecommunication Used</b>		
Prepaid	103	50.7
Postpaid	100	49.3
<b>Total</b>	<b>203</b>	<b>100.0</b>

### *Measures*

All the measurement items in this study were adapted from previous research. Three items for measuring customization were compiled from the studies of Fornell et al. (1996) and Ball et al. (2006). Customer Equity was measured based on three dimensions, namely Value Equity, Brand Equity and Relationship Equity. Four measurement scales of value equity were adapted from previous value research (Dodds et al., 1991; Grisaffe and Kumar, 1998). Brand equity and relationship equity were measured using four scale items developed by Verhoef et al. (2007), De Wulf et al. (2001) and Hennig-Thurau et al. (2002) respectively. Next, three items to measure

purchase intention were developed from Liang and Lai (2002) while two items of switching cost construct adapted from Sharma and Patterson (2000).

## FINDINGS

### *Common Method Variance*

According to Akter et al. (2011), common methods variance (CMV) should be examined when all the variables are measured using a cross-sectional survey method. By using Harman’s Single Factor technique, the findings revealed that the largest variance explained by the first factor was 43.76% (< 50%) thus indicating that common method bias is not a concern in this dataset (Podsakoff & Organ, 1986).

### *Measurement Model*

Structural Equation Modeling - Partial Least Square (SEM-PLS) was applied to test the research hypotheses. Following the two-step approach, first, the measurement model was examined to verify the reliability and validity of the instrument; and secondly the structural model was assessed for hypotheses testing. In SEM-PLS, the assessment of a reflective measurement model focuses on two types of validity (i.e., convergent validity and discriminant validity). First, the convergent validity of the measurement model is examined through item loadings, composite reliability (CR) and average variance extracted (AVE) (Hair et al., 2016). All the loadings and composite reliability were above the threshold value of 0.7 while AVE met the minimum of 0.5 as suggested by Hair et al. (2016). (Refer Table 2) Thus, the construct satisfied the convergent validity requirement.

To examine the discriminant validity of all constructs, the heterotrait- monotrait (HTMT) ratio of correlations technique was adopted (Henseler et al., 2015). Table 3 shows that all values of HTMT are lower than the threshold of 0.90, thus satisfying the requirement for HTMT (Gold et al., 2001) and reinforcing the discriminant validity for all reflective constructs in this study.

Table 2: Measurement Model

Construct	Items	Loading	CR	AVE
Brand Equity	BE1	0.801	0.886	0.661
	BE2	0.890		
	BE3	0.776		
	BE4	0.779		
Customization	CU1	0.788	0.851	0.655
	CU2	0.833		
	CU3	0.806		
Purchase Intention	PI1	0.851	0.885	0.720
	PI2	0.836		
	PI3	0.858		
Relationship Equity	RE1	0.817	0.883	0.655
	RE2	0.723		
	RE3	0.824		
	RE4	0.866		
Switching Cost	SC1	0.860	0.864	0.760
	SC2	0.883		
Value Equity	VE1	0.854	0.907	0.708
	VE2	0.879		
	VE3	0.803		
	VE4	0.828		

Note: CR (Composite Reliability); AVE (Average Variance Extracted)

Table 3: Discriminant Validity (HTMT Criterion)

	1	2	3	4	5	6
1. Brand Equity						
2. Customization	0.750					
3. Purchase Intention	0.737	0.880				
4. Relationship Equity	0.696	0.771	0.894			
5. Switching Cost	0.692	0.882	0.845	0.749		
6. Value Equity	0.797	0.873	0.802	0.798	0.848	

Table 4: Collinearity Assessment

Construct	Variance Inflation Factor (VIF)
Brand Equity	1.994
Customization	2.747
Relationship Equity	2.101
Value Equity	3.595

*Structural Model*

First, it is essential to ensure that there were no lateral collinearity issues in the structural model before assessing it. The variance inflation factor (VIF) for all the four exogenous variables ranged between 1.994 to 3.595 (Table 4) which are less than the suggested value of 5 thus indicating that collinearity was not significant in this model (Hair et al., 2017).

Using the bootstrapping technique with a re-sampling of 500, the path estimates and t-statistics were calculated for the hypothesized relationships. From the analysis it was found that Customization was positively related to Value Equity ( $\beta = 0.777$ ,  $t=26.749$ ), Brand Equity ( $\beta = 0.586$ ,  $t=11.499$ ) and Relationship Equity ( $\beta = 0.610$ ,  $t=13.169$ ). Subsequently, Value Equity ( $\beta = 0.325$ ,  $t=3.404$ ) and Relationship Equity ( $\beta = 0.387$ ,  $t=5.273$ ) were found to positively impact purchase intention. Hence, H1, H2, H3, H5 and H7 were supported.

Table 5: Path Coefficient

Path	Hypothesis	Direct Effect	Stand. Error	Confidence Interval	t-value	p-value
H1	CUS -> VE	0.777	0.029	(0.721,0.817)	26.749**	0.000
H2	CUS -> BE	0.586	0.051	(0.480,0.654)	11.499**	0.000
H3	CUS -> RE	0.610	0.046	(0.531,0.679)	13.169**	0.000
H4	CUS -> PI	0.145	0.095	(-0.003,0.306)	1.531	0.063
H5	VE -> PI	0.325	0.096	(0.149,0.456)	3.404**	0.000
H6	BE -> PI	0.074	0.075	(-0.043,0.208)	0.987	0.162
H7	RE -> PI	0.387	0.073	(0.256,0.502)	5.273**	0.000

Note: \*\* $p < 0.01$ ; CUS (Customization), VE (Value Equity), BE (Brand Equity), RE (Relationship Equity), PI (Purchase Intention)

The  $R^2$  of 0.684 indicates that 68.4% of the variance in purchase intention can be explained by value equity, brand equity and relationship equity. On the others hand, customization accounted for 33.4% of the variance in brand equity ( $R^2=0.344$ ), 37.2% in relationship equity ( $R^2=0.372$ ) and 60.4% in value equity ( $R^2= 0.604$ ). Hence, the  $R^2$  score for this model is considered substantial in terms of its explanatory power because its value is greater than 0.26 (Cohen, 1988).

To measure the magnitude of the effect size Cohen’s (1988) guideline was used: 0.02, 0.15, and 0.35, representing small, medium, and large effects respectively. Effect size ( $f^2$ ) was assessed based on the  $R^2$  change when a specified exogenous construct was omitted from the model (Hair et al., 2016). Looking at the  $f^2$  values, Relationship Equity ( $f^2 = 0.201$ ) indicated a medium effect size, and value equity ( $f^2 = 0.073$ ) had a small effect size on purchase intention. However, brand equity ( $f^2 = 0.007$ ) and customization ( $f^2 = 0.015$ ) demonstrated trivial effect sizes on purchase intention.

Predictive relevance ( $Q^2$ ) was tested by using the blindfolding technique. Table 6 show that all the value for  $Q^2 > 0$  in this model is higher than the cutoff score as recommended by Hair et al. (2016); hence, it indicates that the structural model for this study has substantial predictive relevance.

Table 6: Predictive Relevance,  $Q^2$

Construct	Predictive Relevance $Q^2$
Value Equity	0.415
Brand Equity	0.220
Relationship Equity	0.234
Purchase Intention	0.470

*Mediation Analysis*

In order to investigate the multiple indirect effects of customer equity (i.e., value equity, brand equity and relationship equity) between customization and purchase intention, the bootstrapping procedure (with 500 re-sample) was employed. The specific indirect effect indicated that value equity mediated the relationship between customization and purchase intention ( $\beta = 0.253$ , t-value=3.465). Subsequently, relationship equity was found to mediate the relationship between customization and purchase intention ( $\beta = 0.236$ , t-value=4.917). Hence, H8a and H8c were significant.

Table 7: Result of Multiple Mediation Analysis

Path	Hypothesis	Indirect Effect	Confidence Interval	t-value	p-value
H8a	CUS -> VE-> PI	0.253	(0.129,0.429)	3.465**	0.001
H8b	CUS -> BE -> PI	0.044	(-0.030,0.160)	0.909	0.364
H8c	CUS -> RE -> PI	0.236	(0.147,0.332)	4.917**	0.000

Note: \*\* $p < 0.01$ ; CUS (Customization), VE (Value Equity), BE (Brand Equity), RE (Relationship Equity), PI (Purchase Intention)

*Moderating Effect of Switching Cost*

To test H8a, H8b and H8c the moderating effects of switching cost was assessed by using the two-stage approach (Chin et al., 2003).  $R^2$  (0.684) for the main effect model was compared with the new  $R^2$  (0.692) which showed an increase of 0.008. This result indicates that switching cost has a trivial explanatory power of 0.8%. The results for the moderating effects (Table 8) show that switching cost significantly moderated the relationship between brand equity and purchase intention ( $\beta = -0.262$ , t-value=1.966), H9b was supported.

Table 8: Moderation Result

Path	Hypothesis	Std. Beta	Std. Error	t-value	p-value
H9a	SC*VE -> PI	-0.006	0.048	0.130	0.448
H9b	SC*BE -> PI	-0.262	0.133	1.966*	0.027
H9c	SC*RE -> PI	-0.014	0.033	0.425	0.335

Note: \* $p < 0.01$ ; SC (Switching Cost), VE (Value Equity), BE (Brand Equity), RE (Relationship Equity), PI (Purchase Intention)

The significant moderating effect was further explained based on the interaction plot (Dawson, 2004). As indicated in Figure 2, the line labelled low switching cost has a steeper gradient as compared to that of high switching cost. This indicates that, the relationship between brand equity and purchase intention is stronger in low switching cost situations. As a result, H9b was supported.

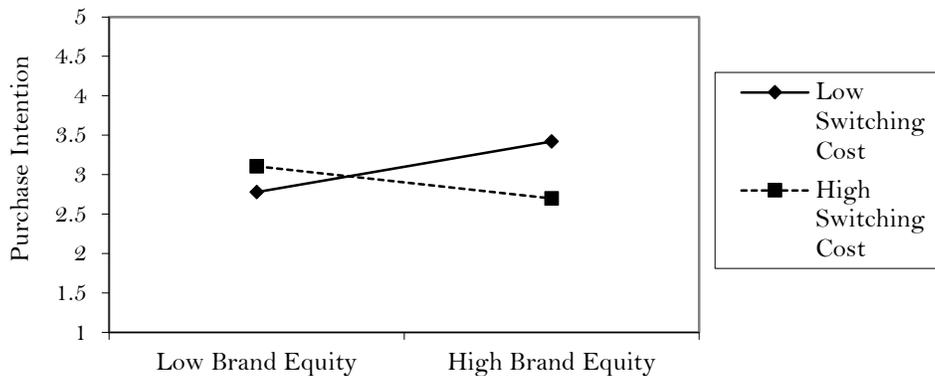


Figure 2: Interaction plot of Switching Cost \*Brand Equity

## DISCUSSION

This study assessed the determinant factors affecting purchase intention of telecommunication service. From the results obtained, customization was found to significantly influence value equity of telecommunication providers. The results find support in the research done by Simonson (2005) who found that the value equity would be increased if customers were offered customized preferences. Identically, customization proved to have a positive relationship with brand equity towards telecommunication service providers. A recent study had reported that customers would attach to a certain brand if the service or product offered fully satisfied their needs and esteem (Huang & Cai, 2015). This revealed that customization facilitates telecommunication providers in enhancing consumer identification. Customization was also found to have a significant influence on relationship equity. In the same vein, Nysveen et al. (2005) and Dabholkar (1996) found that customization exhibits a strong relationship with attitude and usage intention for mobile service and technology- provided services. However, customization did not predict purchase intention; but this may be due to the fact that consumers seek value co-creation on product or services as the determining factors of purchase intention in telecommunication. Customer needs and expectations evolve over time and this is reflected with that, consumer emphasize tangible and intangible perceived benefits of telecommunication service in determining intention of purchase; certainly, they would not purchase customized

telecommunication services until they are able to perceive the value added in the telecommunication services.

Other than that, value equity was found to have a positive relationship with customer purchase intention. This result is supported by prior studies which verified that behavioral intention is influenced by perceived value (Yang, Jun & Peterson 2004, Li et al., 2012). On the contrary, brand equity did not predict purchase intention in telecommunication service. This result is supported by Aaker's (1993) study which disclosed that although brand equity was essential, it cannot lead to sales spontaneously. In the highly competitive market of telecommunication service industry, customers can easily switch to another brand if they are not satisfied with the current telecommunication service. Relationship equity evidenced a positive relationship with purchase intention of telecommunication service provider. Telecommunication service providers that invest in developing programs to strengthen the bond with their customers are likely to enjoy higher returns in profits. The result is consistent with Vogel et al. (2008), who found that there is a positive relation between relationship equity and purchase intention.

In terms of multiple mediating effects of customer equity (i.e., value equity, brand equity and relationship equity), two out of three hypotheses were found to be significant in telecommunication service. First, value equity significantly mediated the relationship between customization and purchase intention. Telecommunication service providers which implement customization are value-adding to the service offering and this indirectly enhances consumer's purchase intention. Similarly, Teas and Agarwal (2000) demonstrated that perceived value from customized service will result in greater purchase and re-purchase intentions. Second, brand equity was found to mediate the relationship between customization and purchase intention on telecommunication service. In Malaysia, customers do not emphasize the brand name of telecommunication service providers, indicating that brand equity is reflected as a lower level need for customers even though telecommunication companies actively participate in branding by investing huge amounts of money in various campaigns or advertisements. Third, relationship equity was found to mediate between customization and purchase intention of telecommunication service. As suggested by Dwivedi et al. (2012), consumer brand relationship can be enhanced via firms' reward programs, special recognition programs, community-building programs, and knowledge-building programs. Therefore, in order to enhance purchase intention, telecommunication service providers should foster stronger relationships with their target customers by emphasizing customization programs on telecommunication services.

In this study, switching cost was found to have a moderating effect on brand equity and purchase intention. This result is consistent with the study of Chen and Chang (2008) who found positive relationships between brand equity, brand preference, and purchase intentions; with a moderation effect of switching cost affecting the relationship between brand equity and purchase intention. In the presence of low switching costs, customers who were not satisfied can easily switch to a new service provider (Lam et al., 2004). However, because of their potential lock-in effect, service providers can use switching costs to keep their customers away from competitors and turn rivals into more expensive competitors (Aydin & Ozer, 2005; Chen & Hitt, 2000). Thus, the results provide preliminary evidence that low switching cost has a moderating effect on the relationship between brand equity and purchase intention.

#### *Theoretical and Managerial Implication*

With accelerating competition and advances in information technology, recent issues regarding high competition among telecommunication service providers have highlighted the need to examine whether business can implement customization to enhance customer equity and enhance the intention to purchase telecommunication services. This study examined whether customization can strengthen customer equity which is expected to increase the purchase

intention of customers for telecommunication service. S-D Logic was found to be supported in the telecommunication context; that is, customers who have experienced customization in telecommunication service, indeed have higher purchase intentions towards the service providers. This is supported by S-D Logic which proposes that value adding leads to higher purchase intention. Besides, path coefficient analysis demonstrates that customization does significantly influence value equity, brand equity and relationship equity. Marketers in the telecommunication service industry should focus on customization and customer equity.

The positive correlation on the mediating effect of value equity between customization and purchase intention provides useful insight to telecommunication marketers especially in developing a marketing strategy that could result in added value to their customers. Value equity exists when telecommunication service providers offer more than what customers expect or require. Firm managers need to identify some specific features which will enhance value for the customer as well as customize the service based on consumer's needs. This should generate greater value for customers and enhance greater intention to purchase telecommunication service from the respective service providers.

Also, relationship equity was found have a positive correlation between customization and purchase intention of telecommunication services. Based on the result, customization programs can enable telecommunication service providers to build stronger bonds with customers, to increase their desire to purchase. By analyzing customers' criteria about their desired service, managers can use this information to increase the intention of customers to purchase their services and build a stronger relationship with the telecommunication companies.

Lastly, switching cost has been found to moderate the relationship between customer equity and purchase intention, indicating that it should be considered a critical part of telecommunication service providers' strategy. Low levels of switching cost are one of the factors why managers must increase brand equity and purchase intention as counter measures. Therefore, marketers should design specific activities to impact switching cost that contributes to increase purchasing intention and brand equity.

#### *Limitations and Suggestions for Future Studies*

It is necessary to identify solutions to reduce or eliminate those limitations in order to obtain models and constructs with higher validity and reliability. Firstly, research should examine data from respondents in a wider adult age range. It would be desirable to conduct a survey with more representative adult sample; although Joseph Sipalan (2013) has suggested that digital natives, aged 15 to 24 years old, should be considered active internet usage. No doubt that, this age group is highly involved in information and communication technology but the older adult age groups have stable incomes and hence, they have higher purchasing power. Therefore, respondents in older age groups would be more capable of purchasing telecommunication services that provide additional value; a more representative sample is suggested for future study.

Moreover, future research should attempt to identify the complete list of factors that influence customers to participate in customization. The rich literatures on value co-creation have shown that interaction, dialogue, engagement, and consumption between companies and consumers play important roles in the co-creation of value. In addition, Etgar (2006) has demonstrated that value emerges through consumption and that consumers are able to perceived value when they consume and experience goods or services. Hence, future research should include consumption factors to complete the study of S-D Logic.

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