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Leveraging virtual brand community engagement and consumer brand identification as a bounce-back brand recovery strategy: Role of brand endorsers

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ABSTRACT

Brand community engagement in the virtual environment during a brand crisis has gained attention from firms and marketing scholars due to innovative technologies. However, there is a limited empirical insight into its antecedents and consequences. This study, grounded in signaling and social identity theories, introduces the relationship between endorser credibility, virtual brand community engagement, and consumer brand identification as a pro-active brand recovery strategy. It also examines the impact of virtual brand engagement and consumer brand identification on brand love and forgiveness. The data were collected from online automobile brand community members. The results show that celebrity endorsers' trustworthiness, attractiveness, and expertise can be used as communication signals to expedite the process of consumer brand identification and virtual brand community engagement. Consumers who strongly identify with the brand and engage in its virtual community are more likely to develop an emotional bond with the brand and forgive it following a crisis. Interestingly, the study finds that the relationships between endorser credibility attractiveness and virtual consumer brand identification, endorser credibility trustworthiness and consumer brand identification, and consumer brand identification and virtual brand community are nonlinear.

Introduction

A brand-harm crisis refers to a situation where a brand receives negative feedback from the public due to non-compliance with the product's mandatory or voluntary standards which eventually causes harm to customers (Yuan et al. 2020). Recent examples of brand-harm crises are the recall of Toyota vehicles due to airbag failures, and Samsung Galaxy Note 7s due to faulty batteries. Toyota experienced significant brand harm from airbags (supplied by Takata) that degraded when exposed to moisture. These supposed safety restraints failed and led to injuries and even death to vehicle occupants (http://recalls.

toyota.com.au). This was a serious brand harm resulting in many class actions, reputational and financial losses. In the case of Samsung, the problem was exploding batteries on the Samsung Note 7 which led to the recall of 2.5 million phones, massive reputation loss, 5–9 billion dollar loss, and finally removal of the model from the market (The Guardian. 10 October 2016).

Brand-harm crises tend to have pernicious consequences for the brand, such as loss of brand credibility, value, marketing effectiveness, market share and, ultimately, revenue (Mukherjee and Chauhan 2020; Yuan et al. 2020). Typically, after a brand-harm crisis, the way the firm responds to the crisis plays a critical role in its recovery.

Following a brand-harm crisis, it is inevitably the method and speed with which the company responds to the breach that dictates the level of forgiveness by consumers and the subsequent long-term health of the brand. Without a standard format or agreed typology for crisis response, damage control can take many forms, ranging from ill-conceived knee-jerk reactions to carefully planned and considered responses. Crouch et al. (2021), illustrate this with their mitigation-aggravation continuum along which strategies selected to manage failure events may be arrayed beginning with silence (no response), followed by concessions, justification and, finally, refusal to account. Excuses were distributed across all four contexts. Benoit and McHale (1999), in an earlier examination of crisis communication, proposed five general categories of strategies available for image repair: denial and avoidance of responsibility, minimizing responsibility, diminishing the offensiveness of the event, taking corrective action and, finally, expressing mortification and begging forgiveness.

Clearly, researchers do not collectively agree on crisis response best practice; however, it appears that response strategies may generally fit a deny-apology continuum, whereby an organization seeking to repair its image either accepts or denies responsibility to varying extents. All response strategies contain their own strengths and weaknesses, therefore marketers have recognized that in order to prepare for future exigencies, it is necessary to take a proactive and customized approach to damage control to mitigate possible future brand-harm crises.

Developing and investing in unique customer-brand relationships is becoming an increasingly prevalent strategy that marketers have found can have positive ramifications for the brand (Ahn and Back 2020). Those constructive and enduring relationships with target customers can provide significant reward in times of brand crisis, resulting in increased tolerance and a decrease in negative response to digressions compared with brands who have ignored or overlooked this potential safeguard (Aichner, Wilken, and Coletti 2020). Concurrently, marketers have realized that the Internet provides a solution to the dilemma of reaching a large audience simultaneously in an environment of transition toward a more informed and involved online community. Consequently, brand communities that are well established in social media (virtual brand communities) have created platforms to build and maintain relationships with customers that allow the values of the brand and its online community to intertwine resulting in positive behavioral and attitudinal outcomes (Kumar and Kumar 2020).

Virtual brand community engagement has attracted the attention of marketing communication scholars as a way of building reliable relationships with target markets (Bazi, Filieri, and Gorton 2020). And while most of the existing studies have attempted to uncover the effectiveness of virtual brand community engagement on consumers'

brand evaluation (Dessart and Veloutsou 2021; Dessart, Veloutsou, and Morgan-Thomas 2015), self-brand connection and intention to use (Veloutsou and Black 2020), and commitment and loyalty (Zhang et al. 2015; Wong 2023), there is a paucity of studies examining the role of virtual brand communities during a brand-harm crisis. When a firm experiences a brand-harm scandal, virtual platforms are poised to play a valuable role in shaping a positive image for the brand which may be necessary due to the involvement of many consumers in virtual communities and their ability to share, comment and spread word of mouth to other community members (Javornik, Filieri, and Gumann 2020).

The primary unresolved question is, therefore, how can virtual brand communities alleviate the negative impact of brand-harm crises on consumers? Using signaling theory, based on information asymmetry theory, the current study addresses this issue to provide a pathway for consumers to make determinations regarding a brand's/company's characteristics. In situations where circumstances have caused consumers to become unsure or doubtful about a brand's integrity (e.g., during a brand-harm crisis), marketers use signals to reassure them about the brand and its ongoing dependability and relevance (Hussain et al. 2020). One or more elements from the marketing mix are typically used to convey brand and company quality; for instance, offering support services such as warranties or by distributing products and services through particular supply channels. Although the signals received in this way might very well be credible, they still may not be successful if the message is lost amongst the noise of the surrounding marketing mix. Using one of the marketing communications tools to convey or communicate signals very clearly through a credible source (e.g., a credible celebrity brand endorser) may have a distinct and positive impact on consumer behavioral outcomes (Phua, Jin, and Kim 2020; Soesilo, Gunadi, and Arimbi 2020). For instance, a credible celebrity brand endorser with a significant level of trustworthiness or expertise may play a positive transformational role by sending credible signals to consumers in a brand community which eventually may affect consumers' cognitive (e.g., beliefs/opinions), affective (e.g., emotional bond) and conative behavior (e.g., future intentions/behavior) responses.

Accordingly, the use of credible celebrities to endorse products or brands has become a popular marketing communication and relationship building strategy due to their positive impact on consumers' brand evaluation (Dwivedi, Nayeem, and Murshed 2018), particularly as a form of brand recovery strategy. Justification for the ongoing use of celebrity endorsement in marketing communications is to be found in the symbolic and aspirational associations and signals provided by celebrities (Wang, Kao, and Ngamsiriudom 2017), who become a conduit for transference of associations between themselves and the brands they endorse (Parmar, Mann, and Ghuman 2020). The high visibility that celebrities provide for the brand contributes to the persuasive impact the message has on the consumer, helping to overcome a cluttered environment (Hussain et al. 2020), saturated markets (Singh and Pandey 2017), increasing brand recall (Song and Kim 2020) and identification (Zhang, Xu, and Gursoy 2020). Therefore, the first objective of this study is to examine the impact of celebrity endorsers' credibility dimensions on virtual brand community engagement and consumer brand identification (CBI) as a brand recovery strategy during brand-harm scandals/crises, which is currently missing from the existing literature.

Veloutsou and Black (2020) noted that customer engagement in virtual brand communities may result in the development of an emotional bond (interpreted as brand love)

between customers and the brand and, therefore, we assume this emotional bond may mitigate the impact of a brand harm-scandal/crisis and facilitate the process of consumers' brand forgiveness. However, there is a paucity of research to empirically suggest that virtual brand community engagement helps to foster the process of creating an emotional bond (brand love) and consumers' brand forgiveness. As suggested by Yuan et al. (2020) and Dessart and Veloutsou (2021) further scrutinization in regard to the promising antecedents and consequences of brand community engagement across different product and brand categories by applying different theories is required. Hence, the second objective of the current study is to address the void in the literature by examining the effect of virtual brand community engagement on positive consumer responses, namely brand love and brand forgiveness.

The role of brand attitude is inevitable in consumer behavior and marketing studies (Quach et al. 2022). It is considered to be a stable, unidimensional summary evaluation of a brand that appears to galvanize consumers' behavior (Augusto and Torres 2018). Those who have a favorable attitude towards a brand are more inclined to engage in positive behavioral and emotional outcomes (e.g., CBI, community engagement, positive word of mouth communication). According to Chattopadhyay and Basu (1990) consumers' prior evaluation of the attitude object plays a significant role in the evaluative directionality of information processing. Therefore, when the message is delivered to those who have already evaluated the brand positively (i.e., they maintain a positive/favorable brand attitude), they tend to be less critical and more receptive toward the advertised brand (e.g., positive toward the source of credibility), and thus, cognitive elaboration is inclined to be evaluatively favorable/positive toward the advertised brand (e.g., message advertised for the brand). Despite numerous studies in regard to brand attitude (Hussain et al. 2020; Liu et al. 2017; Rhee and Jung 2019; Quach et al. 2022) in the relationship marketing literature, there is scant research to incorporate its moderation role in the relationship with the endorser credibility dimensions and CBI, as well as virtual brand community engagement. Therefore, the third objective of this study is to close this overlooked gap in the existing literature.

Additionally, recent studies, particularly in marketing and consumer behavior, conducted their analyses either from variance- or covariance-based SEM, which is only able to identify the linear relationship among the variables. However, as noted by Kaiser and Messer (2011), and Papastathopoulos, Kaminakis, and Mertzanis (2020), the nature of relationships in behavioral studies (e.g., consumer behavior, marketing) tend to be non-linear. Consequently, to address this breach in the extant literature, the final objective of the current study is to apply A(n)(a) symmetric structural equation modeling to uncover the actual relationships among the variables (i.e., linearity/nonlinearity).

This study thus introduces numerous theoretical and practical contributions to the body of knowledge, particularly in the advertising, consumer behavior and branding contexts. Theoretically, by grounding the results in signaling theory, we offer an integrated framework for examining the role of endorser credibility dimensions to be used as signals to activate consumers' positive behavioral outcomes (e.g., CBI, and brand community engagement) particularly during a brand-harm scandal/crisis, which has been missing from the extant literature.

As highlighted earlier, a high level of engagement in brand communities and strong CBI lead to consumers' positive cognitive, affective and conative responses. The study also

validates the impact of CBI on virtual brand community engagement and the subsequent effects of CBI and virtual brand community engagement on brand love and forgiveness. The role of virtual brand community engagement and CBI in stimulating brand love and forgiveness are new in both theory and practice. The results introduce brand attitude as an influential moderator in the relationship between the celebrity endorser's credibility dimensions and virtual consumer brand engagement, as well as CBI, which is also regarded as a further contribution of this study. Further, this study reveals that the relationship between endorser credibility trustworthiness and CBI, as well as endorser credibility attractiveness and virtual brand community are nonlinear. Hence, the study extends the literature by empirically demonstrating the previously overlooked actual relationships among some of the variables (nonlinear).

In practical terms, the findings of this study are expected to encourage brand managers to pay more attention to the significant role of the endorser credibility dimensions as a unique and proactive marketing communication strategy that is instrumental in developing a sustainable customer–brand relationship. Consequently, this will enable them to expedite and facilitate the process of developing consumers' positive behavioral and attitudinal outcomes, particularly during a brand-harm scandal/crisis. The manuscript begins with hypotheses development, followed by methodology, results, discussion, implications, and limitations of the study in sequential order.

Proposed Model and Underpinning Theories

The conceptual framework of the current study is mainly derived from signaling and social identity theories. Signaling theory, which is based on information economics, provides a pathway for consumers to make determinations about brands'/companies' attributes. When circumstances have caused consumers to feel doubt or uncertainty about a brand or its company, messages can be conveyed by marketers using signals to indicate and emphasize brand/company attributes that reassure them (Karanges et al. 2018). Use of the marketing mix to convey brand and company qualities includes, for instance, pricing decisions which are frequently used to signal product or service quality, while offering generous credit terms or restricting distribution are also used in this way. The reliability of these signals may vary, however, and success may be unpredictable. Using marketing communications to convey marketing messages involving a credible source brings a sharper focus to the message (Saldanha, Mulye, and Rahman 2018). It is not indicated, or alluded to; it is clearly articulated and embodies very distinctly the company's marketing strategy (Ghorban and Tahernejad 2012). The use of signaling theory to determine source credibility has been previously studied (Karanges et al. 2018; Ohanian 1991). These studies found that attitudes towards advertisements and brands are positively enhanced when sources that consumers perceive to be credible are used to convey messages.

In tandem with these studies examining source credibility, other researchers (Halder, Pradhan, and Chaudhuri 2021) found a positive relationship between celebrity endorser trustworthiness and consumers' attitudes towards advertising and the brand, intention to purchase (Chen et al. 2022), brand and organizational credibility, brand evaluation and brand equity (Halder, Pradhan, and Chaudhuri 2021) and brand choice and brand consideration (Singh and Banerjee 2021). The impact of celebrity trustworthiness on different constructs using signaling theory has also been tested (Dwivedi and Johnson 2013;

Karanges et al. 2018), however to date there is a lack of evidence confirming the relationship between celebrity source credibility (trust, attractiveness, and expertise) and its effect on CBI and virtual brand community engagement.

Central to social identity theory (Wallace et al. 2021), is the notion that an individual's sense of who they are is based on their self-concept as a member of relevant social groups; brand communities comprising a critical component of social identification are one of these self-selected groups (Bhattacharya and Sen 2003). From a consumer's point of view their identification with a brand, and membership in the brand's community, takes place from two distinct perspectives: *personal* and *social*. From the personal point of view, brands are used as signifiers to indicate personality and to silently express personal values and beliefs (Bhattacharya and Sen 2003); while from the social perspective brands are used to symbolize aspirations and self-status (Nikhashemi and Valaei 2018). For instance, a brand associated with a credible celebrity brand endorser might enhance a consumer's identification process and status. It has also been found that strong identification with a brand by consumers leads to engagement in brand pro-activities that support its marketing strategies, and help protect its reputation (Robertson et al. 2022). This has been described in consumer-brand identification studies as a critical driver of two forms of consumer behavior: in-role (i.e., engagement), and extra-role (i.e., cooperative behaviors) (Popp and Woratschek 2017). Neither of these types of role behavior are purely associated with self-interest, such as brand advocacy (Stokburger-Sauer 2010), or resilience to damaging brand information (Elbedweihy et al. 2016). Even though existing studies (Büyükdağ and Kitapci 2021) examining social identity theory have highlighted its effect on consumer behavior, there is limited data to integrate the aforesaid theory to explore the impact of CBI (having originated from social identity theory) on virtual brand community engagement, brand forgiveness and brand love.

The proposed model highlights the core relationship drivers and outcomes of CBI and virtual brand community engagement on consumer behavioral (brand forgiveness) and emotional consequences (brand love). The framework draws on recent marketing studies of virtual brand communities (e.g., Baldus 2018; Kumar and Kumar 2020; Veloutsou and Black 2020) and social identification (e.g., Coelho, Rita, and Santos 2018; Lin and Wu 2022), and it adds to these ideas by specifically including the source credibility dimensions associated with celebrity endorsers as predictors of CBI and virtual brand community engagement.

The Source Credibility Model (Ohanian 1990) contends that message effectiveness is highly dependent on the level of expertise an endorser is perceived to have in that product category, and their apparent trustworthiness and attractiveness (Ismagilova et al. 2020). Information from a credible source (e.g., a celebrity) can be used as a signal to influence beliefs, opinions, identification, attitudes and/or behavior through the motivation process, which takes place when a receiver is influenced by the personal attitude and value structures of an endorser. The model depicted in Figure 1, shows CBI and virtual brand engagement as the strength of source credibility with the community. CBI and virtual brand community engagement are influenced by the source credibility dimensions (trustworthiness, attractiveness and expertise) of the celebrity endorser, which lead to brand love (emotional response) and brand forgiveness (behavioral response). In the subsequent section, the relationships shown in the hypothesized model are substantiated with appropriate theories.
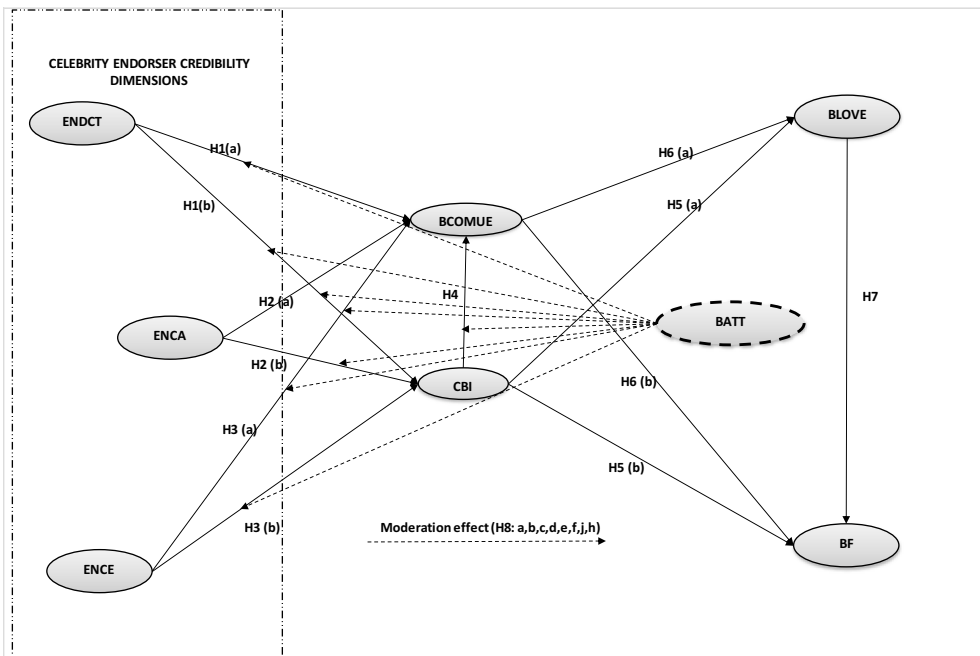
Figure 1. The proposed conceptual model.

The consequences of source credibility

Ohanian's Source Credibility model is one of the most widely used in research examining the effectiveness of celebrity endorsement in advertising, suggesting that the credibility of the endorser lies within three dimensions (e.g., trustworthiness, attractiveness, expertise) which, in turn, affect outcomes like attitudes towards advertising (Ohanian 1990), purchase (Chen et al. 2022) and behavioral intentions (Yu and Hu 2020). Celebrity endorsers, (including content creators) are normally those who are highly recognized by the public, and this public recognition is used to expedite the process of consumers' product and brand recall (Song and Kim 2020).

Product or brand endorsers (particularly celebrities) often have a glamorous image in the minds of their target audience (Samantha Kay et al. 2020) and, consequently, advertisers believe that the positive representation of the celebrity associated with the product will not only attract the target's attention but also improve their recall rate and evaluation (Rhee and Jung 2019). McCracken (1989) contends that consumers associate certain meanings with celebrity endorsers which are subsequently transferred from the endorser to the brand(s) they represent. The effect of this transfer has been the subject of a number of studies primarily measuring the effect of endorser type (Zhu et al. 2019), attractiveness (Liu et al. 2010; Chen et al. 2022) and credibility (Osei-Frimpong, Donkor, and Owusu-Frimpong 2019) on purchase intention. Although celebrities have been used in marketing communications for some time (Song and Kim 2020), it has only been in the last decade that the wide adoption of this advertising strategy for product marketing and brand building has elevated celebrity endorsement to that of standard practice.

Emerging from the endorser credibility model, the current literature on endorser credibility suggests that there is a relationship between message effectiveness and perceived trustworthiness, attractiveness and endorser's level of expertise (Schouten, Janssen, and Verspaget 2020). Information shared by a credible source such as a celebrity has an influence on receivers' beliefs, opinions and attitudes through internalization (Visentin, Pizzi, and Pichierri 2019) resulting from full acceptance of the source's influence derived from their attitudes and value structures. Expertise is considered to be the extent to which a communicator is perceived to be a source of valid assertions and refers to the knowledge, experience or skills possessed by an endorser or the professionalism the endorser has that persuades the consumer to purchase (Ohanian 1990). The level of perceived source expertise is expected to predict endorser effectiveness (Carlson et al. 2020) resulting in increased intention to purchase the brand (Saldanha, Mulye, and Rahman 2018). In this way, it is suggested that the endorser's expertise positively influences consumers' brand attitudes and evaluation (Quach et al. 2022). Celebrities with recognized expertise in their fields have been found to have a stronger effect on product information recall than celebrities who are not recognized for their related expertise; therefore, celebrities whose expertise is recognized by consumers are assumed to be more persuasive than their counterparts without expertise particularly during a brand-harm crisis (Carlson et al. 2020).

The term trustworthiness in the celebrity endorsement literature relates to the endorser's honesty, integrity and credibility (Dwivedi, Johnson, and McDonald 2016) and depends on the perceptions of the target audience of the endorser's characteristics and believability (Hussain et al. 2020). Martin and Tao-Peng (2017) note that those perceptions will be culturally specific and that trustworthiness in the (collectivist) Chinese culture should be considered with the values and beliefs of Chinese society in mind. The value of the trustworthiness dimension lies in the transference, as perceived by the consumer, of the trustworthiness of celebrity endorser to the message they are communicating. The selection, therefore, of honest, principled and credible endorsers is critical to advancing the value of trustworthiness.

Attractiveness has been described as 'the familiarity, likability and/or similarity of the source' (McGuire 1985, 264) and is considered to strongly affect the message. The level of attractiveness of the endorser not only influences advertising evaluation and impacts behavior, it also has an effect on the other two dimensions (expertise and trustworthiness) and liking for the endorser (Carlson et al. 2020). Consumers are more likely to accept information from an attractive endorser than an unattractive endorser. Further, an attractive celebrity looks forward to having a positive effect on consumer behavioral outcomes (Liu et al. 2010; Zhang, Xu, and Gursoy 2020).

The source credibility which is associated with celebrities can be regarded as a crucial intangible asset due to its promotional effect (Shareef et al. 2019; Wang and Liu 2022) and its stimulus effect on consumers' behavior and decision process (Ismagilova et al. 2020; Parmar, Mann, and Ghuman 2020). The match-up theory suggests that an endorser's personal characteristics typically have a dramatic effect on the effectiveness of celebrity endorsement on an individual's behavior (Liu et al. 2010; Liu and Brock 2011; Liu and Liu 2020; Saldanha, Mulye, and Rahman 2018) and hence source credibility can play a critical role in the process of long-term relationship building between consumers and product, brand or services.

Studies in relationship marketing and marketing strategies, however, have been eager to identify the impact of the three dimensions of credibility associated with celebrity brand endorsers on consumer virtual brand engagement and CBI, the links of which have been overlooked to date. Typically, the concept of source credibility has been treated as a unidimensional (endorser's credibility) construct in advertising measured against a number of other constructs in confirmation of their role and effects (e.g., Weismueller et al. 2020). Despite the large number of variables measured with endorser credibility, there appear to be limited studies to date to introduce the link between the source credibility dimensions and virtual brand community engagement and CBI from the perspective of signaling theory.

Researchers have used signaling theory to study the credibility of a number of message sources (Dwivedi, Johnson, and McDonald 2016; Hussain et al. 2020). Findings have shown that consumers' positive behavior is influenced by the credibility of the message source (e.g., positive WOMC, loyalty etc.). Outcomes such as attitude towards the brand, emotional attachment and brand engagement have also been substantiated. Alongside the above theory reference-group theory (Bearden and Etzel 1982), proposes that individuals associate themselves with those reference groups which they can rely on to provide guidance for their own behavior. This argument, therefore, leads to the following hypotheses:

H1: There is a positive relationship between;
H1a) a celebrity endorser's trustworthiness and virtual brand community engagement
H1b) a celebrity endorser's trustworthiness and consumer brand identification

H2: There is a positive relationship between:
H2a) a celebrity endorser's attractiveness and virtual brand community engagement
H2b) a celebrity endorser's attractiveness and consumer brand identification

H3: There is a positive relationship between:
H3a) a celebrity endorser's expertise and virtual brand community engagement
H3b) a celebrity endorser's expertise and consumer brand identification

The consequences of CBI

Lin and Wu (2022) note that brands, as conveyors of symbolic meaning, themselves represent categories that consumers identify with and, therefore, define their social identity through the purchase of. When the brand has a strong reputation and is prestigious, self-esteem is enhanced through a perceived state of oneness with the brand (Coelho, Rita, and Santos 2018), particularly for the conspicuous consumption category (Chang et al. 2019). Consumers' identification with the brand occurs on two levels: firstly on a personal level whereby personality is emphasized and values and beliefs are expressed through use of particular brands (Augusto and Torres 2018); and secondly, on a social level, whereby brands become conduits for consumers' aspirations and self-status (Wang and Feng 2022). On social networks consumers' identities are socially

exposed through their displayed profile, which tends towards an actual self (Kaur et al. 2020) and, accordingly, consumers lean towards brand selections that express the values they share or the brand which is associated with credible celebrity brand endorsers. Social identity theory provides a fitting theoretical lens for the investigation of consumer–brand relationships in virtual brand communities due to the representation of community affiliation as an important source of consumer perceived value, which aligns with the key purpose of virtual brand communities (Lin and Wu 2022). Consequently, social identity theory has been adopted by social networking and related research to explain or predict various aspects of consumer behavior, and applied in the current study to the virtual brand community engagement context.

Stronger identification with a brand leads consumers to engage in positive brand activities such as the support of the firm's goals, community and products; the protection of the brand's reputation, and in becoming brand loyal (Coelho, Rita, and Santos 2018). Therefore, the above argument leads to the following hypothesis:

H4: There is a positive relationship between consumer brand identification and virtual brand community engagement

The phenomenon of CBI is defined as an important driver of consumer behavior with studies suggesting increases in in-role behaviors (e.g., brand loyalty, brand love) and extra-role behaviors (e.g., positive WOM, resilience to negative information) resulting from consumers' identification with a brand (Büyükdağ and Kitapci 2021). Social identity theorists note that, 'positive behavioral outcomes assist consumers to reinforce their sense of belonging and thus fulfill a self-definitional need' (Tajfel and Turner 2004, 283). As a result, emotional benefits, such as brand love, are derived from consumers' identification with a brand/company which is lost following brand switching (Vernuccio et al. 2015).

Individuals who identify very strongly with a brand demonstrate supportive behaviors (e.g., forgiveness for transgressions) (Kucharska 2019). A positive relationship has been found to exist between CBI and positive behavioral and attitudinal outcomes (Chang et al. 2019) as targets of identification. Research from the psychology discipline finds that individuals are willing to accommodate (forgive) in situations of existing relationship happiness and commitment (Yuan et al. 2020), particularly when sincerity traits are evident (Aaker, Fournier, and Brasel 2004). It may be assumed, therefore, that the strength of identification with the brand (currently fulfilling self-definitional needs/or associated with) may lead to the development of an emotional bond with the brand (i.e., brand love) and forgiveness in case of potential future transgressions (e.g., as in the cases mentioned earlier of Toyota and Samsung). Based on this argument, the following hypotheses are proposed:

H5: There is a positive relationship between:
H5a) Consumer brand identification and brand love
H5b) Consumer brand identification and brand forgiveness

The consequences of virtual brand community engagement

Virtual brand communities can be construed as a 'specialized, non-geographically bound community where a social interaction between the brand followers and marketers are formed via internet mediated platforms' (Muniz and O'guinn 2001, 412). Scholars have interpreted virtual brand community engagement from various viewpoints. For instance, some scholars (e.g., Ibrahim, Wang, and Bourne 2017) viewed virtual brand community from a psychological perspective where consumers are engaged with and connected to the brand community, whereas the other perspectives consider brand community engagement from a behavioral viewpoint which focuses more on the intensity of communication and interaction/participation between consumer and the brand (e.g., Wu, Fan, and Zhao 2018).

The central tenet of virtual brand community engagement is the development of an interactive experience between consumers and the brand, therefore, marketers by leveraging virtual brand communities are able to facilitate the process of co-creation activities such as values, and brand (Chang et al. 2019; Yuan, Lin, and Zhuo 2016). Accordingly, virtual brand communities can be considered as well-founded platforms to build customer-to-customer relationships as well as customer-to-brand interactions (Wong 2023). There are numerous predictors and outcomes of virtual brand community engagement which have already been identified in the extant literature, including both brand-related factors and the social and functional benefits of community membership (Bazi, Filieri, and Gorton 2020; Dessart, Veloutsou, and Morgan-Thomas 2015). Wirtz et al. (2013) emphasized the addition of the behavioral dimension to the existing conceptualization, previously attitudinal in nature, describing brand community engagement as 'an identification with the brand community that results in interactive participation in the virtual brand community' (230). Engagement in brand communities is considered critical for the sustainability of the community and for strategically improving its value to all consumers (Coelho, Rita, and Santos 2018) as engagement is found to positively influence brand usage intentions (Hollebeek, Juric, and Tang 2017) to trigger emotional responses (Kaur et al. 2020) and result in community integration and stronger brand relationships (Veloutsou and Black 2020).

While prior research (Hollebeek, Juric, and Tang 2017) positions positive brand relationships (such as loyalty and brand advocacy) as important consequences of virtual brand community engagement, empirical investigation into this association is still lacking (Kumar and Kumar 2020; Veloutsou and Black 2020). In virtual brand communities, the experience offered by participation in brand activities and with other consumers contributes to the development and building of an emotional connection which may develop into love for the brand (Veloutsou and Black 2020). We posit that affection and love for brands can be strengthened through engaging consumers in brand-related virtual communities (de Almeida et al. 2018). We also suggest that the development of emotional ties between brand/company and consumers may be based largely on a sense of community engagement nurtured in an online group which fosters brand love and belongingness. Therefore, based on this argument we propose the following:

H6 (a):   There is a positive relationship between virtual brand community engagement and brand love

Pansari and Kumar's (2017) theory of consumer engagement argues that engaged consumers are inclined to demonstrate a significant interest toward the brand due to the trust and commitment they have developed in the brand. Therefore, such a developed relationship between consumer and brand leads engaged consumers towards satisfaction and emotional bonding with the brand, resulting in attitudinal and behavioral loyalty (Ou et al. 2020). Once the stage of emotional bonding has been reached by the consumer the following stage is that of 'engagement' (Kumar and Kumar 2020). Further, consumers engaged in virtual brand communities tend to develop an intense relationship with the brand and other consumers within the community. As discussed earlier this outcome is as a result of the well-established emotional bond between the brand and consumers (Hussain et al. 2020). Strong levels of virtual brand community engagement may also provide a buffer that mitigates the negative effects of poor service, brand or product failure or a product-harm crisis (Yuan et al. 2020). Engaged customers normally have trust and faith in the quality of the brand and product, thus, engaged customers might be inclined to ignore any product/service flaws highlighted or identified during a product/brand-harm crisis (Sajtos et al. 2020); however, an empirical investigation into the association is lacking. Thus, based on the argument made above, we assume that the intensity of consumer engagement in a virtual brand community might result in brand forgiveness during a brand-harm crisis. Meaning that there is a high likelihood of brand forgiveness by those consumers who are engaged in the brand's virtual community. Therefore, based on this argument, we propose the following:

H6 (b):   There is a positive relationship between virtual brand community engagement and brand forgiveness

Brand love and forgiveness

Robertson et al. (2022) suggest that brand love arises from the satisfaction paradigm and may be considered as the strong and passionate emotional attachment consumers have for a particular brand name. According to Aron's and Aron (1996) self-expansion model, love arises from one's desire for a relationship with another. This involves expanding one's self to include and become part of the other. This model led Bagozzi, Batra, and Ahuvia (2017) to assert that a consumer may feel love for a brand when a level of emotional connection is reached whereby a 'high, real, and desired level of integration' (259) is reached between the consumer's sense of self and a brand. Brand love represents the strong and enduring relationship consumers feel with a brand of their desire. They develop positive feelings towards the brand that are steadfast and irreplaceable (Hegner, Fenko, and Teravest 2017). Consumers who have passionate emotional connections with, and deep, positive feelings for, a brand seem to have developed positive behavioral responses (Thai and Wang 2020). The strength of consumers' emotional attachment and love for a brand, however, must be differentiated from constructs such

as brand attitude and brand satisfaction as the constructs differ in a number of ways (Sajtos et al. 2020).

Although forgiveness in the business environment is considered to be imperative (Kaur et al. 2020), forgiveness is a recent addition to consumer marketing studies (Harrison-Walker 2019). All brands are, at some point in their lifecycle, subject to product or service failure or to negative publicity (Harrison-Walker 2019). The strength of emotional attachment to and love for a brand becomes particularly significant when failures occur in relation to products and services. Customer forgiveness, conceptualized by Tsarenko and Tojib (2011) as 'a motivational process of relinquishing of vengeful thoughts and feelings about (service) transgressors' (139), is a key ingredient in customer retention (Fetscherin and Sampedro 2019). Hegner, Fenko, and Teravest (2017) study was one of the first to identify antecedents and outcomes associated with consumer forgiveness of a brand, simply defining transgressions as 'violations of relationship-relevant norms' (98). At that point in their exploratory study Chung and Beverland (2006) suggested that research into how consumer–brand relationships are affected by transgressions was inconclusive, however, subsequent research (Yuan et al. 2020) has found that close relationships between consumer and brand positively influence the likelihood of brand forgiveness. Therefore, based on this argument, we propose the following:

H7: There is a positive relationship between brand love and brand forgiveness

Brand attitude's role as a moderator

Consumers' attitudes towards a brand and its influence on their behavior has attracted scholarly interest from researchers investigating consumer behavior and other marketing constructs. Findings have shown that a strong direct and indirect relationship exists between brand attitude and consumers' accumulated brand-related evaluations (Rhee and Jung 2019). According to Chattopadhyay and Basu (1990) 'consumers' prior evaluation of the attitude object plays a significant role in the evaluative directionality of information processing" (1). It is considered that favorable brand evaluation prior to exposure to advertisements leads to increased receptivity to brand advertising, and thus, cognitive elaboration is inclined to be evaluatively favorable/positive toward the advertised brand (e.g., message advertised for the brand). Obversely, those message recipients with an unfavorable prior attitude towards the brand are likely to be more critical and less receptive to brand advertising messages, and hence, their consequent cognitive elaborations are expected to be negative. These findings indicate the importance of a prior favorable attitude towards the brand in terms of receptivity to advertising messages and positive behavioral and attitudinal outcomes (e.g., Wang, Kao, and Ngamsiriudom 2017; Zhu et al. 2019). Based on these ideas, we propose that the source of credible advertisements is likely to have a greater influential/persuasive effect on those message recipients who already hold favorable/positive brand evaluations. This proposition is supported by Weismueller et al'.s (Nikhashemi and Valaei 2018) work on endorser credibility published in the psychological literature. Our reasoning for the proposition and conceptualization of the underlying process is derived from the following views.

Firstly, exposure to an advertisement with an endorser considered by viewers to be credible (i.e., trustworthy, attractive, expert) is expected to result in superior numbers of cognitive elaborations. Secondly, prior favorable evaluations of the brand most likely influence the direction of cognitive elaboration (e.g., prior positive brand evaluation might influence the original process/direction of cognitive evaluation). Considering the aforesaid propositions, we can argue that positive/favorable cognitive elaboration is as a result of individuals' prior evaluation of the source credibility (celebrity endorser). Therefore, more positive behavioral (Carlson et al. 2020), emotional (Chin, Isa, and Alodin 2020; Teng et al. 2020) and attitudinal (Chin Isa, and Alodin 2020) responses may be anticipated when the recipients of the message have prior positive/favorable brand evaluations (i.e., favorable brand attitude).

Accordingly, a consumer's prior favorable evaluation (i.e., positive brand attitude) of an advertised brand is expected to enhance the effectiveness of source credibility in advertising toward consumer behavioral consequences. Hence, based on the previous reasoning, a brand attitude effect is proposed in the relationships depicted in the theoretical model (Figure 1):

H8:   Brand attitude moderates the following relationships:

H8a: Celebrity trustworthiness and consumer brand identification

H8b: Celebrity trustworthiness and virtual community engagement

H8c: Celebrity attractiveness and consumer brand identification

H8d: Celebrity attractiveness and brand virtual community engagement

H8e: Celebrity expertise and consumer brand identification

H8f: Celebrity expertise and brand virtual community engagement

H8g: Consumer brand identification and brand virtual community engagement

Asymmetric relationship between consumer responses

Kock (2020) posits that associations between customer responses are not necessarily linear. A nonlinear relationship refers to the relationship curve between exogenous and endogenous variables. This relationship curve can be in the form of a 'U' curve, an inverted 'U' curve, or an "S" shape. Normally when the data point is very distorted from the line the relationship between the variables may be nonlinear (Kock). For example, at the extreme upper end of brand/company satisfaction customers are more receptive to joining loyalty programs and are less responsive to competitive messages and brand switching, suggesting a positive relationship between a customer's satisfaction and their loyalty to the brand (Van Doorn, Verhoef, and Bijmolt 2007). Customers reporting a moderate level of satisfaction, however, appear to be less interested in investing in brand relationships for reasons including lack of personal convenience (Finn 2011). This suggests that at moderate levels of satisfaction the relationship with loyalty is lost. This argument highlights the variability of the customer satisfaction/loyalty relationship between high and moderate levels of satisfaction indicating the nonlinearity of the link between customer satisfaction and

customer loyalty (i.e., it is non-consistent). Further, Nikhashemi et al. (2021) also uncovered the nonlinearity of the relationship between experience with the retail brand, willingness to pay a premium price, and brand commitment. Their study revealed that customers who reported extremely high levels of satisfaction with their shopping experience also reported themselves to be delighted with the retailer, with whom they had an immersive shopping experience: these positive feelings leading to a willingness to pay more for their purchases, remain loyal to the retailer, and engage in positive word of mouth on the retailer's behalf. As satisfaction with the retail shopping experience dropped to the low and moderate levels, however, outcomes tended to become insignificant.

In a similar vein to the preceding discussion, extremely high levels of consumers' perceptions of an endorser's credibility (specifically trustworthiness), lead to a strong identification with the brand and delight with the brand being endorsed by the celebrity. As a consequence, these consumers will evaluate the brand positively (Saldanha, Mulye, and Rahman 2018), remain engaged in the brand community (Wong 2023), and include them in their consideration set for future purchases (Kaur et al. 2020). These outcomes appear to vary at the low and moderate levels of endorser credibility (trustworthiness). This discussion leads to the conclusion that the association between an endorser's credibility (trustworthiness), a customer's subsequent responses (CBI), together with the association between CBI and the responses (virtual brand community engagement) may be nonlinear.

Based on the argument made in the literature review the above theoretical framework is proposed. As indicated in Figure 1, the proposed theoretical model of this study consists of eight constructs, namely, the endorser credibility dimensions (trust, attractiveness and expertise), CBI, virtual brand community engagement, brand attitude, brand love (second order) and brand forgiveness. All constructs are reflective.

Methods

Participants

Prior to proceeding with the data collection, this study was shown to meet research ethics policy requirements. Therefore, there were no negative consequences for target respondents (e.g., deception participation, financial inducement, psychological stress, confidential information etc.) as a result of participating in the study. The target participants were Malaysians, the majority of whom were between 20 and 40 years old, with a similar age distribution (refer to Table 1 for further details). The participants were members of a car club in Malaysia (Toyota). In order to reach out to participants, we contacted the car club organizer to provide us with a list of the car club members, or to post our survey link on their Facebook page. Further, prior to collecting data screening questions were asked of car club members. For instance, the members were asked if they were active participants in virtual automobile brand communities and, if so, did they follow any celebrity brand endorsers in order to be a part of that community. These questions were used to capture data from the appropriate target population. The individuals were requested to provide the name of dominant brand endorsers within the country who have had a significant role in either their identification with the brand or engagement in virtual brand communities.

Table 1. Respondents' characteristics.

Category	N	Percentage %
Male	160	46.8
Female	141	53.2
Age		
<20	5	1.7
20–29	136	45.2
30–39	86	28.6
40–49	58	19.3
>50	16	5.2
Education Background		
A-level	0	0
High School Equivalent	11	3.9
Undergraduate	199	66.1
Postgraduate	90	30
Ethnic Group		
Malay	95	31.6
Chinese	97	32.2
Indian	75	24.9
Others	34	11.3
Brand Type		
Foreign Car Drivers	138	45.8
Local Car Drivers	163	54.2

Consequently, the participants who were not able to complete this criterion were eliminated from the study. The participants were given 10–15 min to complete the questionnaire and were also given the choice of withdrawal at any stage.

Instrument and procedure

The conceptual model in the study was tested with the information obtained from automobile virtual brand community members (Toyota) in Malaysia. Since the first language of Malaysian consumers is Malay and English is regarded as the second language, the questionnaire was designed in both languages with responses confirmed via the back translation technique and therefore respondents were given a choice of language selection.

As stated by Sekaran (2006), any sample within the 300 to 500 range can be considered an adequate sample size. However, Hair et al. (2019), declared that resource constraints play a major role in calculating the sample size. This study applied two approaches; namely 'inverse square root' and 'gamma-exponential', both suggested by Kock and Hadaya (2018) to ensure the appropriateness of the sample size. As highlighted in Appendix A, based on these methods our sample size should be between 261 and 279. Since the sample size of this study was above that threshold (301), the criteria for adequate sample size were met.

Product stimulus

The automobile industry was the focus of this study for several reasons. First, car ownership portrays individuals' social class and self-expression, hence the symbolic values most likely considered by consumers. Second, cars are considered to evoke high levels of emotion and involvement in many individuals and hence can be regarded as a stimulus

for individuals to be involved in the brand's community (Nikhashemi et al., 2018). Third, since the product is considered to be a high involvement product the credibility of endorsers (associated with celebrities) might play an important role in consumers' behavioral responses throughout a brand-harm crisis.

Measures

To measure the proposed model constructs, we adapted items already existing in the literature. The measurement model of the current study was designed based on a 7-point Likert scale, where 1 is associated with 'strongly disagree' and 7 'strongly agree', except brand attitude for which a semantic scale was used. The brand forgiveness scale, with five items, was derived from Hegner, Fenko, and Teravest (2017). Brand community engagement was measured with four items adapted from Algesheimer, Dholakia, and Herrmann (2005). CBI was measured with six items proposed by Nikhashemi and Valaei (2018). Brand attitude was adapted from Hegner, Fenko, and Teravest (2017) and Wang, Kao, and Ngamsiriudom (2017) with 4 items. Endorser credibility was captured as a second-order model with three dimensions (attractiveness, trustworthiness and expertise) with 15 items adapted from Ohanian (1990). Finally, brand love as a second-order model with four dimensions was measured with 18 items adapted from Hegner, Fenko, and Teravest (2017).

Data analysis approach

Structural Equation Modeling (SEM) as a second-generation multivariate data analysis technique has been widely used by scholars. SEM plays a critical role in assessing reflective and formative models (Hair et al. 2019). However, until recently SEM has been unable to identify the possible nonlinear relationships among exogenous and endogenous variables. As a consequence, most of the recent studies in marketing and consumer behavior have suffered from this shortcoming and the extant literature in those disciplines is restricted to findings based on linear relationships, as it has not been possible to construe the actual relationships. This is despite the fact that, as proposed by Kock and Hadaya (2018) and Nikhashemi et al. (2021), the existing relationships among the variables in marketing and consumer behavior studies, tend to be asymmetric (nonlinear).

The present study applied WarpPLS as an appropriate statistical tool to identify the actual relationships among the variables. As highlighted by Kock and Hadaya (2018), WarpPLS is able to identify linear and nonlinear (Warp) relationships among the variables. Moreover, WarpPLS provides robust model fit indices, which are based on classical and correlation matrix indices which is an additional model fit (Kock and Hadaya 2018; Nikhashemi et al. 2021).

Results

Preliminary analyses

Table 1 demonstrates the breakdown of the demographic profile. As tabulated in the appended Table, 46.8% of the sample size was represented by females, whereas 53.2%

was represented by males. In terms of age distribution, most of the respondents were within the age range of 20 to 29 years which accounted for 45.2% of the sample population, followed by 28.6% and 19.2% which fell within the range of 30 to 39 and 40- to 49-year-olds, respectively. As indicated in the Table, Malaysian (31.6%) and Chinese (32.2%) shared similar percentages in terms of sample distribution, followed by Indian and others, which represented 24.9% and 11.3% of the population. Additionally, over 66% of the population had completed undergraduate degrees, 30% postgraduate degrees and 3.9% graduated high school. Further, 45.8% of the respondents were foreign car owners (BMW and Toyota) followed by 54% of whom were owners of local car brands.

model assessment

To confirm the suitability of the measurement model the values of convergent and discriminant validities should be scrutinized (Byrne 2016; Kock and Hadaya 2018). As mentioned in the extant literature by Japutra and Molinillo (2019) and Kock and Hadaya (2018), convergent validity can be achieved if all of the indicator loadings exceed the cut-off-point of 0.70. However, in some cases, indicator loadings within 40–70 can be accepted (e.g., by eliminating the items the R^2 and AVE do not improve). As tabulated in Table 2, all the items were loaded within the accepted range within their corresponding constructs. However, BCOMMU1 and BCOMMU4 items from the brand community engagement construct, and ECE 2 from endorser credibility expertise and ECA1 from endorser credibility attractiveness were eliminated as the loading was not within the acceptable range (e.g., <040). As shown in Table 2, the criteria of composite reliability (C.R.) for all variables were accomplished (C.R > 070) and therefore, the measurement models are deemed to be measuring what they were intended to measure. Furthermore, as highlighted in Table 3, the criteria of discriminant validity were met as the "square root of AVEs value is greater than its respective inter-constructs' correlations" (Kock and Hadaya 2018). As shown in Table 2, collinearity is not of concern in this study as the IVFs among all exogenous and endogenous variables are below the suggested cut-off-point of 5 which can be regarded as a suitable and acceptable collinearity threshold (Hair et al. 2019; Kock and Hadaya 2018). Additionally, as shown in Appendix B the loading of each construct's measurement model is greater than the other measurement model construct. Thus, we can conclude that this study has met the required conditions of discriminant validity as well (For further details, please refer to Appendix A).

The assessment of SEM model

As mentioned earlier, WarpPLS provides two types of model fit indices, where the first type relies on classical model fit indices (see Table 4a) and the second (See Table 4b/additional model fit indices) relies on correlation matrix indices, which very closely resemble the covariance SEM algorithm (see Table 5) (Kock and Hadaya 2018; Nikhashemi et al. 2021). As tabulated in Tables 4 and 5 the conditions of the model fit index for the current study are accomplished.

Table 2. Measurement model assessments.

Construct	Measurement Items	Items Loading	Full Collinearity VIFs	AVE	α	CR
Brand Forgiveness (BF)			1.927	0.702	0.860	0.915
Imagine a scenario where brand X disappoints you, for example due to disappointing quality or bad customer service. To what extent are you:						
Adapted from Hegner, Fenko, and Teravest (2017)	Willing to defend brand X	0.883				
	Willing to seek revenge on brand X	0.903				
	Likely to think favorably of the brand	0.875				
	Willing to purchase brand X in the future	0.847				
	Willing to give brand X a chance to correct its mistakes	0.654				
Virtual Brand Community Engagement (BCOMUE))			2.977	0.801	0.876	0.924
Adapted from, Algesheimer, Dholakia, and Herrmann (2005)						
	I benefit from following the brand community's rules	0.994				
	I am motivated to participate in the brand community's activities because I feel better afterwards	0.890				
	Anything related to brand X's community grabs my attention.	0.926				
Consumer Brand Identification (CBI)			2.947	0.594	0.829	0.880
Adapted from Nikhashemi and Valaei (2018)						
	Brand X helps me show what I believe in	0.849				
	I have a lot in common with other people using brand X	0.798				
	Brand X represents who I am	0.851				
	Brand X embodies my personal beliefs	0.790				
	When someone praises brand X, it feels like a personal compliment	0.715				
	Brand X embodies beliefs that I share with other members of the community	0.849				
Attitude Towards Brand (BATT)	The way I view brand X:		2.065	0.744	0.886	0.922
Adapted from Hegner, Fenko, and Teravest (2017)/Wang, Kao, and Ngamsiriudom (2017)						
	I'm willing to be involved in the brand community due to the influence of a brand endorser	0.726				
	I found so much in common between myself and brand X only because of the brand endorser	0.909				
	Brand endorsers help me to remember a brand	0.828				

(*Continued*)

Table 2. (Continued).

Construct	Measurement Items	Items Loading	Full Collinearity VIFs	AVE	α	CR
	Brand endorsers help me to identify strongly with a brand	0.961				
Endorser Credibility (ENDC) Adapted from Ohanian (1990)						
Trustworthiness (ENDCT)	The endorser of brand X is dependable	0.903	2.036	0.522	0.730	0.813
	The endorser of brand X is honest	0.683				
	The endorser of brand X is reliable	0.618				
	The endorser of brand X is sincere	0.614				
	The endorser of brand X is trustworthy	0.903				
Attractiveness (ENDCA)			2.057	0.623	0.849	0.892
	The endorser of brand X is attractive	0.724				
	The endorser of brand X is classy	0.929				
	The endorser of brand X is beautiful	0.953				
	The endorser of brand X is elegant	0.619				
	The endorser of brand X is sexy	0.853				
Expertise (ENDCE)			2.431	0.632	0.707	0.837
	The endorser of brand X is an expert	0.730				
	The endorser of brand X is experienced	0.753				
	The endorser of brand X is knowledgeable	0.814				
	The endorser of brand X is qualified	0.691				
Brand Love Adapted from Hegner, Fenko, and Teravest (2017)						
Uniqueness (BLOVEU)			3.042	0.703	0.769	0.897
	Brand X is special	0.833				
	Brand X is unique	0.952				
Pleasure (BLOVEP)			3.726	0.666	0.832	0.888
	I take pleasure in buying brand X	0.888				
	Discovering new products from brand X is a pure pleasure	0.776				
	When I drive brand X, I feel pleasure	0.855				
	I am always happy to use brand X	0.856				
Intimacy/Idealization (BLOVEI)			3.591	0.651	0.893	0.918
	I have a warm and comfortable relationship with brand X	0.921				
	I feel emotionally close to brand X	0.916				
	I value brand X greatly in my life	0.841				
	There is something almost "magical" about my relationship with brand X	0.852				
	There is nothing more important to me than my relationship with brand X	0.804				
Memories/Dreams (BLOVEM)			4.930	0.670	0.918	0.934
	Brand X reminds me of someone important to me	0.822				

(*Continued*)

Table 2. (Continued).

Construct	Measurement Items	Items Loading	Full Collinearity VIFs	AVE	α	CR
	Brand X raises memories, moments of my past (childhood, adolescence, a meeting)	0.794				
	I associate brand X with some important events in my life	0.862				
	Brand X corresponds to an ideal for me	0.912				
	I have dreamed about brand X for a long time	0.859				
	Brand X is a childhood dream	0.962				
	I dream (or have dreamt) of possessing this brand	0.953				

Notes: CR (Composite Reliability); AVE (Average Variance Extracted), **α** (Cronbach's Alpha), VIFs (Variance Inflation Factor), Confidence level used: 0.950.

Table 3. Correlations and √AVE of the latent construct.

	BCOMUE	BF	CBI	BATT	ENDCT	ENCA	ENCE	BLOVEU	BLOVEP	BLOVEI	BLOVEM
BCOMUE	**(0.895)**										
BF	0.223	**(0.838)**									
CBI	0.318	0.545	**(0.771)**								
BATT	0.637	0.323	0.366	**(0.864)**							
ENDCT	0.569	0.359	0.466	0.620	**(0.723)**						
ENCA	0.376	0.398	0.532	0.343	0.432	**(0.789)**					
ENCE	0.374	0.515	0.601	0.395	0.473	0.675	**(0.795)**				
BLOVEU	0.306	0.580	0.705	0.354	0.440	0.510	0.556	**(0.834)**			
BLOVEP	0.373	0.558	0.763	0.390	0.470	0.496	0.587	0.774	**(0.815)**		
BLOVEI	0.297	0.613	0.700	0.372	0.457	0.532	0.588	0.712	0.745	**(0.807)**	
BLOVEM	0.293	0.808	0.626	0.378	0.448	0.525	0.615	0.677	0.672	0.780	**(0.818)**

Note: The off-diagonal values are the square roots of AVEs.

The structural model outcomes

To confirm the hypothesized relationships among the exogenous and endogenous variables, the following criteria should be scrutinized: (1): path coefficient value (i.e., P-value); (2): R^2 value.

As stated by Hair et al. (2019) path coefficients below 0.05 and an R^2 greater than 0.02 can be regarded as evidence of an accepted hypothesized relationship. However, there is an ongoing debate among scholars regarding the adequate degree of R^2 (Nikhashemi et al. 2021). To illustrate, the R^2 in exploratory studies is expected to be greater than 0.20, whereas, in consumer science R^2 greater than 0.02, 0.13 and 0.26 associates with weak, moderate and strong values respectively (Cohen 1977; Kock and Hadaya 2018; Ringle, Sarstedt, and Straub 2012). As depicted in Figure 2, and tabulated in Table 5 the R^2 of brand community engagement, CBI, brand love and brand forgiveness greatly exceed all above mentioned values. We also attempted to identify the size of the impact of our exogenous variables for the explanation of f^2 and predication of Q^2 therefore the following formulas for Q^2 and f^2 are applied: **f2**= $(R^2_{Included}-R^2_{Excluded})$ /(1- $R^2_{Included}$); **q2**= $(Q^2_{Included}-\mathbf{Q}^2_{Excluded})$ /(1- $\mathbf{Q}^2_{Included}$). The results showed (refer to Table 5) that the

Table 4a. Classical model fit indices.

Index	Value	Description
Average path coefficient (APC)	0. 234	$P < 0.01$
Average R^2 (ARS)	0.604	$P < 0.01$
Average adjusted R-squared (AARS)	0.598	$P < 0.01$
Average block VIF (AVIF)	4.215	Acceptable if $\leq=5$
Average full collinearity VIF (AFVIF)	3.849	Acceptable if $\leq=5$
Tenenhaus GoF (GoF)	0.652	Small ≥ 0.1, medium ≥ 0.25, large ≥ 0.36
Sympson's paradox ratio (SPR)	0.882	acceptable if $>= 0.7$, ideally $= 1$
R-squared contribution ratio (RSCR)	0.989	acceptable if $>= 0.9$, ideally $= 1$
Nonlinear bivariate causality direction ratio (NLBCDR)	1.000	acceptable if $>= 0.7$

Table 4b. Indicator correlation matrix indices (additional model fit indices).

Index	Value	Description
Standardized root mean squared residual (SRMR)=0.086	0. 0.086	acceptable if $<= 0.1$
Standardized mean absolute residual (SMAR)=0.070	0.070	acceptable if $<= 0.1$
Standardized threshold difference count ratio (STDCR)=0.987	0.987	acceptable if $>= 0.7$, ideally $= 1$
Standardized threshold difference sum ratio (STDSR)=0.955	0. 955	acceptable if $>= 0.7$, ideally $= 1$

outcome of f^2 for accepted hypothesis is from medium to large (e.g., $>= 0.02$ is small; $>= 0.15$ is medium; $>= 0.35$ is large) and the outcome of Q2 is greater than zero, and in present study considered to be large (the lowest **q2** is >0.26 which still indicates a significant value) (Cohen 1977).

The structural model outcomes revealed that there is an insignificant relationship between **ECT** and **BCOMU** ($\beta = 0.04$, $p > .05$). However, the influence of the aforementioned variable via CBI is significant, indicating that there is an indirect relationship between **ECT** and **BCOMU** (refer to Table 5, Figure 2). In addition, the relationship between **ECT** and **CBI** is positive ($\beta = 0.14$, $p < .01$). Interestingly, the finding confirmed the positive relationship between **ECA -> BCOMUE** ($\beta = 0.12$, $p < .02$). The result also

Table 5. Structural model outcome.

Hypothesis	Hypothesized Path	Path Coefficient	p-Value	f^2	Decision	Constructs	R^2	Q^2
H1a	ECT - > BCOMUE	0.04	0.25	0.02	Rejected	BCOMUE	0.42	0.27
H1b	ECT -> CBI	0.12	0.02	0.13	Accepted	CBI	0.56	0.29
H2a	ECA -> BCOMUE	0.24	0.01	0.27	Accepted	BLOVE	0.66	0.45
H2b	ECA -> CBI	0.09	0.05	0.02	Rejected	BF	0.61	0.39
H3a	ECE -> BCOMUE	0.04	0.22	0.02	Rejected	Notes: 0.02= Small; 0.15 =		
H3b	ECE-> CBI	0.30	0.01	0.36	Accepted	Medium; 0.35 = Large		
H4	CBI -> BCOMUE	0.17	0.01	0.25	Accepted	$f^2= (R^2_{Included}-R^2_{Excluded})/(1-$		
H5a	CBI-> BLOVE	0.77	0.01	0.55	Accepted	$R^2_{Included})$		
H5b	CBI-> BF	0.13	0.01	0.16	Accepted	$q^2= (Q^2_{Included}-Q^2_{Excluded})/(1-$		
H6a	BCOMUE-> BLOVE	0.19	0.01	0.31	Accepted	$Q^2_{Included})$		
H6b	BCOMUE-> BF	0.00	0.49	0.01	Rejected			
H7	BLOVE-> BF	0.79	0.01	0.64	Accepted			

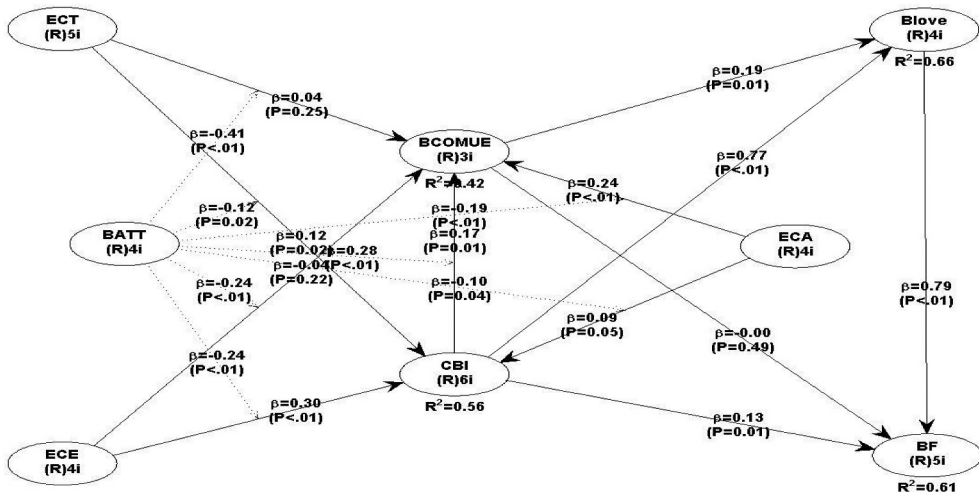Notes: Q2 value effect size 0.02= Small; 0.15 = Medium; 0.35 = Large.

Figure 2. Model outcomes.

revealed that there is no significant relationship between **ECA -> CBI** (β = 0.09, $p > .05$). The study further indicated that there is no relationship between **ECE -> BCOMUE** (β = 0.04, $p > .05$), whereas the relationship between **ECE-> CBI** (β = 0.30, $p < .01$) was found to be significant. The finding shows the significant relationship between **CBI-> BCOMUE** (β = 0.17, $p < .01$). As highlighted in Table 5 the relationship between **CBI-> BCOMUE** is confirmed. The relationship between **BCOMUE-> BLOVE** is found to be significant (β = 0.19, $p < .01$) meaning that **BCOMU** plays an important role in building brand love. The results of the hypothesized relationship between **BCOMUE-> BF** (β = 0.00, $p > .05$) construe an insignificant relationship. The relationship between **CBI-> BLOVE** (β = 0.77, $p < .01$/β = 0.73, $p < .01$) was found to be significant. More interestingly, the meaningful positive relationship between **CBI-> BF** is confirmed (β = 0.13, $p < .01$). Finally, as tabulated in Table 5 the relationship between **BLOVE-> BF** is strongly significant (β = 0.79, $p < .01$).

Moderating role of brand attitude

The study showed that brand attitude somewhat moderated the relationships in the hypothesized model. As indicated in Table 6 and Figures 2, 3, 4, 5 and 6, brand attitude enhances the relationship between ECT -> CBI, ECA -> BCOMUE, ECE-> CBI, and CBI-> BCOMUE, which highlights the substantial role of BATT in the hypothesized proposed

Table 6. WarpPLS- Moderation role of brand attitude.

Hypothesis	Hypothesized Path	p- Values	Moderated	Decision
H8a	ECT - > CBI	N/A	N/A	Rejected
H8b	ECT -> BCOMUE	0.02<0.05	Yes	Accepted
H8c	ECA -> CBI	0.01<0.05	Yes	Accepted
H8d	ECA -> BCOMUE	N/A	No	Rejected
H8e	ECE -> CBI	N/A	No	Rejected
H8f	ECE-> BCOMUE	0.01<0.05	Yes	Accepted
H8g	CBI-> BCOMUE	0.01<0.05	Yes	Accepted

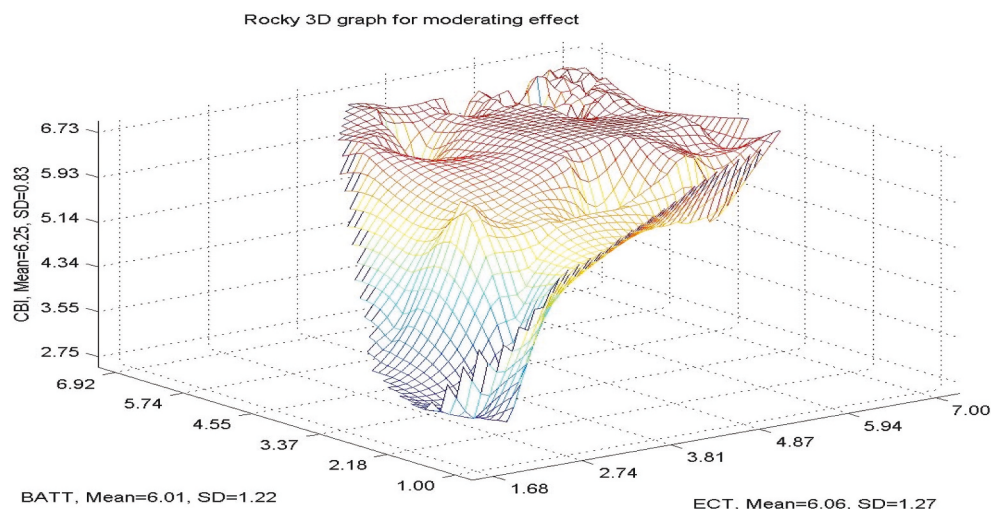Rocky 3D graph for moderating effect

Figure 3. 3D graph of the moderating effect of brand attitude on the relationship between endorser credibility (trust) and consumer brand identification.
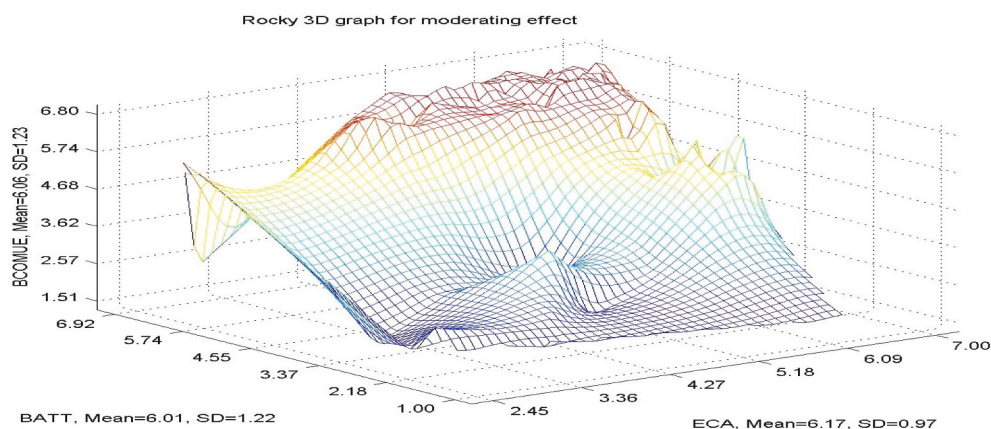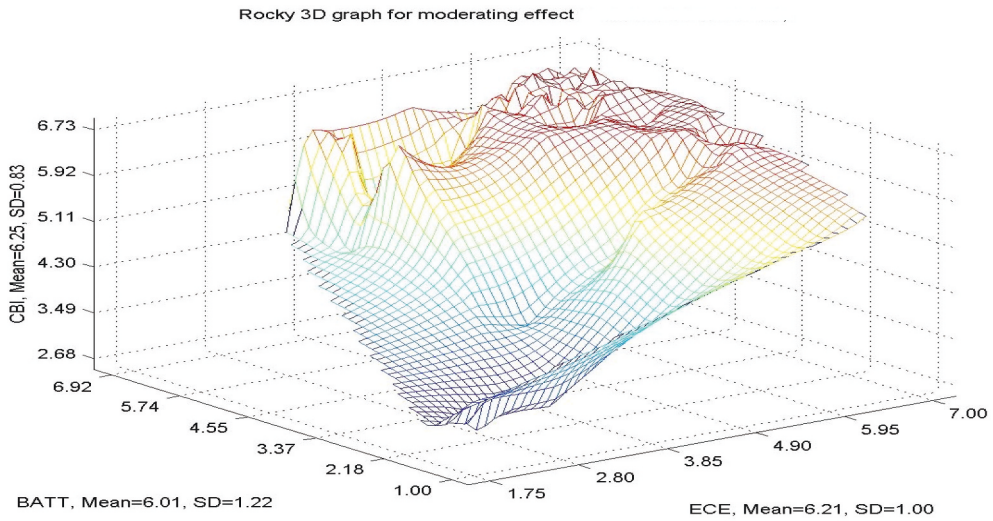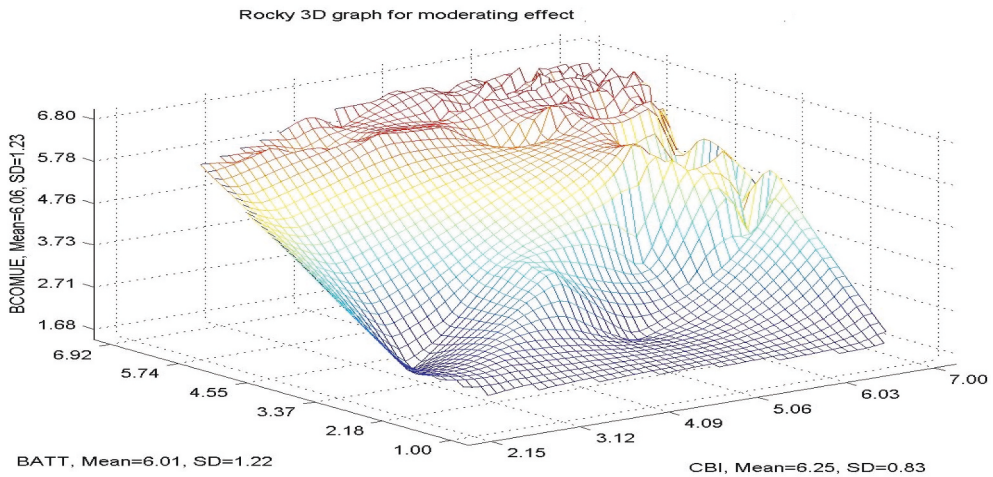
Rocky 3D graph for moderating effect

Figure 4. 3D graph of the moderating effect of brand attitude on the relationship between endorser credibility (attractiveness) and virtual brand community engagement.

model. However, brand attitude fails to enhance the association between ECA -> CBI, ECE -> BCOMUE, and ECT- > BCOMUE.

Results of nonlinear relationships

To identify the nonlinear relationships among the variables in case of existence, as suggested by Kock (2020), the Warp3 algorithm should be selected for inner model analysis. 'With the exception of linear algorithm provided in the WarpPLS the rest of the algorithms provided for inner model analysis in WarpPLS (e.g., Warp2, Warpal2 basic, Warp3) perform non-linear transformations on the predictor latent variable scores prior to calculation of path coefficient' (Kock 2020, 49). To illustrate, when we run the structural

Rocky 3D graph for moderating effect

Figure 5. 3D graph of the moderating effect of brand attitude on the relationship between endorser credibility (expertise) and consumer brand identification.

Rocky 3D graph for moderating effect

Figure 6. 3D graph of the moderating effect of brand attitude on the relationship between consumer brand identification and virtual brand community engagement.

model (inner model/Warp3) when the data points are very distorted or very different from the line (linear) typically the path-confident by default will be calculated through Warp regression, however, if the selected inner model algorithm (Warp3) does not find any nonlinear relationship among the variables, the inner model calculation will be based on a linear algorithm.

Surprisingly, the present study uncovered that the relationships between ECA and BCOMUE, ECT and CBI and CBI and BCOMUE (see Table 5) are nonlinear (warped), as depicted in Figures 7, 8 and 9. For instance, the study revealed the nonlinear relationship between ECT and CBI. To illustrate, at extremely high levels of ECT consumers
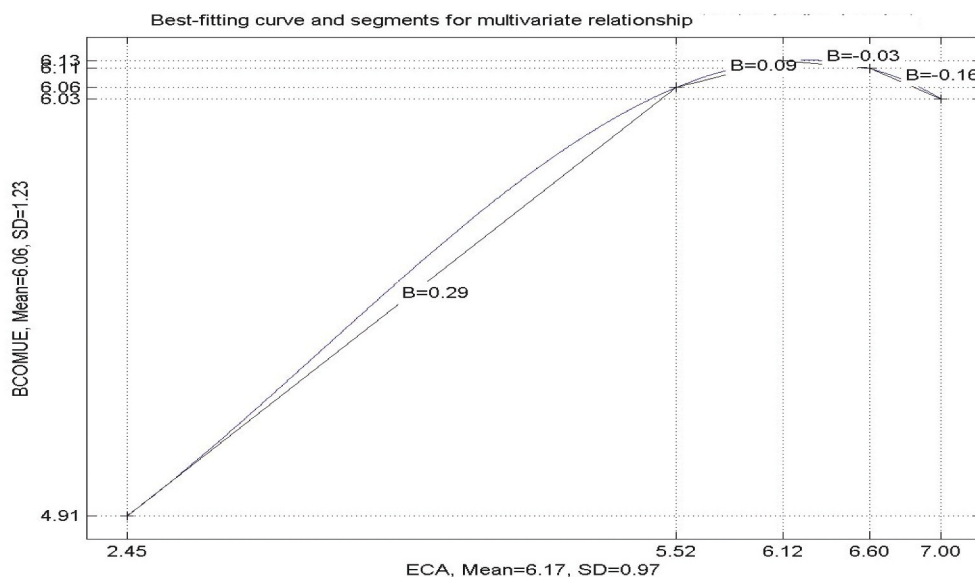
Figure 7. Non-linear relationship between endorser credibility (attractiveness) and virtual brand community engagement.
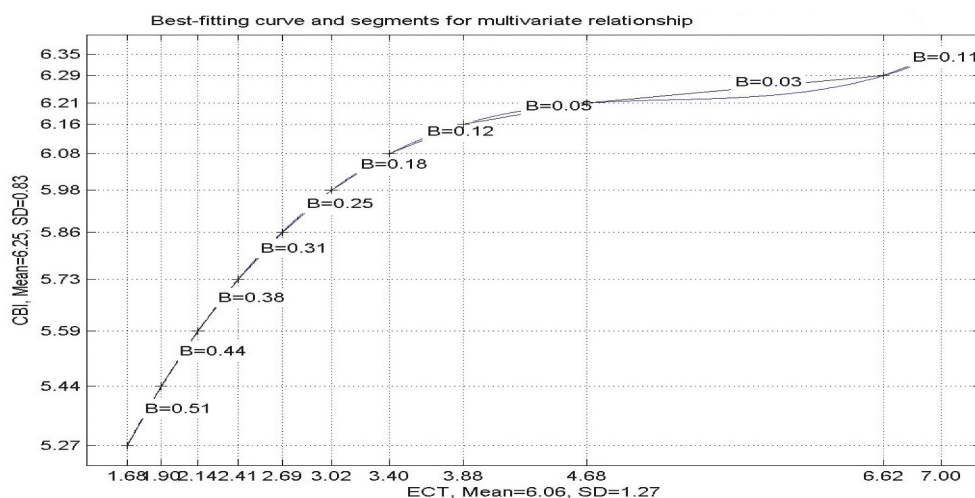

Figure 8. Non-linear relationship between endorser credibility (trust) and consumer brand identification.

tend to identify strongly with the brand and, therefore, will be interested in being positively engaged in its virtual community. However, at the moderate level of trustworthiness, CBI may not occur and so they are less likely to become engaged in the brand community due to other considerations, such as lack of congruity between brand endorser and consumer.

That is, at the moderate level of ECT, there is no association between ECT and CBI. This argument indicates that the ECT and CBI links vary at extremely high and moderate levels
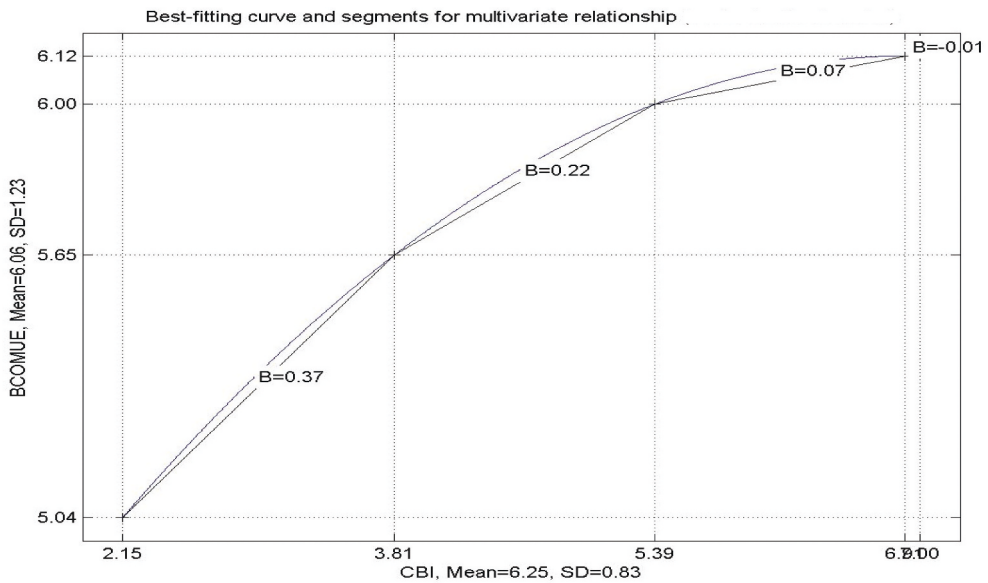
Figure 9. Non-linear relationship between consumer brand identification and virtual brand community engagement.

of ECT, suggesting that the relationship between the ECT and customer brand identification link is not linear (non-consistent).

Conclusion, discussion and implications

Typically, when a brand-harm scandal/crisis occurs, the approach of firms in addressing the problem during the crisis plays a critical role in redeeming the brand. In particular, due to negativity bias, news of a brand-harm crisis tends to spread widely and rapidly via social media and through brand communities (Javornik, Filieri, and Gumann 2020), and hence such news may have an impact on consumers' decision processes and brand evaluations (Bazi, Filieri, and Gorton 2020). Consequently, it is imperative for firms to identify the best possible strategy to manage and address brand-harm crises. Marketers have already realized that in order to address a potential future crisis, in which the brand has minimal attributions of crisis responsibility, devising a proactive strategy to mitigate a possible future brand-harm crisis is necessary. Marketers have already confirmed that developing a unique customer–brand relationship can result in positive behavioral responses (Hayes et al. 2021). Accordingly, during a brand-harm crisis those firms which have already developed a successful brand relationship with their target market/consumers are expected to receive less negative reaction and responses by their consumers than those who have failed to do so.

As highlighted in the literature review section, in a virtual brand community consumers can use their voice to express their opinions regarding the brand and, at the same time, the community can be regarded as a platform that firms can leverage to support a quality relationship with their consumers. Yuan et al. (2020) highlighted that firms, by developing a quality relationship with their consumers via online brand communities, might be able

to alleviate the negative impact of a brand-harm crisis on their consumers' future buying behavior. Therefore, the role of brand community engagement based in social media has received attention among firms and marketers. Marketers and firms are not only interested in identifying the determinants of virtual brand community engagement, they are at the same time eager to identify those determinants that can contribute the most to a fast brand recovery strategy during a crisis. Marketing communication studies (Carlson et al. 2020; Chin, Isa, and Alodin 2020; Dwivedi, Johnson, and McDonald 2016; Wang, Kao, and Ngamsiriudom 2017) show that brand endorsers, as social influencers, play a pivotal role in the consumer buying decision process (Schouten, Janssen, and Verspaget 2020), behavioral intention (Phua, Jin, and Kim 2020), brand recall and brand evaluation (Zhu et al. 2019).

The outcome of the study showed that the dimensions of source credibility play a critical role in sending a positive signal via CBI to consumers' virtual brand engagement. For instance, the effect of endorsers' trustworthiness and expertise was found to be insignificant, whereas the influence of endorsers' attractiveness toward virtual brand community engagement was significant. However, the findings reveal that the endorser's trustworthiness and expertise indirectly (via CBI) influenced virtual brand community engagement. These findings are not consistent with extant literature that posits that endorser characteristics are directly related to consumers' behavioral outcomes (brand love and brand forgiveness). The real situation is somewhat complex. The primary effect of endorser characteristics is on CBI and consumer engagement with the virtual brand community. This implies the dominant mechanisms of transmitting the benefits of endorser characteristics are through these two intervening variables. The evidence of this is provided by the lack of any significant direct relationship between endorser characteristics on behavioral outcomes. These are examples of full mediation (Zhao, Lynch, and Chen 2010). This implies that organizations must invest in CBI and in enhancing engagement of consumers with the virtual group to achieve brand love and brand forgiveness. The lack of significant direct relations between endorser characteristics is good news because it focuses management attention on two strategic issues to invest in as indicated by the fully mediation outcomes. Furthermore, the findings suggest there is serial mediation i.e., to achieve brand love and brand forgiveness it is critical to have CBI which has direct effect on these and indirect effects through brand community engagement. This speaks to the notion that brand community engagement does not fully mediate the relationship between CBI and brand love or brand forgiveness. The existence of such a partial mediation suggests there may be other potential mediators such as the organization's handling of the brand harm, efforts to address the brand harm among others (Zhao, Lynch, and Chen 2010).

To add, according to signaling theory, the current study found that using one of the marketing communications tools to convey or communicate signals very clearly through a credible source (e.g., a credible celebrity brand endorser) may have a distinct and positive impact on consumer behavioral outcomes (Hussain et al. 2020). For instance, a credible celebrity brand endorser with a significant level of trustworthiness or expertise may play a positive transformational role by sending credible signals to consumers in a brand community which may eventually affect consumers' cognitive (e.g., beliefs/opinions), affective (e.g., emotional bond) and conative behavior (e.g., future intentions/behavior) responses.

This study found that CBI can be considered a driving force of consumers' virtual brand community engagement and, at the same time, an outcome of endorsers' credibility dimensions, the links which were previously missing in the literature. As highlighted by Saldanha, Mulye, and Rahman (2018), consumers tend to be attracted by celebrities and any objects associated with them. For instance, BMW motorcars endorsed by Olympic medalist swimmers Natalie Coughlin or Pandora Sykes would likely be appreciated and recognized strongly by individuals as a result of added symbolic meaning (i.e., reliable, honest, attractive) to the brand. Specifically, if the brand endorser is regarded by the target market as credible and expert in the use of the product, this perception may readily transfer to the brand (Hussain et al. 2020). Besides, as a consequence of such endorser added value, the target market tends to develop a strong relationship with the endorsed brand and hence, this relational bond may lead to consumers' positive behavioral, attitudinal and emotional responses (Weismueller et al. 2020), particularly during brand-harm crises. This relationship can be substantiated by reference group (Bearden and Etzel 1982) and signaling (Dwivedi, Johnson, and McDonald 2016; Thai and Wang 2020) theories, which propose that individuals associate themselves with reference groups which can guide and influence buying behavior.

Social identity theory (Tajfel and Turner 2004) can also be regarded as an appropriate theory to validate the bond or association between CBI and virtual brand community engagement. According to this theory, consumers are inclined to identify strongly with the brand (CBI), in which case they find more congruity (more in common) between themselves and the brand (Nikhashemi and Valaei 2018). Therefore, we assume that individuals who do identify strongly with the brand are inclined to be more engaged in the virtual brand community and more inclined towards positive brand evaluation. This study further discovered that virtual brand community engagement and CBI play significant strategic roles in the formation of brand love and brand forgiveness during brand-harm crises. However, the impact of CBI on the formation of brand love and brand forgiveness was more conspicuous compared to virtual brand community engagement.

The findings also highlighted that CBI and virtual brand community engagement are essential in fostering emotional bonds with consumers (brand love) and drive brand forgiveness during brand-harm crises. This finding can be argued by social identity theory (Tajfel and Turner 2004) which purports that consumers might identify strongly with a brand if they find less discrepancy between themselves and the brand, and therefore the negative impact of eWOMC may not trigger negative behavioral outcomes (e.g., brand hate, brand switching). Accordingly, as indicated above, those who strongly identify with a brand (CBI) may develop an emotional bond and adopt positive behavior responses toward the brand (such as brand love and brand forgiveness).

Surprisingly, this study revealed that virtual brand community engagement impacts on brand forgiveness indirectly via brand love. This finding is supported by Baldus (2018) and Kumar's and Kumar (2020) studies, which show that marketers are inclined to reach and communicate frequently with their target market via their brand community members (e.g., through discussion, co-creation, feedback, sharing contemporary news, brand updates). These types of marketing communication messages can expedite the process of relationship building with brand community members in order to give them a sense of belongingness to the brand community. Therefore, this sense of belongingness boosts the salience of membership, resulting in brand community members cultivating an

emotional sense of community (Kaur et al. 2020), and therefore building robust relationships with the brand (such as brand love) and the likelihood of positive behavioral outcomes (e.g., brand forgiveness) during a brand-harm crisis increases. This outcome can also be discussed and supported by the findings of a psychological study on consumer – brand relationships, indicating that individuals have a tendency to be more forgiving of their beloved associates (Hegner, Fenko, and Teravest 2017). In other words, this study contends that if consumers have a high-quality relationship with a brand (e.g., via its community), they are more willing to forgive faults, mistakes and any harm caused by the brand.

This study also revealed that the relationship between CBI and virtual brand community engagement, endorser credibility (trustworthiness) and CBI, as well as endorser credibility (attractiveness) and virtual brand community engagement are positive and nonlinear. This finding is in line with Kock's (2020) statement and Nikhashemi et al. (2021) who note that the nature of the relationships in consumer behavioral studies tends to be nonlinear. For instance, the level of CBI (e.g., how strongly individuals identify with the brand/how similar the brand is to their self-concept) can determine the level of consumer engagement in a virtual brand community. Therefore, consumers with low or average levels of brand identification may not be as eager to be engaged in the brand community as those with high levels of identification. As highlighted in the preceding discussion, this study confirmed the vital role of all dimensions of source credibility in the creation of consumer brand identification.

Finally, this study revealed that brand attitude can enhance the relationship between source credibility and CBI, as well as virtual brand community engagement. Normally, prior to making any decision regarding the advertised brand (e.g., endorser), consumers tend to evaluate the brand. This evaluation shapes brand attitude (Chattopadhyay and Basu 1990; Weismueller et al. 2020) and, consequently, the effectiveness of source credibility which is associated with celebrities (trustworthiness, attractiveness and expertise) can be rechanneled via brand attitude toward virtual brand community engagement and CBI.

Theoretical implications

This study has made numerous contributions, practically and theoretically to the existing body of knowledge. Theoretically, this study sheds light on branding, consumer behavior and advertising literature via uncovering the effectiveness of source credibility (endorsers' credibility) in relation to consumers' brand identification and virtual brand community engagement, which led to the formation of brand love and brand forgiveness during brand-harm crises. Further, this study, by integrating social identity signaling and reference group theories, attempted to build causal relationships between source credibility towards virtual brand community engagement and CBI: relationships which were missing from the extant literature. Further, this study attempted, by leveraging CBI and virtual brand community, to support brand love and brand forgiveness during critical times of brand crisis. Therefore, the findings of the current study can add insight into the aforementioned literature.

Prior literature highlighted the outcome of endorser credibility on consumers' attitudes (Weismueller et al. 2020), corporate credibility (Wang, Kao, and Ngamsiriudom 2017)

purchase intention (Chin, Isa, and Alodin 2020; Osei-Frimpong, Donkor, and Owusu-Frimpong 2019) and corporate image (Saldanha, Mulye, and Rahman 2018). The majority of these studies simply build on existing theoretical frameworks related to the Elaboration Likelihood model (ELM) (Petty and Cacioppo 1986) rather than working on delineating the causal links and mechanisms of the customer–brand relationship facilitated by source credibility. Further, these studies have simply given more attention to the attitudinal measures as the endogenous variables (e.g., attitude toward the source, advertising credibility etc.). The current study, by introducing the links between the dimensions of endorser credibility and virtual brand community engagement and CBI, shows the significant role of source credibility on CBI and virtual brand community engagement; however, the impact of source credibility via CBI was more noticeable. This indicates that CBI is an outcome of source credibility.

The study also demonstrates that CBI can be regarded as a driving force of virtual brand community engagement: a relationship which was overlooked in previous literature. Although the concepts of brand love and brand forgiveness have recently received growing attention among marketing scholars, considering the roles of CBI and virtual brand community from a social identity perspective in relation to brand love and forgiveness during brand-harm crises has not yet been rigorously investigated. Therefore, the present study by establishing these links confirmed the significant and neglected role of the aforementioned variables in the formation of brand love and brand forgiveness.

The outcome of brand attitude as a moderator in the proposed model may also be regarded as another contribution of the present study. Although brand attitude has received more attention in the extant literature, its moderating role in relationships with source credibility and virtual brand community engagement and CBI has not yet been fully considered. Consequently, this study, by introducing the moderating role of brand attitude, uncovered its moderating role in the proposed model. Finally, the current study, by applying A(n)(a) symmetric statistical approach (nonlinear SEM), identified that the associations among some of the hypothesized constructs (i.e., the relationships between endorser credibility (attractiveness) and virtual CBI, endorser credibility (trust) and CBI as well as CBI and virtual brand community) are nonlinear. This can be regarded as a contribution of the present study, as the existing literature in advertising, marketing and consumer behavioral studies largely ignores these relationships (Kock 2020; Kumar and Purani 2018).

Practical contribution

Recently, the importance of emerging markets in the world economy has received increasing attention from marketers. Therefore, understanding marketing practice is very important to the success of firms in these markets (Sridhar and Fang 2019). The outcomes of this study have important implications for marketing managers operating businesses in markets even at the top of the emerging markets list, such as Malaysia. Further, since Malaysia is considered one of the South East Asian emerging markets with a highly diversified culture (Chinese, Malay, Indian etc.,) and with similar values to other countries in the region, the findings of this study may be applicable to those other countries within the proximity of Malaysia (Warner 2014).

In addition to theoretical knowledge, the present study provides practical insights for managers in the car industry in preparation for a potential brand-harm crisis. Practitioners need to pay attention to the important role of all dimensions of source credibility as an essential ingredient in achieving favorable outcomes (e.g., CBI and virtual brand community engagement) particularly during a brand-harm crisis. This study showed that the source credibility dimensions can not only be considered as antecedents of CBI, and to some extent virtual brand community engagement, at the same time they can be regarded as a fast brand recovery strategy during times of crisis. For instance, source credibility as a marketing communication strategy can be used to signal brand and firm quality. In other words, signals conveyed and communicated via a credible source (e.g., trustworthiness, expertise, attractiveness) differ from other marketing mix elements and impact on consumer behavioral outcomes and judgements.

Further, marketers, by including a credible celebrity endorser in their integrated marketing communications campaigns, might also be able to activate consumers' self-concept related benefits. For instance, by incorporating visual images and a creative executional style in their advertising campaign they may be able to expedite and facilitate the process of CBI and consumer engagement in a virtual environment. Finally, to cultivate CBI and virtual brand community engagement, as a proactive marketing strategy to save the brand during a crisis, marketers are obliged to emphasize the commonalities, links between the sources of credibility, brand, community and its members in their marketing communications strategies. In other words, a positive signal which has been *sent*/triggered via a credible brand endorser positively impacts on consumer behavioral (e.g., engagement, brand recall, identification, etc.,) and attitudinal outcomes (brand attitude/positive brand evaluation) which can be considered as a unique proactive marketing communications strategy for sustainable brand relationship management and, at the same time, can be regarded as a brand recovery response strategy during a brand-harm crisis.

The findings also revealed that source credibility plays a meaningful role in CBI and virtual brand community engagement; however, the impact of source credibility via CBI towards virtual brand community engagement was more noticeable. It is noteworthy for managers to understand which types of marketing activities/communications trigger CBI and virtual brand community engagement. In other words, for them to identify which particular dimension of source credibility associated with the endorser facilitates the process of identification and community engagement during a brand-harm crisis. It is supposed that consumers who are actively engaged with the brand's virtual community tend to continue to develop an emotional bond with the brand (brand love) and forgive the brand in spite of any negativity resulting from a brand-harm crisis (Baldus 2018; Veloutsou and Black 2020). Hence, it is suggested that brand managers dedicate more resources in order to expedite and facilitate the process of CBI and brand community engagement in their brand's virtual community as part of their marketing strategies. Kaur et al. (2020) stated that consumers may engage in virtual brand communities if they find that community members share the same values and benefits. Therefore, marketers are expected to develop a firm-host virtual brand community that not only permits individuals' self-expression and the development of strengthened brand and organizational bonds, but gives firms the opportunity of being transparent and to express apologies during a brand-harm crisis situation. Generally, consumers appreciate the firm's position

when they understand it is honest and accepting of blame and/or fault. This is what Toyota did.

Limitations

Despite the numerous contributions of this study, we should acknowledge some of the limitations. Firstly, the present study focused on the emblematic case of brand-harm crisis which specifically considered the Toyota brand's virtual brand community during a crisis (e.g., airbag failure on exposure to moisture). Even though the data were obtained from an authentic and well-known brand, the generalizability of the findings is limited. Therefore, future study is suggested to re-examine the proposed model through the lens of a different product category (such as high vs. low involvement products). Secondly, the study highlighted the impact of source credibility as a general concept with brand endorsers, and did not examine the impact of local vs. foreign/global brand endorsers on CBI and virtual brand community engagement. Therefore, considering the moderating role of local versus foreign source credibility in relation to CBI and virtual brand community engagement is recommended. Thirdly, this study unveiled the chain of effects from source credibility to brand love and forgiveness, in the context of a product-harm crisis; hence for forthcoming research it is also suggested the study is expanded to include the service context. Finally, this study used nonlinear SEM to identify the hypothesized relationships among the variables, therefore future research is suggested to test and compare the outcome of the proposed model with other co-variance and variance-based SEM.

Disclosure statement

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Appendices

Appendix A. Sample Size Method
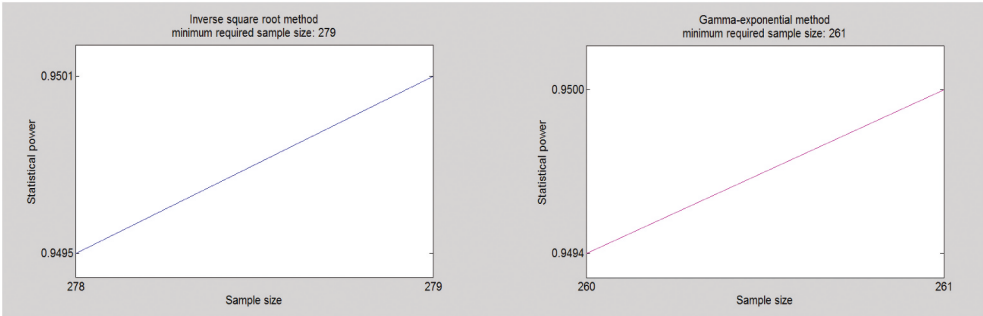
Appendix B: Loading and cross-loading

	BCOMUE	BF	CBI	BATT	ECT	ECA	ECE	BLOVEU	BLOVEP	BLOVEI	BLOVEM
BCOMUE1	(0.897)	0.236	0.295	0.573	0.489	0.368	0.359	0.306	0.337	0.295	0.285
BCOMUE2	(0.877)	0.176	0.266	0.580	0.470	0.338	0.344	0.239	0.322	0.221	0.247
BCOMUE3	(0.911)	0.149	0.274	0.559	0.462	0.311	0.320	0.277	0.343	0.281	0.254
BF1	0.233	(0.853)	0.535	0.332	0.338	0.448	0.537	0.599	0.573	0.624	0.768
BF2	−0.126	(0.889)	0.345	0.216	−0.182	−0.261	−0.322	−0.416	−0.368	−0.446	−0.594
BF3	0.232	(0.814)	0.511	0.300	0.342	0.402	0.488	0.542	0.560	0.531	0.726
BF4	0.179	(0.799)	0.369	0.246	0.290	0.287	0.399	0.393	0.382	0.451	0.670
BF5	0.126	(0.889)	0.345	0.216	0.182	0.261	0.322	0.416	0.368	0.446	0.594
CBI1	0.320	0.443	(0.747)	0.362	0.416	0.450	0.500	0.546	0.572	0.535	0.542
CBI2	0.261	0.377	(0.767)	0.301	0.295	0.450	0.481	0.557	0.584	0.551	0.453
CBI3	0.253	0.438	(0.753)	0.304	0.334	0.500	0.544	0.565	0.634	0.537	0.520
CBI4	0.232	0.402	(0.779)	0.256	0.343	0.368	0.440	0.537	0.591	0.552	0.474
CBI5	0.158	0.319	(0.750)	0.186	0.296	0.333	0.359	0.512	0.558	0.522	0.422
CBI6	0.171	0.234	(0.704)	0.128	0.264	0.271	0.287	0.403	0.469	0.393	0.289
BATT1	0.506	0.189	0.231	(0.846)	0.449	0.253	0.256	0.213	0.238	0.227	0.235
BATT2	0.580	0.262	0.296	(0.906)	0.495	0.306	0.320	0.310	0.335	0.307	0.322
BATT3	0.580	0.296	0.346	(0.870)	0.546	0.333	0.387	0.350	0.400	0.373	0.367
BATT4	0.533	0.315	0.313	(0.832)	0.559	0.326	0.372	0.348	0.374	0.378	0.383
ECT1	0.543	0.261	0.344	0.633	(0.791)	0.331	0.354	0.379	0.381	0.342	0.328
ECT2	0.392	0.218	0.304	0.470	(0.854)	0.257	0.316	0.277	0.295	0.326	0.298
ECT3	0.347	0.300	0.316	0.340	(0.556)	0.292	0.303	0.328	0.332	0.336	0.355
ECT4	0.344	0.212	0.369	0.313	(0.545)	0.395	0.416	0.288	0.357	0.324	0.323
ECT5	0.301	0.173	0.283	0.362	(0.819)	0.231	0.278	0.239	0.217	0.280	0.239
ECA1	0.345	0.281	0.360	0.324	0.369	(0.823)	0.602	0.368	0.357	0.384	0.409
ECA2	0.354	0.312	0.405	0.266	0.319	(0.808)	0.648	0.407	0.401	0.454	0.433
ECA3	0.213	0.236	0.374	0.238	0.202	(0.773)	0.555	0.397	0.332	0.357	0.352
ECA4	0.312	0.425	0.569	0.312	0.394	(0.838)	0.639	0.514	0.537	0.537	0.547
ECE1	0.320	0.347	0.440	0.278	0.340	0.545	(0.811)	0.401	0.444	0.403	0.411
ECE2	0.299	0.463	0.445	0.348	0.351	0.638	(0.823)	0.441	0.473	0.528	0.605
ECE3	0.270	0.340	0.498	0.319	0.372	0.421	(0.657)	0.494	0.487	0.474	0.448
ECE4	0.295	0.354	0.444	0.264	0.335	0.720	(0.812)	0.392	0.429	0.431	0.453
BLOVEU1	0.235	0.466	0.590	0.286	0.349	0.430	0.450	(0.901)	0.674	0.588	0.583
BLOVEU2	0.318	0.535	0.662	0.351	0.385	0.508	0.540	(0.901)	0.721	0.696	0.639
BLOVEP1	0.343	0.432	0.638	0.322	0.367	0.403	0.488	0.637	(0.814)	0.568	0.527
BLOVEP2	0.261	0.437	0.583	0.337	0.323	0.405	0.442	0.599	(0.784)	0.545	0.517
BLOVEP3	0.320	0.392	0.601	0.328	0.339	0.438	0.511	0.624	(0.806)	0.629	0.546
BLOVEP4	0.293	0.459	0.650	0.288	0.347	0.398	0.468	0.662	(0.857)	0.682	0.600
BLOVEI1	0.281	0.460	0.596	0.368	0.392	0.463	0.487	0.621	0.620	(0.790)	0.575

(*Continued*)

	BCOMUE	BF	CBI	BATT	ECT	ECA	ECE	BLOVEU	BLOVEP	BLOVEI	BLOVEM
BLOVEI2	0.289	0.472	0.565	0.333	0.388	0.429	0.450	0.602	0.646	(0.789)	0.587
BLOVEI3	0.234	0.417	0.552	0.301	0.366	0.434	0.520	0.551	0.631	(0.827)	0.592
BLOVEI4	0.225	0.439	0.559	0.308	0.330	0.382	0.433	0.570	0.637	(0.861)	0.608
BLOVEI5	0.193	0.556	0.536	0.214	0.268	0.457	0.452	0.573	0.535	(0.810)	0.736
BLOVEI6	0.221	0.503	0.526	0.277	0.361	0.433	0.504	0.533	0.533	(0.763)	0.684
BLOVEM1	0.235	0.566	0.444	0.323	0.367	0.400	0.423	0.548	0.521	0.713	(0.757)
BLOVEM2	0.200	0.619	0.447	0.272	0.290	0.448	0.481	0.489	0.508	0.665	(0.826)
BLOVEM3	0.233	0.672	0.480	0.294	0.335	0.501	0.550	0.555	0.555	0.642	(0.838)
BLOVEM4	0.229	0.678	0.530	0.341	0.385	0.432	0.484	0.590	0.555	0.684	(0.868)
BLOVEM5	0.240	0.652	0.472	0.294	0.329	0.435	0.531	0.527	0.532	0.566	(0.823)