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The Antecedents and Consequents of Customer Value Co-Creation among Small and Medium Enterprises

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Abstract

The scholarly understanding of the antecedent and consequent behaviors of customer involvement in the creation process particularly among small and medium enterprises (SME's) are limited to date. So, this paper aims to explore the antecedent and consequent behaviors of the customer involvement in the creation process among SME's.

Sample data was collected by administering 384 questionnaires from the customers of SME's. The hypothesized relationships are tested through Structural Equation Modeling. The findings suggest that customer involvement in the creation process is influenced by brand attractiveness, brand response, active engagement and sense of community. Resultantly, customer involvement in the creation process leads to enhanced behavioral loyalty, attitudinal attachment, and resilience against any negative information.

A critical limitation lies in this study is the use of only four antecedent and three consequent behaviors of co-creation behavior. Future researchers need to investigate this model with some other antecedent and consequent behaviors. The study provides strategic recommendations to SME's that the marketers should focus on essential customer behaviors as it not only enhances customer involvement in the creation process but resultantly improves behavioral loyalty, attitudinal attachment, and resilience against any negative information. This paper provides an original insight into customer value co-creation by identifying and examining its antecedent and consequent behaviors.

Keywords: customer value co-creation (CVCC), brand attractiveness, brand response, active engagement, sense of community, behavioral loyalty, attitudinal attachment, resilience to negative information.

1. Introduction

The top global media company, Forbes in its latest issue shows co-creation as the second top trends that drive success among businesses (Altman, 2017). Most recently, companies are using co-creation to validate new product ideas through customers. That proves a turning point for the companies as it saves the cost incurred due to product loss, market researchers, and promotions. For instance, in 2014 General Electric (GE) the world's 11th (Forbes, 2017) most valuable brand introduced first ever global co-creation community

named as, 'Firstbuild' to validate new product ideas (Gilpin, 2014). Through this initiative, GE was able to launch several products successfully such as Opal (a nugget ice maker), Paragon, and an induction cooktop. Most interestingly to validate each product GE involved more than 2100 customers (Altman, 2017). Similarly, in 2016 Microsoft introduced 'Windows Insider Program' to gather unique ideas from the customers for its operation and application (Hassan, 2016). Moreover, Nike is using co-creation community since 2000 (Dave, 2010).

Additionally, customers' role as resource integrators in value creation processes has received increased attention in the recent literature (e.g.,Cossío-Silva et al., 2016; Navarro et al., 2015; Navarro et al., 2016; Trischler et al., 2017). A quick search on Google for the word co-creation shows 36.6 million hits that indicate a 35% increase since 2010 (Meyassed et al., 2012).

Although, the customer-centric approach was initially, introduced in the late 90's that merely meant to learn about the customer choices and then offered tailored products and services (Boulding et al., 1993; Day, 1999; Oliver, 1999). However, most recently it has transformed into arranging flexible, multichannel, dynamic infrastructure so that the customers build their own personalized and optimized experience. Furthermore, Kolsky (2015) also emphasizes that the companies should shift their attention from company-centric to a customer-centric approach that underpins the theory for co-creation.

1.1 Small and Medium Enterprises

Small and Medium Enterprises (SME's) play a fundamental role in national economies around the world in generating employment opportunities, value-added services and contributing to innovation. SME's, are critical for economic health, in both high-income and low-income economies and central to achieve environmental sustainability and more inclusive growth. In the OECD countries, SME's are the predominant form of enterprises, accounting for approximately 99% of all firms. They provide a primary source of employment, by creating around 70% of jobs on average, and are the key contributors to value creation, generating between 50% to 60% of value-added on average (OECD, 2016).

However, these contributions vary widely across firms, countries, and sectors. In emerging economies, SME's contribute up to 45% of total employment and 33% of GDP (Organisation for Economic Cooperation and Development, 2017). Recently, MSCI (Morgan Stanley Capital International) index upgraded Pakistan from a frontier economy to an emerging one. Statistics of Small and Medium Enterprise Development Authority (SMEDA) in Pakistan indicate that SME's constitute nearly 90% of all the enterprises in Pakistan; employ 80% of the nonagricultural labor force; and their share in the annual GDP is 40%, approximately (SMEDA, 2017).

Despite a significant growth of SME's in the economy, very little is known about the customer involvement among SME's for co-creation (e.g., Millspaugh & Kent, 2016). The literature mostly exposes the vital role of customers as co-creators in the large-scale businesses (e.g., Chen & Wang, 2016; Chuang, 2016; Prebensen & Xie, 2017) and ignores Small and Medium Enterprises (SME's). SME's are among the nascent research terrains that examine customers as co-creators. For instance, client's involvement in the creation process with bakeries (Warsap, 2015), furniture (Chang & Hsieh, 2016), boutiques, beauty salons, composing and printing is increasing. It is vital for both SME's and large-scale businesses to engage customers in the creation process as co-creators. The concept of

customer engagement in the co-creation process has evolved in the marketing literature since last decade. However, despite the significance of customer engagement in the creation process as a co-creator, very little is known about the necessary pre-requisites behaviors that customers should possess before involving in the co-creation process; and the consequent behaviors that in turn develop among those customers for SME's.

Therefore, the above discussion highlights two challenges in the co-creation literature. One is to explore the client participation in the creation process, especially among SME's. The second is to identify and examine the antecedent and consequent behaviors of customer involvement in the creation process. The findings of the study have several implications for both researchers and marketers as it not only identifies but also testifies the impact of prerequisite behaviors of customer engagement in the creation process. Moreover, the findings of the study reveal the ultimate impact of customer engagement in the co-creation on customer loyalty and resilience to negative information (RNI).

2. Literature Review

2.1 Theoretical Background of CVCC Behavior

Value creation is a process to create value in the minds of the customers through well organized and well-managed marketing activities of a firm (Keller, 2013). However, it is not possible to create value for customers without involving his/her in the operations of the business. The concept of customer engagement in the creation process was previously existent in the marketing literature (e.g., Grönroos & Voima, 2013; Lambert & Enz, 2012; Wikström, 1996; Zwick et al., 2008). In the new terrain, CVCC is said to be derived from the Theory of Customer Engagement (Malthouse et al., 2013; Nambisan, 2002). Customer engagement marketing theory refers to the initiatives that companies take to involve customers in the activities that help them in creating new products such as crowdsourcing or online co-creation communities. The theory of customer engagement marketing is mainly related to the company initiatives to induce customers for active participation in the creation process. Researchers argued that the CVCC (customer involvement in the creation process) is not a uni-dimensional construct, instead, it consists of several components (Bettencourt, 1997; Bove et al., 2008; Groth, 2005). Moreover, the study of Youjae and Gong (2013) asserts that customer value co-creation behavior possess eight dimensions such as information seeking, information sharing, responsible behavior, personal interactions, feedback, advocacy, helping and tolerance. Youjae and Gong group all these eight dimensions into two major categories, i.e., active customer participation and customer citizenship behavior. The first four dimensions (information seeking, information sharing, responsible behavior, and personal interactions) is termed as active customer participation; while, customer citizenship behavior comprises of the next four dimension, i.e., feedback, advocacy, helping and tolerance.

Based on the above arguments, it can be asserted that active customer participation is a significant dimension of CVCC. However, CVCC behavior should possess both active customer participation and citizenship behavior (Youjae & Gong, 2013).

Several studies have been conducted to explore the concept of CVCC behavior. A detailed analysis relevant to the CVCC behaviors indicates that researchers studied the concept of CVCC in three different streams. Firstly, researchers identified those aspects that enable the companies to earn profit through online co-creation successfully. For instance, Nambisan and Nambisan (2008), assert that in order to facilitate CVCC, the firms have to

design and provide platforms. Secondly, the researchers also focused on how value co-creation can assist in shaping customer behaviors. Moreover, Chen and Wang (2016) asserted that customer participation in the value co-creation process enhances customer satisfaction. Furthermore, a study of Cossío-Silva et al. (2016) revealed that CVCC helps to enhance attitudinal loyalty. Lastly, the third stream of researchers identified the aspects that influence customer participation in the co-creation process. Moreover, most recently Petri and Jacob (2016) proposed some internal and external factors that influence customers to participate in co-creation. The internal factors relating to the customer's traits such as, customer's lack of capacity, a specific expertise to create something by one's own-self that induces the customer to involve in the co-creation process. While the external factors relate to the customers' perceptions such as, customer trust and commitment on the brand that induces them to involve in the creation process.

Although, the significant empirical evidence is available in the literature relating to how CVCC behavior helps to shape customer loyalty (both behavioral and attitudinal) and customer satisfaction. Still, until the present, no significant evidence is available in the literature relating to the factors that ignite the customer active participation and citizenship behavior to create CVCC behavior. Therefore, the current research aims to propose and examine the four behaviors such as Brand Attractiveness (BA), Brand Response (BR), Sense of Community (SC), and Active Engagement (AE) that a customer should possess to develop CVCC behavior.

Moreover, it has been argued that customer involvement in co-creation behavior ultimately help to shape the positive behaviors among customers, so the present study also aims to confirm Behavioral Loyalty (BL) and Attitudinal Attachment (AA) as suggested by Cossío-Silva et al. (2016).

Additionally, the present study not only tries to confirm behavioral loyalty and attitudinal attachment as consequences of CVCC behavior but also proposes a new consequent for CVCC behavior, i.e., Resilience to Negative Information (RNI). The next section discusses the underlying relationship among all the proposed antecedents and consequent behaviors with CVCC behaviors.

2.2 The Antecedents of CVCC Behavior

2.2.1 The Impact of BA on CVCC Behavior

BA is the assessment of brand characteristics that makes it different and unique from other brands in a constructive way (Currás-Pérez et al., 2009). Social identity and verification theory show that individuals are interested in defining themselves so that the society will recognize them. Therefore, customers search for the brands that look attractive and motivational to their beliefs; as such type of brands helps them to satisfy their social identification and verification needs (Dutton et al., 1994).

So the underlying assumption is that the marketers pay particular attention in designing and defining brand characteristics as it profoundly influences the consumer purchase decision. Based on the above arguments, BA is one of the antecedents of CVCC behavior. As only, such customer shows willingness to engage in the CVCC behaviors that are fully aware of the characteristics of the brand in detail. The following hypothesis is developed based on the above discussion.

- **H_1:** BA will have a positive and significant impact on CVCC behavior.

2.2.2 The Impact of BR on CVCC Behavior

The concept of BR is extracted from the brand resonance model developed by Keller (2013). BR refers to the customer's response towards the brand that is characterized by their judgmental and emotional reaction by using a particular brand. The judgmental reaction deals with the customers' feeling of quality, credibility, and superiority relevant to a brand. While customers' emotional reaction refers to the extent to which customers feel an emotional attachment to the brand. The study of Kahle et al. (1988) assert that customer emotional response is categorized into six different types such as warmth, fun, excitement, security, social approval and self-respect among the customers.

Moreover, Keller (2013) argues that a positive customer response towards the brand enhances the customer's engagement in the brand-related activities and communities. Therefore, the current study proposes that BR is the prerequisite for the customer to involve in the CVCC behaviors. In light of the above arguments following hypothesis is developed;

- **H_2:** BR will have a positive and significant impact on CVCC behavior.

2.2.3 The Impact of AE on CVCC Behavior

AE refers to a customer's willingness to invest his/her extra time, money, efforts, energy or other resources in a particular brand or brand-related activities (Walker, 2008). So, the prerequisite for CVCC behavior is the active customer participation (Zhang et al., 2017) in the brand-related activities such as seeking and sharing information, developing interactive relationships and helping other customers to use a similar brand. As per the above discussion, the present research proposes that AE is the prerequisite behavior for CVCC. The following hypothesis is created to test such connections.

- **H_3:** AE will have a positive and significant impact on CVCC behavior.

2.2.4 The Impact of SC on CVCC Behavior

Nowadays brands instead of restricting the provision of essential features carry a broader vision and share a sense of community with the customers. So customers feel socially identified and have a sense of association and affinity with other customers using the same brand (Yang & Li, 2016). The community may exist physically or virtually. CVCC behaviors not only require active participation but it also requires that the customer should possess citizenship behavior. Citizenship behavior refers to the customer's willingness to provide feedback and help to other customers in order to perform brand-related activities. It can be inferred that the concept of an SC develops a sense of citizenship behavior among the customers that is a prerequisite for the CVCC behavior as well. Based on the above discussion, the current study proposes that a customer should possess SC for actively participating in the creation process with the brand. To test the connection mentioned above, following hypothesis is developed.

- **H_4:** SC will have a positive and significant impact on CVCC behavior.

2.3 The Consequences of CVCC Behavior

2.3.1 The Impact of CVCC Behavior on BL

BL which is one of the elements of intensity to use refers to the frequency of a customer to buy a particular brand (Alajoutsijärvi et al., 2000; Elangovan, 2001; Mittal & Lassar, 1998). According to Cossío-Silva et al. (2016), a CVCC behavior relating to a particular

brand consequently develops behavioral loyalty among the customers. The following hypothesis is developed to confirm the results of Cossío-Silva et al. (2016).

- **H_5:** CVCC will have a positive and significant impact on BL.

2.3.2 The Impact of CVCC Behavior on AA

Chaudhuri and Holbrook (2001), assert that repetitive purchases are not enough to increase loyalty among the customers. Rather a customers' strong AA with the brand is essential for creating loyalty. AA is defined as a strong sense of attachment with the brand. For instance, if the customer demands any brand that is out of stock and if the customer refuses to go for an alternative or substitute, then this behavior is termed as customer AA with the brand. The study of Cossío-Silva et al. (2016) reveals that CVCC behavior helps to shape customer loyalty by creating a strong sense of AA with the brand. To confirm the above-mentioned connection, the following hypothesis can be tested.

- **H_6:** CVCC will have a positive and significant impact on AA.

2.3.3 The Impact of CVCC Behavior on RNI

RNI refers to the customer's desire to support his/her favorite brands or company (Du et al., 2007) so that to satisfy his/her self-congruency need. So when customers hear any negative information or perception about the brand, then he/she would tend to refuse to accept it. Primarily when the customers use the brand to satisfy their social identification and verification needs (Bhattacharya & Sen, 2003), they do not accept any negative information relevant to the brand because they want to protect their beliefs and values. Despite the significance of RNI for shaping positive behaviors among the customers, no significant empirical evidence is available to date that examines the RN as a consequence of CVCC behavior. Therefore, the current study proposed and examine RNI as a consequent of CVCC behavior. In the light of the argument mentioned above, the following hypothesis can be tested.

- **H_7:** CVCC will have a positive and significant impact on RN.

2.4 The Mediating Role of CVCC Behavior

The current study not only aims to examine the direct effect of BA, BR, AE, and SC, on the intensity to use (i.e., BL and AA) and RNI but also tries to study the role of CVCC behavior as a mediator. The mediating role of CVCC behavior is the missing link in the literature that the present study tries to testify through the following hypotheses.

- **H_8a:** BA, BR, AE and SC will have a positive and significant indirect impact on BL through mediation of CVCC behavior.
- **H_8b:** BA, BR, AE and SC will have a positive and significant indirect impact on AA through mediation of CVCC behavior.
- **H_8c:** BA, BR, AE and SC will have a positive and significant indirect impact on RNI through mediation of CVCC behavior.

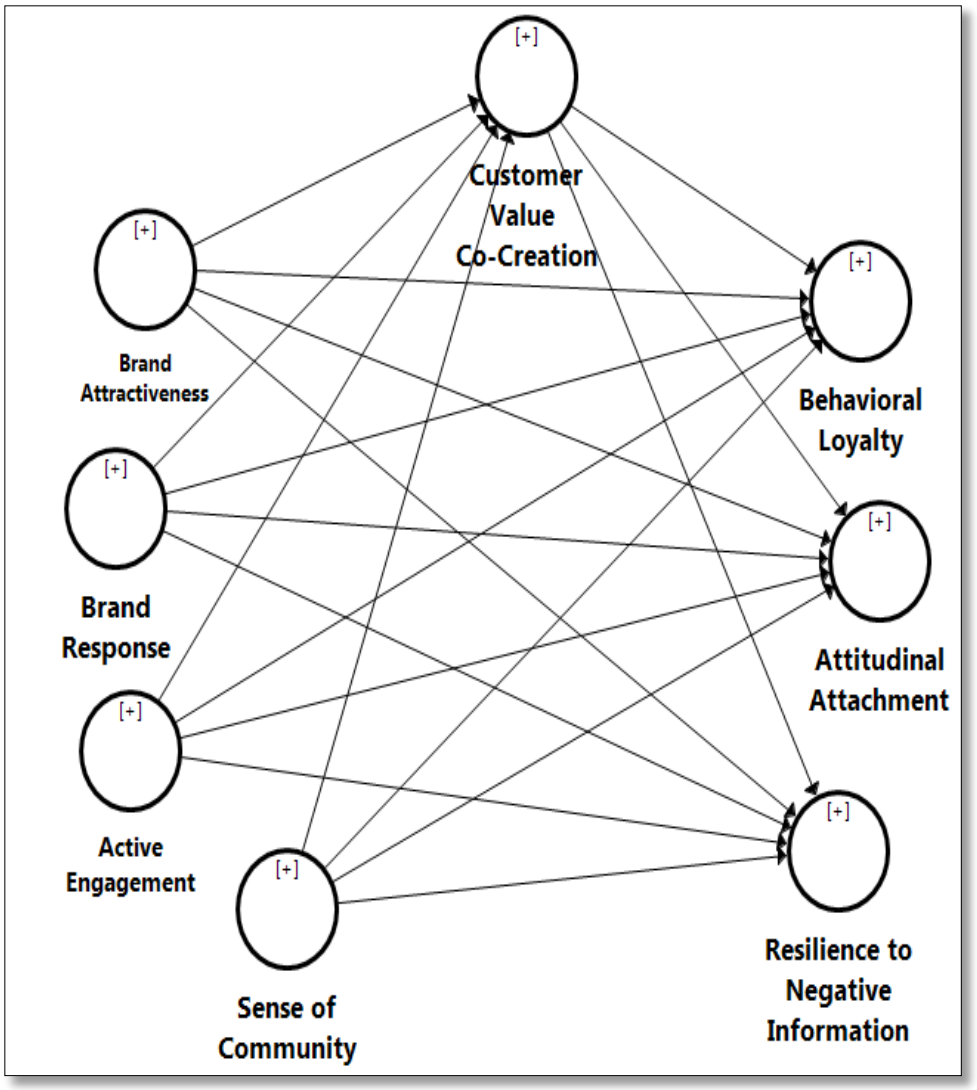

Figure 1: An Integrated Model of the Antecedents and Consequences of CVCC

3. Methods

3.1 Population

The population consists of the customers of SME's. Purposive sampling is applied by selecting different brands of five types of SME's relating to bakeries, boutiques, beauty salons, furniture, and printing services. The underlying assumption to choose the brands of these SME's was that they continuously involve customers in the creation process.

Since the exact number of customers for each brand was unknown. The sample size was calculated using the available online free calculator with 95% level of confidence and 5% margin of error as suggested by Hulley et al. (2001). According to the formula, 384 respondents were appropriate for data collection. Therefore, 384 questionnaires were

personally administered to the customers of the outlets such as boutiques, beauty salons, bakeries, furniture, and printing. Out of 384, 250 filled questionnaires were returned. Out of these, only 207 questionnaires were suitable for further analysis. So the response rate was 65.10% (250 out of 384). The sample consisted of 49% (approx.) male and 42% female respondents. Most of the respondents were between the age group of 16 to 25 years of age (57.5%), then followed by 26 to 35 years of age (25.6%) and other age groups.

3.2 Measures

A questionnaire consisting of 56 items was adopted from the various instruments in the prior studies (See Table 1 below). The overall value of Cronbach's alpha for the instrument was 0.966. However, to examine the convergent and discriminant validity of the instrument Fornell and Larcker (1981) procedure was followed. For testing the convergent validity, PLS-SEM was applied. Moreover, through this software, Average Variance Extracted (AVE), Factor Loading and Composite Reliability (CR) was calculated. Table 1 below shows the value of AVE, CR and factor loadings as calculated by Smart PLS-SEM.

Table 1: Reliability Analysis and Convergent Validity

Construct	Sources	Outer Loadings	CR	AVE
AE	(Keller & Lehmann, 2006)		**0.857**	**0.583**
ae1		0.729		
ae2		0.786		
ae3		0.824		
ae4		0.767		
ae5		0.736		
ae6		0.738		
SC	(Keller & Lehmann, 2006)		**0.808**	**0.634**
sc1		0.774		
sc2		0.794		
sc3		0.824		
sc4		0.794		
BA	(Bhattacharya & Sen, 2003; Currás-Pérez et al., 2009)		**0.706**	**0.533**
ba1		0.723		
ba2		0.750		
ba3		0.785		
ba4		0.656		
BR	(Keller & Lehmann, 2006)		**0.866**	**0.521**
br1		0.619		
br5		0.662		
br6		0.751		
br7		0.766		
br8		0.756		
CVCC Behavior	(Youjae & Gong, 2013)		**0.848**	**0.525**
cvcc13		0.678		
cvcc3		0.725		
cvcc4		0.753		

cvcc5		0.771		
cvcc6		0.742		
cvcc7		0.737		
cvcc9		0.658		
AA	(Ping, 1997, 1999)		**0.789**	**0.616**
aa1		0.674		
aa2		0.834		
aa3		0.849		
aa4		0.771		
BL	(Alajoutsijärvi et al., 2000; Elangovan, 2001; Mittal & Lassar, 1998)		**0.772**	**0.523**
bl2		0.653		
bl3		0.751		
bl4		0.771		
bl5		0.758		
bl7		0.674		
RNI	(Bhattacharya & Sen, 2003; Du et al., 2007)		**0.704**	**0.628**
rn1		0.829		
rn2		0.780		
rn3		0.768		

Table 1 above, shows that all the variables meet the requirement of convergent validity. The values of AVE, CR, and outer loadings meet their recommended values, i.e., 0.50, 0.70, and 0.60 respectively. The above results were extracted by applying PLS-Algorithm. However, during the model extraction, some items of BL, BR, and CVCC were excluded. Only two items of BL were excluded (BL1 and BL6). Moreover, a total of six items were excluded from CVCC (VCC1, VCC2, VCC8, VCC10, VCC11, VCC12) as the factor loadings were less than a recommended value of 0.60.

Discriminant validity means that the variables in the structural model do not show a reflection of other variables. It is assessed by examining low correlation among the measure of interest and the measures of other constructs. Researchers suggest using a heterotrait-monotrait ratio of correlations (HTMT) for discriminant validity (Hair et al., 2017; Henseler et al., 2015). The following Table 2 shows the values that depict discriminant validity.

Table 2: Discriminant Validity

Constructs	HTMT Correlation
BL -> AA	0.845
BA -> AA	0.821
BA -> BL	0.814
BR -> AA	0.844
BR -> BL	0.750
BR -> BA	0.864
RNI -> AA	0.717
RNI -> BL	0.683
RNI -> BA	0.557
RNI -> BR	0.597
CVCC -> AA	0.828
CVCC -> BL	0.782
CVCC -> BA	0.780
CVCC -> BR	0.738
CVCC -> RNI	0.808
AE -> AA	0.814
AE -> BL	0.783
AE -> BA	0.752
AE -> BR	0.733
AE -> RNI	0.699
AE -> CVCC	0.819
SC -> AA	0.828
SC -> BL	0.736
SC -> BA	0.702
SC -> BR	0.715
SC -> RNI	0.685
SC -> CVCC	0.794
SC -> AE	0.822

Table 2 above shows that discriminant validity is established, as the correlation between the constructs is less than 0.90 as recommended by Hair et al. (2017) and Henseler et al. (2015).

Moreover, Table 3 below shows the value of Minimum, Maximum, Mean and standard deviation for BA, BR, AE, SC, CVCC, BL, AA, and RNI. As shown in Table 3, the mean score (calculated using the averages of the total related indicators as well as the univariate analysis) for all of the constructs is higher than the average value of 3.

Table 3: Mean and Standard Deviation of Variables

Variables	Minimum	Maximum	Mean	Std. Deviation
BA	1.00	5.00	3.67	0.80
BR	1.00	5.00	3.68	0.72
BL	1.00	5.00	3.56	0.77
AA	1.00	5.00	3.67	0.82
SC	1.00	5.00	3.59	0.86
AE	1.00	5.00	3.64	0.83
CVCC	1.00	5.00	3.68	0.71
RNI	1.00	5.00	3.52	0.93

4. Findings

4.1 Structural Model Assessment

After the establishment and verification of the outer model (reliability and validity), the structural model is tested to examine the relationship between the exogenous and endogenous variables. The assessment of the structural model in PLS-SEM includes path coefficients that help to examine the significance and relevance of the relationship. The indirect effects are calculated to examine the effect of exogenous variables on endogenous variables in the presence of a Mediator; R^2 value to evaluate the model predictive accuracy and the value of Q^2 to evaluate the model predictive relevance. Moreover, structural model assessment in PLS-SEM includes the value of f^2 to evaluate the substantial impact of the exogenous variable on endogenous variables (Hair et al., 2013).

Moreover, to evaluate the goodness of model fit, PLS-Bootstrapping procedure calculates the value of SRMR (Standardized Root Mean Square). The calculated value of SRMR for the model used in this study was 0.068 that is less than 0.08 as recommended by Hooper et al. (2008), indicating a good model fit.

Furthermore, the measurement model and goodness of fit of the hypothesized relationship in the proposed structural model was tested. Figure 2 below shows the structural model extracted through bootstrapping procedure.

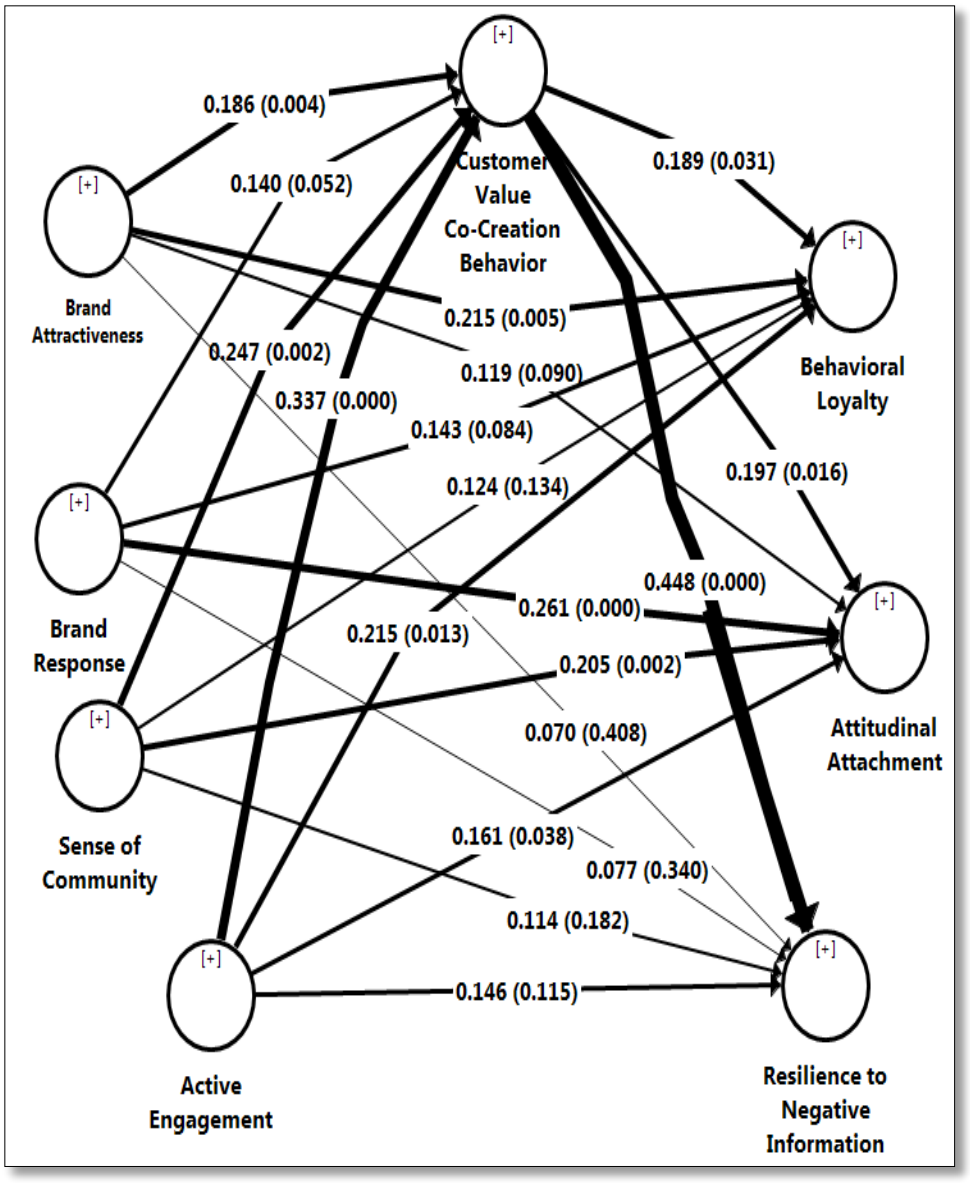

Figure 2: Antecedent and Consequent behaviors of CVCC

Figure 2 above shows the estimated structural model extracted from PLS-SEM and path coefficients for each path. The thickness of path lines shows the intensity of the impact. It is clear from the above figure that all the exogenous variables have a positive and highly significant relationship with a mediator (CVCC) except for BR that is significant at the level of 10%. The results shown in the above *Figure 2* confirmed that for creating CVCC behavior (customer active participation and citizenship behavior), a customer should possess all of the four prerequisite behaviors, i.e., BA, BR, AE, and SC. So in light of all

the hypotheses, i.e., H_1, H_2, H_3, and H_4.relating to the impact of exogenous variables on CVCC behaviors are accepted.

The results of Figure 2 above ratifies the studies of Zhang et al. (2017) and Algesheimer, Dholakia, and Hermann (2005) that AE and SC (respectively) is the pre-requisite for CVCC behavior as AE and SC shows a highly significant relationship with co-creation in comparison with the other exogenous variables. Moreover, the above mentioned PLS-SEM model extracted through bootstrapping procedure sanctions that BA is one of the primary reasons to involve in the co-creation as suggested by social identification and social verification theories (Dutton et al., 1994).

Moreover, all of the exogenous variables show a positive and significant relationship with all the endogenous variables except for RNI. Furthermore, *Figure 2* above shows that SC has no significant relationship with BL as well. Also, CVCC, as a mediator shows a positive and significant impact on all the endogenous variables, i.e., BL, AA, and RNI. Thus, the results confirm that all the relevant proposed hypotheses, i.e., H_5, H_6, and H_7.are accepted. The relationship of CVCC behavior with BL and AA is in line with the results of Cossío-Silva et al. (2016). The current study proposed that CVCC enhances customer resilience against any negative information and the thickness of the path lines confirms the significance of the effect. In the past studies, RNI was never examined as a consequent of CVCC. However, the findings of the current study reveal that RNI is the most significant outcome behavior of CVCC than BL and AA as suggested by Cossío-Silva et al. (2016).

Additionally, to evaluate the predictive accuracy of the structural model, bootstrapping procedure also calculates the coefficients of determination, i.e., R^2. The value of R^2 represents the combined effect of exogenous variables on endogenous variables, and it also represents the amount of combined variance as explained by the exogenous variables into an endogenous variable (Hair et al., 2013). In the current study, the endogenous variables, i.e., CVCC, BL, AA, and RNI have an R^2 value of 0.598, 0.551, 0.629, and 0.429 respectively. The values of R^2 indicates that the structural model has a predictive accuracy (See Table 4). In addition to R^2 values, PLS-SEM also calculates the value of Stone-Geisser Q^2 value (Geisser, 1974; Stone, 1974) to cross-validate the predictive relevance of individual endogenous variables. Table 4 below discusses the predictive accuracy (R^2) and cross-validated predictive relevance (Q^2) for the structural model. The value of Q^2 for CVCC, BL, AA, and RNI is 0.284, 0.260, 0.359 and 0.243 respectively. As the values of Q^2 are > Zero, so this establishes the predictive relevance of the structural model. Moreover, the effect size of Q^2 varies from medium to large.

Table 4: Results of R^2 and Q^2 Values for Model 2

Constructs	R^2	Adjusted R^2	Q^2	Effect Size
CVCC	0.598	0.590	0.284	Medium
BL	0.551	0.540	0.260	Medium
AA	0.629	0.619	0.359	Large
RNI	0.429	0.415	0.243	Medium

Small: 0.0 < Q2 effect size < 0.15; Medium: 0.15 < Q2 effect size < 0.35; Large: Q2 effect size > 0.35

Bootstrapping procedure also calculate the value of f^2. The size of f^2 value shows the substantial impact of latent variable on endogenous variable. In the current study, the effect size of f^2 varies from small to medium (See Table 5).

Table 5: Results of f^2

Endogenous Latent Variables	CVCC		BL		AA		RNI	
Exogenous Latent Variables	**Path Coefficients**	f^2	**Path Coefficients**	f^2	**Path Coefficients**	f^2	**Path Coefficients**	f^2
BR	0.140*	0.023	0.143*	0.021	0.261***	0.084	0.077	0.005
BA	0.186***	0.040	0.215***	0.051	0.119*	0.019	0.070	0.004
AE	0.337***	0.123	0.215**	0.040	0.161**	0.027	0.146	0.015
SC	0.247***	0.073	0.124	0.015	0.205***	0.051	0.107	0.010
CVCC	-	-	0.189*	0.032	0.197*	0.042	0.448**	0.141

Small: 0.0 < Q2 effect size < 0.15; Medium: 0.15 < Q2 effect size < 0.35; Large: Q2 effect size > 0.35
*** Highly Significant at 1% or 0.01 level of significamce
** Moderately Significant at 5% or 0.05 level of significance
* Significant at 10% or 0.10 level of significance)

The study aimed to examine the mediating role of CVCC between the relationship of exogenous (BA, BR, AE and SC) and endogenous (BL, AA, and RNI) variables. Usually, the researchers use the causal-step approach suggested by Baron and Kenny (1986) for testing mediation. However, in the recent years, Shrout and Bolger (2002), Preacher and Hayes (2008) and Zhao et al. (2010) assert to rethink about before using Baron and Kenny (1986) technique for testing mediation due to several limitations. Shrout and Bolger (2002) argue that the precondition of Baron and Kenny mediation analysis is misleading. They further claim that mediation exists even though no significant direct relationship is found between the independent and dependent variable (in the absence of a mediator). Moreover, casual step approach requires calculating each step separately such as calculate the causal relationship between the independent and dependent variable without a mediator and then again calculate casual relationship after including mediating variable. Such step by step technique is not necessary for PLS-SEM as PLS can calculate the mediation in one model at once by calculating the direct, indirect and total effect (See Figure 2).

Based on the shortcomings of Baron and Kenny's technique, Shrout and Bolger (2002), Preacher and Hayes (2008) and Zhao et al. (2010) suggest the following guidelines to test the mediation effect;

- Calculate the value of indirect effect
- Calculate the significance of indirect effect
- Evaluate the strength of indirect effect that determines the size of mediation effect.

PLS-SEM Bootstrapping procedure calculates the value of direct, indirect and total effects along with the significance one go. The indirect effect should be significant, and the significance of the indirect effect should reveal that how much proportion does the mediator absorbs from the total effect. For this purpose Variance Accounted For (VAF) is calculated to examine the extent to which mediator absorbs the total effect (Hair et al. (2013). VAF is calculated as:

$$\text{VAF} = \frac{Indirect\ Effect}{Total\ Effect}$$

Hair et al. (2013) describe the following conditions of mediations based on the values of VAF;

- If 0 < VAF < 0.20, then-No Mediation.
- If 0.20 < VAF < 0.80, then Partial Mediation
- If VAF > 0.80, then Full Mediation.

In light of the above discussion, the following Table 6 below proves statistically not only the direct and indirect effects, but it also tries to assess the mediation effect of CVCC behavior. Moreover, it calculates the value of VAF and interprets the mediation conditions as well. Table 6 below shows that CVCC partially mediates between the relationship of exogenous and endogenous variables.

Table 6: Mediation Analysis: CVCC as Mediator

	Effects			VAF	Mediation
	Direct	**Indirect**	**Total**		
Endogenous: AA					
BR	0.261***	0.028	0.288***	0.10	No
BA	0.119*	0.037*	0.156**	0.24	Partial
AE	0.161**	0.066**	0.228***	0.29	Partial
SC	0.205***	0.049*	0.254***	0.19*	Partial
Endogenous: BL					
BR	0.143*	0.026	0.169**	0.16	No
BA	0.215***	0.035**	0.250***	0.14	No
AE	0.215**	0.064*	0.279***	0.23	Partial
SC	0.124	0.047*	0.170**	0.27	Partial
Endogenous: RNI					
BR	0.077	0.063*	0.139	0.45	Partial
BA	0.070	0.083**	0.153	0.54	Partial
AE	0.146	0.151***	0.297***	0.51	Partial
SC	0.107	0.111**	0.225**	0.49	Partial

No Mediation: 0.0 < VAF< 0.20; Partial Medium: 0.20 < VAF< 0.80; Full Mediation: 0.80<VAF<1.0
*** Highly Significant at 1% or 0.01 level of significance
** Moderately Significant at 5% or 0.05 level of significance
* Significant at 10% or 0.10 level of significance)

Table 6 above shows that CVCC partially mediates, as the value of VAF is greater than 0.20 but less than 0.80. Moreover, Table 6 shows that all the indirect effects are significant from highly significant to just significant except for BR. BR shows a significant indirect effect on only one endogenous variable, i.e., RNI.

Furthermore, the results of the mediation analyses show that H_{8c} is fully accepted because CVCC behavior mediates between all the selected exogenous variables (BR, BA, AE, and

SC) and RNI. While H_{8a} and H_{8b} are partially accepted, as CVCC show no mediation in three cases between a) BR and AA, (b) BR and BL, and (c) BA and BL. So the marketers need to pay particular attention to induce customers to involve in the co-creation process as it partially mediates between all the exogenous and endogenous variables even though no significant direct relationship was found between exogenous and endogenous variables.

4.2 Importance-Performance Matrix Analysis (IPMA)

Researchers use IPMA in various business fields of study (such as accounting, management, operation management, etc.) regarding an importance-performance matrix. Moreover, IPMA has already been used in marketing for assessing customer satisfaction index (Anderson & Fornell, 2000; Fornell et al., 1996). IPMA aims to identify the variables that show significant importance (total effect) in developing a particular target construct, with average latent variable scores indicating relatively low performance (Fornell et al., 1994; Martilla & James, 1977; Slack, 1994). For the current study, IPMA technique was applied by on the variables, i.e., CVCC, AA, BL, and RNI. It is clear from Table 7 below that AE is the most important construct for shaping CVCC and BL with relatively low performance (See *Figure 3* and *Figure 4*). On the other hand, BR and CVCC are the most important predictors for shaping AA and RNI respectively (See Table 7, *Figure 5* and *Figure 6*). Moreover, Figure 3, 4, 5 and 6 show IPMA for each endogenous variables separately.

Table 7: Results of Importance-Performance Matrix Analysis

	CVCC		**BL**		**AA**		**RNI**	
	IM	PE (%)	IM	PE (%)	IM	PE (%)	IM	PE (%)
BR	0.140*	66.632	0.169**	66.632	0.288***	66.632	0.139	66.632
BA	0.186***	66.746	0.250***	66.746	0.156**	66.746	0.153	66.746
AE	0.337***	66.065	0.279***	66.065	0.228***	66.065	0.297***	66.065
SC	0.247***	64.876	0.170**	64.876	0.254***	64.876	0.225**	64.876
CVCC	-	67.067	0.189*	67.067	0.197*	67.067	0.448**	67.067

BR=BR, BA=BA; AE=AE; SC=SC; CVCC=CVCC; IM=Importance; and PE=Performance

*** Highly Significant at 1% or 0.01 level of significance

** Moderately Significant at 5% or 0.05 level of significance

* Significant at 10% or 0.10 level of significance)

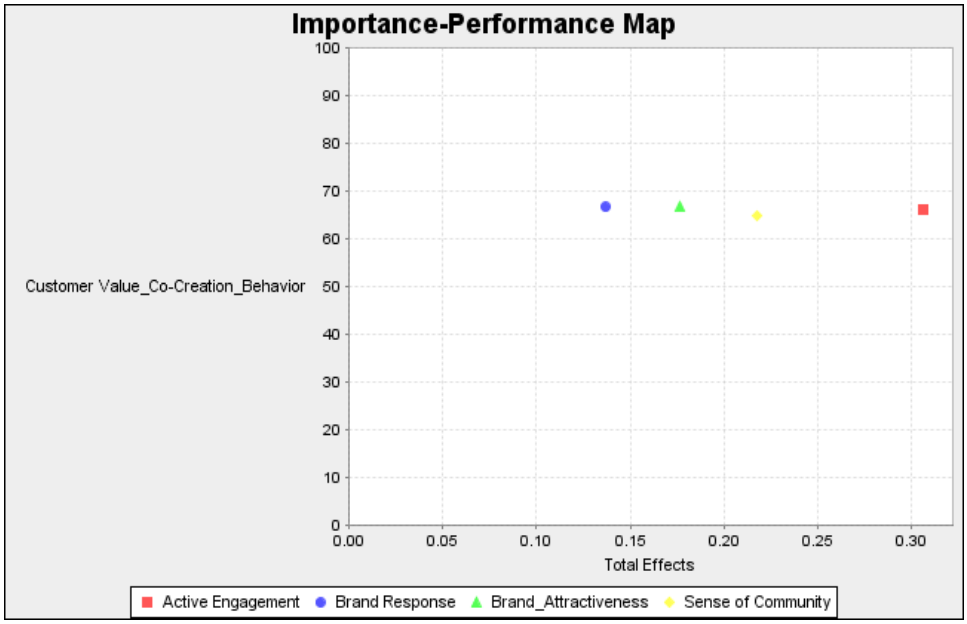

Figure 3: IPMA for CVCC Behavior

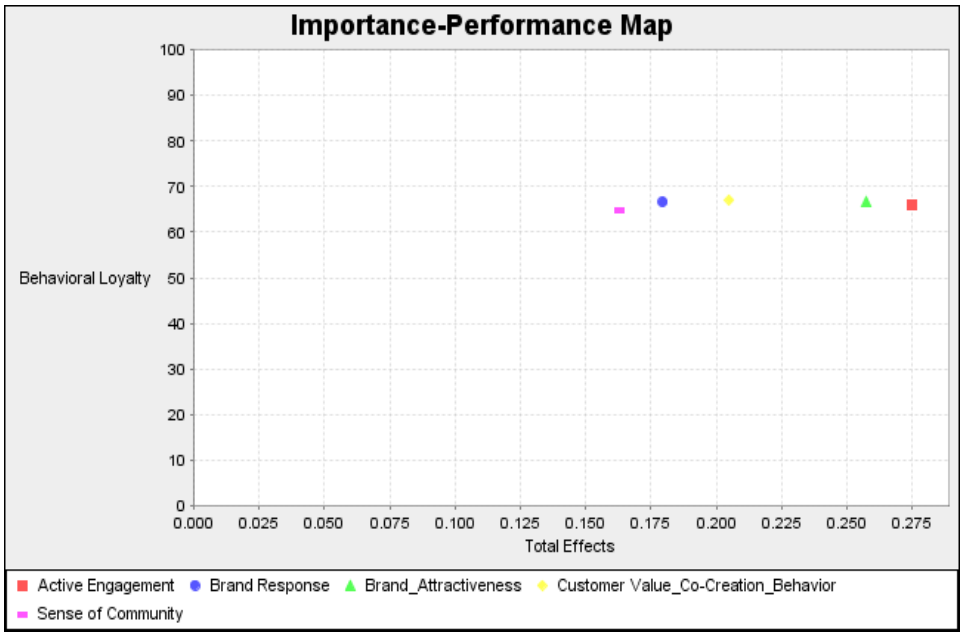

Figure 4: IPMA for BL

Figures 3 and 4 above show that AE is the most important predictor for both CVCC and BL. Although, AE proves to be a significant and important factor and suggests that the marketers should pay attention to improve the performance of AE for enhancing CVCC and BL respectively.

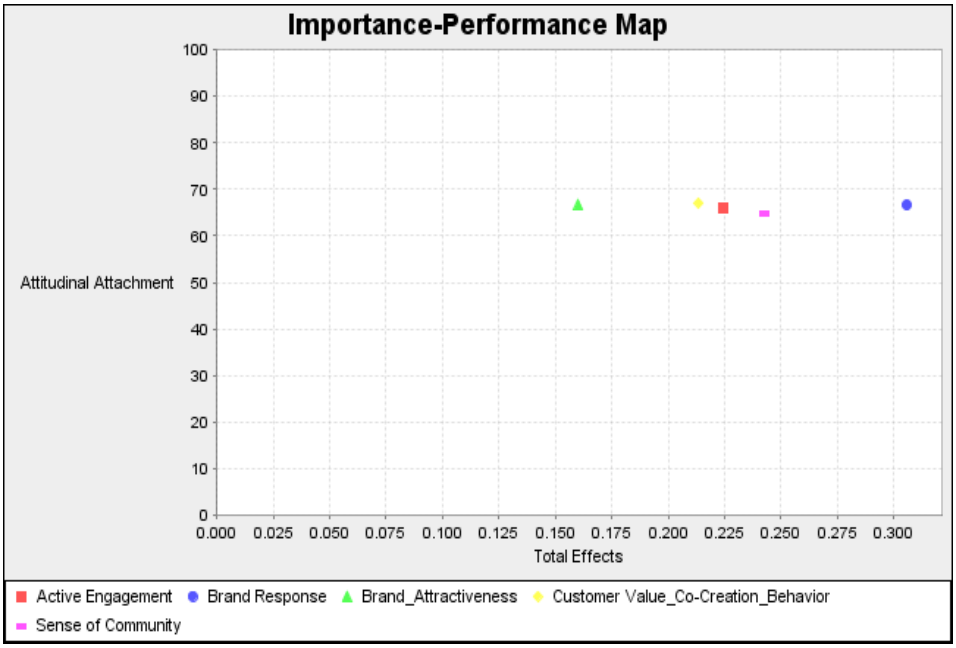

Figure 5: IPMA for AA

Figure 5 above shows the IPMA extracted through PLS-SEM. The graph of IPMA shows that BR is the most important predictor in shaping AA. On the other hand, it has relatively low performance. Based on the IPMA analysis, the current study recommends marketing managers that they should focus to improve the performance of BR to develop a sense of AA among customers.

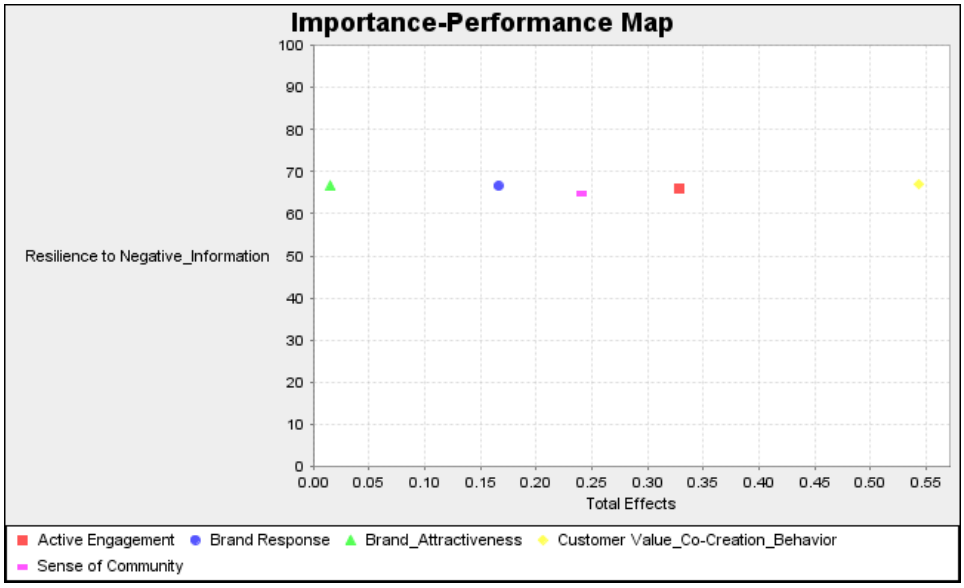

Figure 6: IPMA for RNI

Figure 6 above shows that among all the variables, CVCC is the most significant construct in shaping RNI. The findings of IPMA are in line with the mediation analysis as well. Figure 3 suggests that marketers should focus to increase the performance of AE as it leads to enhanced CVCC behavior that in turn positively influences RNI.

5. Discussion

With the hopes of contributing to the viability of customer's engagement as a co-creator during the creation process, it was important to provide a unique experience on each type of interaction. So the model presented in this study explores the impact of BA, BR, AE and SC (customer behaviors) on CVCC behavior that leads to improving BL, AA, and RNI among SME's. For this purpose, an empirical investigation was conducted to collect the data from the customers of different brands of SME's that related to five type of enterprises, i.e., bakeries, boutiques, beauty salons, furniture, composing and printing. This model represents a step beyond the work of previous researchers as it explores behaviors that drive customers to involve in the CVCC behavior. Moreover, the present study is significant and different from the previous ones as it identifies and empirically testifies that RNI is the most important behavior that is enhanced among the customers as a consequence of CVCC behavior. The findings of the current study have several important implications for both customer co-creation research and practice.

6. Implications

6.1 Theoretical Implications

Several behaviors induce consumers to involve in the CVCC behavior. However, the current study proposed and examined only four behaviors as a driving factor for involving consumers in co-creation behavior. The findings of the current paper reveal that all the proposed prerequisite behaviors show a positive and highly significant impact on CVCC behavior. The results of this research suggest that among all the antecedents, active customer engagement and SC proved to be the most important and significant motivating factors for the customers who are involved in the co-creation process. This finding is in-line with the study of Zhang et al. (2017) who emphasized that AE should be a prerequisite for customer involvement in the co-creation process. Moreover, the study also reveals that the clients who have a strong SC are more likely to involve in the co-creation process.

Furthermore, the two antecedents, i.e., BA and BR show a positive and significant impact on customer co-creation behavior. However, BA shows a highly significant impact on co-creation behavior as compared to BR. The impact of BA and BR on co-creation behavior is the major contributor to the existing literature. Such findings implicate the future researchers to reinvestigate these two behaviors in different settings. Moreover, it also suggests a thorough review by answering a question as to why the BR and BA show a less significant impact as compared to AE and SC on CVCC.

Additionally, the results of the present research confirm the findings presented by Cossío-Silva et al. (2016) that CVCC behavior enhances BL and AA. Moreover, the findings of the current study go one step ahead and suggest that involvement in the creation process leads to inducing customers to defend their brand against any negative information.

6.2 Managerial Implication

Apart from the theoretical implications, the present study carries practical or managerial implications as well. As till present, the phenomenon of co-creation has been examined

among large business organizations perspective only (such as Chen & Wang, 2016; Prebensen & Xie, 2017; Yang & Li, 2016; Zhang et al., 2016). So this study can provide a basis to acknowledge the importance of co-creation process among SME's. The findings of this study suggest the management of SME's that they should focus on engaging the customers in brand-related activities and make them realized so that they feel an SC with other customers and brand managers. For the purpose, to engage customers in the brand-related activities and creating an SC, the brand managers of SME's should use new technological facilities such as different types of social media forums. This consideration is essential because now the customers belong to the age of Facebook, Instagram, Snapchat, and WhatsApp usage and all the customers regardless of age, race, and gender use such mediums for interaction. Therefore, it is easy for the brand managers of SME's to engage customers with brand-related events, offers, activities, and promotions by creating pages on Facebook. Such mediums will not only prove helpful in enhancing customer engagement but through such social communities will help the SME's to connect with prospective clients which in turn will create an SC.

Moreover, the present study recommends that the marketers should consider a positive opinion about the brand in the consumer's mind. A favorable view of the brand can be created by promoting the features of the brand that help customers in satisfying their social identification and verification needs. For this purpose, marketers need to build emotional bonding. So there is a dire need to establish marketing strategies and brand mantra that is capable of conveying the message and accurately positioning the brand concept in the consumer's mind that can develop emotional bonding among the customers.

The present study can be replicated in both SME's and large-scale businesses in the following way:

- The findings of the current study suggest that an SC and customer AE are the two essential behaviors that induce the customers to involve in the co-creation process. Therefore, the brand managers of both SME's and large-scale businesses should specify their strategies relating to enhancement in customer AE and participation. For instance, a promotion campaign of Emirates Airways for Asian countries was launched, that shows an old age lady who is traveling alone while the air hostess adjusts everything for her so that she feels like home. So both SME's and large-scale business marketers should establish and promote their marketing strategy in the same manner that could develop an SC among the customers.
- Most importantly, findings of this research suggest marketers whether SME's or large-scale businesses should try to create positive opinions about the brans among their customers.

7. Limitations and Future Directions

Although, the results of the current study significantly contributes to the existing literature of CVCC. Still, this study is not free from limitations. First, several factors contribute to increasing customer involvement in the co-creation process; however, the current study considered only four customer behaviors as antecedents to customer involvement in the co-creation. So, the current study suggests investigating the other antecedents of the CVCC such as consumer brand identification and electronic word of mouth that might induce customers to involve in the creation process as co-creator.

In the same way, CVCC might have several consequences other than BL, AA, and RNI. Based on the findings of the study, it is recommended that the future researchers should examine the other consequence of customer value co-creation such as corporate brand experience, the behavior of front-liners, flexibility, and customer knowledge management.

Moreover, the current study is cross-sectional. To overcome the limitation of the current study, future researchers should explore this model in different time lags to understand the role of customer value co-creation as it shapes up over a period. To generalize the results of the study, future researchers should replicate the current model in different settings and environments. Lastly, the present study is quantitative, and the data is collected by administering closed-ended questionnaires. Therefore, to investigate the antecedent and consequent behaviors of CVCC in detail, future researchers can investigate the current model using different research designs such as behavioral experimental designs, focus group discussion, observations and randomized field trials.

8. Conclusion

CVCC has opened a new arena for the companies. So current study aimed to understand the determinant and consequent behaviors of CVCC. Four behaviors were drawn from social identification and verification theories as for the determinants and the three consequent behaviors based on the concepts of intensity to use and customers' willingness to protect their brand. The results revealed that the CVCC mediates the impact of antecedent behaviors on consequent behaviors. The findings of the study suggest that among all the antecedents AE is most important for inducing customers to involve in the creation process that in turn increases the customers' willingness to defend their brand against any negative information. Based on the findings of the study, the study suggests that the brands should involve customers in the creation process in order to improve customer loyalty and resilience against any negative information. We believe that the outcomes of the current research provide theoretical and practical understanding for embracing the concept of CVCC.

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