

Impact of Interactive and Supportive Service Innovation in Customer Retention through the Interplay of Value Creation and Participation

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Abstract

This study aimed to understand the customer retention process through customer value creation in the service industry bringing service innovation. The moderating role of customer participation was analyzed. The hypothesized relationships were tested on 548 responses collected through an online survey at one point in time through the structural equation modeling technique. Smart PLS3 was used for analysis and the result of the study indicated that customer retention is significantly influenced by service innovation through the customer value creation process and customer participation moderates the relationship. The results of this study were time-bound and only one service was considered. Other services e.g. banking, hospitality, and traveling can also be applied to generalize the model.

Keywords: Service Innovation, customer retention, value creation, S-D logic

Introduction

In the present era of competition and technological advancement, firms need to be very innovative and vigilant (Malik, Awan & Nisar, 2020). Technology has influenced the business processes and provide more opportunities for success (Haq & Awan, 2020). In this regard, the service industry has got much

attention from marketers, innovators, scholars, and academicians for the last ten years (Huang, 2011). Innovation is said as a socio-habitual process (Malik, Awan, & Nisar, 2020). Traditionally innovation in the service industry is viewed differently. Nowadays innovation is defined from a different perspective and in the services industry it is distinguishing from the traditional product innovation approach. Scholars have redefined the innovation and recent work distinguished it from the traditional perspective (Barrett, Davidson & Vargo, 2015). Some scholars have distinguished the services from products while others have a different view. They argued that no distinction is needed as products require services. Companies rather than focusing only on selling physical products emphasize selling integrated offerings. This leads to the development of new logic in services referred to as the service-dominant (S-D) logic. The focus of service industry scholars (Vargo and Lusch, 2008; Vargo, Maglio and Akaka, 2008). on S-D logic is being noticed considerably. In earlier work, the concept of service is conceptualized from good dominant (G-D) logic to S-D Logic. Technological advancement has pushed companies to focus on service innovation. It is the way of delivering benefits to customers (Boone, 2000). Diverse aspects of innovation were researched by various scholars including but not limited to characteristics of services (Chen, Hung, and Huang, 2015), delivery of services (Nijssen et al., 2006), processes, and strategies of services (Alam, 2006).

Moreover, multiple kinds of research anticipated various kinds of innovation and its impact, but less consideration was given to the service industry. It is vital for an organization to communicate with clients and to retain employees in service industries. As the business environment changed and new dimensions of technology emerged, future innovations are important for better future progressions (Fatima & Abbas, 2016). Current advancements have made it conceivable and new sort of action plans are created. Rare research is conducted on examining the role of service innovation in customer retention. In service industries, it is significant for specialist organizations to associate with clients to retain them. Customer retention through innovation was discussed (Tha-Ti and Yung, 2018), however, it is notable that retaining customers in the service industry is a great challenge. The service providers need to develop a new mechanism and provide innovative services for better retention. An example is a discussion of the customer retention process through satisfaction in the food and beverages industry (Tahir, Anjum, and Heilder, 2020), however, the underlying mechanism of customer retention through innovation is still considered challenging and needs further exploration. As any activity from firms may affect the consumers' retention level and their usage behavior (Mansoor, Awan, Alobidyeen, 2020). Services are deemed successful when existing customers are not switching and are retained by the service provider. With the use of technology, more choices are available to customers and there are more chances of switching (Mahmoud *et al.*, 2017). Problems faced during the use of innovative products or services can be reduced by associating customer value creation (CVC), which ultimately directs to customer retention (Gronemus et al., 2010). Customer participation (CP) has played important role in the paradigm shift from G-D to S-D logic as described by Chan et al. (2010) in their study stating that CP plays an important role in value creation in services. The buffering role of CP in interactive services is still blurred and this study tries to fill this disparity. It examined the interactive and supportive characteristics of service innovation and its impacts on customer retention through CVC and moderating role of CP. More specifically, the model was tested in the telecom sector of Pakistan, aiming to understand the moderated-mediated relationship of supportive service innovation

(SPSI) and interactive service innovation (INTSI) on customer retention (RT) through CVC and moderating role of CP is examined.

Literature Review and Hypotheses Development

Innovation themes are versatile and are termed important for firm growth and obtaining a competitive edge. Product and service innovations are defined differently. Service innovation is categorized into radical innovation in the startups (Wang, Lo & Hui, 2003), and new services for the market that are currently being presented are known as incremental innovation (Jhonsson, 2000). As discussed by Wang, Voss and Zhao, (2015) service innovation has three different domains i.e. product, procedure, and technological change. Another categorization of service innovation is seen into three sorts by earlier scholars i.e. assimilation, demarcation, and synthesis (Edvardsson & Olsson, 1996; Salunke, Weerawardena & Mccoll-kennedy, 2013; Coombs & Miles, 2000; Snyder et al., 2016). Novel technologies are presented in service modernization and reflected as an extension of product innovation (Baron et al., 2012) from an assimilation attitude. The concept of service innovation is explained with G-D logic (Vargo & Lusch, 2004) and is termed as more radical than incremental (Edvardsson & Tronvoll, 2013). Present procedural and product innovations are considering service innovation by assimilation perspective. Companies need to coordinate with the client and the support system (i.e. non-specialized components) including the capacities of cutting-edge staff (Hip & Grup, 2005; Nijssen et al., 2006). The synthetic attitude postulates that any innovation falls under the service domain (Hsieh, Chiu, Wei, Rebecca & Cheng, 2013) supported by S-D logic. Consequently, service innovation can be considered as a process of utilizing specialized skills (information and talents), acts, tactics, and performance, serving all other entities or the entity herself. Innovation is also a method to create value for customers and deliver value to consumers (Skålén et al., 2015). Conclusively it can be stated that value is created and delivered to customers through innovation (Edvardsson & Tronvoll, 2013; Barrutia, 2013).

Traditionally, interactive service and supportive service innovations are a crucial part of all kinds of innovations in services. People think that services are provided to help core products. Government, transportation, businesses, hospitality, education, trade, computer, and information services are part of the supplier sector. The present research uses the interactive and supportive service innovation perspective to retain consumers. In the telecom sector, business support systems (BSS) are used for consumer assistance. Through interaction and support, companies retain consumers by value creation hence associated with interactive and supportive types of innovations. These activities create value for consumers and directly influence their emotional, social, and financial aspects (Salunke, Weerawardena & Mccoll-Kennedy, 2013). Customer feedback often results in the identification and realization of competencies and improvement of service through newness (Abushanab, Pearson & Setterstrom, 2010). INTSI is said as the degree to which an enterprise tailors its service offerings and its adjustments in terms of service provision and customization. Indirect adjustments that create value at the time of compensation make the new value proposition applicable to service provider innovation (Salunke, Weerawardena & Mccoll-Kennedy, 2013). A new service offer must be all-in-one; it should efficiently generate value (Salunke et al., 2013). There is a need to link the interactive and supportive aspects because through marketing activity association among both is reported (Mahajan, Vakharia &

Chase, 1994). In the telecommunications sector, novel functionalities are established and proposed, requiring high consumer retention through a powerful support mechanism. This leads to the development of links between SPSI and INTSI. As Berry (1985) argued, separating the SPSI from the INTSI created problems. This disconnection can affect the sales and service quality of companies. SPSI's activities are not obvious to customers unless they do not interact with the firm. So, on these bases, H_1 is hypothesized as follows.

H1: There exists a positive relation between SPSI and INTSI.

Customer retention is the rate of measuring the number of customers who keep using the companies' product. It is considered a different concept as compared to customer loyalty, satisfaction, and trust (Gerpott et al., 2001). From the firm's perspective, it is important to retain employees to ensure profitability among other concerns. Customer retention would be higher with greater customer value (Anees, Noodin Anjum & Cavalier 2020). Also, greater service quality leads to customer retention (Miao, Zhang, Wu, Heijang, 2019). It is generally accepted that quality of service has a direct impact on retention therefore, if the quality of service is improved, retaining consumers would be easier (Soutar, 2001). Retaining consumers is crucial for industries in the present time for sustainability (Mennens & Gils, 2018). Innovation is undoubtedly associated with the quality of relationships in general (Walter, Müller, Helfert, and Ritter, 2003). Favorable customer support increases the level of positive emotions and retention (Haq & Awan, 2020). According to Mahmoud et al., (2017), innovation increases the chances of meeting customer needs and providing a key to the business to reach the CR. Hence the below two hypotheses for the current study are proposed.

H2: INTSI is positively associated with CR.

H3: SPSI is positively associated with CR.

Customer retention described as a reaction to an assessment of perceived products or the performance of a service is entirely based on the customer's judgments about the value created (Flint, Woodruff & Gardial, 1997). Value perception is the customer's estimate of value created by the vendor, considering the tradeoffs in a usage scenario (Flint & Mentzer, 2005). Prior literature in this regard suggests that value perceived by customers is an antecedent of CR. The association between perceived consumer value and CR has been empirically confirmed, as much of the literature on service marketing demonstrates that CVC is an essential element in obtaining CR (Hui 2003, Turel, Serenko & Bontis 2007, Earthy & Cronin 2008). Customer value creation is an important driver of CR because when consumers perceive higher value levels in an offer, they are likely to feel satisfied with their consumer experience and purchasing decision (Oh, 2000). Thus below two hypotheses are formulated.

H4: The relation between INTSI and CR is significantly mediated by CVC.

H5: The relation between SPSI and CR is significantly mediated by CVC.

Customer participation (CP) is defined in the context of customer interaction and participation for value creation for the current study. It is the extent to which information is shared, feedback is provided, and suggestions are made for decision-making processes (Bolton and Saxena-iyer, 2009). It also plays an important role in satisfaction and loyalty (Auh et al., 2007). However, the focus of new researches has changed, and CP is studied in new disciplines. CVC is theorized, and the role of CP is studied in past (Normann, & Ramirez, 1993). S-D logic supports the view that value is only created and determined by users (Lusch, & Vargo, 2006). Customers participate only when they find that service is interactive, and the participation leads to value creation. Customer active involvement during the interaction creates more value and CR (Bolton & Saxena-layr, 2009). In a volatile environment, customer participation is important to make innovation successful. INTSI and SPSI create higher value to customer when CP is high. Interpersonal relations and support add more value to customers when customers’ participation is high, therefore, the following hypotheses are framed and tested at later stage.

H6: CP will moderate the relationship between INTSI and CVC.

H7: CP will moderate the relationship between SPSI and CVC.

Theoretical Framework

To test the hypothesized relationships based on prior literature(Mahmoud et al.,2017; Tha-Ti & Yung, 2018), the framework is proposed and is provided in figure 1. It is proposed that there exists a mediating role of CVC between service innovation and customer retention and a moderating role of customer participation. The impact of age and gender would not be tested in the model rather will be controlled as both of these factors have an implausible effect on innovation perception (Sim & Koi, 2002).

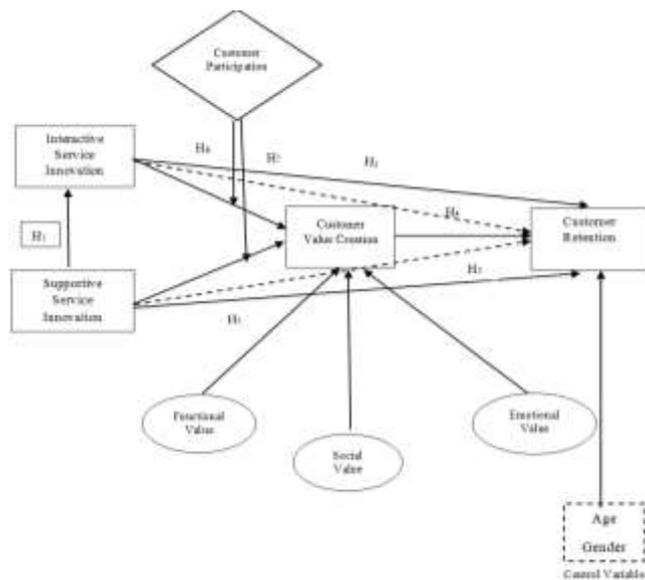


Figure 1: Theoretical Framework

Methodology

To achieve the objectives of this study, a survey was conducted in the first-tier cities of Pakistan. This study follows the positivist philosophy and a deductive approach was used. Data was collected from the mobile phone users. According to the rule of thumb (Hair et al.,2010), the minimum data required for the study was 250. Using the convenient sampling through structured questionnaire 548 usable responses were included in the study. To measure INTSI four items were adopted from the study by Salunke, Weerawardena, and Mccoll-kennedy (2013) which were also used by others e.g. Tha- Ti & Yung (2018). To gauge SPSI, four items were adopted from Salnke, Weerawardena & Mccoll-kennedy (2013). To measure CVC, a scale of nine items was adopted from Mahmoud et al., (2017). The scale of 3 items each for monetary value, emotional value, and social value was adopted from Tha-Ti & Yung (2018). A 5-items scale measuring CR was taken from Chan et al. (2010). Initially, more than 800 questionnaires were sent out to different individuals, and a total of 300 responses were received. Reminders were sent and around 200 more responses were then received. To achieve better results 250 more questionnaires were sent out and as a result a total of nearly 600 responses were received with an approximate response rate of 62%. After careful data screening 548 usable responses were included for data analysis. To analyze the data Smart PLS3 was used and structured equation modeling was performed.

Data Analysis

The demographic profile of the data reveals that female respondents account for 53% while 47% were male respondents. Most respondents were from less than 25-year-old (34%), 32% were between 26-35, 22% were between the age group 36-45, and above 45 were 12% which indicates that younger people are more inclined towards innovation. The higher percentage of Ufone (a government-owned mobile service provider) subscribers was observed as 51% while Mobilink (a joint venture of Orascom and Warid Telecom) and Zong (a Chinese origin firm with China Mobile as the parent firm) are 31%. Mobilink and Warid users are reported nearly equal while Telenor (a Norwegian telecommunications firm operating in Pakistan) users are very low i.e. 18%.

Further analysis was conducted in two steps as adopted by many researchers (e.g. Khan, Awan, Fatima, & Javed, 2020; Haq & Awan; 2020). The first step consists of measurement model assessment i.e. to validate the model and the second step is structural model assessment i.e. testing the hypothesized relationships. Common method biases were also tested by evaluating the full collinearity. All variables were regressed against a common variable in this method and no bias from the data from the single source was found. The study yielded a VIF of less than 3.3 therefore single source bias of our data is not a significant problem.

Measurement Model Assessment

To validate the model, measurement model assessment is conducted as a first step in structural equation modeling (SEM) analysis. The reliability and validity of data are established in this step. To test the reliability (a measure of internal consistency of data), Cronbach's alpha and composite reliability were

calculated. The acceptable value of Cronbach’s alpha is greater than 0.7(Hair et al., 2019) and analysis revealed that all values of constructs are in the acceptable region i.e. > 0.7 proving the reliability of data. The values of composite reliability (CR) of all constructs are above 0.8 which shows good reliable data. The validity of the instrument can be measured through convergent and discriminant validity analysis. Convergent validity was measured through average variance extracted (AVE), the threshold of which is 0.5 (Hair et al., 2019). All values of AVE are greater than 0.5, except CVC indicating that all the items of a single variable are correlated. The values of Cronbach’s alpha, CR, and AVE are tabulated in table 1.

Table 1: Reliability of Instruments

	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
CP	0.735	0.834	0.558
CR	0.782	0.873	0.697
CVC	0.861	0.891	0.478
EV	0.731	0.848	0.650
FV	0.705	0.835	0.628
INTSI	0.782	0.859	0.606
SPSI	0.829	0.887	0.664
SV	0.786	0.875	0.700

CP = Customer Participation, CR = Customer Retention, CVC = Customer Value Creation, EV = Emotional Value, FV = Functional Value, INTSI = Interactive Service Innovation, SPSI = Supportive Service Innovation, SV = Social Value

The CVC was measured as a second-order construct as its AVE value is not in an acceptable range and cannot be measured directly. For the reflective-formative model redundancy analysis is conducted to establish reliability and validity. All the dimensions of CVC should have significant weight on CVC as shown in figure 2.

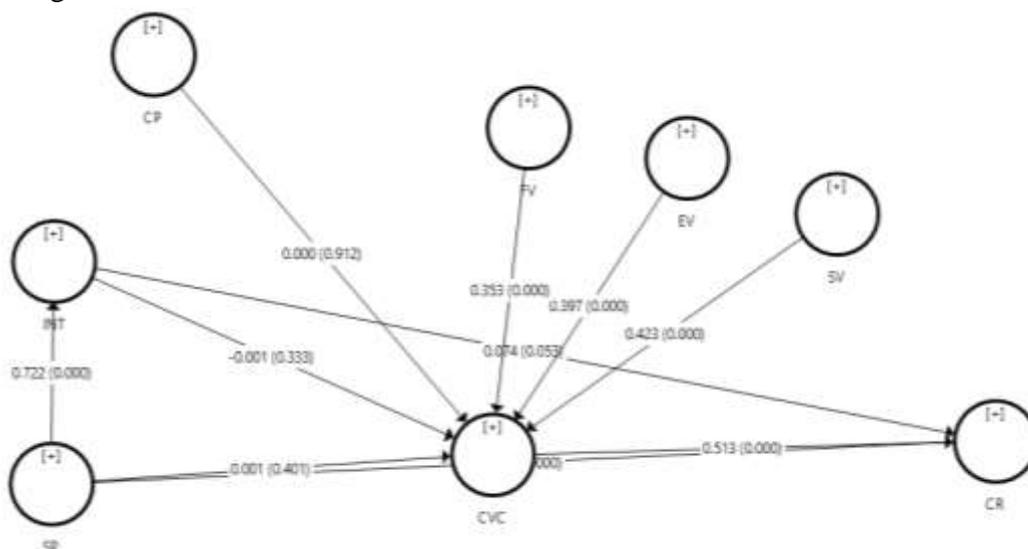


Figure 2:Weights and Significance of CVC

To determine the validity of constructs, traditionally Fornell-Larcker's criterion is used while current literature suggests using others (Henseler, Ringle & Sarstedt, 2014). Using SmartPLS3 Heterotrait-Monotrait (HTMT) ratio of correlation is considered as more reliable. Henseler, Ringle, and Sarstedt, (2015) recommended using this test to measure validity. Its acceptable value is less than 0.9 (more strictly considered as 0.85). The HTMT values are shown in table 2 and values of all constructs fall within the acceptable range showing that discriminant validity was established except CVC having greater value. The repeated indicator approach was used to measure the second-order construct, CVC.

Table 2: Heterotrait-Monotrait (HTMT) Ratios

	CP	CR	CVC	EV	FV	INTSI	SPSI	SV
CP								
CR	0.819							
CVC	0.806	0.911						
EV	0.864	0.867	--					
FV	0.779	0.828	--	0.758				
INTSI	0.682	0.729	0.709	0.651	0.681			
SPSI	0.756	0.849	0.827	0.762	0.864	0.88		
SV	0.838	0.806	--	0.877	0.703	0.615	0.655	

CP = Customer Participation, CR = Customer Retention, CVC = Customer Value Creation, EV = Emotional Value, FV = Functional Value, INTSI = Interactive Service Innovation, SPSI = Supportive Service Innovation, SV = Social Value

Structural Model Analysis

As the second step of SEM, a structural model assessment was conducted and the hypothesized relationships were checked based on Hair, Risher, Sarstedt, and Ringle's (2019)'s recommendations. The beta coefficients, t-values, and p-values were analyzed with the 1000-subsample bootstrapping technique proposed by Ramayah, Cheah, Chuah, Ting, & Memon (2018). Further based on Hahn and Ang's (2017) criticism regarding p-values as not a good criterion for evaluating the significance of the hypothesis. It was suggested to use a combination of criteria such as p-values, beta values, t-values, lower level of confidence interval (LLCI), and upper level of confidence interval (ULCI). The summary of the criteria used to test the proposed hypotheses is shown in the structural model (figure 3). The R-square value shows that SPSI and INTSI predict 61% of customer retention indicating the 61% overall change in the model. Moreover, the results show that SPSI is significantly associated with INTSI ($\beta=0.722$, $T= 35.179$, $\rho=0.000$) supporting H1. The impact of SPSI and INTSI was found significant with customer retention leading to acceptance of H2 ($\beta=0.080$, $T= 2.153$, $\rho=0.016$) and H3 ($\beta=0.265$, $T= 5.982$, $\rho=0.000$).

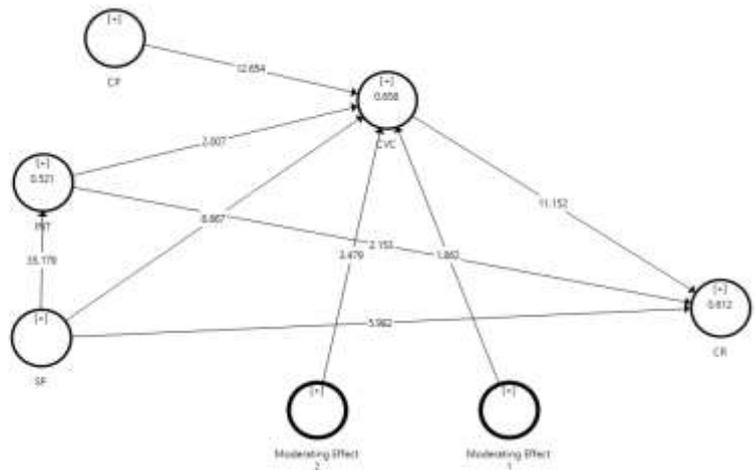


Figure 2: Bootstrap Output

Testing Mediation

The two-stage approach suggested by (Hair et al., 2016) and also used by (Khan, Awan, Fatima & Javed, 2020) was applied to measure CVC as a higher-order construct and its intervening role was measured between INTSI & CS, and SPSI & CR. The results show that CVC plays an intervening role between INTSI (b=0.045, significant at 95%). The indirect effect of SPSI and CR was mediated by CVC significantly (b=0.192, significant at 95%), hence, supporting H4 and H5.

Testing Moderation

The moderating role of CP on the relationship of IVs and MV was checked through a two-stage approach. First, CP was tested as moderator on the relation of INTSI and CVC and second, on the relationship of SPSI and CVC. Path coefficients show that the beta value for interaction term (CP and INTSI) was 0.047, significant at 95% level of the confidence interval, accepting H6 while second interaction term (CP and SPSI) showed different results. The value for coefficient becomes negative (b= -0.078), so the relationship between SPSI and CVC was found as insignificant, hence H7 was not supported. The results are tabulated in table 3.

Table 3: Hypotheses Testing.

Hypotheses	Beta	T Statistics	P Values	5.00%	95.00%	Result
					%	
SPSI -> INTSI	0.722	35.179	0.000	0.682	0.75	Supported
INTSI -> CR	0.080	2.153	0.016	0.021	0.142	Supported
SPSI -> CR	0.264	5.982	0.000	0.189	0.332	Supported
INTSI -> CVC -> CR	0.045	1.961	0.025	0.005	0.08	Supported
SPSI -> CVC -> CR	0.192	6.923	0.000	0.148	0.239	Supported
INTSI*CP -> CVC	0.091	1.862	0.031	0.015	0.174	Supported
SPSI*CP -> CVC	-0.151	3.479	0.000	-0.226	-0.085	Not Supported

CP = Customer Participation, CR = Customer Retention, CVC = Customer Value Creation, EV = Emotional Value, FV = Functional Value, INTSI = Interactive Service Innovation, SPSI = Supportive Service Innovation, SV = Social Value

Discussion

This study measured the underlying mechanism of service innovation and customer retention through value creation through moderating role of customer participation. Supportive and interactive service innovation was used as criterion variables. The results supported by previous studies indicated that there exists a significant positive relation between supportive and interactive innovation and these both affect consumer retention. The direct relations were accepted and are were found in-line with other researchers (e.g. Tha-Ti & Yung, 2018), while the innovation relationship of supportive and retention of the customers is also the same as previous works (e.g. Tha-Ti & Yung, 2018). The mediating role of customer value creation between interactive innovation and customer support and retention was also measured. The outcomes of this study revealed a significant intervening role of CVC between INTSI and CR, which indicates that interactive innovations create value for customers, and they are more willing to continue using a specific service in the future. This study also strengthens this relation and is supported by the previous study as well (e.g. Mahmoud et al.,2017). The relationship between SPSI and CR is also mediated by CVC and supported by previous scholars suggesting that customer support will help them to retain and also reinforced as reported by Mahmoud et al. (2017). The importance of interactivity and support in innovation leads to enhancing the CVC which in turn supports employee retention. It explains the mediating role of CVC among service innovation and interactive offerings which leads to customer retention. All these outcomes are consistent with previous research (e.g. Mahmoud et al.,2017). It was found that when innovations are designed to support and interact with their customers, value is created by customers which ultimately leads to satisfying customer behavior. As in present time, most of the service provider are using technology-based solutions (e.g. online purchase, mobile apps) for such kind of services support and interaction which increases the customer trust in service providers (Mahmoud et al.,2017). Finally, the moderating role of customer participation was analyzed. The results depicted that customer participation moderates the relationship between interactive service innovation and customer value creation as reported by Turel, Serenko & Bontis (2007), while the moderating role of customer participation among the relationship between innovation in support services and creating value for the customer is negative and direct reporting insignificance

of the predictive and dependent variable. Customers being involved in the innovation process feel an association with the product that creates value for them (Turel, Serenko & Bontis, 2007; Fatima & Abbas, 2016).

The importance of the customer support process and interaction of the firm with its customers is noted in this study. It contributes to the literature on customer retention, value creation, and service innovation. The mediating role of CVC is an important contribution of this study as it empirically highlights the importance of customer support for CVC and the role of participation of customers is signified.

Conclusion

This study tested the relation between service innovation and customer retention through the intervening role of CVC. The outcomes revealed that there exists a significant direct relationship between service innovation (both interactive and supportive) and customer retention. The mediating role of customer value creation was also supported which indicates that through service innovation value is created which ultimately retains customers which means that firms should focus on service innovation. According to the assimilation perspective, any kind of innovation in service innovation. So, companies should focus on creating new innovative ideas and deliver innovative services to retain customers. Further, customer participation plays a significant role in the value creation process. When customers are involved in the innovation process, they feel more connected to the organization and feel support from the firm. When customers actively participate in the innovation process, they find that firm is directly involving them in the innovation process which ultimately creates value for customers.

This study highlights the importance of value creation for retaining employees in the service industry. The role of customer participation was also discussed, and it is suggested that value creation is increased when customers are involved, adding in the existing literature of the service domain. It helps to understand the service provider to focus on the interactive and supportive side of service and to retain the customers. Finally, this study provides empirical evidence for marketers and helps to understand the phenomenon more clearly.

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