

Investigating the Antecedents of Customer Brand Engagement and Consumer-based Brand Equity in Social Media

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Abstract

The current research is concerned with identifying and testing the role of three main predictors: consumer involvement, consumer participation, and self-expressive brand on the customer brand engagement (CBE). The customer brand engagement is treated in the current study as multidimensional constructs comprising three main aspects: cognitive processing (CP), affection (AF), and activation (AC). It was also proposed a direct influence for these three aspects of CBE on consumer-based brand equity (CBBE). Using online surveys, we gathered data from fans/followers of mobile phone service providers, via Facebook fan pages in Jordan. The data were analysed using structural equation modelling. Based on structural equation modelling analyses (SEM), it was supported that CBE aspects were largely predicted by the role of consumer involvement (INV), consumer participation (COP), and self-expressive brand (SEB). However, we find that cognitive processing and activation impact one dimension of the CBBE dimensions, namely, brand loyalty. Further, we find that brand awareness/associations affect perceived quality but not brand loyalty. To validate the CBE scale, future studies could investigate the impact of the scale using other social media platforms for different brands. The limited amount of empirical research on CBE was the motivation behind this research. In particular, there is no

study that has investigated the main predictors of CBE and its consequences over developing context by proposing and testing the association between the antecedents of CBE with the dimensions of CBE, which in turn affect the dimensions of CBBE.

Keywords: Brand Equity, Consumer Involvement, Self-expressive Brand, Brand Engagement, Social Media

1. Introduction

The related issues of customer engagement (CE) have been always the consideration and attention of researchers and scholars over the marketing field. Specifically, customer brand engagement (CBE), as part of CE, plays a significant role within the marketing literature (Calder et al., 2009; Dwivedi, 2015; Heinonen, 2011; Hollebeek et al., 2014). Therefore, this research is motivated by the growing emphasis on both the practical recommendations of the Marketing Science Institute (2012, 2014), for conducting more research on this area, and the academic domain. For instance, France, Merrilees, and Miller (2016) assert that understanding of CBE is at an early stage and thus further research is required. Gambetti et al. (2015) posit that CBE is a new topic and that more investigation is required due to its significant role in strategic brand decisions. Within social media sites, Hollebeek et al. (2014) assert that the CBE scale still needs to be validated in different cultural contexts and nomological network models. Recent studies (Alalwan et al., 2017; Algharabat et al., 2017; Chuand Sung, 2015; Dessart et al., 2016; Islam and Rahman, 2016; Halaszovich and Nel, 2017; Shiau et al., 2017; Shareef et al., 2018; Shareef et al., 2017b; Papista et al., 2018; Wang et al., 2018) assert that the area of CBE over social media platforms is still uncovered, and accordingly needs further examinations. Thus, the early work of Brodie et al. (2011), Hollebeek (2011a, b), and Hollebeek et al. (2014) considered pillars to conceptualize and measure CBE. For instance, Hollebeek et al. (2014) define CBE in the context of social media sites as the ability to create a psychological state in the minds of consumers as they interact with the focal brand. The authors argue that CBE enhances the social media site's relationship with customers and, hence, builds up co-creative experiences.

However, studies on CBE within the social media context are still limited (Islam and Rahman, 2016; Halaszovich and Nel, 2017; Hollebeek et al., 2014; Jin and Huang, 2017; Page and Pitt, 2011; Sobhanifard et al., 2018). Closer reviewing the prior studies in the social media area leads to notice that it has never been tested the impact of consumer involvement (INV), consumer participation (COP), and self-expressive brand (SEB) on CBE dimensions: cognitive processing (COP), affection (AF), and activation (AC). This is in addition to the fact that there is not study in area of social media that has empirically tested the effecting role of CBE dimensions on the consumer-based brand equity (CBBE) (Chen et al., 2015). Such of that, there is a number of marketing studies that have discussed how brand loyalty could be predicted by the role of CBE dimensions (e.g. Hollebeek et al., 2014; Leckie et al., 2016; Dwivedi, 2015; Schivinski and Dabrowski, 2015), brand awareness/associations (e.g. Hutter et al., 2013; Schivinski and Dabrowski, 2015) and perceived quality (e.g. Dwivedi, 2015; Schivinski and Dabrowski, 2015). Thus, it could be noticed that previous research did not investigate the impact of CBE dimensions on CBBE dimensions on the social media page of the brand. Current study hopefully will capture a considerable contribution by firstly validation the relationship between CBE

dimensions and CBBE dimensions over the social media area. Secondly, this study will add a value by discovering and testing the main determinants of CBE and its outcomes over the developing countries where quite few studies that have tested such related issues. All things considered, this study will be conducted with purpose to fill this research gap.

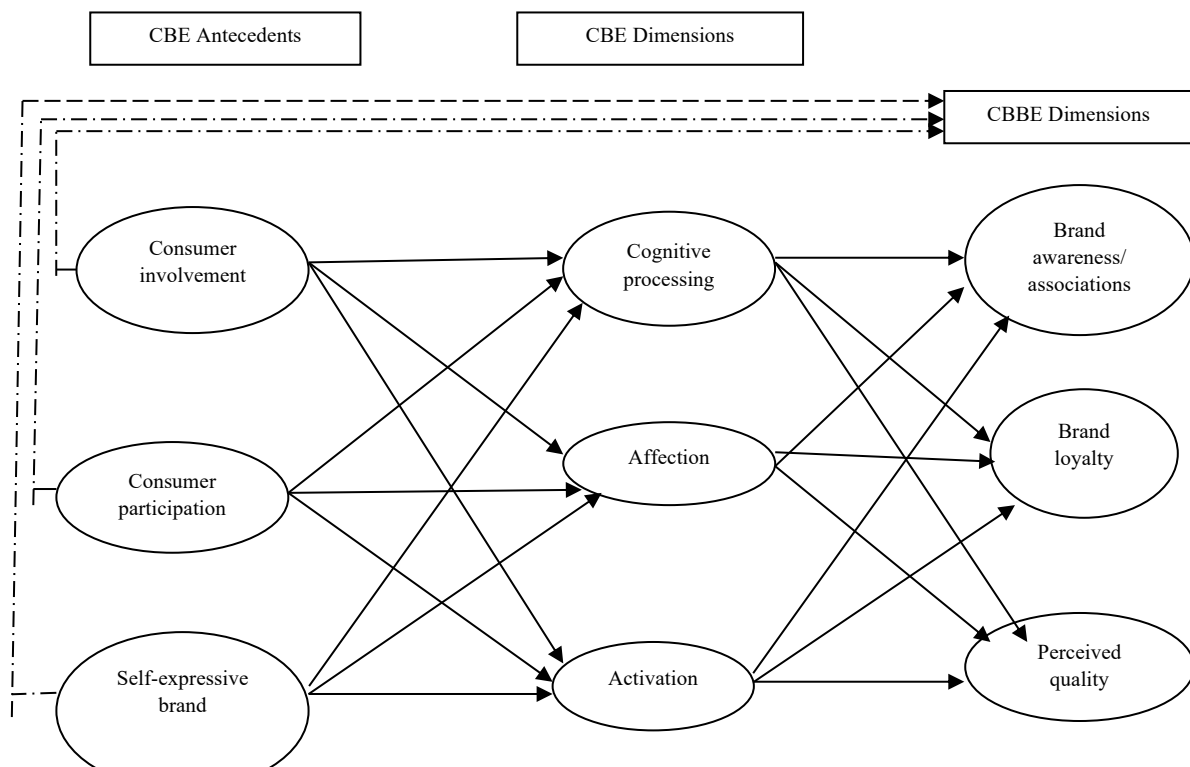
To test our proposed model, we adopted the social media CBE model, based on the customer–brand interactions proposed in a study of Hollebeek et al. (2014) and extended in another study by Leckie et al. (2016) over offline marketing area, and linked it with CBBE consisting of a first order of three dimensions: brand awareness/associations (BAS), brand loyalty (BL), and perceived brand quality (PQ). Therefore, within the context of the social media page of the brand, the current study intention is to validate the influence of three main factors INV, COP, and SEB on the COP, AF, and AC as dimensions of CBE. As well as, this study will then look at the impact of CBE dimensions on the BL, BAS, and PQ as dimensions of CBBE. This study will also address two key questions:

- 1) By considering the area of social media networks, how do INV, COP, and SEB shape and determine CBE aspects: COP, AF, and AC.
- 2) By considering the area of social media networks, how do COP, AF, and AC shape and determine BL, BAS, and PQ as key dimensions of CBBE.

The current paper is organized as follows. First, we explain our proposed conceptual model and hypotheses development. Second, we explain the research methodology. Third, results of the proposed hypotheses are discussed. Finally, we present implications for theory, practice, directions for future research and limitations.

2. Conceptual Model and Hypotheses Development

The current study model was proposed on what has been suggested in prior studies over the related area of CBE and CBBE. All research constructs and associated hypotheses are also presented in Figure 1. To develop and test the proposed model, we relied on CBE and CBBE.



Adapted from: Yoo and Donthu (2000, 2001); Schivinski and Dabrowski (2015); Hollebeek et al. (2014); Leckie et al. (2016). The direct impact of INV, COP, and SEB on CBBE dimensions are displayed by intermittent lines.

Figure 1. Conceptual Model

2.1. The concept of customer brand engagement

Even though the notion of engagement has been investigated from different disciplines, there is an increasing attention by marketing scholars regarding CBE issues over the social media area (Hollebeek et al., 2014). In fact, marketing scholars have addressed and measured CBE differently (based on the engagement between the customer and the brand). For instance, within the context of offline CBE, Hollebeek (2011a) asserts that the definition of CBE should be based on the level of customer investment in a specific brand interaction, which is reflected by the multi-dimensionality of the construct (cognitive, emotional, and behavioural). In their attempt to understand total customer brand experience, Gambetti et al. (2012) conducted a grounded theory to investigate the notion of CBE. The authors assert that CBE is a multi-dimensional concept comprising aspects like attention, emotions, and immediate activation. According to Dwivedi (2015), vigour, dedication, and absorption all were treated as the main dimensions of CBE.

Dessart et al. (2016) conclude that the number of empirical studies in the CBE area is limited (e.g. Brodie et al., 2013; Hollebeek et al., 2014; Hossain et al., 2018; Leckie et al., 2016; Martínez-López et al., 2017; Schultz, 2017) and they lack a comprehensive manner in defining and conceptualizing customer engagement. Thus, the authors argue that the lack of proper measurement of CBE comes as a result of the various focuses on either an individual dimension of engagement or several aspects of engagement. For instance, both brand engagement and community engagement were considered by Dessart et al. (2016) as foundation to formulate customer engagement (CE). In details, affective (enthusiasm and enjoyment); behavioural (sharing, learning and endorsing); and cognitive (attention and absorption) were addressed by Dessart et al. (2016) as key aspects of CE. In 2016, Leckie et al. have addressed CBE based on

Hollebeek's et al. (2014) proposition which supposes CP, AF and AC as a key dimension of CBE.

Over the social networking field Hollebeek et al. (2014) have investigated brand engagement from the customer's perspective and provided a clear definition of CBE which explains how customer could cognitively valence and emotionally and behaviorally react toward all brand activities conducted over social media platforms. Accurately, CP, AF, and AC were identified by Hollebeek et al. (2014) as the main dimensions to measure CBE. Accordingly, and in the line with Hollenbeck's et al. (2014) proposition, Algharabat et al. (2018) recently measured CBE using these three dimensions: CP, AF, and AC over the Jordanian context.

2.2. Relationships among antecedents of CBE and CBE dimensions

Based on the extant studies on CBE (i.e. Brodie et al., 2013; Hollebeek et al., 2014; Leckie et al., 2016), we decided to examine the most common antecedents of CBE within the social media context: consumer involvement (Algharabat et al., 2018; Hollebeek et al., 2014), consumer participation (Leckie et al., 2016), and self-expressive brands (Algharabat, 2017; France et al., 2016) to examine the influence of CBE antecedents on CBE dimensions (Hollebeek et al., 2014), which in turn impact CBBE dimensions (Schivinski and Dabrowski, 2015). The rationale behind choosing the above antecedents of CBE is encapsulated in the following reasons: (i) this study is based on investing in the dimensions of CBE in a service context, thus we decided to investigate the impact CBE dimensions: INV, COP, and SEB. While consumer involvement and participation picked up due to their importance within the service-dominant logic, which is related to consumers' role in proactively co-creating their experiences and values within social media platforms by having active dialogue and interactions (Vargo and Lusch, 2004, 2008) between the service provider and customers. Such an interaction often transforms participants on a social media platform from being inactive followers to dynamic followers (Prahalad and Ramaswamy, 2000) who are involved with the service provider and its values/goals (Woodruff and Gardial, 1996). As a result, consumers become value co-creators who link their values with social media platforms and hence engage with them (Muniz and O'Guinn, 2001). Hence, a solid theoretical proposition was presented by the service-dominant logic regarding the influence of INV and COP on the customer brand engagement. (ii) The rationale behind choosing self-expressive brands as a third dimension of CBE could be justified by consumer culture theory (Brodie et al., 2013). In fact consumer culture theory examines the symbolic and experiential features of interacting with a brand and the way that a brand can enhance self-identity. Thus, consumer culture theory explains the impact of self-expressive brands on CBE.

Based on what has been discussed by Zaichkowsky (1985), consumer involvement could be addressed as the extent of how much customer feels that the targeted object is consistent and linked to his needs, values, and interests. Thus, the author linked involvement with engagement. As stated by Russell et al. (2007), involvement also means that how much the targeted object is important from the customer point of view as well as how such object pertains to customer's ego structure. Over the online and virtual area, a strong positive association was approved by Wirtz et al. (2013) between INV and CE. Dwivedi (2015) also found out that both focal brand and CBE were positively predicted by the role of INV. Likewise, Hollebeek et al. (2014) assured that three dimensions of CBE over social media platforms: CP, AF, and AC are positively related with INV. Within Mobile phone sector, Leckie et al. (2016) showed that INV has a positive role in contributing to CP, AF, and AC. More recently, personal INV has been proved by Hepola et al. (2017) to have a considerable role in accelerating CP, AC, and AF. Accordingly,

H_{1a}: Consumer involvement has a positive effect on cognitive processing.

Previous research asserts the positive impact of consumer involvement on affection. For instance, within the context of social media platform, Hollebeek et al. (2014) find a significant impact of consumer involvement on affection. Hepola et al. (2017) posit the role of consumer involvement on affection. Leckie et al. (2016) find that consumer involvement positively impacts affection. Accordingly,

H_{1b}: Consumer involvement has a positive effect on affection.

The extant literature supports the relationship between consumer involvement and activation. For example, Clarke and Belk (1978) reported the positive relationship between involvement with product and time spent on searching it. Leckie et al. (2016) find that consumer involvement positively impacts affection. Hollebeek et al. (2014) assert the positive impact of consumer involvement on activation. Hepola et al. (2017) posit the role of consumer involvement on activation. Accordingly,

H_{1c}: Consumer involvement has a positive effect on activation.

Leckie et al. (2016) examined the influence of consumer participation on CBE dimensions and discussed the importance of this construct as an antecedent to CBE dimensions. Therefore, consumer participation reflects service organizations' ability to deliver a service with higher quality. Thus, consumer participation helps organizations to shift from good-centred logic to service-dominant logic and increases engagement with the organization/brand (Vargo and Lusch, 2004). Accordingly, consumers' participation on social media sites facilitates their interaction with the service providers and allows them to provide service providers with recommendations regarding: (i) improving the processes, services, or products; (ii) informing service providers when problems arise in the process (Gruen, Summers, and Acito, 2000); (iii) promoting customer satisfaction; (iv) adding value to the production process (Ippolito, 2009); and (v) creating more cognitive and affective brand experiences (Madupu and Cooley, 2010; Muniz and O'guinn, 2001; Algesheimer et al., 2005; Shiau, Dwivedi and Lai, 2018; Shiau, Dwivedi and Yang, 2017). Therefore, consumers' participations impact CBE dimensions (Leckie et al., 2016). For instance, consumers' participation over social media networking sites allows consumers to contribute with their opinions using activities such as likes or posts to reflect their cognitive and affective states (Muntinga, Moorman, and Smit 2011), to generate new content on the sites by creating and distributing more information and materials about the targeted brand (e.g. sharing posts and/or uploading brand-related images) that impact their cognitive, affective, and behavioural aspects (Muntinga, Moorman, and Smit 2011) and thus increase their engagement with the brand (Leckie et al., 2016). Davis et al. (2014) assert the positive relationship between participating in social media sites and information gaining. Vivek et al. (2012) assert that consumer participation is an antecedent for CBE. Additionally, Leckie et al. (2016) found that consumer participation positively impacts cognitive processing. Carlson et al. (2018) posit the positive relationship between customer participation and functional value. Chen et al. (2015) reported the positive link between page posts created by consumers and their utilitarian value. Thus,

H_{2a}: Consumer participation has a positive effect on cognitive processing

Carlson et al. (2018) assert the positive relationship between consumer participation and emotional value (as a dimension of consumer brand engagement). Gutiérrez-Cillán et al. (2017) assert the positive relationship between consumer participation over social media platform and affection (entertainment). Within social networking sites, Hall-Phillips et al. (2016) assert the positive relationship between escapism and consumer engagement. Chen et al. (2015) reported the positive link between page posts created by consumers and their hedonic value. Thus,

H_{2b}: consumer participation has a positive effect on affection

Leckie et al. (2016) assert the positive impact of consumer participation on activation. Previous research posits the positive relationship between consumer participation and enthusiasm and consumer participation and engagement with brands/organization (Bagozzi and Dholakia, 2006; Vivek et al., 2012). Algharabat (2018) finds a positive relationship between telepresence, while users are participating in a particular website, and their engagement (measured as instrumental, experiential value, and behavioural value). Carlson et al. (2018) assert the positive relationship between consumer participation and relational (behavioural) value. Thus,

H_{2c}: consumer participation has a positive effect on activation

Based on definition proposed by Carroll and Ahuvia (2006), SEB could be addressed as the extent to which customer feel and perceive the targeted brand reflecting his or her inner self. Belk (1988) asserts that brands reflect the way that consumers think, thus providing an extension of themselves. Accurately, as stated by Carroll and Ahuvia (2006), the brand symbolic design is usually used by customer to shape and reflect his or her self-identities. Accordingly, the number of studies that link the impact of self-expression to CBE dimensions is still limited (Leckie et al., 2016). For instance, prior studies have tested the related issues of SEB on CBE affective and behavioural demission (Algharabat, 2017; Wallace et al., 2014). Therefore, on social networks, practitioners and academics rely on the “likes” to clarify how SEB could shape and predict customer engagement (i.e. Algharabat, 2017; Dwivedi et al., 2015; Shareef, 2018; Wallace et al., 2014). Therefore, the “like” of a brand on Facebook indicates customers’ engagement with the brand, which means that consumers consider the brand as part of their online self-expression (Algharabat, 2017).

Schau and Gilly (2003) assert that social networks provide consumers with an opportunity to present an “ideal-self”, so consumers engage with a brand to express themselves. In the context of fan page participation, Jahn and Kunz (2012) found a positive impact between self-concept value and fan page engagement. Additionally, Leckie et al. (2016) found that both CP and AF are positively and largely influenced by the role of SEB. Accordingly, it could be postulated that:

H_{3a}: Self-expressive brand has a positive effect on cognitive processing,

Sprott et al. (2009) assert that consumers’ perception of self-expression of brands partly impacted their engagement. France et al. (2016) found a positive relationship between brand self-congruity and CBE. Lee and Workman (2014) find a positive relationship between self-expressive brand and emotional brand attachment. Previous research (Algharabat, 2017; Wallace et al., 2014) asserts the positive relationship between SEB and the affective dimension of the CBE. Accordingly,

H_{3b}: Self-expressive brand has a positive effect on affection.

The relationship between self-expressive brand and activation gets some support within the social media literature. For instance, Algharabat (2017) and Wallace et al. (2014) assert the positive relationship between self-expressive brand and its ability to shape and predict the activation part of the CBE. Keng and Ting (2009) report the relationship between consumers' interaction via blog and service excellence. Westhuizen (2018) asserts the positive relationship between self-brand connection and brand experience (affection). Thus,

H_{3c}: Self-expressive brand has a positive effect on activation

2.3. CBE and brand equity

Consumer-based brand equity

Currently, social media plays a significant role in the creation of brand equity via customers' engagement (Bruhn et al., 2012). Therefore, customers' interaction with the brands provided over social media symbolizes their higher involvement in the presented brands and thus increasingly contributes to brand equity (van Doorn et al., 2010; Calder and Malthouse, 2005). As a result, consumers' engagement enhances their brand knowledge, which in turn builds strong, favourable and unique associations with the brand, influences their purchase decisions (Hutter et al., 2013), creates value (Gummerus et al., 2012), and builds brand equity (Schivinski and Dabrowski, 2015).

Previous research has examined brand equity from different streams (i.e. financial and consumer). However, it can be noticed that brand equity aims to explain the value gifted by the brand to the product regardless of the previous research streams. Yoo and Donthu (2000, p. 1) "*define brand equity as the difference between consumers' responses to a focal brand and an unbranded product when both have the same level of marketing stimuli and product attributes*". Historically, to conceptualize CBBE, researchers follow two main frameworks: those of Keller (1993) and Aaker (1991). Keller (1993) defines brand equity based on brand knowledge, consisting of two components: brand awareness and brand image, while Aaker (1991) provides a more general and comprehensive conceptualization of brand equity. Yoo and Donthu (2001) conceptualized brand equity, based on Keller (1993) and Aaker's (1993, 1996) frameworks. In details, BL, PQ, BAS were treated as key dimensions (first order scale) of brand equity which was considered as a second order factor (e.g. Schivinski and Dabrowski, 2015; Yoo and Donthu, 2000). Therefore, to answer the research questions, brand equity dimensions will move from focusing on brands to their applications over social networking sitting.

2.4. CBE and brand awareness/associations

As a matter of customer's ability to recognize and memorize the targeted brand, Aaker (1991) conceptualized brand awareness. As for brand associations, it could be addressed as all issues (i.e. quality, shape, image, feelings, product features) that could cross the customers' mind when the targeted brand is subject to cognition (Aaker and Joachimsthaler, 2000). Such associations should be strong, favourable and unique (Aaker, 1991; Aaker and Keller, 1990; Keller, 1993). However, evidence from the empirical work of Yoo et al. (2000) asserts that both brand awareness and associations could be treated as a one factor which is entitled brand awareness/associations (BAS). Therefore, brand awareness and associations usually shape a particular brand image (Yoo et al., 2000), which helps marketers to build a positive brand attitude, brand differentiation and hence positioning (Low and Lamb, 2000). Additionally, according to Aaker (1991), brand associations have the strongest

impact on consumers since such associations are linked to their experiences. Therefore, we believe that CBE, with its three dimensions, leads to more associations with the brand as a result of the consumers' positive cognition, affection, and activation. This belief is consistent with Yoo et al. (2000), who assert that brand communication enhances brand equity because of consumers' ability to consider the communicated brand as part of their evoked set. In the context of online social media, Bruhn et al. (2012), argue that cognitive perception of users' communication significantly effects their awareness of the online brands. Similarly, Hutter et al. (2013) find a significant influence of consumer's engagement and brand awareness. Using Facebook as social media brand communication, Schivinski and Dabrowski (2015) assert the positive relationship between user-generated evaluation and brand awareness/associations. Thus,

H_{4a}: Cognitive processing has a positive effect on brand awareness/associations

Bruhn et al. (2012) assert that consumers' perception of online brand communication, using social media, positively influence their perception of brands. Similarly, Hutter et al. (2013) stated that CE is more likely to be improved by the role of Facebook brand pages and the role of brand awareness as well. According to Schivinski and Dabrowski (2015), BAS is largely predicted by the interactions and communications that take place between customers and organizations over the social media platforms. Within social networking sites, Lee and Hong (2016) assert the positive relationship between customers' informativeness and their attitude. Yazdanparast et al. (2016) posit the positive relationship between social media marketing activities (affection as an element) and brand awareness/associations. Mishra et al. (2014) find a positive relationship between brand usability and brand associations. Shareef et al. (2017a) posit the positive relationship between affection and awareness. Bruhn et al. (2012) and Hutter et al. (2013) find a significant influence of consumers' affect (as an element of commitment) and brand awareness. Hence, we hypothesize:

H_{4b}: Affection has a positive effect on brand awareness/associations

Mishra et al. (2014) assert the positive relationship between pleasure and brand associations. Godey et al. (2016) assert the positive relationship between entertainment (as a dimension of social media marketing activity) and brand awareness (as a dimension of brand equity). Using Facebook context, Schivinski and Dabrowski (2015) posit the significant correlation between user-generated evaluation and brand awareness/associations. Within social media platforms, Bruhn et al. (2012) and Hutter et al. (2013) find a significant influence of consumers' commitment (affect and affection) and brand awareness. Hence, we hypothesize:

H_{4c}: Activation has a positive effect on brand awareness/associations

2.5 CBE and brand loyalty

Brand loyalty can be defined as the extent of customer's feelings that he or she is cognitively, emotionally, and behaviourally attached to an organization's brand (Liu et al., 2012). Hence, BL has been usually considered as a desirable result of marketing activities over the marketing literature (De Villiers, 2015; He et al., 2012). Dwivedi (2015) asserts that brand loyalty is an important construct for service organizations due to its ability to maintain and increase sales revenues. The author reported the relationship between cognitive processing and brand loyalty. Hollebeek (2011a)

asserted that there is a link between consumers' cognitive processing and brand loyalty. Vivek et al. (2012) assert the correlation between consumers' beliefs and brand loyalty. Therefore, we intended to investigate the impact of cognitive processing on brand loyalty towards the social media page. Hence, we hypothesize:

H_{5a}: Cognitive processing has a positive impact on brand loyalty

Hollebeek (2011a) posited that affective bonds with a focal brand often enhance consumers' brand loyalty. Vivek et al. (2012) reported that engaged consumers with strong beliefs, affection, and purchase behaviour often have more brand loyalty. Furthermore, evidence for the link between CE within social media platforms and brand loyalty (such as customer loyalty and word-of-mouth) is proved. Such of that, interactions and communications initiated by customers could have a positive role in enhancing the level of BL as stated by Schivinski and Dabrowski (2015). Dwivedi (2015) found that affection has a positive impact on brand loyalty. Hollebeek et al. (2014) reported the positive impact of affection on brand loyalty. Leckie et al. (2016) found that affection had a positive impact on brand loyalty. Therefore, we intended to investigate the impact of affection on brand loyalty towards the social media page. Hence, we hypothesize:

H_{5b}: Affection has a positive impact on brand loyalty

Leckie et al. (2016) found that activation had a positive impact on brand loyalty. Dwivedi (2015) found that activation has a positive impact on customers' loyalty toward the targeted brand. Alalwan (2018) asserts the positive impact between affection, cognition, and purchase intention over social media sites. Hollebeek et al. (2014) found that activation positively influences brand usage intent. Therefore, we intended to investigate the impact of activation on brand loyalty towards the social media page. Hence, we hypothesize:

H_{5c}: Activation processing has a positive impact on brand loyalty

2.6. CBE and perceived quality

In the line with Zeithaml (1988), perceived quality is more pertained to the customer's overall appraisals of the brands' features. The author asserted that perceived quality is based on the consumers' cognitive evaluations. Thus, such superiority is related to consumers' ability to compare a certain brand with alternatives (Aaker, 1991). Consequently, Yoo et al. (2000) linked the perception of highly advertised brands with high quality. In the online social media context, social media is considered to be a significant source of information to consumers, and hence it plays an important role in reflecting product quality (Liand Bernoff, 2011). Within social media brand communication, Li and Bernoff (2011) articulate that users are a significant source of information to other consumers. The authors assert that users' opinions are considered as a main source of information about product quality. Chevalier and Mayzlin (2006) show the positive relationship between consumers' online product reviews and other consumers' perception of product quality. Riegner (2007) also argues that users' opinions are a significant means for customers to get information regarding the quality of products or services. Thus,

H_{6a}: Cognitive processing has a positive effect on perceived quality

Chevalier and Mayzlin (2006) asserted that perceived quality is more likely to be enhanced by reviews and feedbacks generated by customers. Likewise, customers' interactions and customers' communications conducted over social media platforms were reported by Schivinski and Dabrowski (2015) to have positive role in shaping consumers' perceived brand quality. Dwivedi (2015) found an insignificant relationship between CBE dimensions and perceived value. Kim and Ko (2012) find a positive relationship between entertainment (a dimension of social media marketing activities) and product quality (a dimension of value equity). Thus,

H_{6b}: Affection has a positive effect on perceived quality

The relationship between the activation (the behaviour) and product quality has been supported within the literature. For instance, Lassoued and Hobbs (2015) assert the positive relationship between consumers' positive experience and quality. Consequently, we assume that consumers will interpret the positive information provided by reviewers and those featured within the social media platform as an indicator of the consumer's level of product quality, which in turn will affect consumers' perception of brand quality. Hence, we expect that within the social media platforms, consumers will associate their experience with the quality of the focal brand. Therefore, we intended to investigate the impact of activation on perceived quality towards the social media page. Accordingly, we hypothesize:

H_{6c}: Activation has a positive effect on perceived quality

2.7. Relationships among CBBE dimensions

We followed the steps of Schivinski and Dabrowski (2015) to hypothesize the relationships among CBBE dimensions, which relied on Ajzen and Fishbein's (1975, 1980) research and employed the standard learning hierarchy. Accordingly, building brand equity should start with building brand awareness, then brand associations (Aaker, 1991; Yoo and Donthu, 2001) in consumers' memories, followed by perceived equity, and ending up with attitudinal brand loyalty (Aaker, 1991; Yoo and Donthu, 2001). BAS was approved by Schivinski and Dabrowski (2015) to have a positive impact on BL. Therefore, we intended to investigate the relationship between BAS and BL towards the social media page. Thus, we hypothesize:

H₇: Brand awareness/associations positively influence brand loyalty.

Within the context of online brand communities, perceived value was noticed by Mishra et al. (2014) to be positively influenced by the role of brand associations. In the same context, Brogi et al. (2013) asserted that positive relationships exists between BAS and BL. Schivinski and Dabrowski (2015) report the positive relationship between BAS and PQ. Therefore, we intended to investigate the relationships between BAS and PQ towards the social media page. Thus, we hypothesize:

H₈: Brand awareness/associations positively influence perceived quality.

2.8. The Antecedents of CBE and CBBE

There is a good number of marketing studies that have tested the direct and indirect relationships between INV, COP, SEB, and CBBE dimensions. Consumer

involvement reflects the importance of objects from the customer point of view as well as how such an object pertains to a customer's ego structure and values (Russell et al., 2007; Peter et al. 1999). Previous research (e.g. Bonhomme et al., 2010; Christodoulides et al., 2012) asserts the positive relationship between involvement and customer-based brand equity (with its dimensions: brand awareness/associations, perceived quality, and brand loyalty). Hutter et al. (2013) find a significant influence of consumers' commitment (affect and affection) and brand awareness. Bonhomme et al. (2010) assert the positive relationship between involvement with user-generated content and CBBE dimensions (e.g. brand awareness/associations). Thus,

H_{9a}: Consumer involvement has a positive effect on brand awareness/associations.

Hollebeek et al. (2014) found a significant direct relationship between consumer involvement and brand usage intent. Russell et al. (2007) empirically proved the influence of INV on attitudinal loyalty. A strong and positive association between brand identification and brand loyalty was also noticed by He et al. (2012). Christodoulides et al. (2012) find positive relationship between consumer involvement and brand loyalty (as a dimension of CBBE). Bonhomme et al. (2010) assert the positive relationship between involvement with user-generated content and CBBE dimensions (e.g. brand loyalty). Leckie et al. (2016) found a significant direct impact of INV on brand loyalty. Thus,

H_{9b}: Consumer involvement has a positive effect on brand loyalty

Previous research (Auh et al., 2007; Chan et al., 2010) postulates the positive relationship between customer involvement and quality evaluation. Moreover, Carlson et al. (2018) argue that consumers' involvement shapes their brand experience. Bonhomme et al. (2010) assert the positive relationship between user-generated content involvement and CBBE dimensions (e.g. perceived quality). Christodoulides et al. (2012) find a positive relationship between involvement and perceived quality (as a dimension of CBBE). Thus,

H_{9c}: Consumer involvement has a positive effect on perceived quality.

Consumer participation, in social media, reflects consumer needs for social interaction with other consumers who have similar needs. Thus, such interaction often enhances a feeling of belonging (Eisenbeiss et al., 2012). Therefore, social media platforms allow consumers to search for more information and understand the main features and benefits of a particular brand and, as a result, they can perceive the quality of a brand (Dholakia et al., 2004; McKenna and Bargh, 1999). Consumers use social networks to talk to people, interact with strangers, and even make new friends (Eisenbeiss et al., 2012). Thus,

H_{10a}: Consumer participation has a positive effect on brand awareness/associations.

Zheng et al. (2015) concluded that a positive relationship is present between consumer participation and brand loyalty. Kamboj et al. (2018) find a positive relationship between customer participation over social networking sites and brand loyalty. Leckie et al. (2016) assert a positive relationship between COP and brand loyalty. Similarly, Hollebeek et al.'s (2014) study proposed a positive direct relationship between COP and brand loyalty. Thus,

H_{10b}: Consumer participation has a positive effect on brand loyalty.

There have been quite a few attempts to investigate the impact of antecedents of CBE on CBBE, but we have decided to follow Leckie et al.'s (2016) and Hollebeek et al.'s (2014) studies and proposed positive direct relationships between COP and the three dimensions of CBBE. Moreover, Carlson et al. (2018) argue that consumers' participation shape their brand experience Thus, we hypothesize:

H_{10c}: Consumer participation has a positive effect on perceived quality.

Self-expressive brand within the context of social media platforms reflects consumers' willingness to send messages regarding themselves to others (Fournier, 1998). Therefore, self-expressive brand has a positive impact on consumer willingness to get more information and updates about the brand (Richard and Guppy, 2014; Roblek et al., 2013; Parker, 2012). Roy and Chau (2011) posit the positive relationship between consumers' motivations (self-expressive) and brand associations. Schivinski and Dabrowski (2015) posit the positive relationship between the content which consumers use to express their ideas through Facebook and brand awareness/associations.

H_{11a}: Self-expressive brand has a positive effect on brand awareness/associations.

Liu et al. (2012) assert the significant relationship between self-expressive brand and brand loyalty. Sirgy et al. (2008) argue the positive relationship between self-expressive brand and brand loyalty. Roy and Chau (2011) assert the positive relationship between consumers' motivations (self-expressive) and brand loyalty. Carroll and Ahuvia (2006) identify a positive relationship between SEB and WOM. Schivinski and Dabrowski (2015) posit the positive relationship between the content which consumers use to express their ideas through Facebook and brand loyalty. Godey et al. (2016) posit the positive impact of self-expressivity toward the brand and WOM. Thus,

H_{11b}: Self-expressive brand has a positive effect on brand loyalty.

Roy and Chau (2011) articulate the positive relationship between consumers' motivations (self-expressive) and brand associations, perceived quality, and brand loyalty. Lee and Workman (2014) find a positive relationship between self-expressive brand and emotional brand attachment. Schivinski and Dabrowski (2015) assert the positive relationship between the content which consumers use to express their ideas through Facebook and perceived quality. Thus,

H_{11c}: Self-expressive brand has a positive effect on perceived quality.

3. Methodology

3.1. Data collection and sample

We employed a sample of 500 Jordanian consumers who are fans of the social media pages of certain brands (i.e. mobile service providers' Facebook pages) and used online survey to collect the data. We decided to choose this sector due to the heavy competition among Jordanian mobile phone service providers and due to the fast growth of this sector. In Jordan, the population exceeds 9.456 million people (TRC, 2016) and we have three telecommunication companies [Zain Jordan: 1.4 million fans, with 5.6 million subscribers; Orange Jordan: 26 million fans, with 4.6 million subscribers; and Umniah Jordan: 1.07 million fans, with 4.6 million subscribers] with almost 16.7 million subscribers with 8.7 million internet users (TRC, 2016). Therefore, understanding consumer behaviour, in particular the relationship between the consumer and the focal brand, on social media platforms within such a sector is considered an essential aspect for success (Leckie, et al., 2016). The empirical study was applied in Jordan using questionnaire survey. In fact, the original constructs items were in English, and accordingly, there was a need to convert these items to Arabic language using the back translation method suggested by Brislin (1986). We decided to use a convenience (non-students) sample due to the advantages associated with this approach (Dwivedi et al., 2006). Unlike Leckie et al.'s (2016) study, we conducted this study using Facebook. Therefore, we targeted fan pages for the mobile service provider in Jordan and we asked them to fill out the questionnaire. A filtering question technique was adopted to identify those participants who often track their Mobile service providers over social media platforms. Then, we only targeted those participants who already follow the Facebook page of their Mobile service provider. A polite study was conducted with a mini sample of 50 participants. The majority of our sample had a bachelor's degree (49.9%), some had a diploma (25.1%), some went to high school (10.2%), some had a postgraduate degree (10.8%), and 5% were 'other'. Our sample relationship duration with mobile service providers' Facebook pages varied as follows: less than one year (20.1 percent), between one year and two years (30.9 percent), between three and four years (35.1 percent) and over four years (13.9 percent).

3.2. Construct operationalization

We informed our sample that this research aimed to evaluate their experiences with one of the most-used mobile service providers on the social media page of the brand (i.e. Facebook) which they "liked", and asked them to think about it while answering the survey. The questionnaire contains five-point Likert-type scales, anchored by 1 = 'strongly disagree' and 5 = 'strongly agree'. The original sources of the main scale items are presented in Table 1.

Table 1: Construct operationalization

Construct	Author(s)
Consumer involvement (INV1-INV5)	Malär et al. (2011)
INV1: Because of my personal attitudes, I feel that the Facebook page of the telecommunication company brand that I am using ought to be important to me.	
INV2: Because of my personal values, I feel that the Facebook page of the telecommunication company brand that I am using ought to be important to me.	
INV3: The Facebook page of the telecommunication company brand that I am using is very important to me personally.	
INV4: Compared with other Facebook pages of telecommunication companies, the Facebook page of the telecommunication company brand that I am using is important to me.	

INV5: I'm interested in the Facebook page of my telecommunication company brand.	
Consumer participation (COP1-COP4)	Eisingerich et al. (2014)
COP1: If I have a useful idea on how to improve the Facebook page of my telecommunication company brand, I give it to someone at the firm.	
COP2: I make constructive suggestions to the Facebook page of my telecommunication company brand on how to improve its offering.	
COP3: On the telecommunication company brand's Facebook page, I let the company know the ways that it can better serve my needs.	
COP4: I spent a lot of time sharing information with others about my telecommunication company brand on its Facebook page.	
Self-expressive brand (SEB1-SEB5)	Carroll and Ahuvia (2006)
SEB1: My telecommunication company brand's Facebook page symbolizes the kind of person I really am inside.	
SEB2: My telecommunication company's Facebook page reflects my personality.	
SEB3: My telecommunication company brand's Facebook page is an extension of my inner self.	
SEB4: My telecommunication company brand's Facebook page mirrors the real me.	
SEB5: My telecommunication company brand's Facebook page contributes to my image.	
CBE cognitive processing (CP1-CP4)	
CP1: Using my telecommunication company brand's Facebook page gets me to think about it.	
CP2: I think about my telecommunication company brand's Facebook page a lot when I'm using it.	
CP3: Using my telecommunication company brand's Facebook page stimulates my interest to learn more about it.	
CBE 'affection' factor (AF1-AF4)	Hollebeek et al. (2014)
AF1: I feel very positive when I use my telecommunication company brand's Facebook page.	
AF2: Using my telecommunication company brand's Facebook page makes me happy.	
AF3: I feel good when I use my telecommunication company brand's Facebook page.	
AF4: I'm proud to use my telecommunication company brand's Facebook page.	
CBE 'activation' factor (AC1-AC3)	
AC1: I spend a lot of time using my telecommunication company brand's Facebook page compared to other brands.	
AC2: Whenever I'm using telecommunication services on Facebook, I usually use my telecommunication company brand's Facebook page.	
AC3: I use my telecommunication company brand's Facebook page the most.	
Brand awareness/association (BAS1-BAS4)	Yoo et al. (2000); Villarejo and Sanchez (2005)
BAS1: I easily recognize my telecommunication company brand on its Facebook page.	
BAS2: Several characteristics of my telecommunication company brand on its Facebook page instantly come to my mind.	
BAS3: I can quickly recall the symbol or logo of my telecommunication company brand on its Facebook page.	
BAS4: I can recognize my telecommunication company brand on its Facebook page among other competing brands.	
Brand loyalty (BL1-BL3)	Walsh et al. (2009); Yoo et al. (2001)
BL1: I consider myself to be loyal to my telecommunication company brand's Facebook page.	
BL2: My telecommunication company brand's Facebook page would be my first choice.	
BL3: I intend to remain a customer to my telecommunication company brand on its Facebook page.	
Perceived quality (PQ1-PQ3)	Yoo et al. (2000)
PQ1: Most of the services of my telecommunication company brand on its Facebook page are of great quality.	
PQ2: The likelihood that my telecommunication company brand on its Facebook page is reliable is very high.	
PQ3: Services of my telecommunication company brand on its Facebook page are worth their price.	

4. Analysis and results

4.1. Measurement model

At the beginning the data normality was inspected skewness and kurtosis method, and all variables were noticed to be within their suggested level. Then, the measurement model was tested via AMOS 17. We started the analyses by conducting confirmatory factor analyses (CFA) on all nine latent factors (INV, COP, SEB, CP, AF, AC, BAS, BL, and PQ). The results of the CFA model fit indicate acceptable indices ($\chi^2 = 1984.579$, d.f. = 856; and $\chi^2/\text{d.f.} = 2.318$), comparative fit index [CFI] = 0.962, goodness-of-fit index [GFI] = 0.941, Tucker–Lewis index [TLI] = 0.954, incremental fit index [IFI] = 0.967, and root mean square error of approximation [RMSEA] = 0.045), AGFI= 0.939 (Hair et al., 2010). While testing for the coefficient alpha values, we found and deleted two items (INV5 and SEB5) loaded below 0.7, while the remaining items were loaded above the threshold value of .7 (Fornell and Larcker, 1981) and the average variance extracted (AVE) values for each construct exceeded the threshold value (0.5) recommended by Fornell and Larcker (1981). Therefore, convergent validity is proved. Composite reliability (CR), t-value and AVE for each construct is reported in Table 2 indicating acceptable levels (Hair et al., 2010).

Table 2: Results of the CFA within the nine latent factors

Indicator	Direction	Construct	Standardized Estimate	SE	t-value	P	CR	AVE
INV1	←	INV	0.80				0.89	67.51
INV2	←	INV	0.89	0.168	7.325	***		
INV3	←	INV	0.84	0.153	7.239	***		
INV4	←	INV	0.75	0.168	7.602	***		
COP1	←	COP	0.82				0.86	60.53
COP2	←	COP	0.78	0.067	11.929	***		
COP3	←	COP	0.77	0.069	11.450	***		
COP4	←	COP	0.74	0.070	11.169	***		
SEB1	←	SEB	0.83				0.90	70.21
SEB2	←	SEB	0.85	0.063	15.600	***		
SEB3	←	SEB	0.87	0.065	14.638	***		
SEB4	←	SEB	0.80	0.059	13.250	***		
CP1	←	CP	0.85				0.85	65.69
CP2	←	CP	0.79	0.082	15.287	***		
CP3	←	CP	0.79	0.084	15.248	***		
AF1	←	AF	0.83				0.92	74.44
AF2	←	AF	0.87	0.106	10.976	***		
AF3	←	AF	0.86	0.105	10.968	***		
AF4	←	AF	0.89	0.104	10.957	***		
AC1	←	AC	0.87				0.87	68.45
AC2	←	AC	0.82	0.065	15.950	***		
AC3	←	AC	0.79	0.068	15.390	***		
BAS1	←	BAS	0.77				0.88	64.07
BAS2	←	BAS	0.79	0.061	14.762	***		
BAS3	←	BAS	0.80	0.063	15.186	***		
BAS4	←	BAS	0.84	.064	13.796	***		
BL1	←	BL	0.77				0.84	62.98
BL2	←	BL	0.82	0.074	12.831	***		
BL3	←	BL	0.79	0.070	11.231	***		
PQ1	←	PQ	0.75				0.81	58.79
PQ2	←	PQ	0.77	0.108	12.724	***		
PQ3	←	PQ	0.78	0.083	13.236	***		

[Note: Significant at ***p < 0.001, (two-tailed test)]

The discriminant validity was inspected by comparing square roots of average variance extracted for each construct with the inter-correlation values with corresponding constructs. as seen in Table 3, square roots of AVE for each construct is not less than the value of inter-correlation, and accordingly, The discriminant validity criterion was achieved in the current study.

Table 3: Internal consistency and discriminant validity of constructs

Construct	1	2	3	4	5	6	7	8	9
1. INV	0.82								
2. COP	0.25	0.78							
3. SEB	0.25	0.38	0.84						
4. CP	0.31	0.32	0.55	0.81					
5. AF	0.40	0.42	0.30	0.34	0.83				
6. AC	0.52	0.37	0.25	0.28	0.24	0.85			
7. BAS	0.38	0.30	0.24	0.35	0.25	0.27	0.80		
8. BL	0.35	0.31	0.27	0.23	0.24	0.38	0.44	0.79	
9. PQ	0.36	0.35	0.25	0.24	0.38	0.30	0.32	0.39	0.77

The figures under the diagonal are the Pearson (R) correlations between the variables. Diagonal elements are square roots of average variance extracted.

4.2. Common method bias

We used common method bias test due to our data which is self-reported (Podsakoff et al., 2003). Therefore, we used Harman's single-factor (Harman, 1976) test which is recommended by Podsakoff et al. (2003) and run the analysis using nine constructs (INV, COP, SEB, CP, AF, AC, BAS, BL, and PQ), with all their items using unrotated factor solution. Results show that 42.435% (less than 50%) of variance was accounted by the first factor. Therefore, we can conclude that this study data has no common method bias problems.

4.3. The Structural model

To test the proposed hypotheses, we used structural equation modelling (SEM), and the hypothesized structural model indicated acceptable fit measures ($\chi^2 = 2536.528$, d.f. = 870, $\chi^2/d.f. = 2.916$; CFI = 0.930; GFI = 0.915; AGFI = 0.941; TLI = 0.910; IFI = 0.933; and RMSEA = 0.044). We found that H1_{a-b} were all supported, thus INV positively affected CP ($\beta = 0.23$, $t = 3.911$), and AF ($\beta = 0.28$, $t = 3.982$), while H1_c was not supported ($\beta = 0.08$, $t = 0.167$). COP was found to have a significant impact on CP ($\beta = 0.28$, $t = 5.237$), AF ($\beta = 0.20$, $t = 3.313$), and AC ($\beta = 0.28$, $t = 4.943$), thus H2_{a-c} was supported. The impacts of SEB (H3_{a-c}) on CP ($\beta = 0.60$, $t = 9.531$), AF ($\beta = 0.37$, $t = 6.02$), and AC ($\beta = 0.43$, $t = 7.533$) were all supported. We found that the positive impact of CP (H4_a; $\beta = 0.045$, $t = 0.46$), AF (H4_b, $\beta = 0.02$, $t = -1.313$) and AC (H4_c, $\beta = 0.13$, $t = -1.834$) on awareness/associations were not supported.

Table 4: Structural model results

Hypothesized relationships	β	SE	t-value	Result
H1 _a : INV→CP	0.23	.079	3.911***	Supported
H1 _b : INV→AF	0.28	.097	3.982***	Supported
H1 _c : INV→AC	0.08	.082	0.167	Not Supported
H2 _a : COP→CP	0.28	.044	5.237***	Supported
H2 _b : COP→AF	0.20	0.49	3.313***	Supported
H2 _c : COP→AC	0.28	0.050	4.943***	Supported
H3 _a : SEB→CP	0.60	0.050	9.513***	Supported
H3 _b : SEB→AF	0.37	0.050	6.02***	Supported
H3 _c : SEB→AC	0.43	0.050	7.533***	Supported
H4 _a : CP→BAS	0.045	0.08	0.46 ns	Not Supported
H4 _b : AF→BAS	0.02	0.072	-1.313	Not Supported
H4 _c : AC→BAS	0.013	0.065	1.834	Not Supported
H5 _a : CP→BL	0.03	0.069	1.446	Not Supported
H5 _b : AF→BL	-0.08	0.069	0.319	Not Supported
H5 _c : AC→BL	0.11	0.062	2.167**	Supported
H6 _a : CP→PQ	-0.07	.054	-1.202	Not Supported
H6 _b : AF→PQ	-0.001	0.054	-0.015	Not Supported
H6 _c : AC→PQ	0.01	0.049	0.161	Not Supported

H ₇ : BAS→BL	0.04	0.057	-0.809	Not Supported
H ₈ : BAS→PQ	0.21	0.045	3.823***	Supported
H _{9a} : INV→BAS	0.061	0.105	0.733	Not Supported
H _{9b} : INV→BL	0.25	0.115	3.214***	Supported
H _{9c} : INV→PQ	-0.064	0.082	-0.693	Not Supported
H _{10a} : COP→BAS	-0.062	0.063	-1.012	Not Supported
H _{10b} : COP→BL	0.43	0.069	5.705***	Supported
H _{10c} : COP→PQ	-0.161	0.037	-0.015	Not Supported
H _{11a} : SEB→BAS	-0.053	0.083	-0.552	Not Supported
H _{11b} : SEB→BL	0.29	0.085	3.033**	Supported
H _{11c} : SEB→PQ	0.03	0.065	0.46	Not Supported

[Note: Significant at ***p < 0.001, (two-tailed test); β: standardised path coefficients; SE: Standard error]

We also found that H_{5a} and H_{5b} were not supported. Therefore, CP and affection have no relationship with BL. However, H_{5c}, which inspects the association between AC and BL, was supported (H_{5c}, β = 0.11, t = 2.823). Furthermore, we found that CP, AF, and AC have no impact on PQ, thus, we reject H_{6a-c}. While AC has no impact on PQ (H₇), we found that BAS positively affect PQ (H₈, β = 0.21, t = 3.823). We tested the direct impact of INV, COP, and SEB on the three dimensions of CBBE, and we found them significantly linked with BL (β = 0.25, t = 3.214), (β = 0.43, t = 5.705), (β = 0.29, t = 3.033) respectively, supporting H_{9b}, H_{10b}, and H_{11b}. However, other results revealed that H_{9a}, H_{9c}, H_{10a}, H_{10c}, H_{11a}, and H_{11c} were not significant, thus, we rejected them. Therefore, the three antecedents of CBE partially mediated the link between them and one dimension of CBBE (BL). Finally, we found that the coefficient of determination (R²) for CP = 0.48, AF = 0.26, AC = 0.27, BL = 0.36, BAS = 0.02, and PQ = 0.05, respectively. All results are summarized in Table 4.

5. Discussion

This research comes to answer the call of previous research (Halaszovich and Nel, 2017; Hollebeek et al., 2014; Kapoor et al., 2018) which encouraged future research to test and validate the CBE scale using different nomological networks in different countries. Therefore, the newness of the notion of CBE within the area of social network sites makes it an underexplored one that requires deeper investigation (Algharabat et al., 2018; Islam and Rahman, 2016; Halaszovich and Nel, 2017; Misirlis, and Vlachopoulou, 2018). Thus, the current study was employed within the Jordanian context, and aimed to test the impact of the CBE antecedents on CBE, which in turn impacts CBBE. Therefore, we answered the call of Leckie et al.'s (2016) study, which advises future research to test the impact of CBE on brand equity. More specifically, we investigated the impact of CBE dimensions on CBBE dimensions towards the social media page of the brand.

Our results confirm that consumer INV, COP, and SEB, as measures of the social media page of the brand, are antecedents to the three dimensions of the CBE with the highest impact being that of consumer involvement on affection. Such a result is in accordance with Hollebeek et al.'s (2014) and Leckie et al.'s (2016) studies, which found the impact of involvement to be highest on the affection dimension. Thus, consumers who have the characteristics of high involvement with a social media page find that the brand reflects their self-relevance and thus strengthens their bonding levels with the social media page of the brand and positively enhances their engagement (i.e. cognitive, affection, and activation). Furthermore, our results confirm the relationships between consumer participation and the three dimensions of CBE. This could be attributed to our sample's ability to provide their mobile service provider's Facebook page with constructive feedback (cognitive processing), comments (cognitive processing and affection), recommendations (activation), and co-producing marketing communication, which often facilitate mutual benefits and

strengthen the bonds (Chen et al., 2011). The current study findings are in agreement with Leckie et al.'s research (2016), which supported a positive association between COP and CP but not AF and AC. Regarding self-expressive brand results, using the preferred mobile service provider's Facebook page, consumers can express their personal values and self-concepts in group participations and they feel proud of themselves for being part of the social media page of the brand. Therefore, consumers aim to reflect their inner states during their discussion on the social media platform. In Jordan, we have three mobile service providers' pages, some of which are considered prestigious in comparison to those of other providers and hence consumers are trying to reflect such issues by being active members. Therefore, any social media page of the brand that would support consumers' inner selves would enhance their engagement as reflected by their positive thinking and feelings toward the social media page of the brand.

We found that the three dimensions of CBE have no positive impact on the brand awareness/associations or on perceived quality of the social media page. Therefore, consumers already know about the social media page of the telecommunication company and its associations. Unlike Leckie et al.'s (2016) study, which found that affection and activation have an impact on brand loyalty, we found that only activation has a positive impact on brand loyalty towards the social media page of the telecommunication company. Therefore, it seems that the relationship between cognitive processing, affect, and brand loyalty did not reach the optimal point, which makes the relationships significant (Hollebeek et al., 2014).

We found that users' brand awareness of and associations with the social media page of the telecommunication company has no impact on their loyalty to the social media page of the brand. Therefore, it seems that our sample knew much information about the social media page of the brand, and thus this does not impact their brand loyalty towards the social media page of the brand since they have the needed information about the brand on social media and they are activating the knowledge they needed automatically. On the other hand, the positive relationship between the social media page of the brand awareness/associations and perceived quality of the social media page could be attributed to the level of awareness that the service provider's pages provide consumers with regarding different and updated aspects which impact consumers' perception of the quality of the provided services on the social media page of the brand.

We found that the three dimensions of CBE have direct impacts on social media page brand loyalty but not social media page brand awareness/associations and social media page perceived quality. From our sample's perspective, this could be attributed to the importance of rewards, suggestions, and dealing with consumers' complaints immediately via the Facebook page, thus enhancing their brand loyalty towards the social media page. Furthermore, the activation process which relates to the behavioural aspect is reflected by the positive relationship as in our case. Jordanian consumers perceive their mobile service provider's social media page to be the best among its counterparts and therefore they are willing to continue being loyal to it (activation).

5.1. Theoretical implications

By addressing the main factors predicting CBE and their consequences on the CBBE, a number of theoretical contributions that have been captured in the current study. Initial, prior literature (i.e. Brodie et al., 2011; Hollebeek et al., 2014; Leckie et al., 2016) described the notion of CBE as an underexplored one. Hence, we respond to the call of previous research (Aladwani and Dwivedi, 2018; Islam and Rahman, 2016;

Halaszovich and Nel, 2017; Hollebeek et al., 2014) to conduct more empirical research in different nomological networks and different cultures. Therefore, to test and to validate the CBE scale, we investigated a developing country (Jordan) due to its different characteristics and values in comparison with developed countries. Second, to bridge the gap of conducting more empirical research on the CBE scale, we adopted the main antecedents of CBE as suggested by Leckie et al. (2016) and the scale suggested by Hollebeek et al.'s (2014) was considered by the current study CBE scale. Third, an empirical study was conducted to validate the influence of the antecedents of CBE on the three dimensions of CBE, which in turn impact CBBE dimensions, using the social media page of the telecommunication company's brand (Facebook). This was considered as the main contribution of this research. Previously, Hollebeek et al. (2014) investigated the impact of CBE dimensions on brand usage intent and self-brand connection. Leckie et al. (2016), on the other hand, investigated the impact of CBE's three dimensions on brand loyalty. Therefore, the limited number of empirical studies on CBE led to this research. In particular, there is no study that has investigated the antecedents of CBE and its consequences within the developing countries context by linking the antecedents of CBE with the dimensions of CBE, which in turn affect CBBE dimensions towards the social media page of the brand.

5.2. Implications for practice

The importance of CBE and its ability to enable strategic and brand managers to provide consumers with a more favorable experience of the brand using social media pages results in the following implications.

First, to increase the telecommunication company's social media page brand loyalty, we recommend that brand managers increase their consumers' level of activation via the Facebook page by conducting more research into their level of satisfaction about network quality, speed, reward systems, data allowances, data downloads, and service plans. By strengthening the activation part of CBE they will end up with more loyal consumers via the social media page of the telecommunication company. Furthermore, we recommend that brand managers activate cognitive processing as a tool to enhance the level of customer- brand interactions over the social media pages of their Mobile service provider. Providing consumers with more information would keep them knowledgeable about the latest aspects. Strategic and brand managers should focus more on the use of social media and encourage consumers to like and interact with the brand page and be emotionally attached to the page. Thus, mobile service providers should work on their social media platforms to create more experiential interaction.

Second, strategic and brand managers should strengthen the bonds between their consumers and the social media page of the telecommunication company to reflect their needs, interests, and personal values by conducting more research to explore consumers' needs and the effectiveness of the communication strategies. As a result, organizations should enhance consumer participations by following consumers' comments with the social media platform.

Third, strategic and brand managers should work on different plans to increase the consumer-brand relationship by enhancing consumers' experience, making it more interactive and more self-related by increasing the number of likes, dealing with consumers' dissatisfaction, negative feedback, developing high levels of service quality, and maintaining the quality of their networks.

Fourth, brand managers within telecommunication companies should enhance consumers' involvement by providing them with content which should be linked to their needs, values, and interests. This can lead consumers to think positively (cognitive processing) and feel positively (affectation) regarding the content. Thus, we believe that if telecommunication companies enhance consumers' involvement by posting what is important from the customer point of view, this would increase consumers' brand engagement with telecommunication companies' brand pages over social media.

Fifth, the impact of consumer participation on CBE dimensions, on telecommunication companies' social media pages suggests that strategic and brand managers should take certain actions, for instance enhancing, consumers' participation regarding the services offered by telecommunication companies and their ability to deliver services with higher quality. Thus, telecommunication companies over their social media platforms should encourage consumers to interact with the service provider via comments, posts, liking, creating content, and sharing. This would help telecommunication companies to shift their focus from good-centred logic to service-dominant logic and thus increase CBE (Vargo and Lusch, 2004; Nisar et al., 2018; Pacauskas et al., 2018). Accordingly, consumers' participation on telecommunication companies social media platforms allows them to provide service providers with (i) recommendations regarding the current level of the services; (ii) complaints; (iii) complements; (iv) suggestions regarding increasing value to the production process (Ippolito, 2009); and (v) suggestions for creating more cognitive and affective brand experiences. Therefore, consumers' participations impact CBE dimensions (cognitive, affective, and activation aspects) and thus increase their engagement with the brand.

Finally, within the telecommunication companies' social media, the influence of self-expressive brand on the CBE dimensions has its own practice to managers. Self-expression brand reflects consumer inner and the way that consumers are providing an extension of themselves. Therefore, telecommunication companies' social networks should provide consumers with an opportunity to present an "ideal-self" (Schau and Gilly, 2003) to increase their engagement with a particular brand using social media to express themselves. Therefore, we advise brand managers to analysis the pattern of consumers who like to express themselves over their social media networks. Understanding users' opinion is considered as a main substitute about product quality. Therefore, self-expression brand impacts CBE dimensions (cognitive, affective, and activation aspects) and thus increases their engagement with the brand.

6. Conclusion

This research aims to identify and test the role consumer involvement, consumer participation, and self-expressive brand on the customer brand engagement within social media platform (Facebook fan pages) for Jordanian telecommunication companies. We treated customer brand engagement as multidimensional constructs comprising three main aspects: cognitive processing, affection, and activation. Furthermore, we proposed a direct influence for the three dimensional of CBE on consumer-based brand equity. We find that customer brand engagement dimensions were largely predicted by the role of consumer involvement, consumer participation, and self-expressive brand. However, we find that cognitive processing and activation impact one dimension of the consumer-based brand equity dimensions, namely, brand

loyalty. Further, we find that brand awareness/associations affect perceived quality but not brand loyalty.

6.1 Limitations and future research directions

Our research has the following limitations. First, to investigate the main drivers of CBE, we adopted Leckie et al.'s (2016) suggested antecedents. Therefore, we believe that other research may focus on other antecedents based on different theoretical frameworks, such as telepresence theory (Steuer, 1992), social presence theory (Fulk et al., 1987), and relationship marketing (Alalwan et al., 2018; Vivek et al., 2012). Furthermore, since the area of CBE is still underexplored, we advise future researchers to investigate the impact of brand personality and social self-expression on CBE dimensions. Second, the generalizations of our research should be treated with caution since we applied this study on a different nomological network of CBE, in Jordan, the Middle East. Therefore, we recommend that future researchers validate the CBE model in other countries that are similar to Jordan's culture. Third, we investigated the outcomes of CBBE dimensions as the main consequences of the CBE; however, our results did not support some hypotheses. This could be attributed to the mentality of our consumers. Therefore, we suggest that future research is carried out to investigate the impact of CBE on CBBE using different sectors.

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