Sudan University for Science and Technology
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Impact of Social Media Marketing on Brand Equity: The Mediating Effect of Customer-Brand Engagement

أثر التسويق عبر وسائل التواصل الإجتماعي علي القيمة العادلة للعلامة التجارية: دور الوساطة إشراك العملاء في العلامة التجارية

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DEDICATION:

To my mother Fatima; for supporting and encouraging me to believe in myself.

To the soul of my beloved father.

To my only brother who has paved the way for me.

Finally, I dedicate this work to Mr. Shawgi Gharib , I couldn't have done this research without him, I thank him for all his support along the way.

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ABSTRACT

Social media marketing has changed the traditional communication between brands and customers and enabled them to make positive as well as negative influence on brand equity. The purpose of this research was to determine the impact of social media marketing on brand equity, Moreover, this research attempts to examine the role of customer-brand engagement as the mediating variable between social media marketing and brand equity. A descriptive cross-sectional survey was used in the research. The target population was undergraduate students in three universities in Khartoum state. A questionnaire survey was constructed based on previous studies. The sample size was 200 respondents of undergraduate's students using convenient sampling technique. Data was analyzed by SPSS version 24 and AMOS . The result of this research was established that the social media marketing dimensions online communities and credibility has a positive impact on brand loyalty, while sharing of content dimension has a positive impact on perceived quality, also the results found there is a positive relationship between sharing of content , credibility with the dimensions of customer brand engagement emotions and cognitions while the behavioral intentions dimension has a positive relationship with online communities and credibility. Behavioral intentions has a positive relationship with brand loyalty and brand associations, and there is positive relationship between cognitions and perceived quality. The results also proved that the mediating effect of cognitions and behavioral intention has a positive effect on the relationship between social media marketing and brand loyalty. Since customer brand engagement proved to be a partial mediator between social media marketing and brand equity, the research suggests that a combination of a high equity brand with a significant use of Social Media that will lead to engagement of the customers and success companies.

مستخلص الدراسة:

غيرت وسائل التواصل الاجتماعي المفهوم التقليديي للتسويق بين العلامات التجارية والعملاء وتمكنهم من التأثير إيجابيا وسلبا علالقيمة العادلة للعلامة التجارية. وكان الغرض من هذا البحث هو تحديد أثر التسويق عبر وسائل التواصل الاجتماعي على القيمة العادلة للعلامات التجارية، وعلاوة على ذلك، يحاول هذا البحث دراسة دور المشاركة بين العملاء والعلامة التجارية كمتغير وسيط بين التسويق عبر وسائل التواصل الاجتماعي و القيمة الادلة العلامة التجارية .وقد تم استخدام المسح الوصفي في البحث .وكان مجتمع الدراسة المستهدف الطلاب الجامعيين في ثلاث جامعات في ولاية الخرطوم .تم بناء الاستبيان بناء على دراسات سابقة .وكان حجم العينة 200 مشارك .تم تحليل البيانات من قبل برنامج SPSS الإصدار 24 و أموس .وقد أثبتت نتائج هذا البحث أن أبعاد التسويق عبر وسائل التواصل الاجتماعي على الانترنت والمصداقية لها تأثير إيجابي على الولاء للعلامة التجارية، في حين أن بعد مشاركة المحتوى له تأثير إيجابي على الجودة المدركة، كما وجدت النتائج أن هناك علاقة إيجابية بين مشاركة المحتوى، والمصداقية مع أبعاد إشراك العملاء في العلامة التجارية العواطف والإدراك ، في حين أن بعد النوايا السلوكية لديه علاقة إيجابية مع المجتمعات على الانترنت والمصداقية . بعد النوايا السلوكية له علاقة إيجابية مع الولاء للعلامة التجارية والجمعيات التجارية، وهناك علاقة إيجابية بين الإدراك والجودة المدركة .وأثبتت النتائج أيضا أن تأثير الوساطة في الإدراك والنوايا السلوكية له تأثير إيجابي على العلاقة بين التسويق عبروسائل التواصل الاجتماعي والولاء للعلامة التجارية .وبما أن مشاركة العلامة التجارية للعملاء أثبتت أنها وسيط جزئي بين التسويق عبر وسائل التواصل الاجتماعي والقيمة العادلة للعلامة التجارية، فإن البحث يشير إلى أن الجمع بين علامة تجارية عالية في رأس المال مع استخدام كبير لوسائل التواصل الاجتماعي من شأنها أن تؤدي إلى إشراك العملاء ونجاح الشركات.

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CHAPTER ONE

1. Introduction

1.1 Background of the study:

In the society increasingly influenced by social media and a shift to consumer control of media, brand managers must understand how to use social media effectively in engaging with consumers (Gensler & Völckner, 2013.) .

As an integrated marketing medium, social media marketing activities enhance value equity effectively by providing novel value to customers, which traditional marketing media do not usually provide. The brand's social media platforms offers venues for customers to engage insincere and friendly communications with the brand and other users, so the brands intend actions on the social communication scene positively affect relationship equity and brand equity as well (Kim A. J., 2012). Social media marketing and brand equity are positively and significantly correlated, social media marketing helps organizations in building positive customer relationships, improving brand image. The building blocks of Social media have positive effect on brand awareness, brand association, brand loyalty and perceived quality (Tresna, 2015).

Consumers, identify social media as a more trustworthy source of Information compared to the traditional marketing communication tools this allows organizations to integrate social media marketing into their marketing mix not only to communicate with customer but to get the feedback also (Karamian, 2015). There is a statistically significant impact of the dimensions of social media marketing on the brand equity, therefore companies need to focus more on social media marketing and increase its share in marketing mix activities that will in return help companies to generate huge revenues from enhanced brand equity (Abu-Rumman, 2014).

An attempt to define the relationship between customers and brands; the term “brand equity” was produced in the marketing literature (Wood, 2000). The brand equity generates a type of added value for products which helps companies 'long term

interests and capabilities' (Chen L.-H. , 2008). Over the past two decades, great deals of researches have addressed various aspects of brand equity; brand equity is generally accepted as a critical success factor to differentiate companies and service providers from its competitors.

Firstly the concept of brand equity was presented in marketing literature in the 1980's.later this got the vital importance practitioners and academicians (Aaker D. , 2005). The formation of the concept of brand equity is based on the perceptions of consumers toward a specific brand, which might have a dependence upon various factors, out of them brand can be considered as one factor for a brand to have a value it is compulsory that it must be valued by the consumer. The power of brand represented in what consumer has felt, heard, seen and learned about the brand over the time as the result of their experiences about the brand (Keller, Strategic Brand Management: Building, Measuring and Managing Brand Equity , 2014).

Today the most of conceptualization of brand equity is agreed upon the phenomena which involves the value by consumers to a product, also the perception and association of a particular brand name (Winter, 2013) (Chaudhuri, 2010). In today's competitive business environment, the concept of brand equity is an important source of strategic intelligence for marketers.

Brand equity serves three important roles: (a) it acts as a magnet to attract new customers to the firm, (b) serves as a reminder to the customers about the organization's products and services, (c) it is customer's emotional tie to the organization (Lemon K. R., 2001). Brand equity is significant in assisting consumers to process information, especially, when the information is overloaded (Krishnan, 2001).

1.2 Problem statement:

Despite the importance of branding and relationship building in the digital world, little is known about how social media relates to consumers relationships with brands,

and whether social media-based brand relationships are associated with desired outcomes such as customer satisfaction and recommendations.

Similarly, studies suggest that customer engagement (CE) is an important strategic imperative for generating brand equity (Passikoff, 2007). Hence, social media channels have become very important for the process of customer engagement and for development of brand equity. Thus, this research seeks about the role of customer engagement through social media in building brand equity.

In a broader context, customer brand engagement (CBE) has received considerable recent attention (Gambetti R. C., 2010**;** (Hollebeek, Demystifying customer brand engagement: Exploring the loyalty nexus., 2011a**),** (Hollebeek, Exploring customer brand engagement: definition and themes. , 2011b). Arguably, social media channels are especially relevant for the establishment of CBE beyond exchange, as these interactive two-way communication platforms encourage customers' participation (Brodie & Ilic, 2013**;** (Dessart, 2015); (Avery, 2011); (Gummerus & Veronica Liljander, 2012); (Jahn, 2012). Social media provide the opportunity for a firm to become more customer-centric, and to encourage CBE via certain brand activities (Hoffman, 2012); (Kaplan, 2010); (Schamari, 2015**).** Social media also allow service brands to use content and pictures to depict situations in which customers may find themselves, thereby building mental constructs of their services before they are used (Laroche, 2012). This approach can reduce customers' perceptions of uncertainty and risk. However, current insight into CBE processes in social media is limited, and few studies have investigated factors explaining CBE in this context (Dessart, et al 2015); (Jahn & Kunz 2012**;** (Schamari, 2015). Thus the aim of this study is to reveal the impact of social media marketing on brand equity in the presence of customer brand engagement as a mediating factor.

1.3 Research questions :

1) What is the relationship between the social media marketing and brand equity?

2) Is there is any relationship between social media marketing and customer-brand engagement?

3) What is the relationship between customer-brand engagement and brand equity?

4) Does the customer-brand engagement mediate the relationship of social media marketing and brand equity?

1.4 Research Objectives:

1) To investigate the impact of the social media marketing on brand equity.

2) To determine the relationship between customer-brand engagement and social media marketing.

3) To explore the link between the customer-brand engagement and brand equity.

4) To find out the mediating factor of customer-brand engagement on social media marketing and brand equity.

1.5 Significance of the study:

1.5.1 Theoretical:

1) Despite the growing popularity and ever-increasing adoption of social media as a marketing tool, number of studies which explore the implications of social media usage for businesses still very few in academia. (Mangold, & Faulds 2009; Kietzmann et al., 2011**).**
2) In exploring the effects of social media usage on brand equity, this study brings together the brand management literature and the social media theory in a business context. The purpose of this study is to offer a new structured model based on theory that would enhance our understanding of the relationship between social media use and brand equity and the mediating effect of customer-brand engagement.
3) Furthermore, by exploring the relationship between social media use and brand equity; this study extends brand equity research to 21st century ((Aaker D. A., 1991); (Keller, Conceptualizing, measuring, managing customer-based brand equity, 1993); (Yoo B. &., 2001) and provides empirical evidence.

1.5.2 Practical:

1) By providing a conceptual framework for brand equity in social media, it provides to managers an enhanced understanding of the brand equity concept in social media and may help in the formulation and design of focused strategies and tactics of customer engagement in social media in order to improve the brand equity.

2) This research will help marketers working on brands to use this new tool efficiently and understand the role of brand equity to consumers' intention to engage in brand's Social Media.

3) Researching the influence engagement of consumers on brand equity with the brand's Social activities companies have the opportunity to discover if brand equity plays a critical role on consumers' intention to engage with the brand in its Social network. If this statement is true companies should pay attention to build their brand with equity and make people engage in their Social activities

4) Last but not least, if the research demonstrates that high equity brands with higher brand engagement in Social Media it will mean that brand engagement is a mediating effect between brand equity and social media marketing and that demonstration will provide strong evidences to companies to use Social Media in their marketing strategy.

1.6 Operationalization definitions of key terms:

Social media:

Is a group of internet based applications that build on the ideological and technological foundations of web 2.0, and allow the creation and exchange of user generated content (Kaplan & Haenlein, 2010).

Social media marketing:

Is the marketing strategies that smart businesses are employed in order to be a part of a network of people online (As'ad, H.; Anas Y., 2014).

Social media marketing dimensions:

Online Communities: A company or business can use the social media to build a community around its products/business. Vibrant communities create loyalty and encourage discussions, which can contribute towards business development and improvement (Taprial, & Kanwar, 2012).

Interaction*:* Social networking sites enable greater interaction with the online community through broadcasting up-to-date, consumer relevant information (Fischer, & Reuber, 2011).

Sharing of Content*:* The sharing dimension is about the extent to which an individual ex-changes, distributes and receives content in a social media setting. (Babac, 2011)

Accessibility: The social media is easily accessible and takes minimal or no costs to use. Social media is easy to use and does not require any special skills, knowledge to use. (Taprial, & Kanwar, 2012)

Credibility*:* It is all about delivering your message clearly to the people, establishing credibility for what you say or do, connecting emotionally with your target audience, motivating the buyer and generating loyal customers. The social media provides a very good platform for all businesses (big or small) to network and reach out to their target audience, connect with them directly and generate trust by listening to what they have to say. (Taprial, & Kanwar, 2012).

Brand equity:

Is a set of brand assets and liabilities linked to a brand, its name and symbol; that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers" Aaker (1991).

Brand equity dimensions:

1. ***Brand Loyalty****:*

Defined as a situation which reflects how likely a customer will be to switch to another brand, especially when that brand makes a change, either in price or in product features.

2. ***Brand awareness:***

Defined brand awareness as the ability of the potential buyer to recognize and recall that a brand is a member of a certain product category.

3. Perceived Quality:

Is the customer's perception of the overall quality or superiority of a product or service regarding its intended purpose in comparison to that of other alternatives.

4. Brand Association:

Anything linked in memory to a brand.

Customer-brand engagement:

Considered to be a multidimensional (emotional, cognitive and intentional) – and fluctuating – psychological state that is context dependent and process based (Hollebeek (2011a, 2011b) and Brodie et al. (2011).

1. ***Emotional:*** Conceptualized as the customer's degree of positive brand activity-related affect.
2. ***Cognitive:*** the customer's levels of brand activity-related thought processing and elaboration.
3. ***Intentional:*** refers to a customer's interest in devoting energy, effort and time to a brand activity.

1.7 Organization of the study:

This dissertation consists of five chapters, being the first one is the introduction, where the object of study is presented. The second chapter is the literature review about social media, its impact on brand equity, consumer-brand engagement and brand equity. In the third chapter the research presents framework and research methodology. In chapter four, the results are presented. In chapter five, the discussion, in this chapter the research limitations and the directions for further research and conclusions are also noted.

CHAPTER TWO

2. Literature review

2.1 Chapter overview:

This chapter presents a review of some related literatures published on the subject of the study, like Social Media, brand equity, Social Media marketing and customer-brand engagement in Social Media activities. Through the literature review, it will be possible to formulate the hypotheses that will be used as a basis in order to conduct the survey and ultimately answer the research question. In addition to define and sort types of Social Media will be presented, as well as the definition of brand equity. This chapter will assist to understand what Social Media and Social Media marketing are, and why do consumers involve with such brand related Social activities , and different measurements of social media marketing will also be addressed. Moreover, brand engagement will be indicated. Finally, a number of hypotheses will be developed according to the goals and aims of study, and a conceptual map will also be designed.

2.2 Social Media:

The concept of social media was clarified by (Kaplan, 2010). Based on they defined, social media "is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content (UGC)" .UGC is the sum of all ways in which people use social media, meaning "all the various forms of media content that are publicly available and created by the end-user" and not by professionals (Kaplan & Haenlein, 2010).

Social media includes a diverse range of online word-of-mouth (WOM) forums such as social networking sites (SNS), creativity works sharing sites (like YouTube), blogs, chat rooms, consumer product or service ratings websites, Internet discussing forums, among others (Mangold & Faulds, 2009).

Therefore, SNS offer people new ways to develop their social networks, by building and maintaining social interaction, creating relationships, sharing information, generating and editing content and participating in social movements through the Internet (Hajli, 2014; Lorenzo-Romero et al., 2014; Mangold & Faulds, 2009).

Social media facilitates communication allow individual to communicate effortlessly with hundreds or thousands of other consumers in a quick manner (Mangold & Faulds, 2009), and on the other hand it give the brands the opportunity to share and exchange information with their consumers (Sashi, 2012). The passive position of the consumer has declined and nowadays they are also content generators, adding value to the interaction consumer–brand by collaborating and supporting business through co-creation **(**Hajli, 2014; Sashi, 2012). Consumers are also able to influence purchase decisions of others in peer-to-peer interactions (Hajli, 2014; Sashi, 2012).

Social media has significant growth, influencing consumer behavior, more specifically their awareness, and their search for information, attitudes, purchase behavior and post-purchase evaluation (Mangold & Faulds, 2009). Social media favors relationship, community building and also promotes active engagement (Hutter et al., 2013) which has stimulated brands to use them as an effective way to interact with consumers.

2.3 Social Media Marketing:

Marketing strategies is smart businesses; are employed in order to be a part of a network of people online (Williams, 2009), Business-to-consumer (B2C) where marketers are quick to realize the value of Facebook as a branding opportunity.

Today`s consumer is different from the traditional consumer. The consumer is able to go to the internet and get details about a product, interact with other consumers, access product reviews that add a different dimension of products and marketing in general. With today's customers actively engaging in social media, the world of marketing and customer service has fundamentally changed.

Customers control the conversation and willing to change a product based on the experience and will let their family and friends know about it. The information available on social media need to be curated and aggregated, otherwise the consumer will get unchecked information about the product; this where marketers come in Social Media marketing. According to Weber (2009), Marketing to the social web means to adopt a completely new way of communication with the online consumer. Instead of continuing as a broadcaster, marketers should become aggregators of customer communities. Social Media has evolved into an influential marketing channel is news to many companies and organizations (Drury 2008). The social media marketing is a process that empowers individuals and companies to promote their websites, products or services through online social channels and to communicate with and tap into a much larger community that may not have been available via traditional advertising channels. Social media platforms connect service providers, companies and corporations with a broad audience of influencers and consumers (Weinberg 2009).

Weber (2009) argues that social media marketing is not only for the largest multinational corporations. It might be even easier and more effective for a small and medium-size company to take maximum advantage of it.

2.3.1 Social media marketing dimensions:

Online Communities: A company or business can use the social media to build a community around its products/business. Vibrant communities create loyalty and encourage discussions, which can contribute towards business development and improvement (Taprial, & Kanwar, 2012).

Interaction: A Facebook page or Twitter account can notify all its followers of specific subject quickly and simultaneously. Social networking sites enable greater interaction with the online community through broadcasting up-to-date, consumer relevant information (Fischer, & Reuber, 2011).

Sharing of Content: The sharing dimension is about the extent to which an individual ex-changes, distributes and receives content in a social media setting. (Babac, 2011)

Accessibility: The social media is easily accessible and takes minimal or no costs to use. Social media is easy to use and does not require any special skills, knowledge to use. (Taprial, & Kanwar, 2012)

Credibility: It is all about delivering your message clearly to the people, establishing credibility for what you say or do, connecting emotionally with your target audience, motivating the buyer and generating loyal customers. The social media provides a very good platform for all businesses (big or small) to network and reach out to their target audience, connect with them directly and generate trust by listening to what they have to say. (Taprial, & Kanwar, 2012).

2.3.2 Measures of social media marketing:

A company can't have a direct control and telling customers what to think. However, they can listen to what customers say, measure it, and monitor progress over time.

Thus, the information can be used to modify and improve what is offered and the way it is offered in (Evans, 2008). One of the biggest challenges of any marketing strategy is measuring the effectiveness of the traditional methods of marketing. For instance; how many people actually heard the message broadcast or radio; how many actually saw a Television advert and so on. Social Media platforms helps marketers with different metrics that once computed can give a quicker and easier to work on results.

Weber (2009) presents various metrics for media influence, influence on target audience and business impact. According to him, the easiest and cheapest way to obtain is the media influences which include visits and page views, unique visitors, volume of reviews and comments, navigation paths, links history and files embedded. These metrics can be monitored, for example by using free tools like Google Analytics, Site Meter, Facebook Likes, Retweets, Tweet Reach, Technorati and Yahoo! Search Management. The influence on the company's target audience can be monitored by analyzing metrics like sentiment of reviews and comments, brand affinity, commenter authority and influence, time spent on the site, viral forwards, number of downloads, opinions expressed and number of memberships. The business impact on social media activities can be measured by monitoring the number of leads and new sales figures.

Also the customer satisfaction and loyalty measured with the help of surveys give information about the business Mangold and Faulds (2009) support the view that customers engaged with a product, service or idea are more likely to communicate through social media.

2.4 Brand Equity:

Brand Equity is defined as the difference in consumer choice between the focal branded product and an unbranded product given the same level of product features (Yoo and Donthu, 2001).

In marketing literature, "Brand Equity" tends to mean brand description or brand strength referred as "customer brand equity" in order to distinguish it from the asset valuation meaning (Wood, 2000; Atilgan et al., 2005). Hence, Brand equity is a customer's subjective and intangible assessment of the brand over and above its value (Kim et al., 2008; Lemon et al., 2001). Brand equity resides within the consumers, and not in the brand (Dillon et al., 2001).

Keller (1993, 2003a) defined customer based brand equity as "the differential effect of brand knowledge on consumer response to the marketing of the brand". Among the definitions of brand equity, most widely accepted definition is given by Aaker (1991) as "a set of brand assets and liabilities linked to a brand, its name and symbol; that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers". Brand equity can also be defined as a set of perceptions, knowledge and behavior on the part of customers that creates demand and/or a price premium for a branded product, and in other words, what the brand is worth to a customer (Tiwari, 2010).

Aaker (1991) focused on five brand equity dimensions; brand awareness, brand associations, brand loyalty, perceived quality, and other proprietary brand assets. However, Keller (1993) adopted two basic approaches (direct and indirect) to measure the customer-based brand equity. The "indirect" approach tries to assess the potential sources of customer-based brand equity by evaluating brand knowledge (i.e., brand awareness & brand image). The "direct" approach tries to measure

customer-based brand equity more directly by assessing the impact of brand knowledge on consumer response to different elements of the firm's marketing program. All the existing theories related to brand equity can be applied in social media in a similar manner because various research studies (e.g., Rios & Riquelme, 2008; Kim & Ko, 2012) found that; there is no significant difference between the development of brand equity in traditional and online mediums. Dimensions of brand equity can be further explained as follows:

1. ***Brand Loyalty****:*

Is a sense of attachment to a particular brand or company. Aaker (1991) defined brand loyalty as a situation which reflects how likely a customer will be to switch to another brand, especially when that brand makes a change, either in price or in product features.

2. ***Brand awareness:***

Aaker (1991) defined brand awareness as the ability of the potential buyer to recognize and recall that a brand is a member of a certain product category.

3. ***Perceived Quality****:*

Is the customer's perception of the overall quality or superiority of a product or service regarding to its intended purpose in comparison to other alternatives (Parasuraman & Zeithaml, 1988, Aaker, 1991).

4. ***Brand Association:***

Anything linked in memory to a brand (Aaker, 1991). Brand associations may be seen in all forms and reflect characteristics of the product or independent aspects of the product itself (Chen, 2001). Product associations and organizational associations are taken as the two mostly referred categories according to Chen's (2001) brand association typology. Associations represent basis for purchase decisions for brand loyalty, and also create value to the firm and its customers (Atilgan et al., 2005). It can be any symbol, character or word that symbolizes a specific brand, for example Nike’s “The Swoosh”.

5. *Brand Assets:*

Brand assets can be defined as something that distinguishes a specific brand from other brands such as patents, trademarks, relationship channels etc. (Aaker, 1991). The elements that drive brand equity go beyond customer associations to include a brand's business assets. These assets include, but are not limited to, intellectual properties, business processes and distribution reach (Tiwari, 2010).

2.4.1 High and Low Brand Equity

It is complicated to distinguish high equity brands to low equity brands because the concept of brand equity itself is difficult to be defined as it depends on consumers' thoughts and feelings toward the brand. Hence, brand equity differs from consumer to consumer and what may be considered as high brand equity by some people may be characterized as low equity by others. As believed by Yoo et al (2000) high prices, high investments in advertising and distribution in selected stores with a good image in great intensity are some activities that enhance brand equity.

There is a possibility of some consumers to interpret low prices as cutting costs, made by the quality of the product. Frequent use of coupons, price deals and discounts may also be considered by consumers as signals of lower quality. Moreover, consumers usually appreciate the quality of the product, not by the product itself but from the reputation of the store that they can find the product. The frequency of advertisements and the high investments of money for them can increase brand equity as well.

Taking into account, high equity brand can be characterized a brand that has high prices, distribute its product in stores with a respectable image and reputation, investing a lot of money for advertising its products in a regular base and does not follow strategies of rebates and price deals mostly.

On the contrary, as *low equity* brand can be characterized a brand that has low prices, distribute its product in stores with neutral or poor image and reputation,

invest a small amount of money to advertise its product and has a policy of using discounts and special offers frequently.

2.4.2 Measures of Brand Equity:

Aaker(1991) conceptualized brand equity as asset of five assets; Brand awareness, perceived quality, brand loyalty, brand association and other tangible proprietary brand assets. Thus captures the tangible and intangible value of brands to an organization or company. The customer based measures will capture how the consumers perceive a brand. This creates challenges in getting a standard measure.

This makes firm based brand equity a better measure where this is calculated by financial valuation. This is done by calculating the price at which a brand can be sold.

Another is to determine price premium a brand can command over an unbranded competitive product. Another measure is to measure a brand`s strength within its primary competitive set. This means you use a there part approach to determine firm based brand equity: financial analysis, determining which portion of earnings can be attributed to a brand, measuring brand strength based on internal and external components.

An alternative concept of consumer-based brand equity was developed by Keller (1993)**,** who defined "the differential effect of brand knowledge on consumer response to the marketing of the brand". Keller emphasized that brand equity should be captured and understood in terms of brand awareness and in the strength, favorability and uniqueness of brand associations that consumers hold in memory.

Thus, consumer-based brand equity (CBBE) can be understood as a concept that predicts that consumers will react more favorably to a branded product than to an unbranded product in the same category (Aaker 1991;Keller 1993; Yoo, Donthu, and Lee 2000).Weber(2009) was argued against the 'traditional way' of looking at brand equity in terms of brand recall-and instead claims contemporary, with a new marketing mindset adapted to the social media arena, brand equity thus exists and should be measured not in terms of brand recall but by dynamic measures such as customer word of mouth, online reviews among others Instead of creating brand

awareness through brand recall, it is about how likely customers are to recommend the good or service to others (Weber, 2009).

2.5 Engagement conceptualizations in the marketing literature

The concept of engagement has taken considerable attention in several academic disciplines (e.g. educational, psychology and organizational). The exploration of available marketing literature reveals the emergence of several engagement sub-forms, such as "customer engagement", "customer engagement behaviors", "consumer engagement", "customer brand engagement" as well as the more general conceptualizations of simply the "engagement" itself (Hollebeek, 2011a), although it has appeared only recently in the marketing literature (Gambetti & Graffigna, 2010; Hollebeek, 2011a, 2011b). Marketing researchers argue that engagement can entail specific subjects (e.g. users, customers, consumers) and objects (e.g. products, firms, firm activities, media channels) (Gambetti & Graffigna, 2010; Hollebeek, 2011a, 2011b; Hollebeek et al., 2014; Patterson, Ting, & De Ruyter, 2006; Van Doorn et al., 2010).

In particular, engagement is defined as "a cognitive and affective commitment to an active relationship with the brand as personified by the website or other computer-mediated entities designed to communicate brand value" and is suggested to comprise the dimensions of active, sustained, cognitive processing, attainment of instrumental value (relevance and utility), and experiential value (emotional congruence) (Mollen & Wilson, 2010).

Customer engagement was presented by Bowden (2009) as a sequential psychological process that customers move through to become loyal towards a brand. This process is suggested to model's mechanisms by which loyalty may be developed and maintained for two different types of customers – new and existing. Bowden (2009) is also discussing the distinction between customer engagement and the more traditional marketing constructs such as involvement, commitment and loyalty. It is in fact suggested that customer engagement process helps to examine the dynamic

relationships between these constructs and further the understanding of how they drive the development of customer loyalty.

Customer engagement has also been explored as a new perspective in the field of customer management (Verhoef, Reinartz, & Krafft, 2010). It has been highlighted that the emerging concept of customer engagement is highly important in the increasingly networked society. Building on the research of van Doorn et al. (2010), Verhoef et al. (2010) considers customer engagement as behavioral manifestations towards a focal object (e.g. a brand or a firm), other than purchase, resulting from motivational drivers. The concept of customer engagement behaviors implies that van Doorn et al. (2010) are focusing on the behavioral aspects of the relationship between the customer and the firm.

Some other authors have also suggested that customer engagement includes a continuum of behaviors ranging from pure voice (complaining, recommendation, word-of-mouth) to pure exit (reduced or discontinued consumption) (Hirschman, 1970). Moreover, van Doorn et al. (2010) establish a conceptual model suggesting that customer engagement behaviors are affected by customer characteristics, firm initiatives and the contextual environment. In addition, they also present a number of consequences that customer engagement behaviors bring to the firm, the society and the customer itself. Despite the customer management research mostly being focused on the transactional side of the customer-firm relationship, the non-transactional forms of behavior have also gained their share of attention recently Verhoef et al. (2010) acknowledge the importance of the impact of word-of-mouth and co-creation in particular. It has been recognized that ignoring the non-transactional behavior manifestations may have detrimental effects to the firm because of potentially wrong valuation of the customers (Kumar et al., 2010). The paper of (Kumar et al. 2010) introduces a new metric for customer valuation, where they include both the value from transactional and the non-transactional behaviors and, therefore, disagree with the view of (van Doorn et al. 2010).

2.6 Customer brand engagement (CBE):

Based on the study of Hollebeek (2011b) who presents the concept of customer brand engagement and defines it as "the level of an individual customer's motivational, brand-related and context-dependent state of mind characterized by specific levels of cognitive, emotional and behavioral activity in direct brand interactions", where the focus lies on the interactions between a specific subject (the customer) and the focal object (brand). The cognitive activity refers to the level of engrossment or concentration towards a brand, whereas the emotional and behavioral activities reflect the level of an individual's pride or inspiration and the level of energy expressed while interacting with the brand, respectively (Hollebeek, 2011b).

Just like Bowden (2009), Hollebeek (2011b) also suggests that customer brand engagement contributes to developing customer loyalty by focusing on conceptualizing the positively valence expressions of customer brand engagement. Mollen and Wilson (2010) elaborate on the concept of engagement from the perspective of online consumer experience. Building on the findings from e-learning and online marketing literature, the authors suggest that a consumer's experiential response to a website or some other computer-mediated entity comprises three experiential states including perceived interactivity, telepresence and engagement.

Brodie et al. (2011a) have derived the main themes prominent in the literature concerning customer engagement and developed a set of five fundamental propositions, which consequently provide the basis for the suggested general definition, Customer engagement (CE) is:

1) A *psychological state* that occurs by virtue of *interactive, co-creative customer experiences* with a *focal agent/object* (e.g. brand) in focal service relationships.
2) It occurs under a specific set of context-dependent conditions generating differing CE levels.
3) Exists as a *dynamic, iterative process* within service relationships that *co-create value*.

4) CE plays a *central role* in a nomological network governing service relationships in which other relational concepts (e.g. involvement, loyalty) are antecedents and/or consequences in iterative CE processes.
5) It is a *multidimensional concept* subject to a context- and/or stakeholder specific expression of relevant cognitive, emotional and/or behavioral dimensions.

Engagement can arise not only from active behaviors such as e.g. blogging, but simply receiving communication can also be viewed as interactive and co-creative, as long as these experiences are immersive Malthouse & Calder (2011). Finally, Brodi's et al. (2011a) definition also addresses the issue of differentiating customer engagement from other relational concepts and suggests that they represent the potential antecedents and/or consequences embedded in the iterative process of service relationships.

Research on CBE has focused on various underlying (and often single) components of this concept (Kaltcheva et al., 2014). Higgins (2006) and Higgins and Scholer (2009) examined the strength of engagement by focusing on its cognitive aspects, arguing that the state of engagement is characterized by a subject's interest in and involvement and occupation with an object**.** Heath (2009) explored the emotional aspects of engagement related to advertisements. Other researchers have focused on the physical aspects of engagement (e.g. Gummerus et al., 2012; Kumar et al., 2010; Van Doorn et al., 2010; Verhoef, Reinartz, & Krafft, 2010; Wallace, Buil, & de Chernatony, 2014). For example, Van Doorn et al. (2010, p. 254) posited that customer engagement behaviors could be defined as 'a customer's behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers'.

Challenging existing research perspectives, and inspired by organizational behavior research (Kahn, 1990; Schaufeli & Bakker, 2003), another group of researchers has considered CBE as a multidimensional psychological state (Algesheimer, Dholakia, & Herrmann, 2005; Brodie, Hollebeek, Juric, & Ilic, 2011; Brodie et al., 2013; Dessart et al., 2015; De Villiers, 2015; Dwivedi, 2015; Hollebeek, 2011a, 2011b; Mollen & Wilson, 2010 & Patterson et al., 2006). For example,

Hollebeek (2011a, p.555) defined CBE as 'the levels of a customer's cognitive, emotional and behavioral investment in specific brand interactions'.

The perspective adopted in this study aligns most closely with the views of Hollebeek (2011a, 2011b) and Brodie et al. (2011), as CBE is considered to be a multidimensional (emotional, cognitive and intentional) – and fluctuating – psychological state that is context dependent and process based. It is considered to generate two-way co-creating interactions between customers and brand activities. Following Van Doorn et al. (2010) and Gummerus et al. (2012), CBE was also argued to comprise engagement behavior beyond exchange (e.g. Facebook 'likes' and comments). Following the reasoning of Hollebeek et al. (2014), emotional CBE was conceptualized as the customer's degree of positive brand activity-related affect, and cognitive CBE as the customer's levels of brand activity-related thought processing and elaboration. Intentional CBE refers to a customer's interest in devoting energy, effort and time to a brand activity. Based on Van Doorn et al. (2010) and Wallace et al. (2014), behavioral CBE was conceptualized as a customer's behavioral and physical brand-related activities (i.e. Facebook 'likes' and comments).

Although researchers often focus on the positive valence of engagement, one can also be engaged negatively with a firm or a brand (i.e. negative word-of-mouth behavior in social media) (Van Doorn, 2011; Vivek et al., 2014). Few authors have discussed the valence of engagement explicitly (e.g. Hollebeek, L & Chen, 2014).

2.7 Relationship between social media marketing and brand equity:

Social media impacts on brand equity in four major ways:

(1) Social media has opened a new way of direct communication between brand and audience.

(2) Social media increases brand presence and awareness, hence influence the routine lives of the customers.

(3) Social media accelerates customer's involvement in promoting brand indirectly with its numerous content sharing functionalities.

(4) Social media helps the brand in building relationships with its audience (Babac, 2011).

Many studies were focused on the relationship between social media marketing and brand equity, where Babac (2011) provided study to examine the impact of social media usage on the brand equity of magazine brands. Building on an integrative model, which brings together classical theories of brand management and the frontiers of research in social media, this study examines one of the first magazines to incorporate social media in its marketing strategy (Babac, 2011). Also Erdogums &Cicek in their study were aimed to identify the effect of social media marketing on brand loyalty of the consumers, given that the concept is receiving increasing attention from marketing academia and practitioners. The scope of the study consists of customers who follow at least one brand on the social media in Turkey (Erdogums &Cicek, 2012). Where Odhiambo in his study was used a scientific research methodology of case study research, this study was designed to explore whether social media is more effective than the traditional media on a brand management perspective and finding the implementation challenges that make it a two-face phenomenon. (Odhiambo, 2012)

In addition to Bushelow's study was aimed to examine whether liking and interacting with a Facebook fan page has an effect on brand loyalty and purchase intentions, and Facebook fan pages create an online brand community. An analysis of 104 online survey responses indicates that interaction with fan pages is not a strong indicator of consumer brand loyalty or purchase intentions, suggesting that brand communities are not formed on the basis of liking a page (Bushelow, 2012). The Perdue study presents the principles of social media marketing by explaining the social media phenomenon, detailing how to create and capture value with social media, and discussing the process of formulating a social media marketing strategy. The overall relationship of the Impact of social media on consumer buying behavior and brand commitment has been empirically analyzed and resulted.

2.8 Relationship between customer engagement and social media:

Internet is an open, highly cost-effective and far reaching global network, which helps reducing or even eliminating the barriers of geography and distance (Sawhney, Verona, & Prandelli, 2005). In the physical world, businesses often face the trade-off

between the richness and the reach of their communication. That is, a rich dialogue with a customer requires personal interaction and physical proximity, which means that there are only a limited number of customers the firm can communicate with it in the most effective manner. Internet, however, allows the firms to overcome these constraints and reach a much larger number of customers without having to lose on the richness of the communication too much.

The emergence and rise of new social media channels in the recent years enabled the customers to increasingly participate in the new forms of customer/firm interaction processes. Discussion forums, chat rooms, email, bulletin boards, blogs and social networks are just some of the tools that facilitate interactive customer experiences, that may eventually also foster the development of customer engagement with the specific brands (Brodie et al., 2011b). Hollebeek (2011b) also recognizes the importance of customer engagement in the so called Web 2.0 applications, which are designed in a way that enables them to aggregate the information from their user base in order to expand their content as well as value (Wilkins, 2007). Some practitioners even refer to customer engagement as the Holy Grail in the context of online marketing (Mollen & Wilson, 2010). One of the main reasons behind the suggested importance of the concept lies in the definition of Web 2.0 and the fact that this kind of setting would not persist without the user-generated content, which in turn requires users to be engaged in the new media. Not surprisingly, this specific sub-form of engagement has also gained attention among the researchers. For instance, Cheung et al. (2011**)** have initiated a study exploring customer engagement in online social platforms.

Other authors have defined it as "the level of a customer's physical, cognitive, and emotional presence in connections with a particular online social platform". The conceptual model developed suggests that customer engagement in an online social platform is a construct comprising vigor (level of energy and mental resilience), absorption (level of concentration and engrossment) and dedication (sense of significance, enthusiasm, inspiration, pride and challenge) towards the online social platform, which are driven by involvement and social interaction. The consequences

reflected in the model exhibit, the authors‟ belief that customer engagement will have a positive effect on online social platform participation and word-of-mouth communication about the platform (Cheung et al., 2011). The study by Cheung et al. (2011) is expected to contribute highly to the existing knowledge about social media engagement by providing a validated measurement scale for customer engagement in online social platforms. However, the research is still in progress and no results have been published to date. Thus, even though the new media presents a number of significant opportunities and challenges for researchers and practitioners (Hennig-Thurau et al., 2010), most of the existing researches are primarily conceptual or qualitative (Cheung et al., 2011**).**

2.9 The relationship between customer brand engagement and brand equity:

Many authors addressed the term customer engagement with some behavioral, emotional and customers cognition efforts or commitment. (Hollebeek, 2011) while analyzing customer brand engagement, distinguishes cognitive, affective and behavioral engagement dimensions. At the first consumer gets familiar with a brand, which later evokes some particular emotions that could be positive or negative, and eventually these emotions stimulate the consumer to act, i.e., the consumer is not a passive user, but an active participant, who gives some input into brand value creation. According to (Higgins E. T., 2009), the more consumers are engaged, the bigger value is created.

With reference to brand equity dimensions, proposed by Aaker (1991) - familiarity, perceived quality, associations and brand loyalty – (Boyle, 2007) identifies 5 stages of consumer engagement in brand equity creation:

1) The development of a new product with unique perceived product attributes.

2) The creation of brand awareness through marketing and other communications.

3) Consumer interpretation of marketing and other communications to form pre- consumption brand association.

4) Consumption of the product and the formation of post-consumption associations.

5) Repurchase and the intensifying perception of unique benefits leading to brand loyalty.

Based on existing research results, it can be concluded that consumers could actively participate in brand value creation through engagement into the process of new product and brand marketing communications creation, and brand buying behavior.

Study of the factors that influence engagement behavior, (Van Doorn, Lemon, Mittal, Nass, Pick, Pirner & Verhoef, 2010) were oriented to the research of consumer motivation and company's efforts to involve consumers. The research on consumer motivation was mostly related to personal consumer characteristics, among which customer awareness, perceived role clarity, customer ability and willingness of the customers to participate are distinguished as the most important factors, influencing consumer engagement. In group of company's efforts to involve consumers, the main factors are: organizational socialization techniques; help for the customer to understand what its expectations are, developing its customers' ability to participate, and motivation of the customer to participate (Kuvykaitea & Piligrimiene, 2014).

2.10 The mediating effect of Customer Engagement between social media and brand equity:

Studies suggested that customer engagement (CE) is a strategic imperative for generating enhanced customer loyalty (Patterson et al., 2006; Bowden, 2009) and brand equity (Passikoff & Schultz, 2007). Simon and Sullivan (1993) identified marketing communications as one of the driving source of brand equity. Yoo et al. (2000) stated that marketing communications exert a positive influence on perceived brand quality as well as on brand loyalty, brand associations, and brand awareness. 'Watching', 'sharing' and 'commenting' in social media brand communities generate high brand awareness and strong associations with brand (i.e. brand image) (Zailskaite-Jakste & Kuvykaite, 2012).

In online travel context, factors that impact the formation of effective brand equity are website interactivity (Riquelme, 2001), brand image, and brand awareness (Hsu et al., 2012). Barreda (2014) found that website interactivity positively affects

brand knowledge (brand awareness and brand image), and, subsequently, brand equity. Hence, customer engagement in social media with effective website interactivity generates positive word of mouth (PWOM) by satisfied and delighted customers, which in turn creates brand knowledge (brand awareness and brand image) among other consumers, and ultimately leads to brand equity.

Since positive word of mouth (PWOM) in social media helps in mitigating the perceived risk about the brand (Ghosh et al., 2013), so, we assume that PWOM in social media effect on the perceived quality positively (i.e. customer's perception of the overall quality) of the brand. Similarly, brand association is a specific perception, may be real or imagined, that a customer has about a product, service or organization (Tiwari, 2010), it would also be has positive affect by PWOM spread by consumers as a result of customer engagement in social media. PWOM in social media would also upsurge the valuation of intellectual properties, patents, trademarks, relationship channels about the brand because PWOM improve the brand image, so, these brand assets would also be positively affected by customer engagement in social media.

Similarly, Customers who are dissatisfied with the brand as result of bad experience with the product, service or firm may share negative feelings in the form of negative word of mouth (NWOM) in social media, or may seek legal or regulatory action for relief (Van Doorn et al., 2010). Larivière et al. (2013) highlighted it as negative value fusion due to the negative consequences experienced by consumers. Customers may tweet about a negative experience without formulating a complaint directly to the firm itself. In such situation, consumers are disengaged with the firm and takes U-turn to involve in disengagement activities such as sharing negative word of mouth (NWOM), creating anti-brand communities in social media etc. In this regard, dimensions of brand equity would be negatively impacted by negative word of mouth in social media.

CHAPTER THREE

3. Theoretical frame work & research methodology

3.1 chapter overview:

The main goals of this chapter is to describe how the hypothesis developed and the research method that will be followed and also the data collection method. Moreover, the way that the questionnaire was created will also be illustrated. Through the methodology chapter, the population and sampling techniques will be discussed, and the method that the primary and secondary data were collected will also be analyzed.

3.2 Theoretical frame work:

As stated earlier, brand equity may affect the user's intention to engage in brand's Social Media activities. Moreover, customer-brand engagement may also be mediator between brand equity and Social Media.

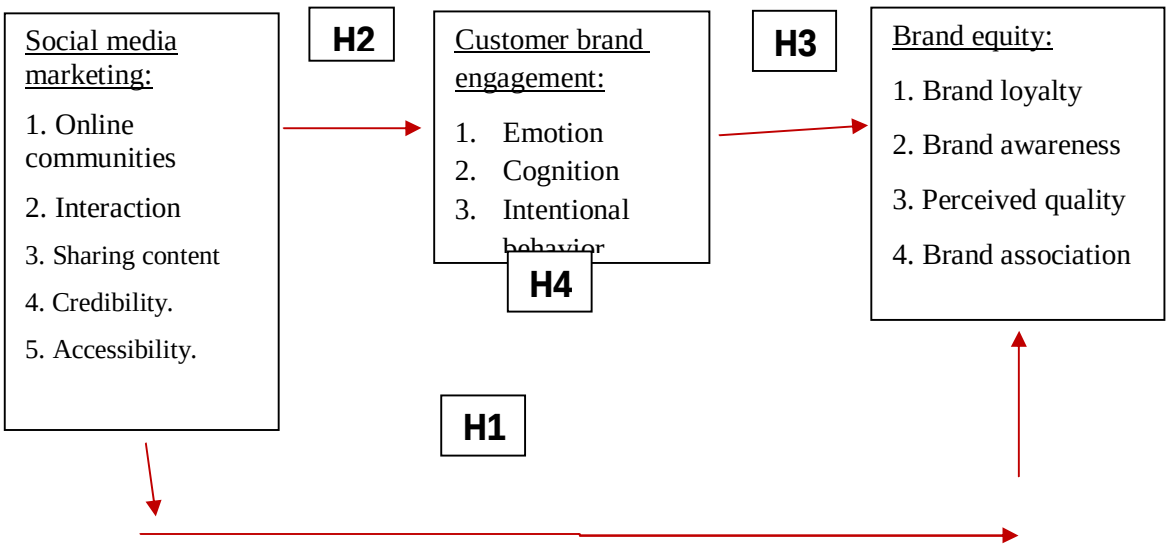


Figure (3.1) Research model

3.3 Hypothesis development:

As mentioned in the previous chapter of literature review or the previous studies the research can develop the hypothesis based on this studies and what they found.

Many research studied the relationship of social media on brand equity as in Babac study examines the impact of social media use on the brand equity of magazine brands. Building on an integrative model, which brings together classical theories of brand management and the frontiers of research in social media (Babac, 2011). Other research in same area was Syed, Z. et al (2016) who analyze the impact of social media on brand equity his model establishes the relationships based on literature survey and conceptual understanding and proposes a positive relationship between the use of social media marketing and value of firm through brand equity and customer value. So our assumed hypothesis will be:

H1: There is a positive relationship between social media marketing and brand equity.

In the other hand there is a conceptual model developed suggests that customer engagement in an online social platform is a construct comprising vigor (level of energy and mental resilience), absorption (level of concentration and engrossment) and dedication (sense of significance, enthusiasm, inspiration, pride and challenge) towards the online social platform, which are driven by involvement and social interaction. The consequences reflected in the model exhibit the authors‟ belief that customer engagement will have a positive effect on online social platform participation and word-of-mouth communication about the platform (Cheung et al., 2011), depend on that our hypothesis is:

H2: There is a positive relationship between social media marketing and customer-brand engagement

Previous studies suggested that customer engagement (CE) is a strategic imperative for generating enhanced customer loyalty (Patterson et al., 2006; Bowden, 2009) and brand equity (Passikoff & Schultz, 2007).

Simon and Sullivan (1993) identified marketing communications as one of the driving source of brand equity. Yoo et al. (2000) stated that marketing communications exert a positive influence on perceived brand quality as well as on brand loyalty, brand associations, and brand awareness. 'Watching', 'sharing' and 'commenting' in social media brand communities generate high brand awareness and strong associations with brand (i.e. brand image) (Zailskaite-Jakste & Kuvykaite, 2012).). Also Barreda (2014) found that website interactivity positively affects brand knowledge (brand awareness and brand image), and, subsequently, brand equity. Based on this we put our hypothesis in such form:

H3: there is a positive relationship between customer-brand engagement and brand equity

Customer engagement in social media with effective website interactivity generates positive word of mouth (PWOM) by the satisfied and delighted customers, which in turn creates brand knowledge (brand awareness and brand image) among other consumers, and ultimately lead to brand equity.

Since, positive word of mouth (PWOM) in social media helps in mitigating the perceived risk about the brand (Ghosh et al., 2013), so, we assume that PWOM in social media positively affect the perceived quality (i.e. customer's perception of the overall quality) of the brand. Similarly, brand association is a specific perception, may be real or imagined, that a customer has about a product, service or organization (Tiwari, 2010), it would also be positively affected by PWOM spread by consumers as a result of customer engagement in social media.

H4: customer-brand engagement has mediating effect on the relationship between social media and brand equity.

3.4 Research methodology

3.4.1 Research Design

Research design gives a framework or blueprint for the study and it suggest to make observations and analysis them.

Business research method can be categorized on the either function basis or technique basis. However, based on function, there are three kind of research including exploratory, descriptive and casual studies. This study employed a descriptive design using a cross-sectional sample survey. In my study, I investigate different variables effects on brand equity. A survey was administered to a selected sample from a population of undergraduate students of different universities.

The term 'survey' is commonly applied to a research methodology designed to collect data from a specific population, or a sample from that population, and typically utilizes a questionnaire or an interview as the survey instrument (Robson, 2002).

3.4.2 Population

According to Hair *et al.* (2010), target population is said to be a specified group of people or object for which questions can be asked or observed made to develop required data structures and information. Therefore, for this study, the target populations were under graduates students in different universities in Khartoum state.

3.4.3 Sampling

In a survey, in order the sampling to be chosen two techniques can be followed: the probability or representative sampling and the non-probability or judgmental sampling (Saunders et al, 2009). The probability samples include all the conditions that can occur within a population while non-probability samples consist of the most appropriate sample in the opinion of the researcher. Additionally, a non-probability sampling technique has been used for this survey. More precisely, a convenience sampling was used for the goals of this research.

3.4.4 Pilot Study

Before the publication to the participants, the questionnaire was pilot-tested. In this way, it could be ensured that respondents would experience no problems understanding the questions or any kind of difficulties when conducting the survey. Fifteen pilot participants were asked to fill in the pilot questionnaire in order to give opinions and provide a feedback. The pilot participants were kindly asked to fill in the questionnaire and pay attention to the questions and their meanings and the easiness of the answers. All fifteen responses were extremely helpful to improve the final version of the questionnaire.

3.4.5 Data collection & Questionnaire design

The primary data was gathered particularly using survey questionnaire. The researcher distributed the questionnaire to sampled respondents. For the purpose of this study a quantitative methodology involving a close-ended questionnaire was used as the measuring instrument. The close-ended questionnaires can be administered to groups of people simultaneously, since they are less costly and less time consuming than other measuring instruments. The Likert-type scale method used a range of responses: 'strongly disagree', 'disagree', 'Neutral', 'Agree', and 'Strongly Agree', with a numeric value of 1-5, respectively. The usage of this particular scaling method ensured that the research study illustrated the ability to assess the responses and measure the responses quantifiably so that a pattern or trend may be produced in order to asses' research hypothesis.

3.4.6 Measurements of variables:

Table 3.1 Measures of social media marketing

Measures of social media marketing	Source
online communities:	(As'ad & Alhadid, 2014; Zai, 2015)
1. Brands allows direct user input or posting to site.	
2. Is online community is useful for gathering various information about the product or the brand.	
3. At least some of members of the brands online community know me.	
***Interaction*:**	
1. It is possible to add or invite more friends to the brand online community.	
2. It is possible to exchange opinions or conversation with other users through the brands social media.	
3. It is possible to do two way interaction between administrator and user through the brands social media.	
4. It is possible to share information with other users through brand's social media.	
sharing of content:	
1. I would like to pass out information on brands, products, or services in the form of picture, video, or status update from brands social media to my friends.	
2. I would like to upload contents in the form of picture, video, or status update from brand's social media on my micro blog or other social media profile.	
3. I would like to share opinion in the form of picture, video, or status update on brands, product, or services acquired from brand's social media with my acquaintances.	
4. I would like to receive content in the form of picture, video, or status update about brands, products, or services from brand's social media.	
accessibility:	
1. It is easy to access the brand's social media site.	
2. It is easy to participate in the brand's social media site.	
3. I do not have to spend cost to participate in brand's social media	
credibility:	
1. I trust the information obtained from brand's social media site.	
2. Brand's social media provides clear information about its brands, products, or Services.	
3. I feel that I have emotional bond with the brand by acquiring the information from its social media site.	

Table 3.2 Measures of brand equity

Measures of brand equity	**source**
Brand loyalty: 1. I regularly refer this particular product/brand through the social media.	Erfan S., Kwek C. & Amir N. (2014)
2. I usually use this product/brand as my first choice in comparison with the other product/brand.	
3. I would recommend this product/brand to others through the social media.	
4. I will not switch to another product/brand that appeared in the social media next time.	
5. I am satisfied with product/brand that appeared in the social media.	
Brand awareness 1. I aware this particular product/brand that appeared in the social media.	
2. I can recognize this particular product/brand in comparison with the other competing product/brand that appeared in the social media.	
3. I know how this particular product/brand looks like. Some characteristics of the particular product/brand that appeared in the social media come to my mind quickly.	
4. I can quickly recall symbol or logo of the particular product/brand that appeared in the social media.	
Brand associations 1. This particular product/brand that appeared in the social media has its own personality.	
2. This particular product/brand is different in comparison with the other competing product/brand that appeared in the social media.	
3. I trust the company who owns the particular product/brand that appeared in the social media.	
4. This particular product/brand that appeared in the social media is familiar to me.	
5. There are reasons to buy this particular product/brand over the competing product/brand that appeared in the social media.	
Perceived quality: ***1.*** The Webmaster provides prompt services at the promised time.	
2. The Webmaster handles customer complained effectively.	
3. The Webmaster is able to tell patrons exactly when the services would be performed.	
4. The Webmaster gives individual customer attention	

Table 3.3 Measures of customer brand engagement

Measures of customer brand engagement	sources
Emotion:	(Hollebeek et al., 2014; Solem & Pedersen, 2015).
1. I am passionate about this brand	
2. This brand inspires me	
3. I am excited when browsing on and interacting with this brand on social media	
4. I am enthusiastic about this brand	
Cognition**:**	
1. This brand post evoked my interest.	
2. Anything related to this brand grabs my attention.	
3. I pay a lot of attention to anything about the brand pages in social media	
4. I like to learn more about the brand in social media	
Behavioral intention	
1. I really would like to comment on this post.	
2. I really would like to share this post with others	
3. This post was so special that I would share it with others.	
5. I love participating in brand's social media with my friends.	

CHAPTER FOUR

4. DATA ANALYSIS AND FINDINGS

4.1 Chapter overview

This chapter shows the process through which the data that was collected from students represents various categories in Sudan was analyzed to presents the findings. The chapter was organized into four sections. The first section concerns with data cleaning, response rate, and the characteristics of both firms and respondents, followed by the goodness of measures which discusses the validity and reliability of the measurement. The third section shows the descriptive analysis of the study variables. The last section focuses on the results of path analysis and hypotheses testing.

4.2 Data Cleaning

Data cleaning deals with detecting and removing errors and inconsistencies from data in order to improve the quality of data. The need for data cleaning is centered on improving the quality of data to make them “fit for use” by users through reducing errors in the data and improving their documentation and presentation (Chapman, 2005).

Data quality problems are present in single data collections due to misspellings during data entry, missing information or other invalid data. When multiple data sources need to be integrated, or analysis programs need to be used, the need for data cleaning increases significantly. Thus in this study data cleaning is used to manipulates missing data, unengaged responses, and outliers.

4.2.1 Missing Data

Missing data is common and always expected in the process of collecting and entering data due to lack of concentration and/or the misunderstanding among respondents, and missing information or other invalid data during the entry of data. Missing data can cause several problems. The most apparent problem is that there simply won't be enough data points to run the analysis and particularly in structural equation model (SEM).

Both exploratory and confirmatory factor analysis and path models require a certain number of data points in order to compute estimates. Additionally, missing data might represent bias issues. Some people may not have answered particular questions in survey because of some common issue. If missing data is more than 10% of the responses on a particular variable, or from a particular respondent, that variable or respondent may be problematic. In this study the proportion of missing data is lower than 10% therefore there no need to remove any of responses.

4.2.2 Unengaged responses

Unengaged responses means some responses giving same answer for all the questionnaire it seems to be random answers , in this case we use standard deviation to find out any unengaged response this means that any standard deviation of responses less than 0.5 when Likert's five point scale is used just deleted. Therefore in this study 24 questionnaires was found to have standard deviation less than 0.5 and they were excluded from data analysis. Table 5.1 shows the unengaged response.

Table 4.1Unengaged responses

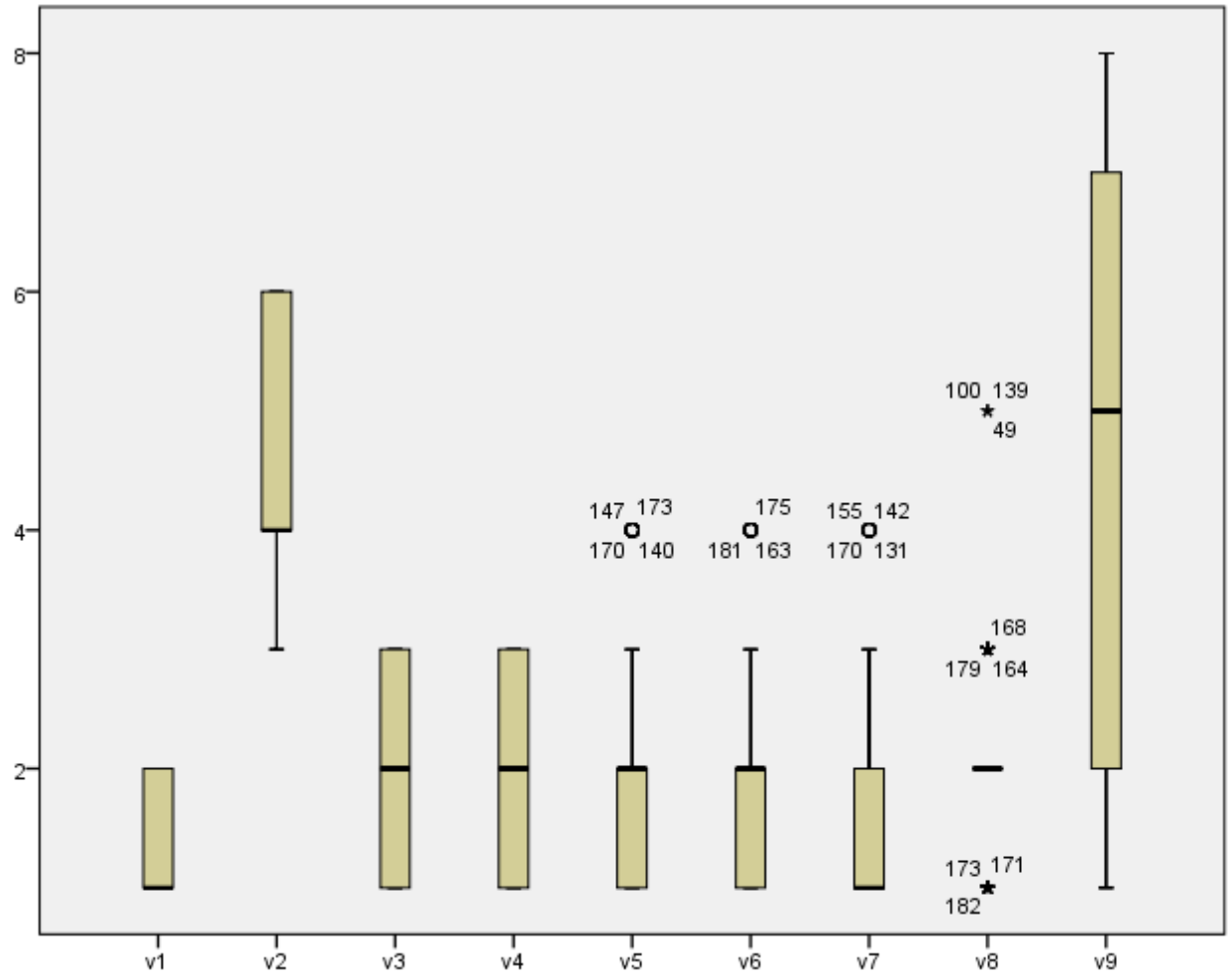
Total Questionnaires	**138**
Unengaged responses	**60**

Source: prepared by researcher 2017

4.2.3 Outliers

It's very important to check outliers in the dataset. Outliers can influence the results of analysis. If there is a really high sample size, the need for removing the outliers is wanted. If the analysis running with a smaller dataset, you may want to be less liberal about deleting records However, outliers will influence smaller datasets more than largest ones. However in this dataset outliers were checked as showed in figure 5.1 but no change was made because it is seemed logic to find some of the employees are extreme in their ages and gender among all the respondents of the study.

Figure 4.1 Outliers



4.3 Response rate

It was well known that most of the population of this study was the under graduated students located in Khartoum area. The researcher employed convenient sample where self-administrated survey was used to distribute 200 questionnaires to the students across the four universities, given that to fill the questionnaire. The survey started on the 15 of December 2016 and by the end of December 2016 a total of 195 out of 200 questionnaires received from respondents, the overall response rate was 97.5% this was considered as high rate due to questionnaires given one by one to respondents and in researches used a self–administrated survey (Sekaran, 2003).

Those who didn't responded to fill the questionnaire were not transparent in their justifications. Below is Table (4.2) to shows the summary of questionnaire response rate.

Table (4.2**) Response rate of questionnaire**

Total distributed questionnaires	**200**
Total questionnaires received from respondents	**198**
Valid questionnaires received from respondents	**138**
Partially filled questionnaires	**-**
Invalid questionnaires	**60**
Not filled-up questionnaires	**-**
Questionnaires not received	**2**
Overall response rate	**97.5%**
Useable response rate	**69%**

Source: prepared by researcher from data (2017)

4.4 Profile of the responded individuals and respondents

Based on the descriptive statistics using the frequency analysis this part investigates the profiles of students who participated in the survey on the light of the demographic variables gender, age , participations in social media , browsing rate of social network , common social networks subscribed , more favorable sites , the goal of browsing and brands categories. The SPSS output presented shows that (60.1%) of the responded were males, where (39.1%) were females, and (32.6%) of participation in social media were less than five years, (30.4%) were from five to ten years and (37%) were participated for more than ten years. The browsing rate was (44.9%) browsing daily, (33.3%) browsing weekly, (11.6%) browsing monthly and finally (10.1%) were rarely browsing.

Concerning the common social networking sites that they were subscribed almost half of responded were subscribed on Facebook (44.2%), where Twitter are (31.9%), and You tube (13%), and Instagram (10.9%).

The majority of the responded there favorable sites Facebook (55.8%) while Twitter (22.5%), and the You Tube (14.5%), the less favorable was Instagram (7.2%). The goal of the browsing came like this (55.1%) for gaining knowledge and experience exchange, (20.3%) acquaintance, (22.5%) shopping and (2.2%) all of the pervious. (23.9%) from brands categories are electronics, (23.2%) perfumes and make up,(13%) fashions, (9.4%) restaurants and café, telecommunication (14.5%) and (2.2%) for cars and (13.8%) others. Below is table (4.3) to presents the descriptive analysis for demographic variables.

Table (4.3) frequency tables:

Statistics										
		gender	**Age**	**Position**	**participation in social media**	**Browsing rate of SN**	**Common SNS you subscribed**	**More favorable sites**	**The goal of your browsing**	**Brands categories**
N	Valid	138	138	138	138	138	138	138	138	138
	Missing	0	0	0	0	0	0	0	0	0

Gender					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	male	84	60.9	60.9	60.9
	female	54	39.1	39.1	100.0
	Total	138	100.0	100.0	

participation in social media					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Less than 5 years	45	32.6	32.6	32.6
	5-10 years	42	30.4	30.4	63.0
	More than 10 years	51	37.0	37.0	100.0
	Total	138	100.0	100.0	

Browsing rate					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	62	44.9	44.9	44.9
	weekly	46	33.3	33.3	78.3
	monthly	16	11.6	11.6	89.9
	Rarely	14	10.1	10.1	100.0
	Total	138	100.0	100.0	

Common social networking sites you subscribed					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Facebook	61	44.2	44.2	44.2
	Twitter	44	31.9	31.9	76.1
	YouTube	18	13.0	13.0	89.1
	Instagram	15	10.9	10.9	100.0
	Total	138	100.0	100.0	

favorable sites					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Facebook	77	55.8	55.8	55.8
	twitter	31	22.5	22.5	78.3
	YouTube	20	14.5	14.5	92.8
	Instagram	10	7.2	7.2	100.0
	Total	138	100.0	100.0	

The goal of your browsing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Acquaintance	28	20.3	20.3	20.3
	Knowledge and experience exchange	76	55.1	55.1	75.4
	Shopping	31	22.5	22.5	97.8

	All of the above	3	2.2	2.2	100.0
	Total	138	100.0	100.0	

Brands categories					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fashion	18	13.0	13.0	13.0
	Perfumes\ make up	32	23.2	23.2	36.2
	Restaurant\ Café'	13	9.4	9.4	45.7
	Cars	3	2.2	2.2	47.8
	Electronics	33	23.9	23.9	71.7
	telecommunication	20	14.5	14.5	86.2
	Others	19	13.8	13.8	100.0
	Total	138	100.0	100.0	

Source: prepared by researcher from data (2017)

4.5 Goodness of measures

This section, reports the results of validity and reliability tests as a means to assess the goodness of measure in this study constructs (Sekaran, 2003). The study used exploratory factor analysis (EFA) and (CFA) confirmatory factor analysis. The following are the detailed information of each

4.5.1 Exploratory factor analysis (EFA)

Exploratory Factor Analysis (EFA) is a statistical approach for determining the correlation among the variables in a dataset. This type of analysis provides a factor structure (a grouping of variables based on strong correlations). In general, an (EFA) prepares the variables to be used for cleaner structural equation modeling (SEM). This means the (EFA) will be able to spot problematic variables much more easily than the (CFA). Therefore this study used exploratory factor analysis for testing the validity and uni-dimensionality of measures to all variables under study, followed the assumptions recommended by (Lowry, 2014)as follow:

- There must be a clean pattern matrix.
- Adequacy.
- Convergent validity.
- Discriminant validity.
- Reliability.

Fifty five items was used to measure the model variables were subjected to exploratory factor analysis using principal component, the summary of results was showed in Table (4.4). As shown in Table (4.4) below all the remaining items has more than recommended value of at least 0.45 in measure of sample adequacy (MSA) with (KMO) value of 0.903 (above the recommended minimum level of 0.60), and Bartlett's test of sphericity is significant ($p<.01$). Thus, the items are appropriate for factor analysis.

Table (4.4) EFA: for Social Media Marketing:

Pattern Matrix[a]					
	Component				
	1	2	3	4	5
At least some of members of the brands online community know me.	.813				
It is possible to add or invite more friends to the brand online community.	.877				
It is possible to do two way interaction between administrator and user through the brands social media.	.637				
I would like to pass out information on brands, products, or services in the form of picture, video, or status update from brands social media to my friends			.943		
I would like to upload contents in the form of picture, video, or status update from brand's social media on my micro blog or other social media profile			.890		
It is easy to participate in the brand's social media site.		.614			
I do not have to spend cost to participate in brand's social media		.897			
I trust the information obtained from brand's social media site.		.775			
Brand's social media provides clear information about its brands, products, or Services.					.841
I feel that I have emotional bond with the brand by acquiring the information from its social media site.					.802
I find the social media sites full of meaning and purpose				.868	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy					.645
Bartlett's Test of Sphericity					626.959
Total Variance Explained					72.803

Source: prepared by researcher from data analysis (2017)

EFA for ***Brand Equity***

	1	2	3	4	5	6
I regularly refer this particular product/brand through the social media.			.815			
I usually use this product/brand as my first choice in comparison with the other product/brand.			.769			
I would recommend this product/brand to others through the social media			.666			
I will not switch to another product/brand that appeared in the social media next time.						.742
I aware this particular product/brand that appeared in the social media.						.834
I can recognize this particular product/brand in comparison with the other competing product/brand that appeared in the social media.						.518
Some characteristics of the particular product/brand that appeared in the social media come to my mind quickly.		.654				
I can quickly recall symbol or logo of the particular product/brand that appeared in the social media.		.773				
This particular product/brand that appeared in the social media has its own personality.		.792				
This particular product/brand is different in comparison with the other competing product/brand that appeared in the social media	.816					
I trust the company who owns the particular product/brand that appeared in the social media	.905					
This particular product/brand that appeared in the social media is familiar to me.					.750	
There are reasons to buy this particular product/brand over the competing product/brand that appeared in the social media.					.850	
The Webmaster provides prompt services at the promised time.				.648		
The Webmaster handles customer complained effectively				.921		
The Webmaster is able to tell patrons exactly when the services would be performed.				.596		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy						.634
Bartlett's Test of Sphericity						699.963
Total Variance Explained						66.682

EFA for Customer-brand Engagement

Pattern Matrix[a]			
	Component		
	1	2	3
I am passionate about this brand	.945		
This brand inspires me	.812		
This post was so special that I would share it with others.	.604		
I love participating in brand's social media with my friends.	.546		
This brand post evoked my interest.		.897	
I am enthusiastic about this brand		.847	
Anything related to this brand grabs my attention.		.780	
I really would like to comment on this post.			.942
I like to learn more about the brand in social media			.835
Kaiser-Meyer-Olkin Measure of Sampling Adequacy			.701
Bartlett's Test of Sphericity			679.005
Total Variance Explained			70.886

Source: prepared by researcher from data analysis (2017)

4.5.2 Convergent validity for mediator variable: -

Convergent validity means that the variables within a single factor are highly correlated. This is evident by the factor loadings. Sufficient/significant loadings depend on the sample size of dataset.

The table below (4.5) outlines the thresholds for sufficient/significant factor loadings. Generally, the smaller the sample size, the higher the required loading.

Table (4.5) thresholds for sufficient/significant factor loadings

Sample size	Significant factor loadings
50	0.75
60	0.70
70	0.65
85	0.60
100	0.55
120	0.50
150	0.45
200	0.40
250	0.35
350	0.30

***Source**: adopted from (Gaskin, 2017)*

Since the sample size used in analysis for this study was 138, therefore the sufficient factor loading was 0.45 as shown above in Table (4.15) of the factor structure for (EFA) indicating sufficient convergent validity of the measurement instrument.

4.5.3 Discriminant validity

Discriminant validity refers to the extent to which factors are distinct and uncorrelated. The rule is that variables should relate more strongly to their own factor than to another factor. Two primary methods exist for determining discriminant validity during an (EFA). The first method is to examine the rotated component matrix instate of pattern matrix when principle component used. Variables should load significantly only on one factor. If cross loading do exist (variable loads on multiple factors) then the cross loading should differ by more than 0.2. The second method is to examine the factor correlation matrix. The correlation between factors should not exceed o.7. The following Table (4.6) shows the Discriminant validity.

Table (4.6) Mediator (customer brand engagement)

Component Correlation Matrix		
Component	1	2
1	1.000	.313
2	.313	1.000

Table (4.6) Dependent variable (brand equity)

Component Correlation Matrix						
Component	1	2	3	4	5	6
1	1.000	.317	.299	.183	.099	.153
2	.317	1.000	-.039	.014	.090	.130
3	.299	-.039	1.000	.205	-.036	.068
4	.183	.014	.205	1.000	.096	-.082
5	.099	.090	-.036	.096	1.000	.065
6	.153	.130	.068	-.082	.065	1.000
Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.						

Table (4.6) Independent variable (social media marketing)

Component Correlation Matrix				
Component	1	2	3	4
1	1.000	-.070	.049	.185
2	-.070	1.000	.352	-.069
3	.049	.352	1.000	-.136
4	.185	-.069	-.136	1.000
Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.				

Source: prepared by researcher from data analysis (2017)

4.5.4 Reliability Analysis

This study used Cronbach's alpha as diagnostic tool to assess the degree of internal consistency between multiple measurements of variables. (Hair et al, 2010) stated that the lower limit for Cronbach's alpha is 0.70, although it may decrease to 0.60 in exploratory research. While (Nunnally, 1978) considered Cronbach's alpha values greater than 0.60 are taken as reliable. Given that Cronbach's alpha has being the most widely used measure (Sharma, 2000).

Table (4.7) presents the summary of the results for reliability analysis. Confirmed that all the scales display the satisfactory level of reliability (Cronbach's alpha exceed the minimum value of 0.60). Therefore it can be concluded that the measures have acceptable level of reliability.

Table (4.7) Reliability for study variables after EFA

Variable	*N of items*	*Alfa*
Online communities	*3*	*.720*
Accessibility	*3*	*.651*
Sharing of content	*2*	*.832*
credibility2	*2*	*.765*
Credibility	*2*	*.570*
Brand association2	*2*	*785*
Brand association	*3*	*619*
Brand Loyalty	*3*	*.606*
Perceived Quality2	*3*	*.636*
Perceived Quality	*2*	*.696*
Brand awareness	*3*	*.525*
Behavioral intention	*4*	*.784*
Emotion	*3*	*.809*
Cognition	*2*	*.772*

Source: prepared by researcher from data analysis (2017)

4.5.5 Confirmatory factor analysis

Confirmatory Factor Analysis (CFA) is the next step after exploratory factor analysis to determine the factor structure of dataset. In the (EFA) we explore the factor structure (how the variables relate and group based on inter-variable correlations); in the (CFA) we confirm the factor structure we extracted in the (EFA). All the items in Table (4.4) were used to conduct confirmatory factor analysis with maximum likelihood and promax. Thus, the clean pattern matrix showed that items (Sca1, Cp4, Cp5, Inn4, IG4, IG5) were deleted because of their low standardized regression weight (less than .650), as a result of deleting these items the correlation between factor four and five, factor nine and seven, and factor seven and eight which presented in Table are decreased to less than 0.7. Given that the composite reliability was improved. Figure 4.2 presents the result of confirmatory factor analysis represented by path diagram.

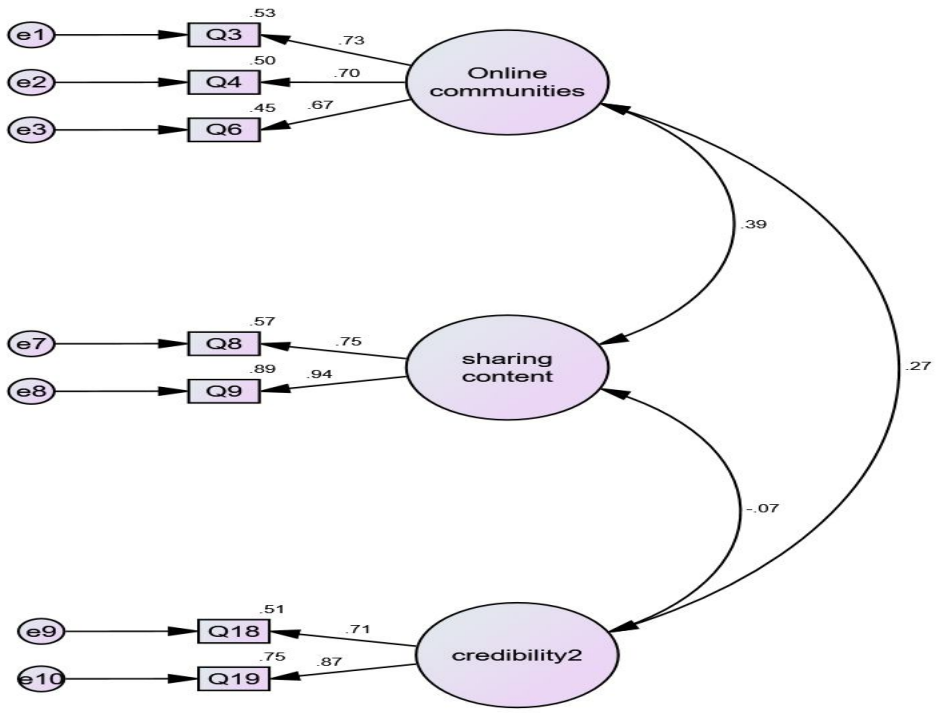
4.5.6 Model fit

Model fit refers to how well the proposed model accounts for the correlations between variables in the dataset. If the accounting for all the major correlations inherent in the dataset (with regards to the variables in the model), then the model will have a good fit. If not, then there is a significant "discrepancy" between the correlations proposed and the correlations observed, and thus have poor model fit. There are specific measures that can be calculated to determine goodness of fit. The thresholds listed in the table (4.8) below are simply a guideline.

Confirmatory factor analysis

Confirmatory Factor Analysis (CFA) is the next step after exploratory factor analysis to determine the factor structure of dataset in this section provided CFA to Social media marketing

Figure (4.2) Path diagram for independent variable (Social media marketing)

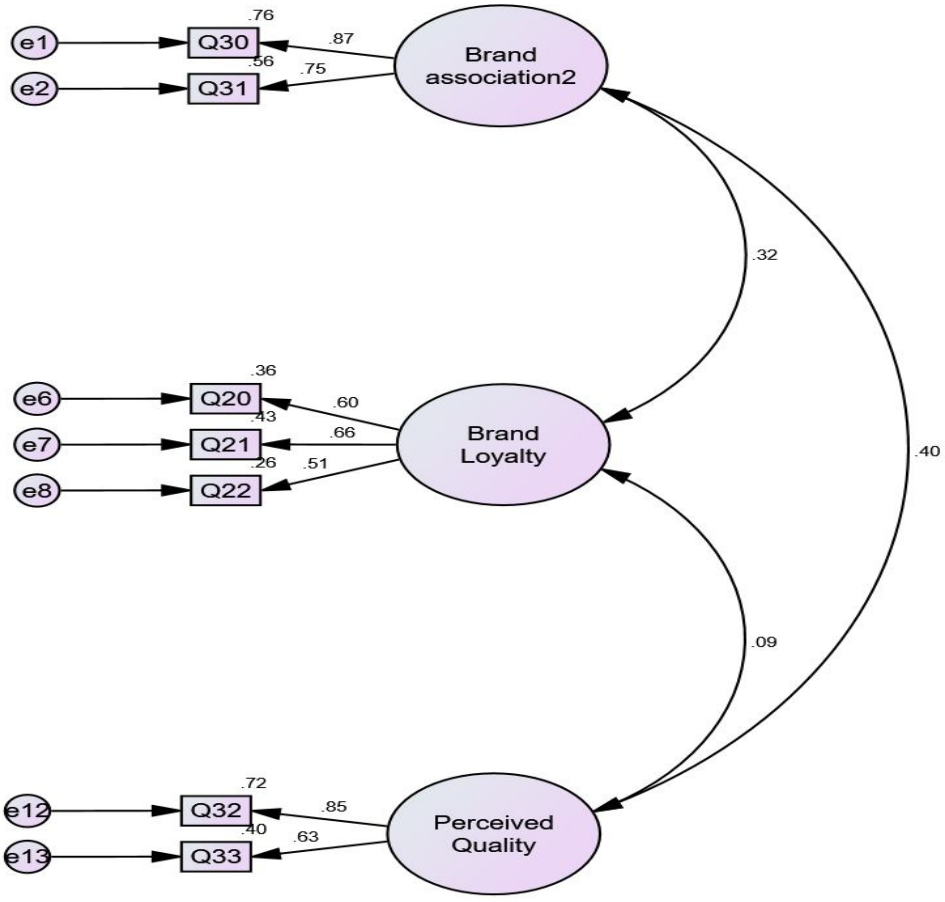


Source: prepared by researcher from data analysis (2017)

Confirmatory factor analysis

Confirmatory Factor Analysis (CFA) is the next step after exploratory factor analysis to determine the factor structure of dataset in this section provided CFA to brand equity.

Figure (4.3) Path diagram for dependent variable (brand equity)

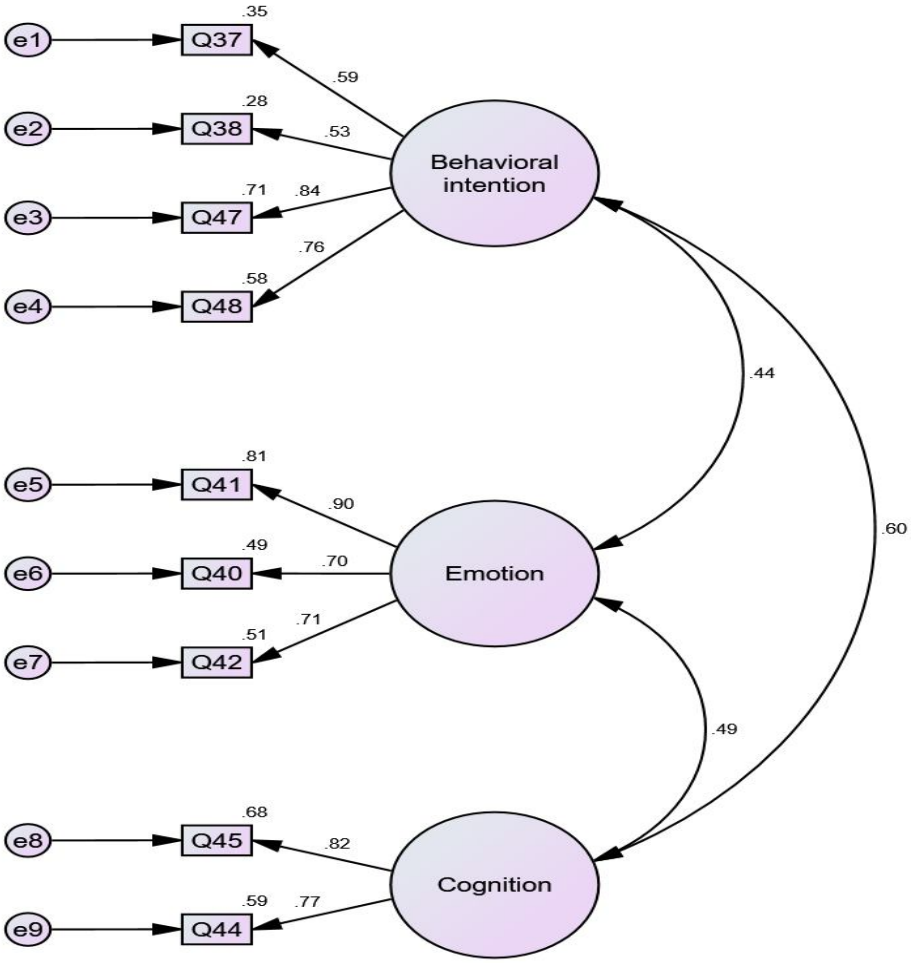


Source: prepared by researcher from data analysis (2017)

Confirmatory factor analysis

Confirmatory Factor Analysis (CFA) is the next step after exploratory factor analysis to determine the factor structure of dataset in this section provided CFA to customer-brand engagement.

Figure 4.4 Path diagram for mediator variable (customer-brand engagement)



Source: prepared by researcher from data analysis (2017)

Table (4.8) measures to determine goodness of model fit

Measure	Threshold
Chi-square/degree of freedom(cmin/df)	< 3 good; < 5 sometimes permissible
P-value for model	>.o5
CFI	>.95 great; >.90 traditional; >.80 sometimes permissible
GFI	>.95
AGFI	>.80
SRMR	<.09
RMSEA	<.5 good; .05-.10 moderate;> 10 bad
P Close	>.05

***Source**: Adopted from* (Gaskin, 2017)

Based on the thresholds listed in Table (4.8) above and the confirmatory factor analysis (CFA) was run to check the validation of the measurements, including unidimensionality and convergent validity. Table (4.8) presents the measures and the (CFA) results. The (CFA) fit indices show that the measurements model fits the data well: Chi-square/degree of freedom (cmin/df) = 1.562; incremental fit index (IF) = .931; comparative fit index (CFI) = .930; goodness of fit index (GFI) = .826; adjusted goodness of fit index (AGFI) = .786; square root mean of residual (SRMR) = .060; root mean square error of approximation (RMSEA) = .056; and P Close = .115. All items loaded on their respective constructs, and each had large coefficients and significance at the 0.001 level. Table (4.9) presents the cut off criteria of the model fit.

Table (4.9) Model Fit Measures of independent variable

Measure	Estimate	Threshold	Interpretation
CMIN	31.564	--	--
DF	11	--	--
CMIN/DF	2.869	Between 1 and 3	Excellent
CFI	0.946	>0.95	Acceptable
SRMR	0.073	<0.08	Excellent
RMSEA	0.101	<0.06	Terrible
P Close	0.021	>0.05	Acceptable

Source: prepared by researcher from data analysis (2017)

Cutoff Criteria

Measure	Terrible	Acceptable	Excellent
CMIN/DF	> 5	> 3	> 1
CFI	<0.90	<0.95	>0.95
SRMR	>0.10	>0.08	<0.08
RMSEA	>0.08	>0.06	<0.06
P Close	<0.01	<0.05	>0.05

Source: prepared by researcher from data analysis (2017)

Based on the thresholds listed in Table (4.7) above and the confirmatory factor analysis (CFA) was run to check the validation of the measurements, including unidimensionality and convergent validity. Table (4.9) presents the measures and the (CFA) results. The (CFA) fit indices show that the measurements model fits the data well: Chi-square/degree of freedom (cmin/df) = 1.562; incremental fit index (IF) = .931; comparative fit index (CFI) = .930; goodness of fit index (GFI) = .826; adjusted goodness of fit index (AGFI) = .786; square root mean of residual (SRMR) = .060; root mean square error of approximation (RMSEA) = .056; and P Close = .115. All items loaded on their respective constructs, and each had large coefficients and significance at the 0.001 level. Table (4.10) presents the cut off criteria of the model fit.

Table (4.10) Model Fit Measures of dependent variable

Measure	Estimate	Threshold	Interpretation
CMIN	31.354	--	--
DF	11	--	--
CMIN/DF	2.850	Between 1 and 3	Excellent
CFI	0.922	>0.95	Acceptable
SRMR	0.075	<0.08	Excellent
RMSEA	0.101	<0.06	Terrible
PClose	0.022	>0.05	Acceptable

Based on the thresholds listed in Table (4.20) above and the confirmatory factor analysis (CFA) was run to check the validation of the measurements, including unidimensionality and convergent validity. Table (4.23) presents the measures and the (CFA) results. The (CFA) fit indices show that the measurements model fits the data well: Chi-square/degree of freedom (cmin/df) = 1.562; incremental fit index (IF) = .931; comparative fit index (CFI) = .930; goodness of fit index (GFI) = .826; adjusted goodness of fit index (AGFI) = .786; square root mean of residual (SRMR) = .060; root mean square error of approximation (RMSEA) = .056; and P Close = .115. All items loaded on their respective constructs, and each had large coefficients and significance at the 0.001 level. Table (4.11) presents the cut off criteria of the model fit.

Table (4.11) Model Fit Measures of mediator variable

Measure	Estimate	Threshold	Interpretation
CMIN	114.728	--	--
DF	24	--	--
CMIN/DF	4.780	Between 1 and 3	Acceptable
CFI	0.862	>0.95	Need More DF
SRMR	0.073	<0.08	Excellent
RMSEA	0.144	<0.06	Terrible
P Close	0.000	>0.05	Terrible

Source: prepared by researcher from data analysis (2017)

4.5.7 Reliability and Validity to independent variable

To evaluate the reliability and validity of the measurement instrument, several statistical analyses were conducted. To verify scale reliability, Composite Reliability (CR) and Cronbach's alpha were engaged. Table (4.7) shows that all CR and Cronbach's alpha values have exceeded the minimum requirement of 0.70 Therefore, the measurement instrument has a high level of reliability (Lee, Foo, Leong, & Ooi, 2016). In terms of convergent validity, the Average Variance Extracted (AVE) for all scales is greater than the suggested threshold 0.5 as recommended by (Fornell &

Larcker, 1981) indicating sufficient convergent validity of the measurement instrument. To evaluate discriminant validity the calculation of (AVE) showed that the correlation of the construct with its measurement items is greater than its correlation with the other constructs (Lowry & Gaskin, 2014) the diagonal boldface of Table (4.13) showed that all square root of AVE is greater than their respective correlation coefficients. Hence, the measurement instrument has a high level of discriminant validity. Table (4.12) shows the details of the above mentioned.

Table (4.12) Model Validity Measures of independent

	CR	**AVE**	**MSV**	**MaxR(H)**	**Online communities**	**sharing content**	**credibility**
Online communities	NaN	NaN	0.000	0.000	**NaN**		
sharing content	NaN	NaN	0.000	0.000	0.387	**NaN**	
Credibility	0.772	0.631	0.075	0.804	0.274	-0.066	**0.795**

NaN : present no validity concern

4.5.8 Reliability and Validity to dependent variable

To evaluate the reliability and validity of the measurement instrument, several statistical analyses were conducted. To verify scale reliability, Composite Reliability (CR) and Cronbach's alpha were engaged. Table (4.13) shows that all CR and Cronbach's alpha values have exceeded the minimum requirement of 0.70 Therefore, the measurement instrument has a high level of reliability (Lee, Foo, Leong, & Ooi, 2016). In terms of convergent validity, the Average Variance Extracted (AVE) for all scales is greater than the suggested threshold 0.5 as recommended by (Fornell & Larcker, 1981) indicating sufficient convergent validity of the measurement instrument. To evaluate discriminant validity the calculation of (AVE) showed that the correlation of the construct with its measurement items is greater than its

correlation with the other constructs (Lowry & Gaskin, 2014) the diagonal boldface of Table (4.13) showed that all square root of AVE is greater than their respective correlation coefficients. Hence, the measurement instrument has a high level of discriminant validity. Table (4.13) shows the details of the above mentioned.

Table (4.13) Model Validity Measures of dependent variable

	CR	AVE	MSV	MaxR(H)	Brand association2	Brand Loyalty	Perceived Quality
Brand association2	NaN	NaN	0.000	0.000	**NaN**		
Brand Loyalty	NaN	NaN	0.000	0.000	0.324	**NaN**	
Perceived Quality	NaN	NaN	0.000	0.000	0.402	0.089	**NaN**

NaN present No Validity Concerns

4.5.9 Reliability and Validity to mediator variable

To evaluate the reliability and validity of the measurement instrument, several statistical analyses were conducted. To verify scale reliability, Composite Reliability (CR) and Cronbach's alpha were engaged. Table (4.26 shows that all CR and Cronbach's alpha values have exceeded the minimum requirement of 0.70 Therefore, the measurement instrument has a high level of reliability (Lee, Foo, Leong, & Ooi, 2016). In terms of convergent validity, the Average Variance Extracted (AVE) for all scales is greater than the suggested threshold 0.5 as recommended by (Fornell & Larcker, 1981) indicating sufficient convergent validity of the measurement instrument. To evaluate discriminant validity the calculation of (AVE) showed that the correlation of the construct with its measurement items is greater than its correlation with the other constructs (Lowry & Gaskin, 2014) the diagonal boldface of Table (4.14) showed that all square root of AVE is greater than their respective correlation coefficients. Hence, the measurement instrument has a high level of discriminant validity. Table (4.14) shows the details of the above mentioned.

Table (4.14) Model Validity Measures of mediator variable

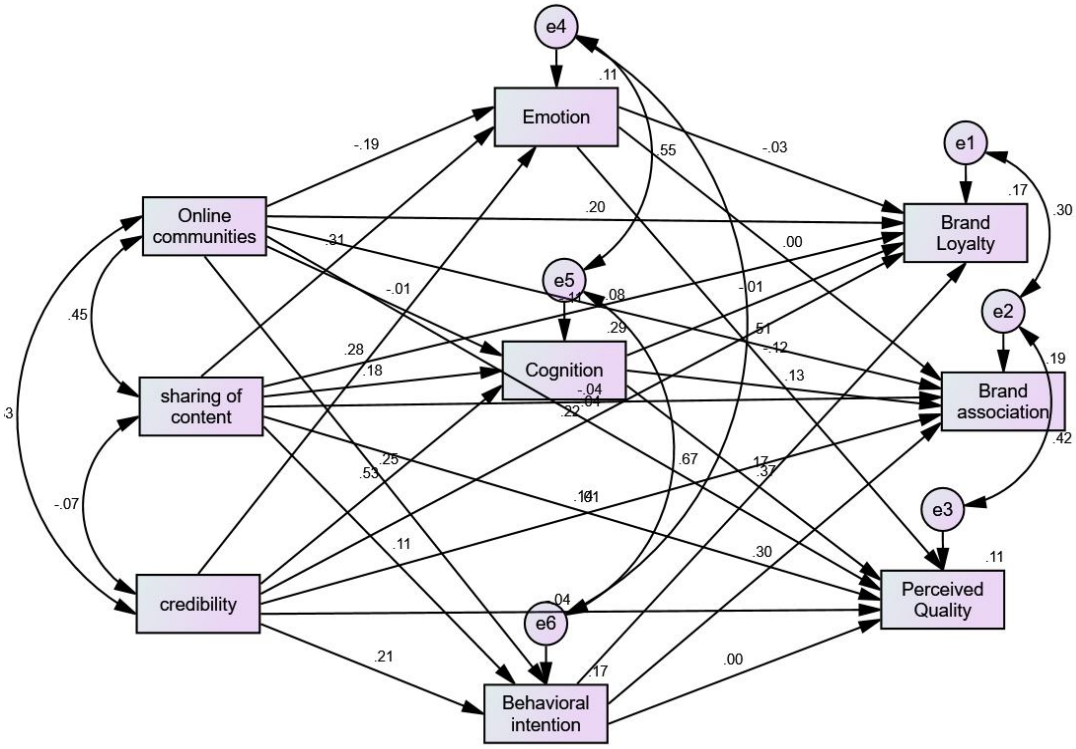
	CR	AVE	MSV	MaxR(H)	Behavioral intention	Emotion	Cognition
Behavioral intention	NaN	NaN	0.000	0.000	**NaN**		
Emotion	0.819	0.604	0.244	0.861	0.442	**0.777**	
Cognition	0.774	0.632	0.357	0.779	0.598	0.494	**0.795**

No Validity Concerns

4.6 Modification of Conceptual Framework and Hypotheses

As a result of factor analysis the initial Framework of this study had been changed, the variables of social media marketing had been changed to three variables online communities, sharing content and credibility. However the variables related to brand equity had been changed to three variables, brand loyalty, brand associations and perceived quality. While the items related to the IMO were factored into two variables instead of three conceptualized component. Therefore, two variable has been excluded from social media marketing (interaction and accessibility). Furthermore one dimension of brand equity construct was excluded (brand awareness). In contrast the customer- brand engagement dimensions remains the same. Sequentially, the initial hypotheses presented with the proposed model will be restated. Figure (4.3) presents the modified conceptual framework, and the restated hypotheses are shown in table (4.28).

Figure (4.5): The Modified Conceptual Framework.



Source: prepared by researcher 2017

4.6.1 Model fit after modified the model

Model fit refers to how well the proposed model accounts for the correlations between variables in the dataset. If the accounting for all the major correlations inherent in the dataset (with regards to the variables in the

Model Fit Measures

Measure	Estimate		Threshold	Interpretation
CMIN	1.439		--	--
DF	1		--	--
CMIN/DF	1.439		Between 1 and 3	Excellent
CFI	0.999		>0.95	Excellent
SRMR	0.014		<0.08	Excellent
RMSEA	0.049		<0.06	Excellent
P Close	0.330		>0.05	Excellent

4.7 Descriptive Analysis

Descriptive statistics such as mean and standard deviation was used to describe the characteristics of the population and all the variables (social media marketing, brand equity and customer-brand engagement) under the study. Therefore, t-test and one way ANOVA were used to test the differences.

4.7.1 Descriptive Analysis of the model

Table (4.17) shows the means and standard deviations of the three components of social media marketing, brand loyalty, and customer brand engagement. The table reveals that the social media marketing in Sudan are emphasized more on online communities (mean= 2.9, standard deviation=0.76), followed by sharing content (mean=1.70, standard deviation=0.809). Given that the scale used a 5-point scale (1=strongly disagree, 5=strongly agree), it can be concluded that social media marketing in Sudan are to some extend highly of information dissemination, while above average on responsiveness.

Table (4.15) descriptive statistics

Descriptive Statistics				
	Variable name	**Mean**	**Std. Deviation**	**important**
Cognition	Customer brand engagement	2.0214	.74480	40.43%=1
Emotion	Customer brand engagement	2.0070	.81009	40.02%=2
Behavioral intention	Customer brand engagement	1.2446	.44352	24.89%=3
Credibility	Social media marketing	1.4552	.57153	29.10%= 3
sharing content	Social media marketing	1.7053	.80960	34.10%= 2
Online communities	Social media marketing	2.1892	.71745	43.78%=1
Perceived Quality	Brand equity	1.9660	.84628	39.32%= 2
Brand Loyalty	Brand equity	1.6434	.54596	32.87%= 3
Brand association	Brand equity	2.1329	.83503	42.658%= 1

Note: *All variables used a 5-point likert scale (1= strongly disagree, 5= strongly agree)*

4.8 Correlation Analysis

The zero-order correlation was conducted for all dimensions of the constructs operationalized in this study using bivariate correlations. These bivariate correlations allow for preliminary inspection of hypothesized relationships.

Table (4.18) presents that all the hypothesized relationships are in positive correlations. For example the relationship between all the three dimensions of social media marketing which represents the independent variable and all the three dimensions of the brand equity are distinctively positive and statistically significant ($0.638 \leq r \leq 0.782$, $p<0.01$). The table also shows that all the three dimensions of customer-brand engagement are significantly correlated with the social media ($0.633 \leq r \leq 0.707$, $p<0.01$). Regarding organizational capabilities the table also reveals that the three factors of organizational capabilities are significantly correlated with the customer performance ($0.559 \leq r \leq 0.644$, $p<0.01$). Based on the bivariate correlations there was some expectation that these coefficients would be significant.

Table (4.16) Person's correlation coefficient for all variables.

Correlations									
	MM	MM	MM	IV	VI	IV	DV	DV	DV
Cognition	1								
Emotion	.574**	1							
Behavioral intention	.696**	.508**	1						
credibility2	.511**	.190*	.281**	1					
sharing content	.139	.204**	.205**	-.073	1				
Online communities	.245**	.038	.365**	.327**	.452**	1			
Perceived Quality	.295**	.117	.203**	.104	.157*	.099	1		
Brand Loyalty	.241**	.079	.264**	.332**	-.010	.283**	.130	1	
Brand association	.358**	.227**	.414**	.192**	.075	.206**	.479**	.414**	1

Source: prepared by the researcher from data (2015). ** Correlation is significant at the 0.01 level (2-tailed

As shown in table (4.18) above the correlation analysis provides strong indicators of associations, thus for more examination of the proposed relationships path analysis through structural equation model (SEM) was conducted to gives the best predictive model of the relationship present among the independent variables. In the following are hypotheses testing the last part of data analysis and findings.

4.9 Hypotheses Testing

This section discusses the results of hypotheses of the study. The hypotheses were tested with the path analysis that discloses the effect of independent variables on dependent variables and the effect of mediator and moderator in relationships between variables through the structural equation modeling (SEM) that grows out of and serves purposes similar to multiple regression, but in more powerful way which takes in account the modeling of interactions between variables, nonlinearities, correlated independents, measurement error, correlated error terms, multiple latent independents each measured by multiple indicators, and one or more latent dependents also each with multiple indicators (Gaskin, 2016). SEM may be used as a more powerful alternative to multiple regression, path analysis, factor analysis, time series analysis, and analysis of covariance. That is, these procedures may be seen as special cases of SEM, or, to put it another way, SEM is an extension of the general linear model (GLM) of which multiple regression is a part. Given that the variables

appeared in confirmatory factor analysis encompasses 35 hypotheses in this study. The main effects as well as the mediating effect were examined using path analysis, the statistical procedures of which had been explained in chapter 3.

In order to perform path analysis, it is generally agreed that there are at least the assumptions of model fit should be met. It's given that the model fit was done in (CFA), however the need to do it again in structural model is important in order to demonstrate sufficient exploration of alternative models (Gaskin, 2016). Every time the model changes and a hypothesis are tested, model fit must be assessed. Thus the Absolute fit indices and Incremental fit indices assumptions are provided below:

4.9.1 Absolute fit indices

Absolute fit indices provide the most fundamental indication of how well the proposed theory fits the data, it includes indices like the Chi-Squared test, RMSEA, GFI, AGFI, the RMR and the SRMR the information about each are in the following sub sections.

1. The relative/normed chi-square/df (χ2/df)

Due to the restrictiveness of the Model Chi-Square (Hooper, Coughlan, & Mullen, 2008) indicates that researchers have sought alternative indices the relative/normed chi-square (χ2/df) which means (the model calculated value of chi-square divided by the degree of freedom), as one example of statistic that minimizes the impact of sample size on the Model Chi-Square. The recommendations regarding an acceptable ratio for this statistic range from as high as 5.0 to as low as 2.0 (Hooper et al, 2008).

2. Root Mean Square Error of Approximation (RMSEA)

The RMSEA is the second fit statistic reported in SEM to tell us how well the model, with unknown but optimally chosen parameter estimates would fit the populations' covariance matrix (Hooper et al, 2008). In recent years it has become regarded as one of the most informative fit indices due to its sensitivity to the number of estimated parameters in the model. In other words, the RMSEA favours parsimony

in that it will choose the model with the lesser number of parameters. Recommendations for RMSEA cut-off points have been reduced considerably in the last fifteen years. Up until the early nineties, an RMSEA in the range of 0.05 to 0.10 was considered an indication of fair fit and values above 0.10 indicated poor fit, and then it was thought that an RMSEA of between 0.08 to 0.10 provides average fit and below 0.08 shows a good fit (MacCallum et al, 1996, cited in Hooper et al, 2008). However, more recently, a cut-off value close to .06 (Hu and Bentler, 1999) or a stringent upper limit of 0.07 (Steiger, 2007) seems to be the general consensus amongst authorities in this area (Hooper et al, 2008). Finally it is generally reported in conjunction with the RMSEA and in a well-fitting model the lower limit is close to 0 while the upper limit should be less than 0.08.

3. Goodness-of-fit statistic (GFI) and the adjusted goodness-of-fit statistic (AGFI)

According to Hooper et al, (2008) the (GFI) was created as an alternative to the Chi-Square test and calculates the proportion of variance that is accounted for by the estimated population covariance, this statistic ranges from 0 to 1 and with larger samples increasing its value and the cut-off point of 0.90 has been recommended for the GFI however, simulation studies have shown that when factor loadings and sample sizes are low a higher cut-off of 0.95 is more appropriate. On the other hand the value of AGFI which adjusts the GFI based upon degrees of freedom also ranges between 0 and 1 and it is generally accepted that values of 0.90 or greater indicate well-fitting models.

4. Root mean square residual (RMR) and standardized root mean square residual (SRMR)

The RMR and the SRMR are the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model. Values for the SRMR range from zero to 1.0 with well-fitting models obtaining values less than .05, however values as high as 0.08 are deemed acceptable (Hooper et al, 2008). An SRMR of 0 indicates perfect fit but it must be noted that SRMR will be lower when

there is a high number of parameters in the model and in models based on large sample sizes (Hooper et al, 2008).

4.9.2 Incremental fit indices

Incremental fit indices are a group of indices that do not use the chi-square in its raw form but compare the chi-square value to a baseline model this means it use to measure how well the model fits in comparison to no model at all. This category includes Normed-fit index (NFI), Non-Normed Fit Index (NNFI) and Comparative fit index (CFI) (Hooper et al, 2008). The following sub sections will discuss these indices.

1. Normed-fit index (NFI)

This statistic assesses the model by comparing the $\chi 2$ value of the model to the $\chi 2$ of the null model. Values for this statistic range between 0 and 1 with Bentler and Bonnet (1980) recommending values greater than 0.90 indicating a good fit. More recent suggestions state that the cut-off criteria should be NFI $\geq$ .95 (Hu and Bentler, 1999).

2. Non-Normed Fit Index (NNFI)

Non-Normed Fit Index (NNFI), also known as the Tucker-Lewis index (TLI), is an index that prefers simpler models. Recommendations as low as 0.80 as a cutoff have been preferred however Bentler and Hu (1999) have suggested NNFI $\geq$ 0.95 as the threshold.

3. Comparative fit index (CFI)

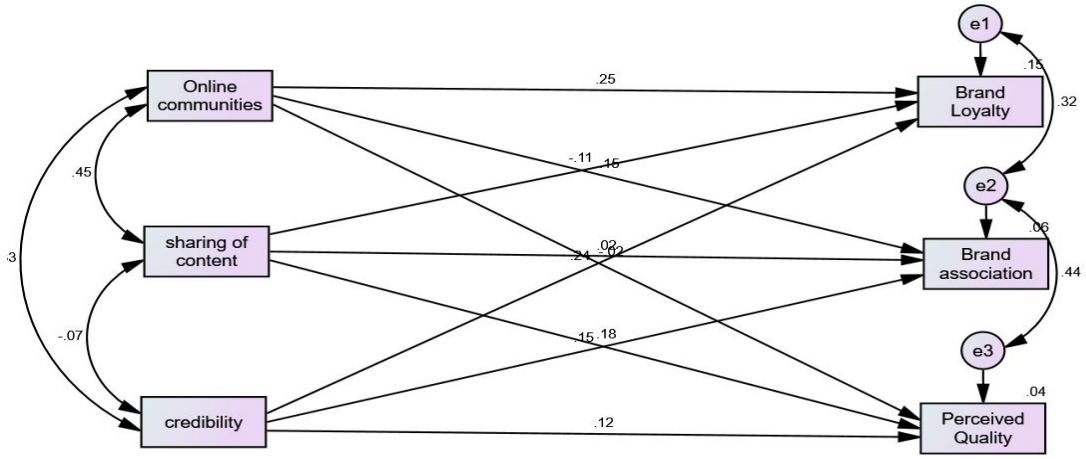
This statistic assumes that all latent variables are uncorrelated (null/independence model) and compares the sample covariance matrix with this null model. The values for this statistic range between 0.0 and 1.0 with values closer to 1.0 indicating good fit. A cut-off criterion of CFI $\geq$ 0.90 was initially advanced however, recent studies have shown that a value greater than 0.90 is needed in order to ensure that miss-specified models are not accepted (Hu & Bentler, 1999). From this, a value of CFI $\geq$ 0.95 is presently recognized as indicative of good fit (Hu & Bentler, 1999). Today this index is included in all SEM programs and is one of the most popularly reported

fit indices due to being one of the measures least affected by sample size (Fan, Thompson, & Wang, 1999).

4.9.3 The relationship between social media marketing and Brand equity:

This section aims to investigate the effect social media marketing dimensions on the brand equity dimensions which represented shown in figure (4.6) below.

Figure (4.6): **The relationship between social media marketing and Brand equity**



Source: prepared by the researcher from data (2017).

From the above figure 3 hypothesis were developed to be tested. In order to test these hypothesis, path analysis in (SEM) using AMOS. Then to test the impacts of social media marketing on brand equity. The results of path analysis showing Model fit parameters consistent with recommendation for CMIN/DF<2, 0<RMSEA<1, 0<GFI<1, 0<AGFI<1, 0<RMR<1, 0<NFI<1, 0<CFI< 1, and PCLOSE>0.05. Table (5.21) presents the achieved model fit indices, which are quite reasonable values to indicate the model fit.

The achieved model fit values

Measure	Estimate	Threshold	Interpretation
CMIN	2.107	--	--
DF	1	--	--
CMIN/DF	2.107	Between 1 and 3	Excellent
CFI	0.994	>0.95	Excellent
SRMR	0.028	<0.08	Excellent
RMSEA	0.078	<0.06	Acceptable
P Close	0.235	>0.05	Excellent

Source: prepared by the researcher from data (2017)

Based on the results show the in the figure (4.6) to test the impacts of social media marketing on brand equity. The results of path analysis and regression weighs attached to explain the estimate between the variables and P value to check our hypothesis.

Table (4.17) Regression Weights: The relationship between social media marketing and Brand equity

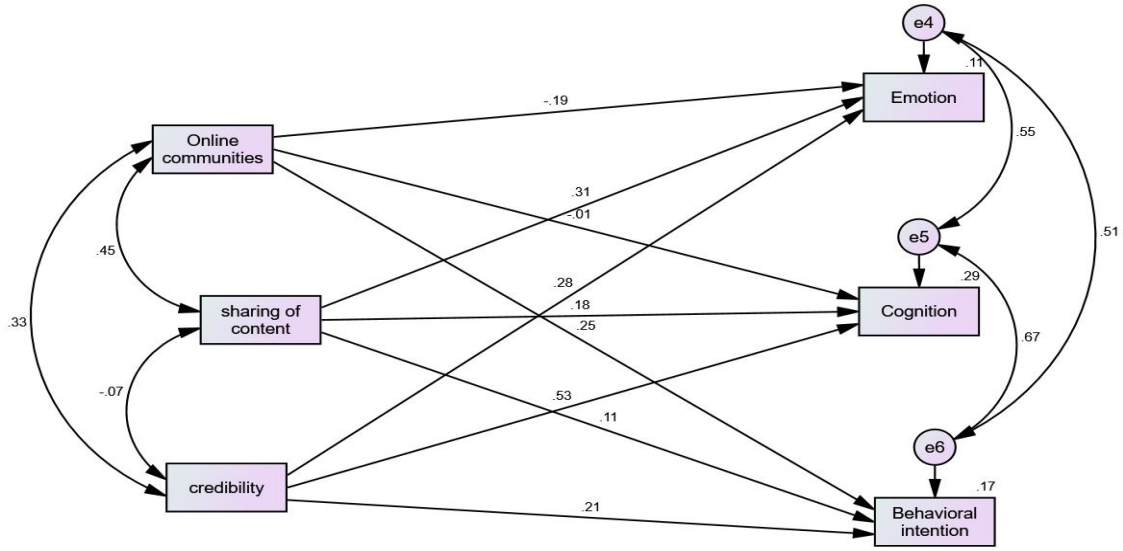
			Estimate	S.E.	C.R.	P	Label
Brand Loyalty	<---	Online communities	.191	.064	3.007	.003	S
Brand_association2	<---	Online communities	.175	.101	1.737	.082	N S
Perceived Quality	<---	Online communities	-.025	.105	-.239	.811	NS
Brand Loyalty	<---	sharing content	-.071	.053	-1.335	.182	NS
Brand_association2	<---	sharing content	.017	.085	.206	.837	NS
Perceived Quality	<---	sharing content	.184	.088	2.086	.037	S
Perceived Quality	<---	credibility2	.183	.118	1.553	.120	NS
Brand_association2	<---	credibility2	.210	.113	1.856	.063	NS
Brand Loyalty	<---	credibility2	.231	.071	3.235	.001	S

Source: prepared by the researcher from data (2017)

4.9.4 The relationship between social media marketing and customer-brand engagement:

This sub section aims to investigate the relationship between social media marketing dimensions and customer brand engagement ions which represented shown in figure below

Figure (4.7) **the Relationship between social media marketing and customer-brand engagement**



From the above figure four hypothesis were developed to be tested. In order to test these hypothesis, path analysis in (SEM) using AMOS. Then to test the impacts of social media marketing on brand equity. The results of path analysis showing Model fit parameters consistent with recommendation for CMIN/DF<2, 0<RMSEA<1, 0<GFI<1, 0<AGFI<1, 0<RMR<1, 0<NFI<1, 0<CFI< 1, and PCLOSE>0.05. Table (5.21) presents the achieved model fit indices, which are quite reasonable values to indicate the model fit.

Based on the results show the in the figure (4.7) to test the impacts of social media marketing on brand equity. The results of path analysis and regression weighs ttached to explain the estimate between the variables and P value to check our hypothesis

Table (4.18) Regression Weights: (Relationship between social media marketing and customer-brand engagement)

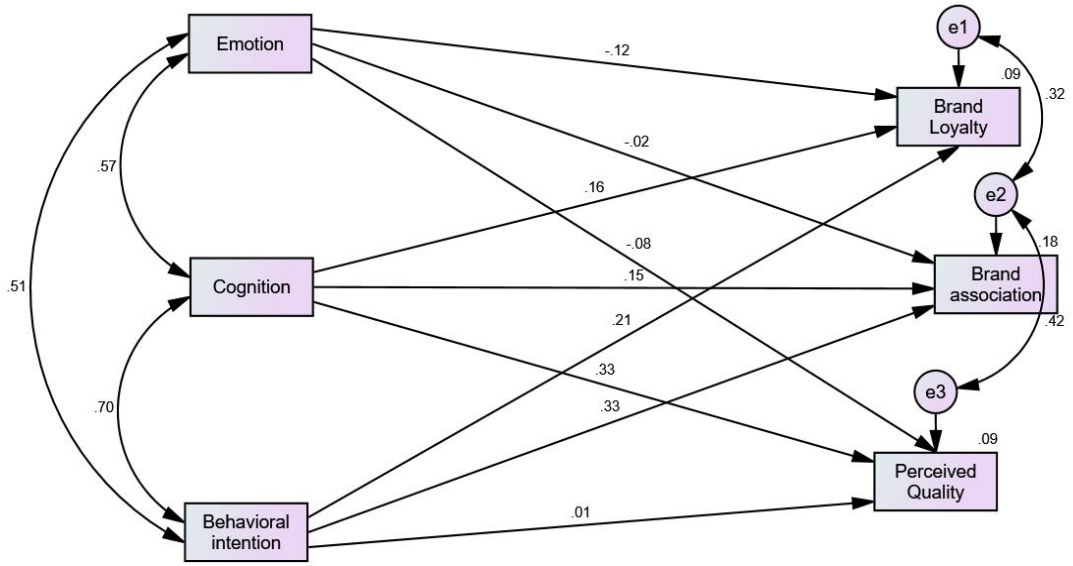
			Estimate	S.E.	C.R.	P	Label
Emotion	<---	Online communities	-.218	.097	-2.250	.024	NS
Emotion	<---	sharing content	.312	.081	3.835	***	F S
Emotion	<---	credibility2	.390	.109	3.590	***	F S
Cognition	<---	Online communities	-.010	.079	-.131	.896	N S
Cognition	<---	sharing content	.167	.067	2.514	.012	S
Cognition	<---	credibility2	.687	.089	7.715	***	F S
Behavioral intention	<---	Online communities	.153	.051	2.994	.003	S
Behavioral intention	<---	sharing content	.059	.043	1.382	.167	N S
Behavioral intention	<---	credibility2	.161	.057	2.806	.005	S

Source: prepared by the researcher from data (2017)

4.9.5 The relationship between customer-brand engagement and brand equity:

This sub section aims to investigate the relationship between customer brand engagement and brand equity which represented shown in figure below

Figure (4.8) the relationship between customer-brand engagement and brand equity



From the above figure four hypothesis were developed to be tested. In order to test these hypothesis, path analysis in (SEM) using AMOS. Then to test the impacts of social media marketing on brand equity. The results of path analysis showing Model fit parameters consistent with recommendation for CMIN/DF<2, 0<RMSEA<1, 0<GFI<1, 0<AGFI<1, 0<RMR<1, 0<NFI<1, 0<CFI< 1, and PCLOSE>0.05. Table (4.34) presents the achieved model fit indices, which are quite reasonable values to indicate the model fit.

the achieved model fit values

Measure	Estimate	Threshold	Interpretation
CMIN	0.622	--	--
DF	1	--	--
CMIN/DF	0.622	Between 1 and 3	Excellent
CFI	1.000	>0.95	Excellent
SRMR	0.015	<0.08	Excellent
RMSEA	0.000	<0.06	Excellent
P Close	0.526	>0.05	Excellent

Based on the results show the in the figure (4.8) to test the impacts of social media marketing on brand equity. The results of path analysis and regression weighs attached to explain the estimate between the variables and P value to check our hypothesis.

Table (4.19) Regression Weights: the relationship between customer-brand engagement and brand equity

			Estimate	S.E.	C.R.	P	Label
Perceived Quality	<---	Behavioral intention	.022	.191	.116	.908	N S
Brand_association2	<---	Behavioral intention	.609	.178	3.430	***	F S
Brand Loyalty	<---	behavioral intention	.263	.124	2.124	.034	S
Perceived Quality	<---	Cognition	.379	.120	3.164	.002	S
Brand_association2	<---	Cognition	.163	.111	1.466	.143	N S
Brand Loyalty	<---	Cognition	.119	.077	1.539	.124	N S
Perceived Quality	<---	Emotion	-.084	.092	-.911	.362	N S
Brand_association2	<---	Emotion	-.022	.085	-.258	.796	N S
Brand Loyalty	<---	Emotion	-.083	.059	-1.391	.164	N S

Source: prepared by the researcher from data (2017)

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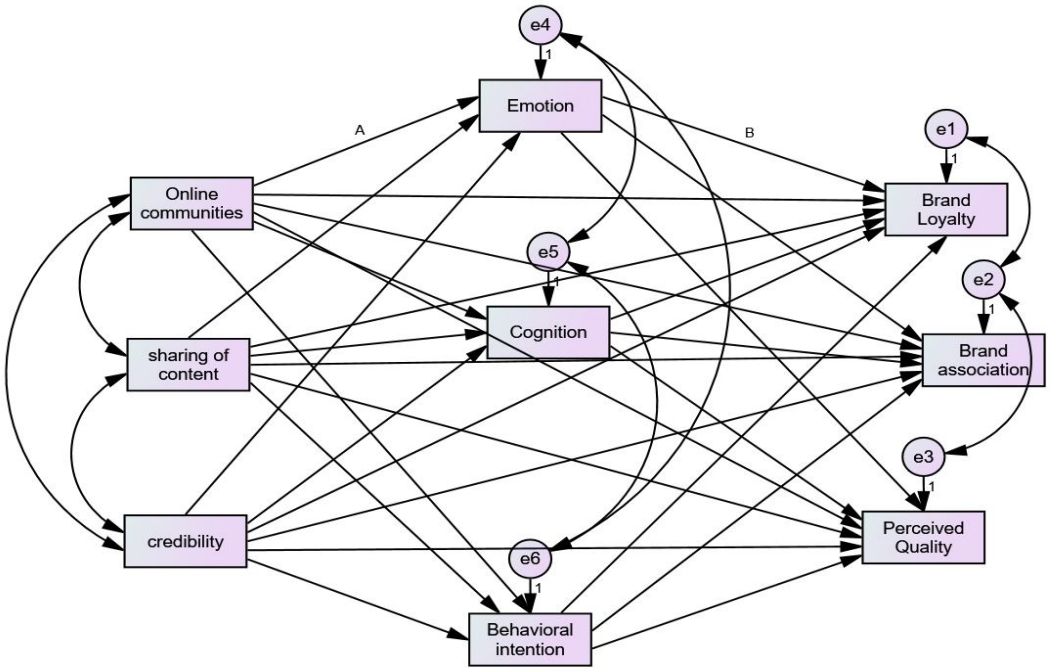
4.9.6 The Mediating Effect of customer-brand engagement

The fourth part of hypotheses testing in this study deals with the mediating effect of customer brand engagement witch included in H4. The support from the first three hypotheses provides the initial steps required to test the fourth hypothesis in the study which predicts whether customer brand engagement (emotions, cognitions and behavioral intentions) may be a mediating variable between the social media marketing and brand equity. As shown in figure 4.9 below.

As recommended by Baron and Kenny (1986) in literature a three-step hierarchical regression must be conducted to test the hypotheses of mediator. First step, the independent variable must affect the dependent variable significantly (ß1must be significant). Second step, the independent variable should affect the mediating variable (ß2 must be significant). Third step, mediating variable must influence the dependent variable significantly (ß3 must be significant).

This sub section aims to investigate the mediating effect customer brand engagement between social media marketing and brand equity which represented shown in figure below

Figure (4.9): **The Mediating Effect of customer-brand engagement between SMM and BE**



Source: prepared by the researcher from data (2017).

On the other hand, in order to found whether mediator is fully or partially mediating the relationship between the independent variable and dependent variable, the impact of independent variable on dependent variable controlling for mediating variable should be zero or ß4 is not significant in fully mediator, while partial mediator exists once ß4 is significant but reduced.

Despite the method outlined by Kenny (e.g., Baron & Kenny, 1986; Kenny et al., 1998) is the most commonly used approach in the literature (Patricia A. Frazier, 2004) however, to fulfill the condition for testing the mediation effect of customer-brand engagement in this study the direct and indirect effect was conducted to examine firstly, the direct effect between social media marketing and brand equity then the indirect effect to this relation through the customer-brand engagement. Given that the third assumption of Kenny approach was not satisfied in this study, in which the mediating variable must significantly influence the dependent variable (ß3 must be significant), this means that the relationship between the market orientation and

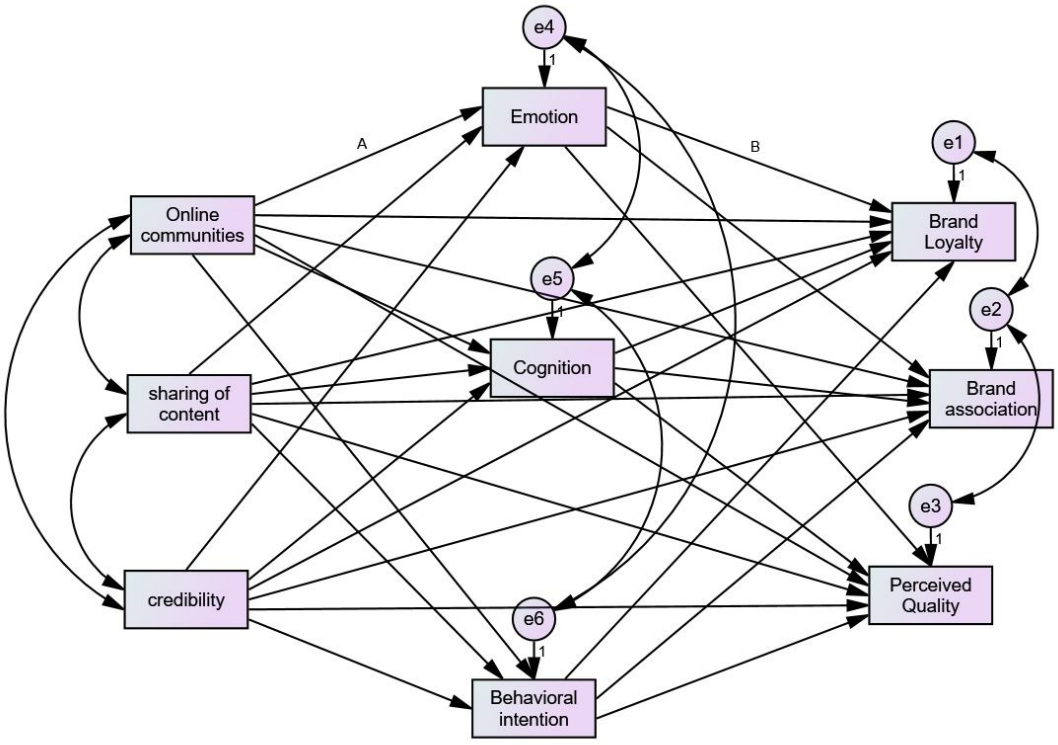
operational performance is not significant. The results of the direct and indirect effect analysis were discussed in the next subsections.

4.9.6.1 The mediating effect of customer brand engagement in the relationship between social media marketing and brand equity

In this subsection the customer- brand engagement was hypothesized to mediate the relationship between social media marketing and brand equity. However, to test this hypothesis an examination of whether customer- brand engagement mediates the relationship between social media marketing and brand equity as shown in figure (4.10) below must be estimated firstly, then secondly, the examination of whether customer- brand engagement mediates the relationship between social media marketing and brand equity.

Emotion mediate the positive relationship between online communities and brand loyalty

Figure (4.10): The Mediating Effect of CBE between SMM and BE relationship.



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.36) below presents the model fit measures and their interpretations.

Table (4.24) the model fit measures The Mediating Effect of customer-brand engagement

Measure	Estimate	Threshold	Interpretation
CMIN	1.439	--	--
DF	1	--	--
CMIN/DF	1.439	Between 1 and 3	Excellent
CFI	0.999	>0.95	Excellent
SRMR	0.014	<0.08	Excellent
RMSEA	0.049	<0.06	Excellent
P Close	0.330	>0.05	Excellent

Source: prepared by the researcher from data (2017).

The result of regression weights presented in Table (4.24) which represents the direct effects shows social media marketing significantly influence brand equity ($p<0.01$), social media marketing significantly influence customer brand engagement ($p<0.05$), and customer brand engagement significantly influence brand equity ($p<0.05$). Thus, the satisfaction of these three assumptions indicates that the customer brand engagement has established mediating effect.

The results of path analysis and regression weighs attached to explain the estimate between the variables and P value to check our hypothesis.

Table (4.25) Regression Weights for direct effect: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	Online communities	-.218	.097	-2.250	.024	A
Brand Loyalty	<---	Emotion	-.020	.059	-.342	.733	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.26) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

Table (4.26) User-defined estimands for indirect effect: (Group number 1 - Default model)

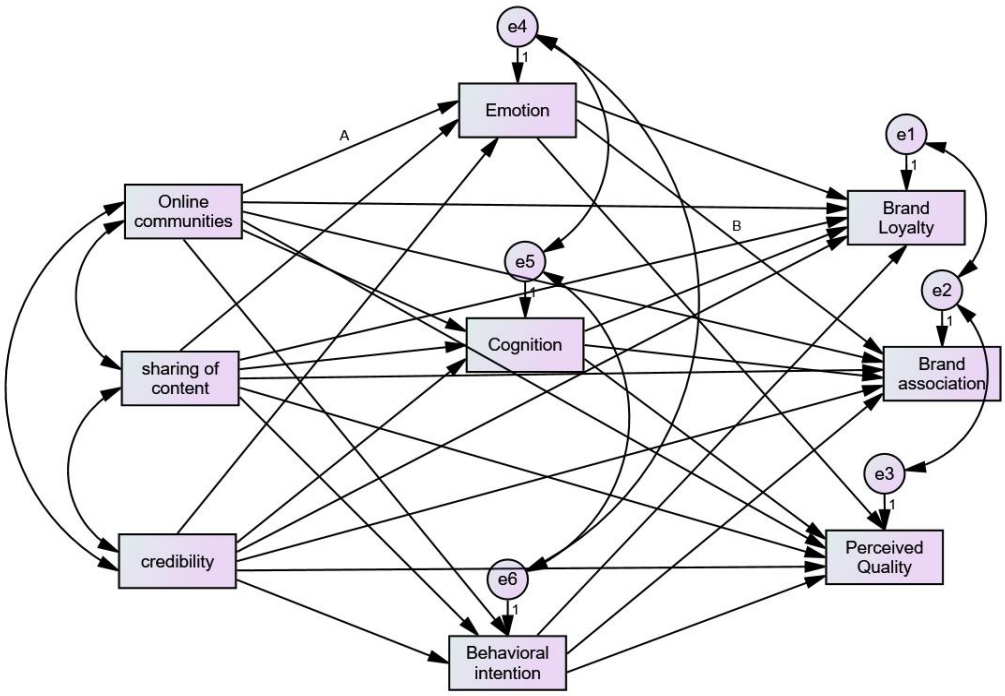
User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.004	-.016	.028	.694

Source: prepared by the researcher from data (2017).

Emotion mediate the positive relationship between online communities and brand association

Figure (4.11): The Mediating Effect of CBE between SMM and BE relationship.



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.27) below presents the model fit measures and their interpretations.

Table (4.27) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	Online communities	-.218	.097	-2.250	.024	A
Brand association	<---	Emotion	.004	.089	.049	.961	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.28) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

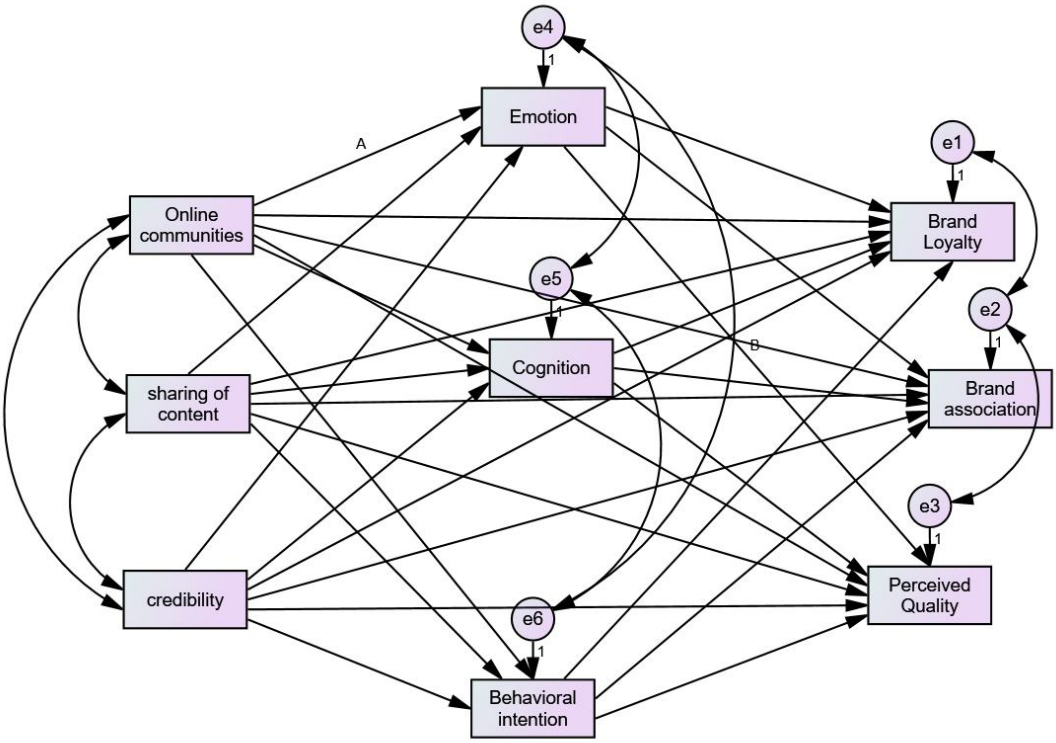
Table (4.28) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	-.001	-.031	.031	.910

Source: prepared by the researcher from data (2017).

Emotion mediate the positive relationship between online communities and perceived quality

Figure (4.12): The Mediating Effect of CBE between SMM and BE relationship.



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.41) below presents the model fit measures and their interpretations

Table (4.29) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	Online communities	-.218	.097	-2.250	.024	A
Perceived Quality	<---	Emotion	-.122	.095	-1.287	.198	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.30) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

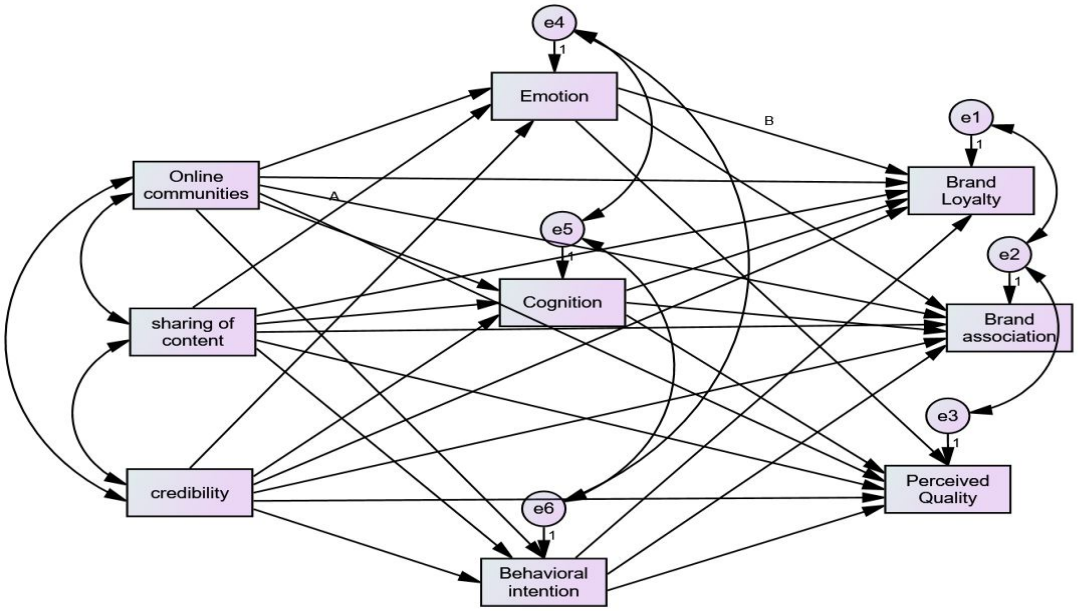
Table (4.30) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.027	-.019	.094	.319

Source: prepared by the researcher from data (2017).

Emotion mediate the positive relationship between sharing content and brand loyalty

Figure (4.13): The Mediating Effect of CBE between SMM and BE relationship.



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.31) below presents the model fit measures and their interpretations

Table (4.31) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	sharing content	.312	.081	3.835	***	A
Brand Loyalty	<---	Emotion	-.020	.059	-.342	.733	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.32) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

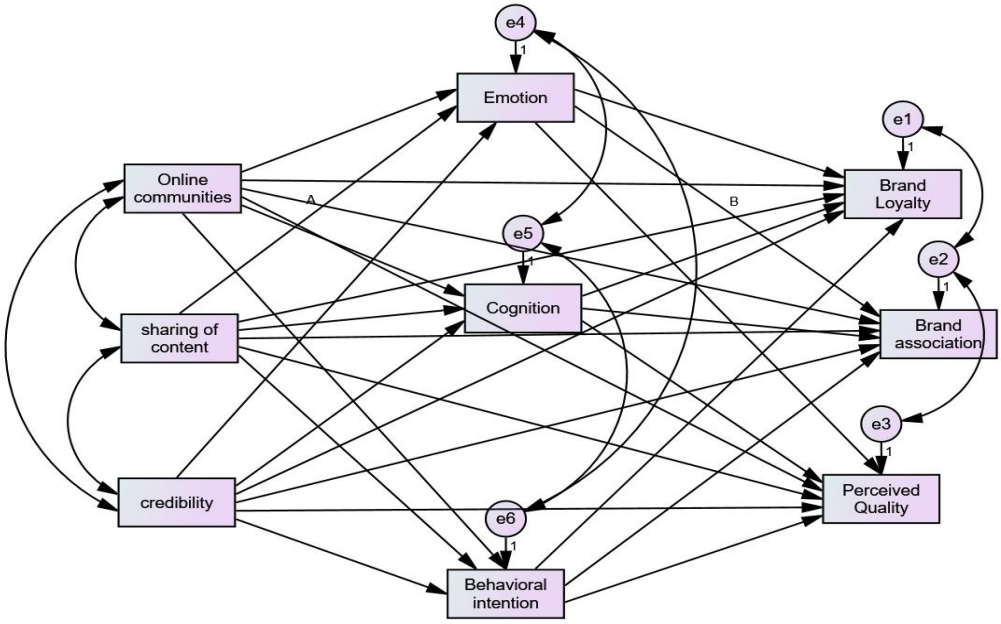
Table (4.32) User-defined estimands: (Group number 1 - Default model)

Parameter	**Estimate**	**Lower**	**Upper**	**P**
A x B	-.006	-.039	.022	.722

Source: prepared by the researcher from data (2017).

Emotion mediate the positive relationship between sharing content and brand association

Figure (4.14): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.33) below presents the model fit measures and their interpretation

Table (4.33) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	Sharing content	.312	.081	3.835	***	A
Brand association	<---	Emotion	.004	.089	.049	.961	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.34) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

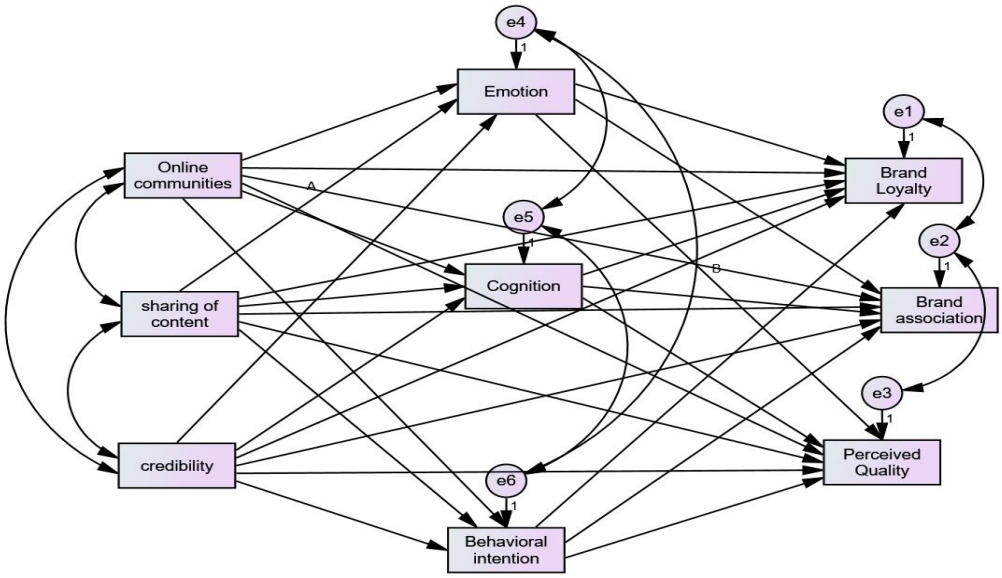
Table (4.34) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.001	-.045	.044	.925

Source: prepared by the researcher from data (2017).

Emotion mediate the positive relationship between sharing content and perceived quality

Figure (4.15): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.35) below presents the model fit measures and their interpretation

Table (4.35) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	sharing content	.312	.081	3.835	***	A
Perceived Quality	<---	Emotion	-.122	.095	-1.287	.198	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.36) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

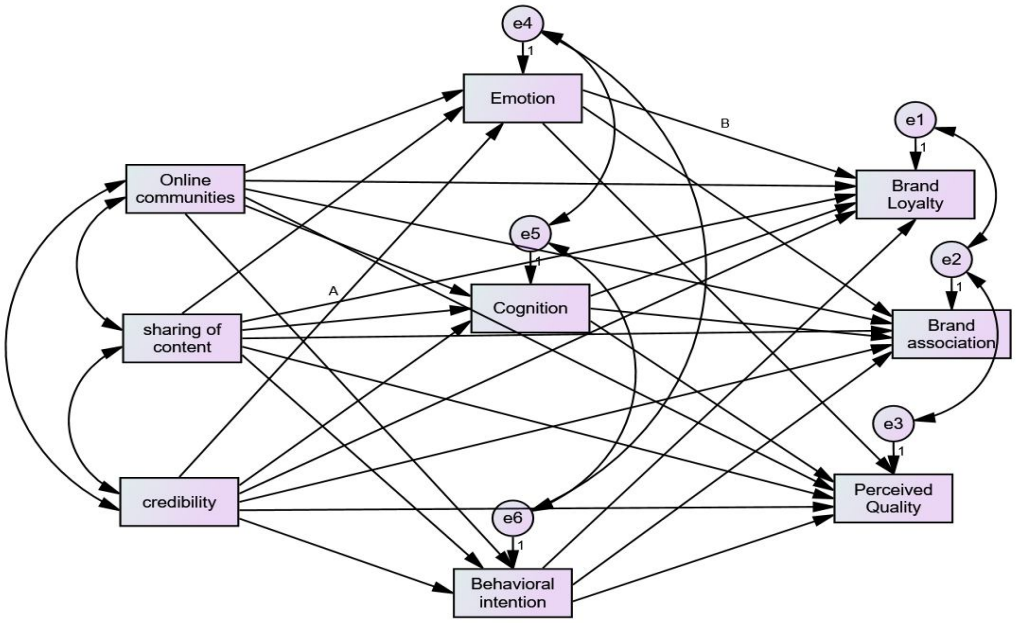
Table (4.37) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	-.038	-.125	.032	.377

Source: prepared by the researcher from data (2017).

Emotion mediate the positive relationship between credibility and brand loyalty

Figure (4.16): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.38) below presents the model fit measures and their interpretation

Table (4.38) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	credibility2	.390	.109	3.590	***	A
Brand Loyalty	<---	Emotion	-.020	.059	-.342	.733	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.39) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

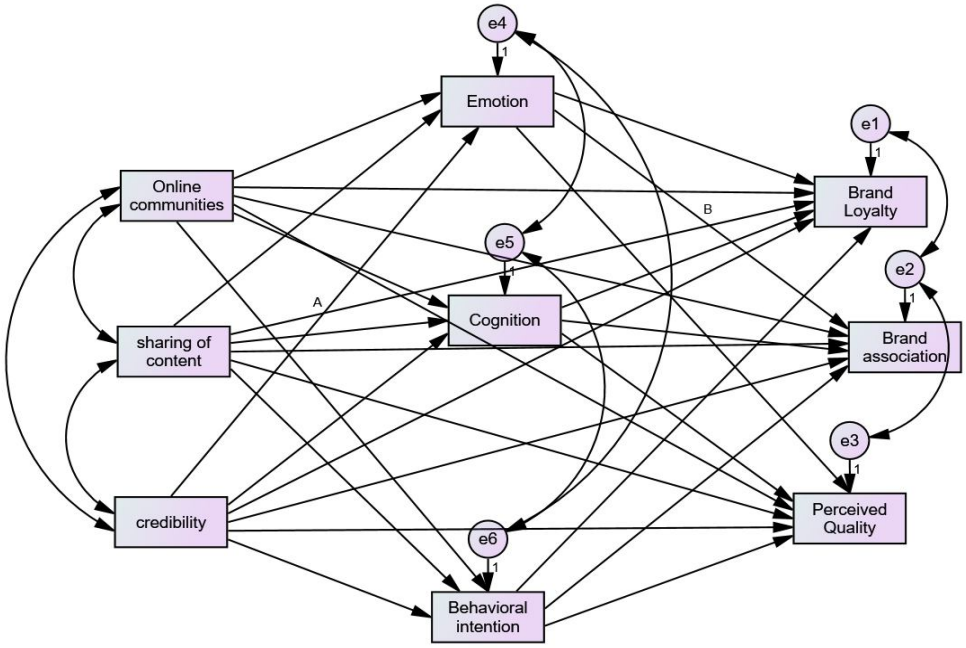
Table (4.39) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	-.008	-.045	.028	.751

Source: prepared by the researcher from data (2017).

Emotion mediate the positive relationship between credibility and brand association

Figure (4.17): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.40) below presents the model fit measures and their interpretation

Table (4.40) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	credibility2	.390	.109	3.590	***	A
Brand_association2	<---	Emotion	.004	.089	.049	.961	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.40) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

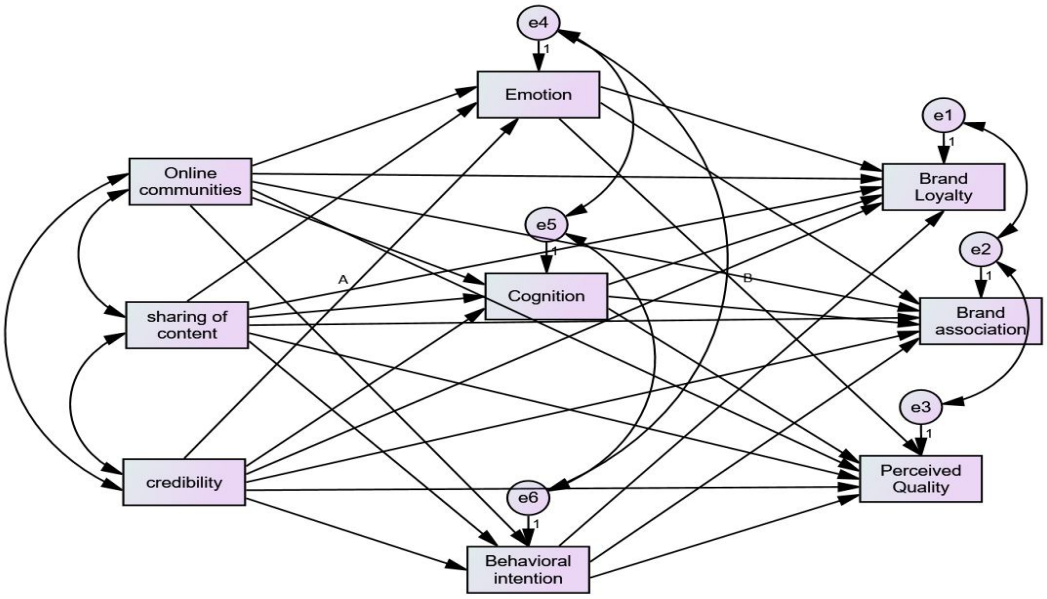
Table (4.40) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.002	-.049	.059	.933

Source: prepared by the researcher from data (2017).

Emotion mediate the positive relationship between credibility and perceived quality

Figure (4.18): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.41) below presents the model fit measures and their interpretation

Table (4.41) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Emotion	<---	credibility	.390	.109	3.590	***	A
Perceived Quality	<---	Emotion	-.122	.095	-1.287	.198	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.42) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

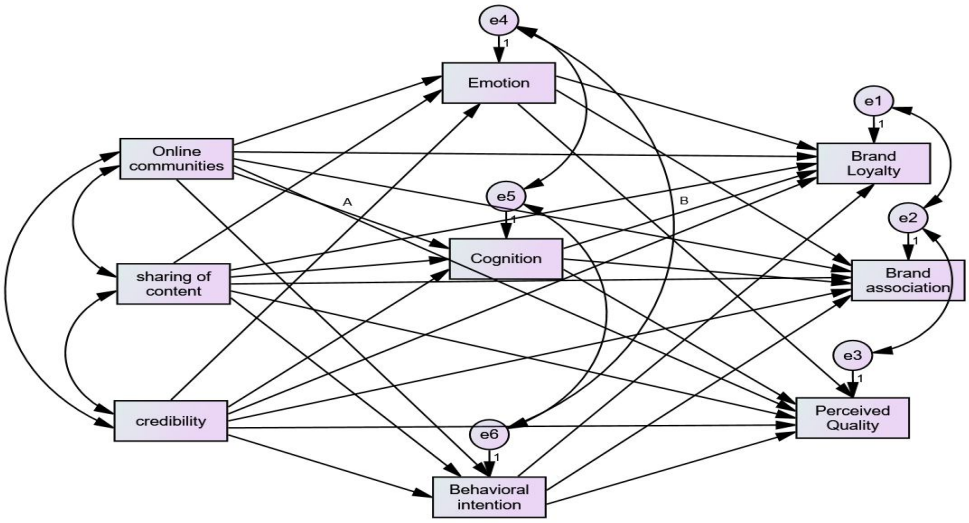
Table (4.42) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	-.048	-.150	.040	.369

Source: prepared by the researcher from data (2017)

Cognition mediate the positive relationship between online communities and brand loyalty

Figure (4.19): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.43) below presents the model fit measures and their interpretation.

Table (4.43) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	Online communities	-.010	.079	-.131	.896	A
Brand Loyalty	<---	Cognition	-.006	.084	-.070	.944	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.43) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

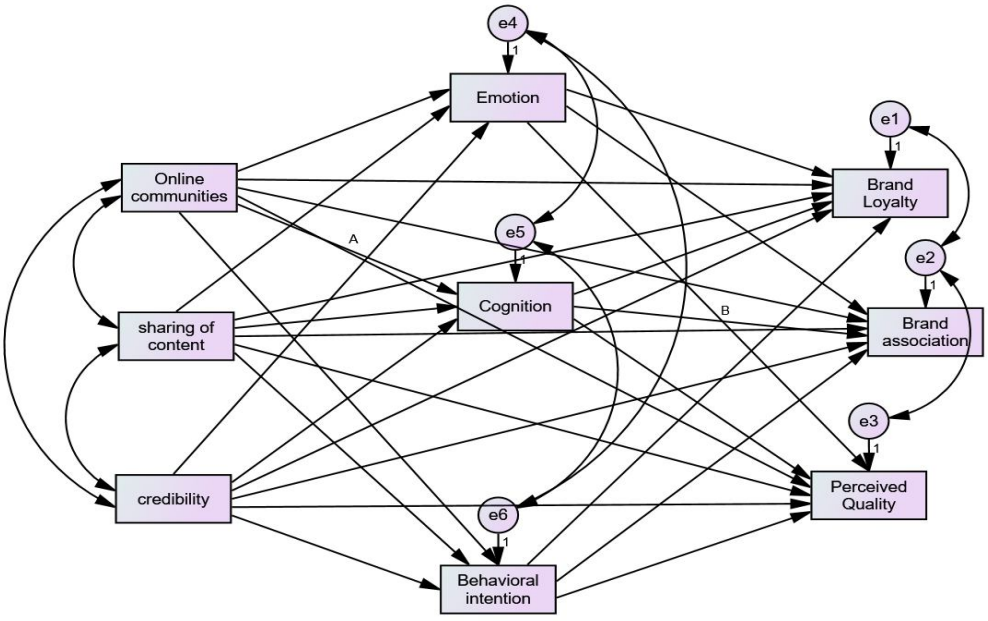
Table (4.43) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.000	-.008	.010	.846

Source: prepared by the researcher from data (2017)

Cognition mediate the positive relationship between online communities and brand associations

Figure (4.20): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.44) below presents the model fit measures and their interpretation.

Table (4.44) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	Online communities	-.010	.079	-.131	.896	A
Brand association2	<---	Cognition	.143	.126	1.132	.258	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.45) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

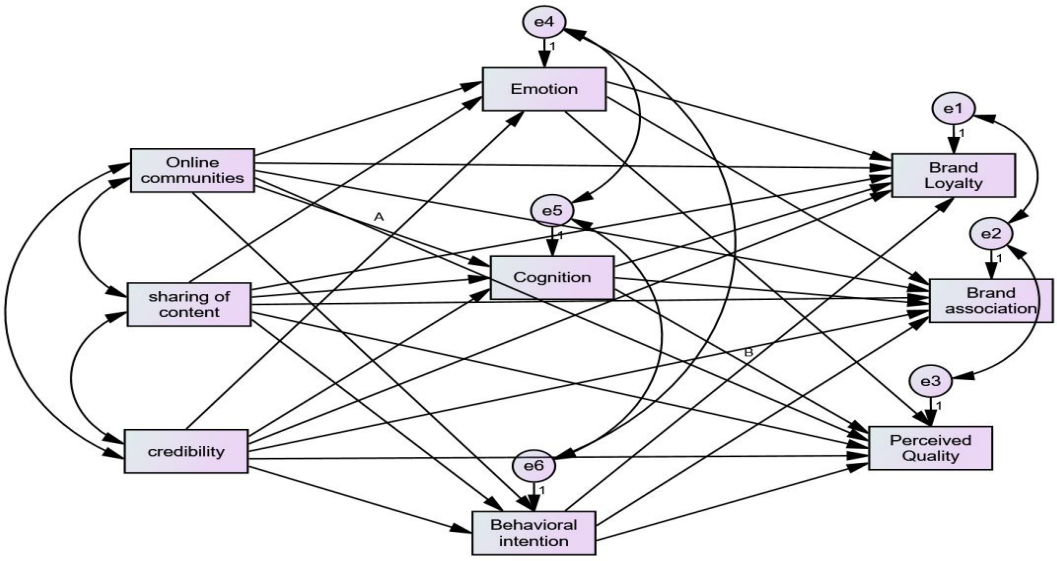
Table (4.45) User-defined estimands: (Group number 1 - Default model)

Parameter	**Estimate**	**Lower**	**Upper**	**P**
A x B	-.001	-.036	.015	.617

Source: prepared by the researcher from data (2017).

Cognition mediate the positive relationship between online communities and perceived quality

Figure (4.21): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.46) below presents the model fit measures and their interpretation

Table (4.46) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	Online communities	-.010	.079	-.131	.896	A
Perceived Quality	<---	Cognition	.426	.135	3.158	.002	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.60) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

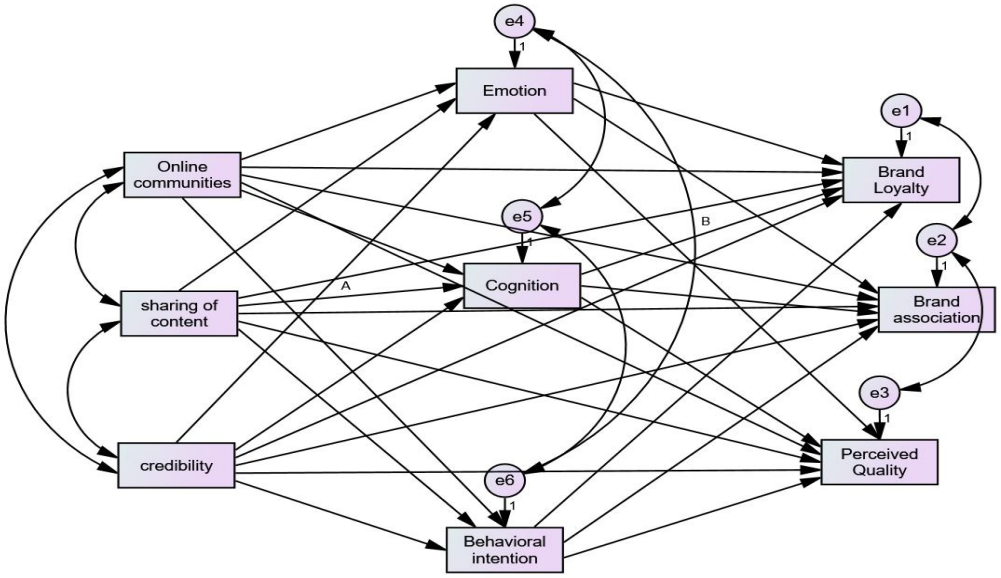
Table (4.47) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	-.004	-.058	.059	.856

Source: prepared by the researcher from data (2017).

Cognition mediate the positive relationship between sharing content and brand loyalty

Figure (4.23): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.48) below presents the model fit measures and their interpretation

Table (4.48) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	sharing content	.167	.067	2.514	.012	A
Brand Loyalty	<---	Cognition	-.006	.084	-.070	.944	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.49) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

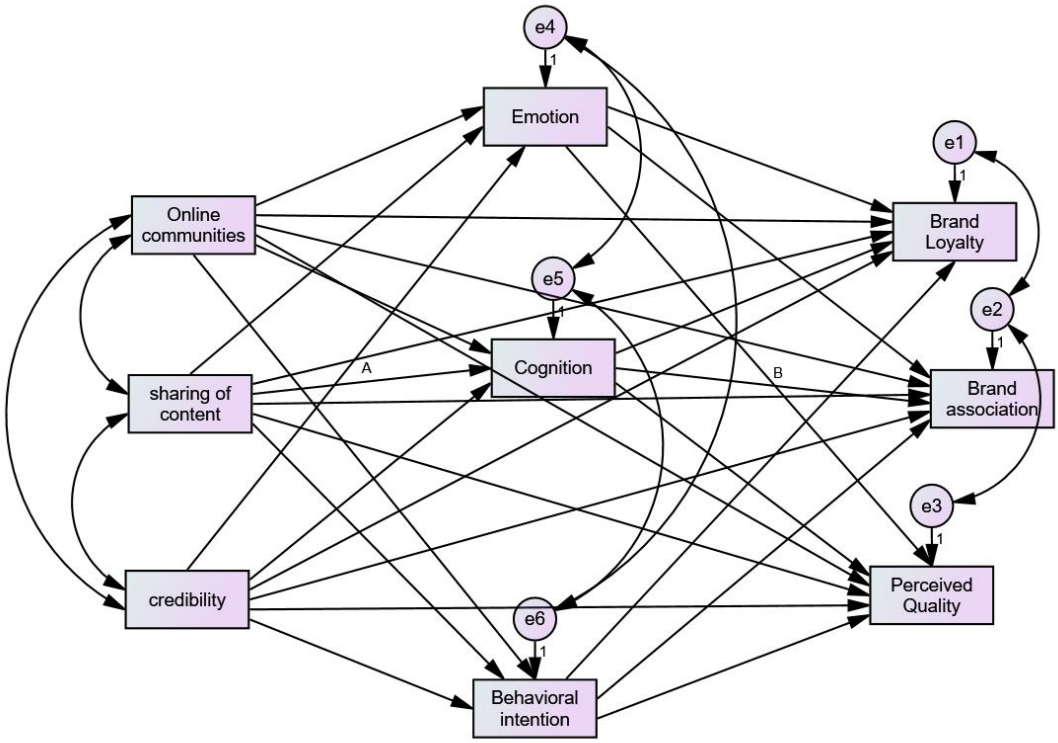
Table (4.49) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	-.001	-.028	.016	.793

Source: prepared by the researcher from data (2017).

Cognition mediate the positive relationship between sharing content and brand association

Figure (4.24): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.50) below presents the model fit measures and their interpretation

Table (4.50) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	sharing content	.167	.067	2.514	.012	A
Brand association	<---	Cognition	.143	.126	1.132	.258	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.51) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

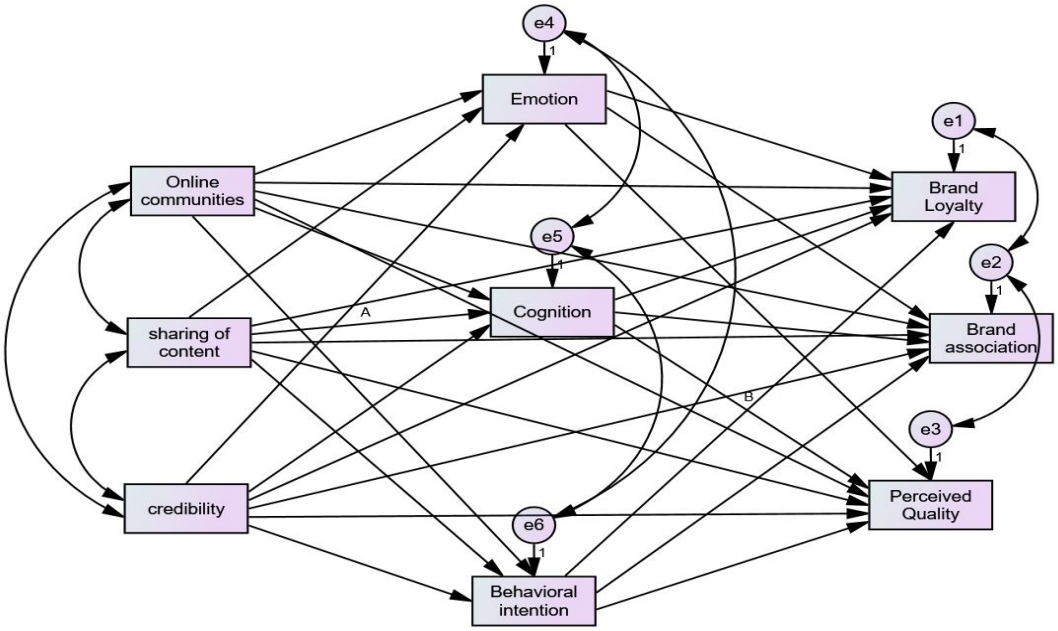
Table (4.51) (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.024	-.001	.089	.123

Source: prepared by the researcher from data (2017).

Cognition mediate the positive relationship between sharing content and perceived quality

Figure (4.25): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.52) below presents the model fit measures and their interpretation

Table (4.52) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	sharing content	.167	.067	2.514	.012	A
Perceived Quality	<---	Cognition	.426	.135	3.158	.002	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.53) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer

brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship.

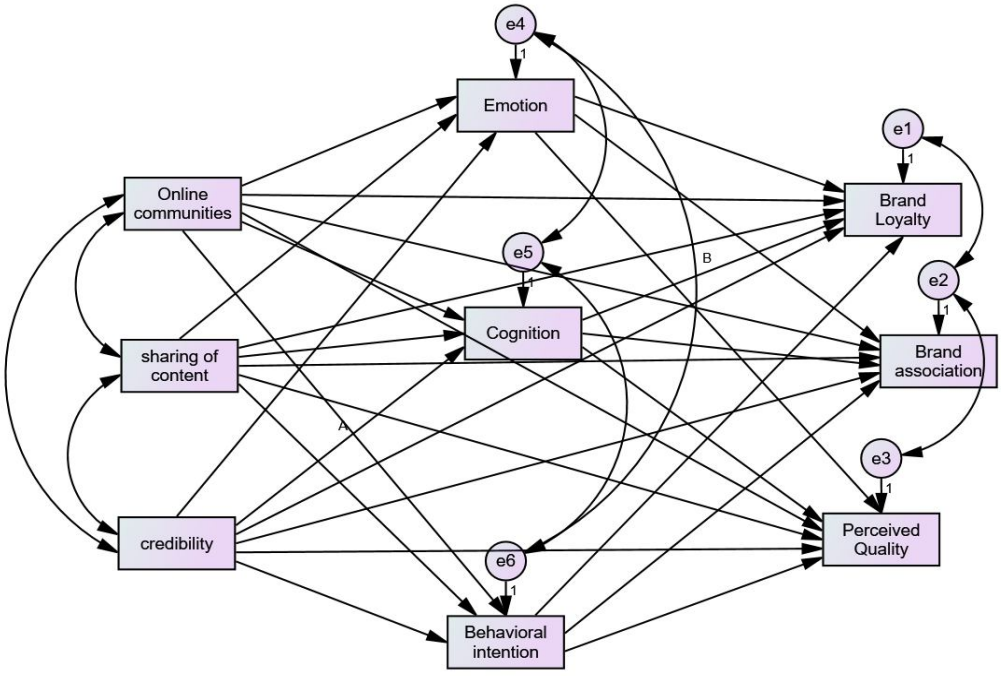
The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

Table (4.53) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.071	.017	.168	.027

Source: prepared by the researcher from data (2017).

Cognition mediate the positive relationship between credibility and brand loyalty
Figure (4.26): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.54) below presents the model fit measures and their interpretation

Table (4.54) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	credibility	.687	.089	7.715	***	A
Brand Loyalty	<---	Cognition	-.006	.084	-.070	.944	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.55) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

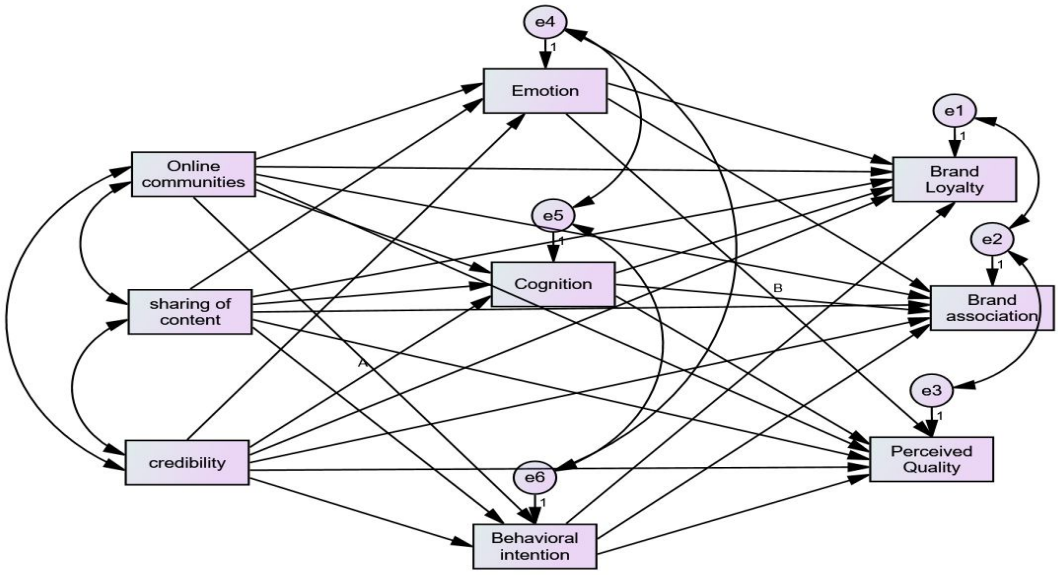
Table (4.55) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	-.004	-.098	.074	.877

Source: prepared by the researcher from data (2017).

Cognition mediate the positive relationship between credibility and brand association

Figure (4.27): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.69) below presents the model fit measures and their interpretation

Table (4.65) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	credibility	.687	.089	7.715	***	A
Brand association	<---	Cognition	.143	.126	1.132	.258	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.57) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between

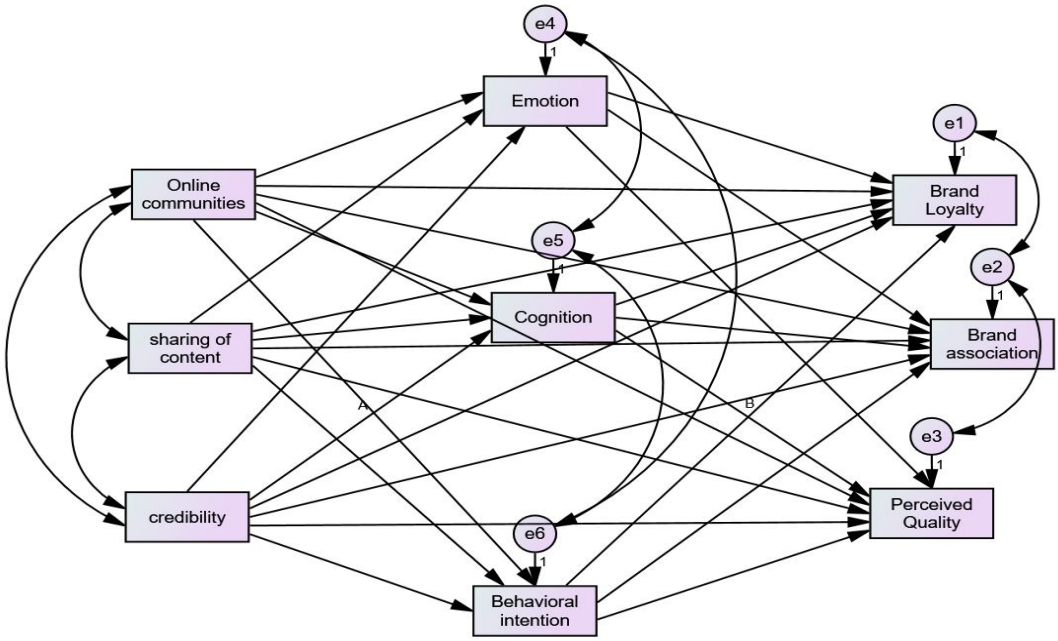
social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

Table (4.57) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.098	-.036	.275	.230

Source: prepared by the researcher from data (2017).

Cognition mediate the positive relationship between credibility and perceived quality
Figure (4.28): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008,

NFI=.944, CFI=1, and PCLOSE=.853. Table (4.58) below presents the model fit measures and their interpretation

Table (4.58) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cognition	<---	credibility2	.687	.089	7.715	***	A
Perceived Quality	<---	Cognition	.426	.135	3.158	.002	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.59) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

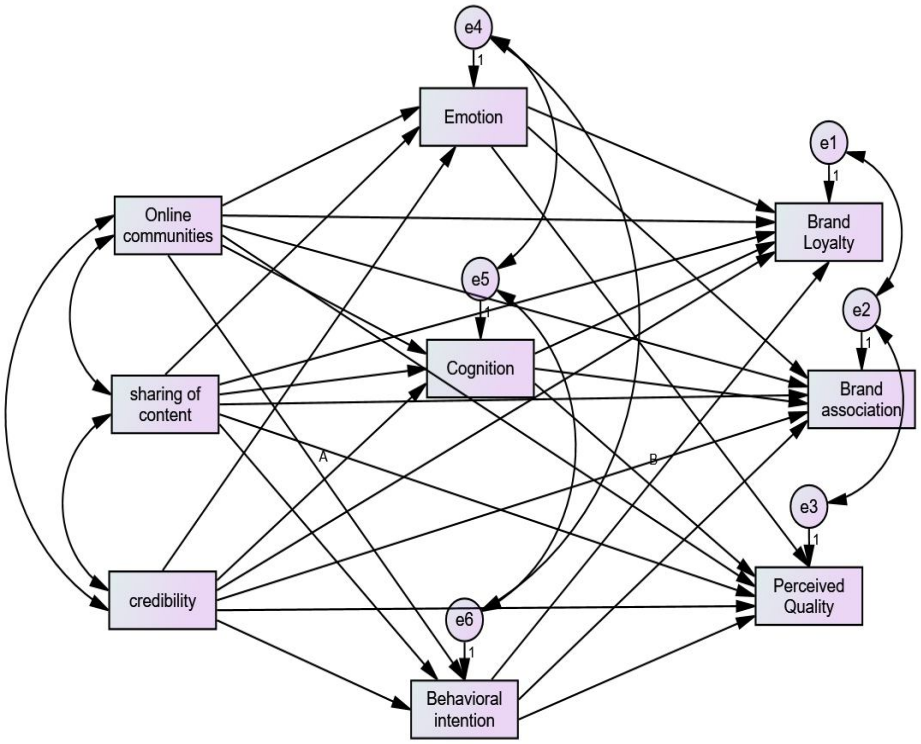
Table (4.59) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.293	.123	.509	.002

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between online communities and brand loyalty

Figure (4.29): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.60) below presents the model fit measures and their interpretation

Table (4.60) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Behavioral intention	<---	Online communities	.153	.051	2.994	.003	A
Brand Loyalty	<---	Behavioral intention	.213	.126	1.689	.091	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.61) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

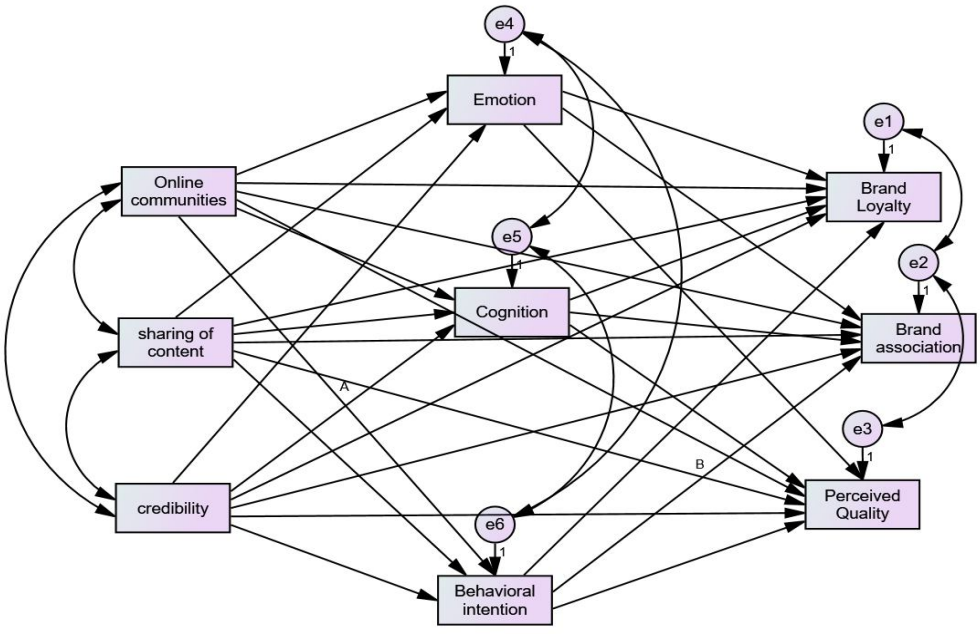
Table (4.61) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.033	.001	.098	.086

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between online communities and brand association

Figure (4.30): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.62) below presents the model fit measures and their interpretation

Table (4.62) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Behavioral intention	<---	Online communities	.153	.051	2.994	.003	A
Brand association	<---	Behavioral intention	.563	.189	2.971	.003	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.63) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

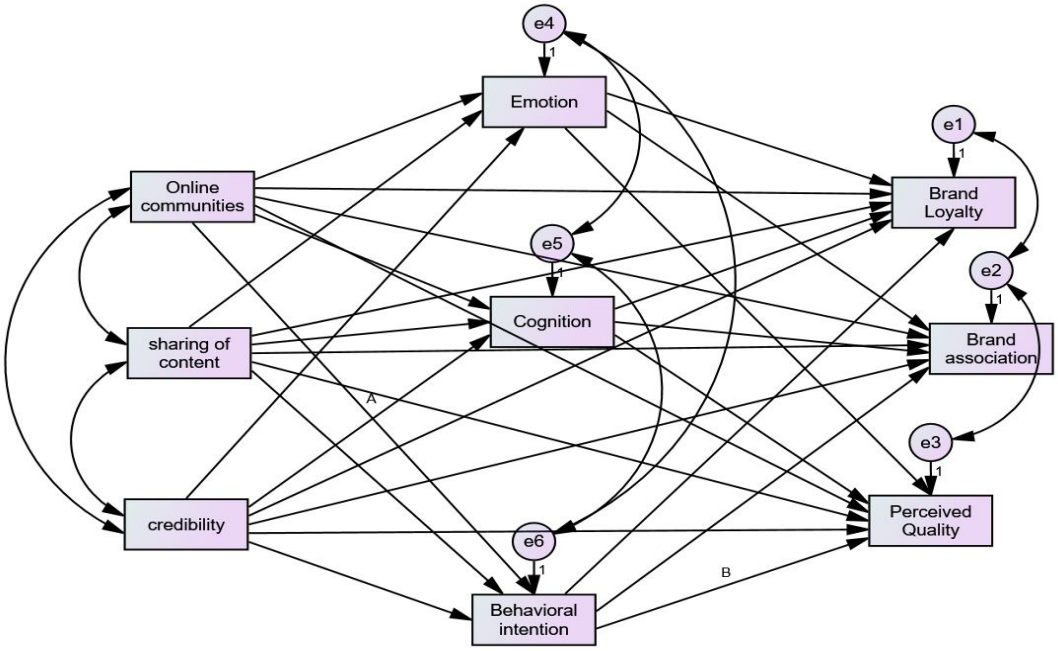
Table (4.63) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.086	.030	.198	.007

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between online communities and perceived quality

Figure (4.31): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.64) below presents the model fit measures and their interpretation

Table (4.64) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Behavioral intention	<---	Online communities	.153	.051	2.994	.003	A
Perceived Quality	<---	Behavioral intention	-.004	.203	-.020	.984	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.65) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

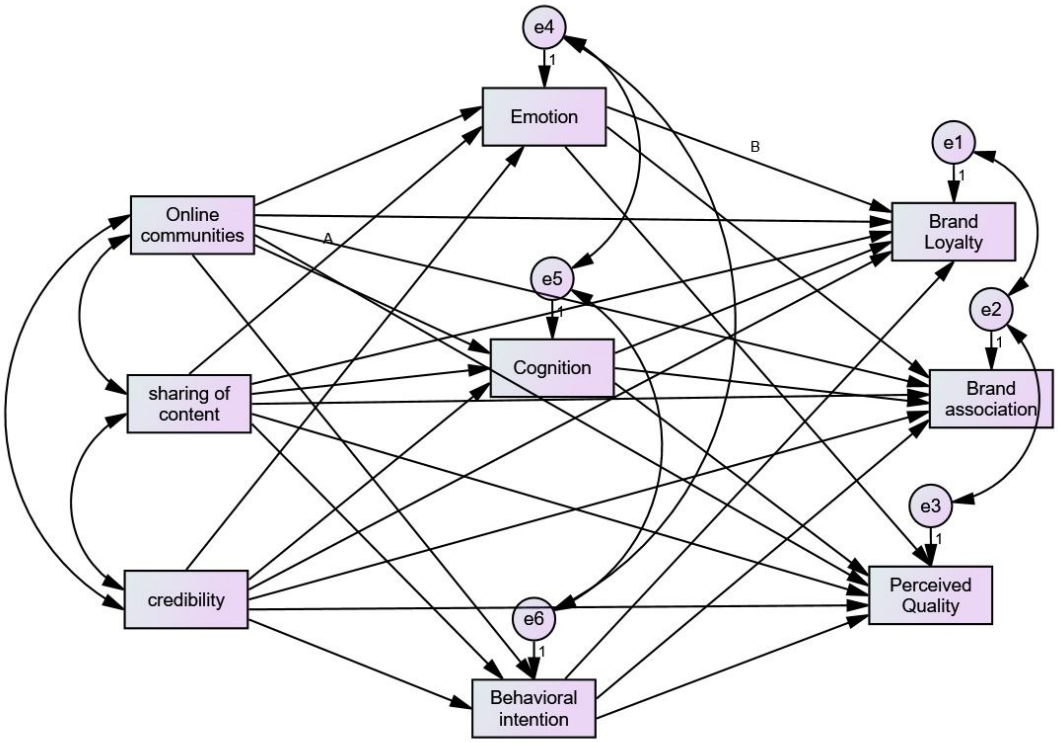
Table (4.65) User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	-.001	-.076	.078	.964

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between sharing content and brand loyalty

Figure (4.32): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.66) below presents the model fit measures and their interpretation

Table (4.66) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Behavioral intention	<---	sharing content	.312	.081	3.835	***	A
Brand Loyalty	<---	Behavioral intention	-.020	.059	-.342	.733	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.67) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

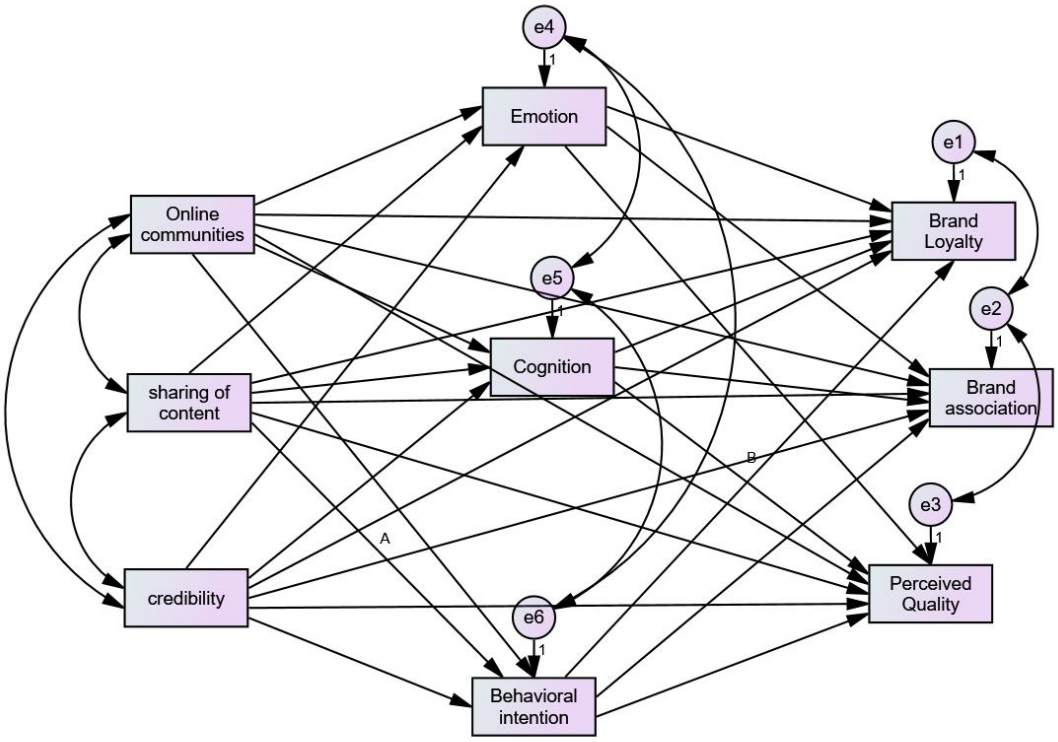
Table (4.67): User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.013	-.001	.050	.140

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between sharing content and brand association

Figure (4.33): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.68) below presents the model fit measures and their interpretation

Table (4.68): Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Behavioral intention	<---	sharing content	.059	.043	1.382	.167	A
Brand_association2	<---	Behavioral intention	.563	.189	2.971	.003	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.69) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

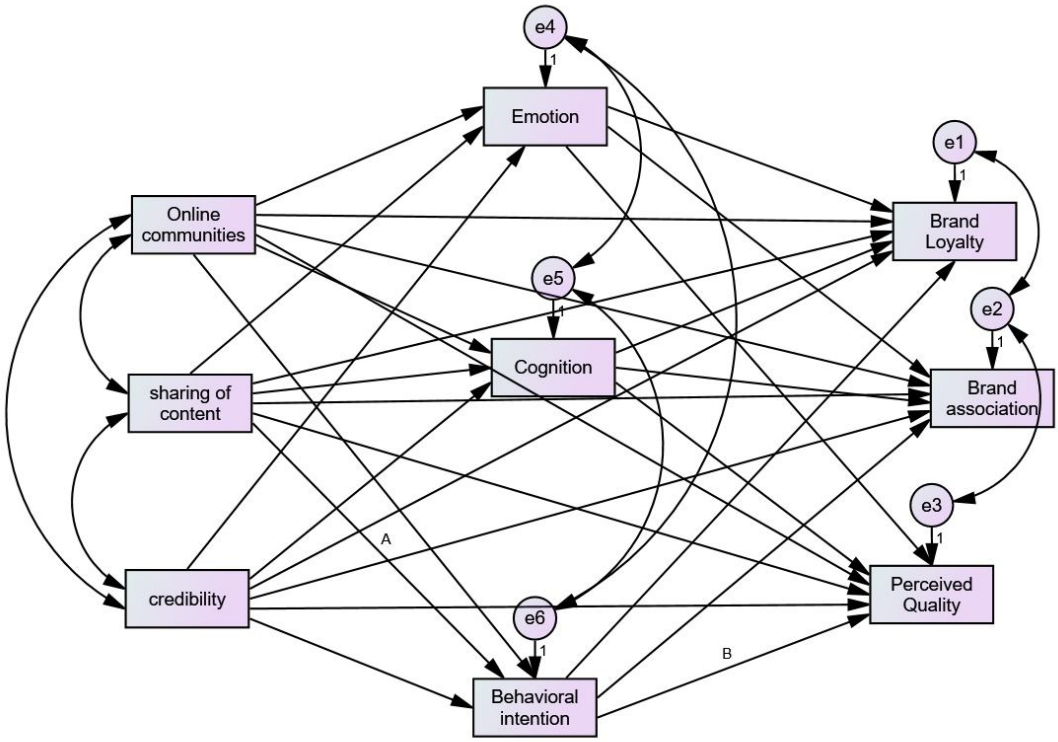
Table (4.69): User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.033	-.004	.110	.142

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between sharing content and perceived quality

Figure (4.34): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.70) below presents the model fit measures and their interpretation

Table (4.70): Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
Behavioral intention <--- Sharing content	.059	.043	1.382	.167	A
Perceived Quality <--- Behavioral intention	-.004	.203	-.020	.984	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.71) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

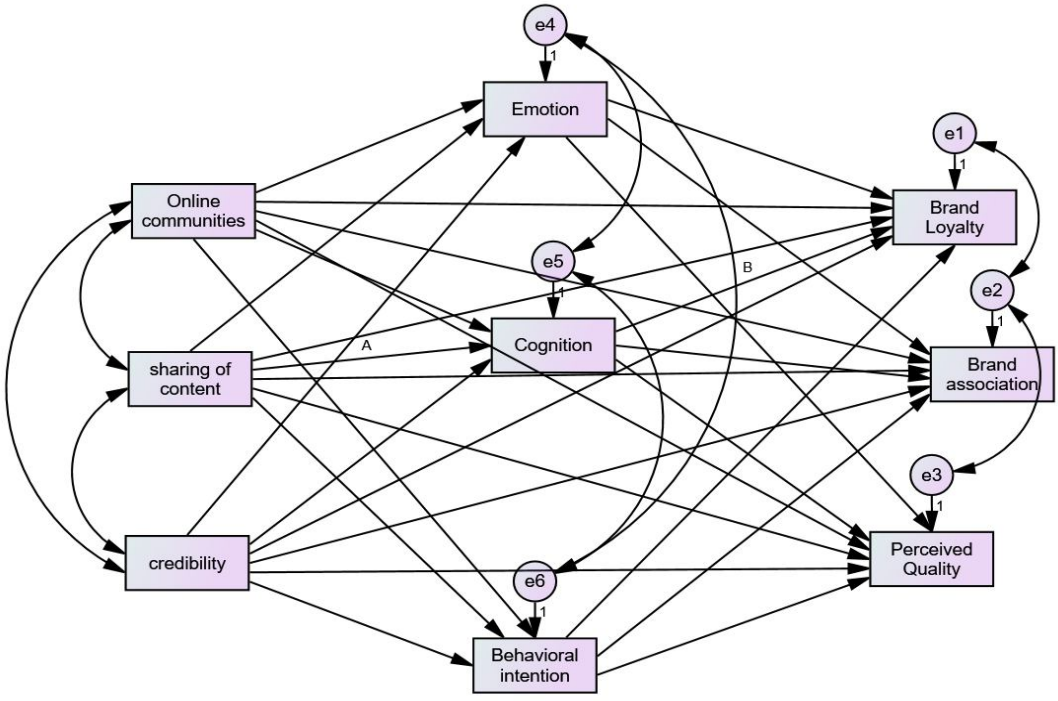
Table (4.71): User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.000	-.039	.035	.935

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between Credibility and brand loyalty

Figure (4.35): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.72) below presents the model fit measures and their interpretation

Table (4.72): Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Behavioral intention	<---	credibility	.161	.057	2.806	.005	A
Brand Loyalty	<---	Behavioral intention	.213	.126	1.689	.091	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.73) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

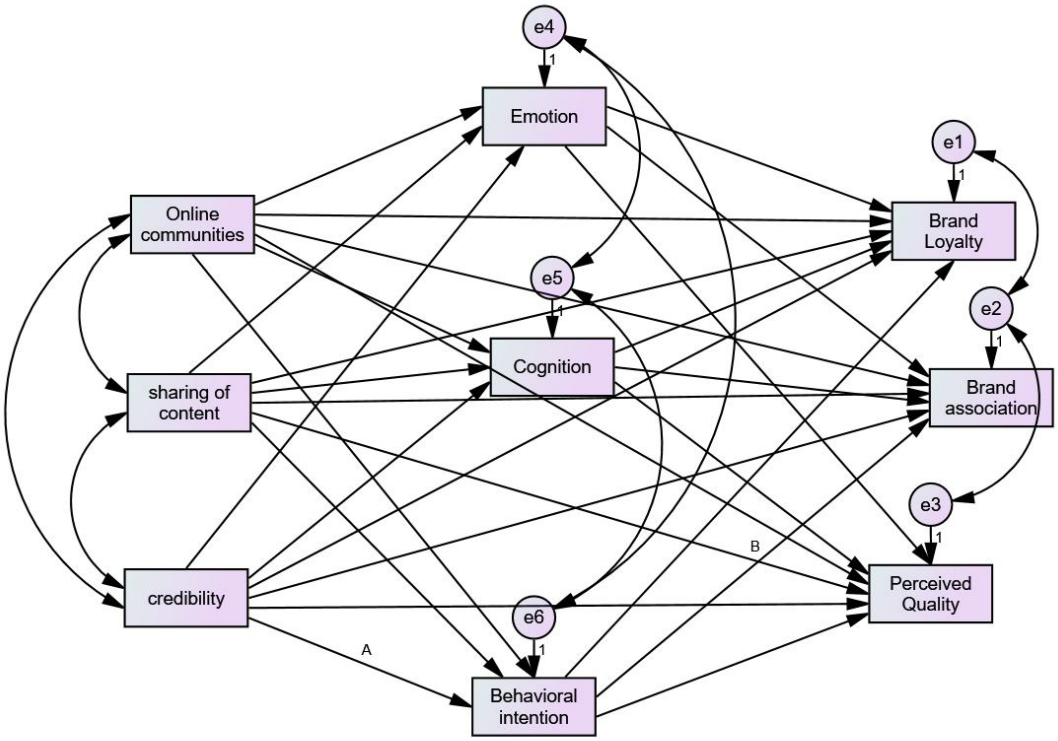
Table (4.73) User-defined estimands: (Group number 1 - Default model)

Parameter	**Estimate**	**Lower**	**Upper**	**P**
A x B	.034	.003	.088	.073

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between Credibility and brand association

Figure (4.36): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.74) below presents the model fit measures and their interpretation

Table (4.74): Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Behavioral intention	<---	credibility	.161	.057	2.806	.005	A
Brand_association2	<---	Behavioral intention	.563	.189	2.971	.003	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.75) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

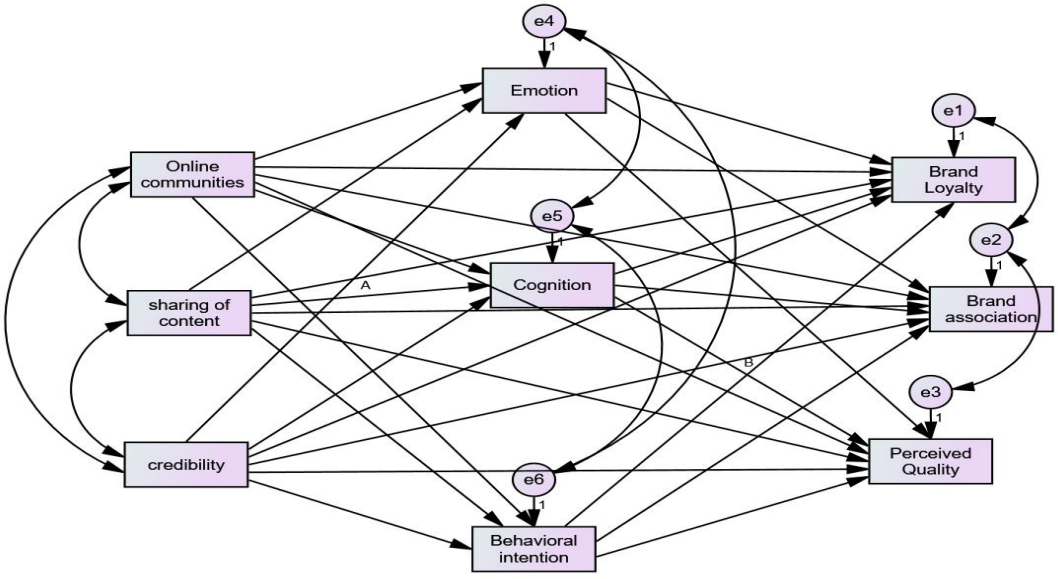
Table (4.75): User-defined estimands: (Group number 1 - Default model)

Parameter	Estimate	Lower	Upper	P
A x B	.091	.025	.203	.013

Source: prepared by the researcher from data (2017).

Behavioral intention mediate the positive relationship between Credibility and perceived quality

Figure (4.37): The Mediating Effect of CBE between SMM and BE relationship



Source: prepared by the researcher from data (2017).

Concerning the model fit recommendation AMOS output showing Model fit indices as follow, CMIN/DF=.852, RMSEA=.000, GFI=.987, AGFI=.956, RMR=.008, NFI=.944, CFI=1, and PCLOSE=.853. Table (4.76) below presents the model fit measures and their interpretation

Table (4.76): Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Behavioral intention	<---	credibility	.161	.057	2.806	.005	A
Perceived Quality	<---	Behavioral intention	-.004	.203	-.020	.984	B

Source: prepared by the researcher from data (2017).

On the other hand, Table (4.77) illustrates the indirect effect shows significant relationship between social media marketing and brand equity through customer brand engagement. This, result confirmed the mediating role of customer brand engagement in the relationship between social media marketing and brand equity. Thus, the summing up of the direct and indirect effect indicated a partial mediation of customer brand engagement with the above mentioned relationship. The results of path analysis and regression weighs attached to explain the (Parameter A*B) estimate between the variables and P value to check indirect effect.

Table (4.77): User-defined estimands: (Group number 1 - Default model)

Parameter	**Estimate**	**Lower**	**Upper**	**P**
A x B	-.001	-.077	.081	.968

Source: prepared by the researcher from data (2017).

4.10 Summary of the chapter

This chapter concerns with data analysis that was generated from under graduated students in Khartoum to show the findings for testing the hypotheses of the study. For analyzing data different statistical systems and techniques were used. For example, IBM (SPSS and AMOS) statistics version 24 were conducted in this study in addition

to other techniques like data cleaning which used for detecting and removing errors and inconsistencies to improve the quality of data followed by the validity and reliability to insure the goodness of measures for the study variables. Then, to identify the characteristics of all variables under study beside, responding firms and respondents descriptive statistical techniques were used. Furthermore, Person's correlations were also implemented to identify the interrelationships among all the variables. Finally, path analysis in AMOS was used to test the direct and indirect effects for testing the hypotheses. The coming chapter presents discussion and conclusion which includes results, implications and limitations of the study.

Table (4.20) Summary of hypothesis testing results: for relationship between social media marketing and brand equity

Item	**Statement of hypotheses: there is positive relationship between:**	**Remark**
H1	**social media marketing and brand equity**	
H1.1	**Social media marketing and brand loyalty**	**Partial support**
H1.1a	Online communities and brand loyalty	**Supported**
H1.1b	Sharing content and brand loyalty	**Not supported**
H1.1c	Credibility and brand loyalty	**Supported**
H1.2	**Social media marketing and brand association**	**Not supported**
H1.2a	Online communities and brand association	**Not supported**
H1.2b	Sharing content and brand association	**Not supported**
H1.1c	Credibility and brand association	**Not supported**
H1.3	**Social media marketing and perceived quality**	**Partial sup.**
H3.1a	Online communities and perceived quality	**Not supported**
H1.3b	Sharing content and perceived quality	**Supported**
H1.3c	Credibility and perceived quality	**Not supported**

Table (4.78) Summary of hypothesis testing results for relationship between social media marketing and customer-brand engagement

Item	Statement of hypotheses: there is a positive relationship between:	**Remark**
H2	**social media marketing and customer-brand engagement**	
H2.1	**social media marketing and Emotion**	**Partial sup.**
H2.1a	Online communities and emotion	**Not supported**
H2.1b	Sharing content and emotion	**Fully supported**
H2.1c	credibility2 and emotion	**Fully supported**
H2.2	**social media marketing and cognition**	**Partial sup.**
H2.2a	Online communities and cognition	**Not supported**
H2.2b	Sharing content and cognition	**Supported**
H2.2c	credibility2 and cognition	**Fully supported**
H2.3	**social media marketing and behavioral intention**	**Partial sup.**
H2.3a	Online communities and behavioral intention	**Supported**
H2.3b	Sharing content and behavioral intention	**Not supported**
H2.3c	credibility2 and behavioral intention	**Supported**

Table (4.78) Summary of hypotheses testing results for relationship between customer-brand engagement and brand equity.

Item	Statement of hypotheses: there is positive relationship between,	**Remark**
H3	**Customer-brand engagement and brand equity.**	
H3.1	**Customer-brand engagement and brand loyalty**	**Partial sup.**
H3.1a	Emotion and brand loyalty	**Not supported**
H3.1b	Cognition and brand loyalty	**Not supported**
H3.1c	Behavioral intention and brand loyalty	**Supported**
H3.2	**Customer-brand engagement and brand association 2**	**Partial sup.**
H3.2a	Emotion and brand association 2	**Not supported**
H3.2b	Cognition and brand association 2	**Not supported**
H3.2c	Behavioral intention and brand association 2	**Fully supported**
H3.3	**Customer-brand engagement and perceived quality**	**Partial sup.**
H3.3a	Emotion and perceived quality	**Not supported**
H3.3b	Cognition and perceived quality	**Supported**
H3.3c	Behavioral intention and perceived quality	**Not supported**

Table (4.78) Summary of hypotheses testing results of the mediating effect of customer brand engagement on the relation between social media marketing and brand equity

Item	Statement of hypotheses: there is positive relationship between,	**Remark**
H4	The impact of social media marketing on brand equity is stronger when customer brand engagement variables are higher.	
H4.1	**The impact of social media marketing on brand equity is stronger when emotions are higher.**	**partial**
H4.1.1	The **effect of social media marketing on brand loyalty is stronger when emotion are higher.**	
H4.1.1a	The effect of online communities on brand loyalty is stronger when emotions are higher.	**Not supported**
H4.1.1b	The effect of sharing content on brand loyalty is stronger when emotions are higher.	----------
H4.1.1c	The effect of credibility on brand loyalty is stronger when emotions are higher.	**Not supported**
H4.1.2	**The effect of social media marketing on brand association is stronger when emotion are higher**	**N.S**
H4.1.2a	The effect of online communities on brand association is stronger when emotions are higher.	**Not supported**
H4.1.2b	The effect of sharing content on brand association is stronger when emotions are higher.	**Not supported**
H4.1.2c	The effect of credibility on brand association is stronger when emotions are higher.	**Not supported**
H4.1.3	**The effect of social media marketing on perceived quality is stronger when emotion are higher**	**N.S**
H4.1.3a	The effect of online communities on perceived quality is stronger when emotions are higher.	**Not supported**
H4.1.3b	The effect of sharing content on perceived quality is stronger when emotions are higher.	**Not supported**
H4.1.3c	The effect of credibility on perceived quality is stronger when emotions are higher.	**Not supported**
H4.2	**The effect of social media marketing on brand equity is stronger when cognition are higher.**	**N.S**
H4.2.1	The effect of social media marketing on brand loyalty is stronger when cognition are higher.	
H4.2.1a	The effect of online communities on brand loyalty is stronger when cognition are higher.	**Not supported**
H4.2.1b	The effect of sharing content on brand loyalty is stronger when cognition are higher.	**Not supported**
H4.2.1c	The effect of credibility on brand loyalty is stronger when cognition are higher.	**Not supported**
H4.2.2	**The effect of social media marketing on brand association is stronger when cognition are higher.**	**N.S**

H4.2.21	The effect of online communities on brand association is stronger when cognition are higher.	**Not supported**
H4.2.2b	The effect of sharing content on brand association is stronger when cognition are higher.	**Not supported**
H4.2.2c	The effect of credibility on brand association is stronger when cognition are higher.	**Not supported**
H4.2.3	**The effect of social media marketing on perceived quality is stronger when cognition are higher.**	**Partial supported**
H4.2.3a	The effect of online communities on perceived quality is stronger when cognition are higher.	**Not supported**
H4.2.3b	The effect of sharing content on perceived quality is stronger when cognition are higher.	**supported**
H4.2.3c	The effect of credibility on perceived quality is stronger when cognition are higher.	**Supported**
H4.2.4	**The effect of social media marketing on brand loyalty is stronger when behavioral intention are higher.**	**N.S**
H4.2.4a	The effect of online communities on brand loyalty is stronger when behavioral intention are higher.	**Not supported**
H4.2.4b	The effect of sharing content on brand loyalty is stronger when behavioral intention are higher.	**Not supported**
H4.2.4c	The effect of credibility on brand loyalty is stronger when behavioral intention are higher.	**Not supported**
H4.2.5	**The effect of social media marketing on brand association is stronger when behavioral intention are higher.**	**Partial supported**
H4.2.5a	The effect of online communities on brand association is stronger when behavioral intention are higher.	**supported**
H4.2.5b	The effect of sharing content on brand association is stronger when behavioral intention are higher.	**Not supported**
H4.2.5c	The effect of credibility on brand association is stronger when behavioral intention are higher.	**supported**
H4.2.6	**The effect of social media marketing on perceived quality is stronger when behavioral intention are higher.**	**N.S**
H4.2.6a	The effect of online communities on perceived quality is stronger when behavioral intention are higher.	**Not supported**
H4.2.6b	The effect of sharing content on perceived quality is stronger when behavioral intention are higher.	**Not supported**
H4.2.6c	The effect of credibility on perceived quality is stronger when behavioral intention are higher.	**Not supported**

CHAPTER FIVE

5. Discussion, Limitation and Conclusions

5.1 chapter Overview:

This chapter explained the findings of this study which examined the social media marketing according to four different dimensions suggested by the previous research. Basically, four parts will be discussed in this chapter for the purpose of the current study. First part will discuss overall findings of this research, while the second and third part will clarify the managerial implications and limitations of the study, and the next part will suggest some recommendations for future research.

5.2 Recapitulation of the results:

For the purpose of the study we tested the relationship among social media marketing as independent variable with brand equity as dependent variable in the presence of customer brand engagement as a mediator variable was done by using the SPSS 24 and AMOS 24 .From the results some changes occur in the model of the study:

Based on the literature review the dimensions of the independent variable was online communities, credibility, interaction , accessibility and sharing of content, after the statistical analysis this dimensions had become three dimensions which are online communities , sharing of content and credibility. while the dimensions of the dependent variable was four dimensions brand loyalty, brand awareness, brand association and perceived quality after the statistical analysis this dimensions had become three dimensions which are brand loyalty , brand association and perceived quality . Finally the mediator variable has remain the same dimensions before and after the analysis which are emotions, cognitions and behavioral intention.

- The results shows that social media marketing have positive impact on brand loyalty and perceived quality. While they did not have impact on brand associations.
- Social media marketing have a partial impact on the dimensions of customer brand engagement which are emotions, cognitions and behavioral intention.
- The research found that from the results the customer brand engagement have a partial impact on brand loyalty, brand association and perceived quality which represent the dimensions of brand equity.
- Customer brand engagement have a mediate the relationship of social media marketing and brand equity.

5.3 Discussion:

This study aims to determine the impact of social media marketing on brand equity dimensions (brand loyalty, brand awareness, brand associations and perceived quality) and find out the mediating effect of customer brand engagement. The results have revealed that there is some dimensions not supported or have been removed in the analysis.

Social media marketing is a challenging field for such measurements, due to various conceptual and measurement issues (Schultz, 2011; Schultz & Peltier, 2013). This research addresses this important gap in the literature by offering a study on the impact of social media marketing on brand equity. This research contributes to prior literature by providing a holistic framework that demonstrates how social media marketing influence brand equity and how customer-brand engagement influence the relationship between social media marketing and brand equity as a mediating factor. Although prior literature recognized the importance of various social media elements (Kim & Ko, 2012), our empirical study details their relative importance and shows that there is three elements should be holistically taken into account when planning social media activities.

The relationship between Social media marketing and brand equity:

Another contribution of the study is that the first hypothesis was tested whether there was a relation between social media marketing and brand equity. According to regression weights there is a partial support to the relationship between social media marketing and brand loyalty and perceived quality but not support to the relationship between social media marketing and brand associations it finds that social media marketing dimension (online communities) have a significant positive effect on one dimension of brand equity which is brand loyalty (p=.003) and have no significance on the two other dimensions of brand equity: brand association (0.082) and perceived quality (0.8). This result means that social media marketing should not only be thought of as a means of raising brand loyalty and reaching new customers, but also as an increasingly important and serious tool to sustain customer's and this support the theory of (Erdogums,&Cicek, 2012) that was to identify the effect of social media marketing on brand loyalty of the consumers where Babac (2011) study shows also there is a positive relationship between social media communities and brand loyalty and what the consumers feel or think about the brand which is the perceived quality. Moreover, the result found to be aligned with the journal reference from As'ad & Alhadid (2014) they had proven that there is a strong relationship between social media marketing and brand equity in the mobile service providers in Jordan. These days, people is getting more concern about the use of social media as part of marketing activities. Through social media brands is able to improve the brand awareness, increase the brand association in customer's mind, provide a solid quality perceived by customers, and yet build the brand loyalty.

***The relationship between social media marketing and customer-brand engagement*:**

The second hypothesis was tested to find out if there is a positive relationship between social media marketing and customer-brand engagement. The results revealed that first there was support the relation between sharing content, credibility with the emotions but not supported to the online communities. Secondly, the dimensions of social media marketing against cognition was vary, there was a significance support to the relation between cognition and sharing content also with

credibility but not support the relationship with online communities. Finally there was a significance to the relation between behavioral intention and two dimensions of social media marketing which are online communities and credibility but there was no significance with sharing content dimension, that was agree with the studies of Hollebeek (2011a, 2011b), Brodie et al. (2011), Van Doorn et al. (2010), Gummerus et al. (2012) and Hollebeek et al. (2014). The findings also showed that engagement is complex and not solely behavioural, providing support for the multidimensionality of Customer brand engagement (Brodie et al., 2013; Hollebeek et al., 2014). The study of solem (2016) identified different explanatory effects of service brand activities on three separate, psychologically anchored customer brand engagement dimensions (i.e. emotional, cognitive and intentional) among customers applying eager and vigilant strategies. Customers seem to engage differently in these diverse dimensions, depending on motivational orientation (mode) and strategy.

The relationship between customer-brand engagement and brand equity:

The third hypothesis tested the relationship between customer-brand engagement and brand equity, the regression weights found that there was a partial support to the relationship between customer- brand engagement and brand equity. The results shows that the relationship between brand loyalty with emotions and cognitions was not supported but supported to the relationship between brand loyalty and behavioral intentions. The second dimensions of brand equity was brand associations that was found to be not supported to the relationship with customer brand engagement dimensions emotions and cognitions but was fully supported to the relationship with behavioral intentions. The last dimension of brand equity was perceived quality , the relationship between this dimension and customer brand engagement dimensions were supported with cognitions and not supported to the relationship between perceived quality and emotions and behavioral intensions as well ,and that agree with the theory of Yoo et al. (2000) which stated that marketing communications exert a positive influence on brand awareness, perceived brand quality as well as on brand loyalty and brand associations. Also this results agree with the views of Hollebeek (2011a, 2011b) and Brodie et al. (2011), as customer brand engagement is considered

to be a multidimensional (emotional, cognitive and intentional) – and fluctuating – psychological state that is context dependent and process based. It is considered to generate two-way co-creating interactions between customers and brand activities.

The mediating effect of customer- brand engagement between social media marketing and brand equity:

In hypothesis four we tested the mediating effect of customer-brand engagement between social media marketing and brand equity. Customer engagement in social media is becoming an especially relevant topic as social media provides companies with a lot of opportunities to become more noticeable and interact with consumers. Social media helps to ensure interactivity i.e. provides an opportunity to keep conversations among consumers and engage them in content and brand equity building by focusing in perceived quality, enhancing positive brand associations and building customer loyalty to the brand. We found that the relationship between social media marketing and brand equity in the presence of emotions as mediating factor was not supported. The effect of social media marketing on brand equity is when cognition are higher not supported also , Where there was a partial support to the effect of social media marketing on perceived quality is stronger when cognition are higher. Also the effect of social media marketing on brand equity in the presence of the mediating effect of customer brand engagement was partially supported mainly in the perceived quality which had a higher effect when behavioral intentions was high. So we concluded that the mediating effect of customer-brand engagement on the relationship between social media marketing and brand equity was partially supported to the hypothesis.

Customer brand engagement allows company to use the customers' competencies in brand equity creation. Brand engaged consumers experiences bigger emotional, functional and social value, brand creates more positive associations for them and leads to increased brand loyalty and brand equity.

5.4 Implication:

a. Theoretical

(1) This study contributes important addition to current literature on impact of social media marketing on brand equity as it suggests the conceptual framework integrating the dimensions of brand equity with the process of customer-brand engagement in social media networks.

(2) Nowadays, brands are not the only creators of brand stories and brand information. Co-existing customer engagement plays an important role in influencing brand equity (Bruhn et al 2012, Bruno and Dariusz 2015).The present study makes several contributions to the online marketing literature and social media marketing practice.

(3) Previous studies on brand equity creation were mostly based on traditional media such as TV, Newspaper, magazines etc., and studies few studies such as Bruhn et al. (2012) found that user created and firm created social media communication are helpful in creating brand equity but left the scope for future research to link it with value creation, so our study resolves this research gap while linking it with the process of customer engagement.

(4) The research develop a Customer brand engagement conceptualization and an associated it measurement scale, which contributes further insights into the nature and dimensionality of the 'engagement' concept within the broader theoretical area of interactive consumer/brand relationships.

b. Practical

In addition to theoretical contributions, this study also draws a number of managerial implications.

(1) By providing a conceptual framework for brand equity in social media, it provides managers an enhanced understanding of the brand equity concept in social media and may help in the formulation and design of focused strategies and tactics of customer engagement in social media in order to improve the brand equity.

(2) Social media is a powerful, low cost tool that if used wisely, can ensure that a brand will increase its customer loyalty and the customer view to brand quality. There is a vast number of different social media platforms, each having advantages and disadvantages. Managers should be sure about the goals they want to achieve, their target group and about the message they want to convey and choose optimally. As proved in this study, the higher the engagement in a brand's Social Media activities, the higher the company will increase association with customers and make customer loyal.

(3) Since profits is the main goal of all firms, companies regardless of size and type of business should implement a social media strategy. They can use it to research the market, learn about new trends, and obtain valuable feedback and also to increase their sales. As a result managers should not only keep an open-mind and eye to the market, using social media to listen to what consumers talk about and how they perceive their brand but they should also expand their network.

(4) Since brand engagement is a partial mediator between brand equity and social media marketing, a combination of a high equity brand with a significant use of Social Media that will lead to the engagement of the consumers will prove to be successful for companies. However, a firm should be prepared to lose some control over their brand; some companies avoid engaging in social media because of that but consumers are going to discuss about anything or anyone, regardless of an online presence. Therefore, companies have just to make sure to be consistent with their positioning, have a brand of high equity, choose the appropriate Social Media, implement a strategy that is aligned with the brand and embrace even negative comments, since they could result in great improvements.

5.5 Limitation

1. First and the main limitation is that we have collected data only from three universities in Khartoum state and the respondents were under graduate students only, data can also be collected from more cities for broader generalizability of results.

2. The outcome of this research has given valuable feedbacks to researchers. However, these outcomes were accompanied with some limitations. Cavana et al. (2001) have stated that cross-sectional data that is only able to reveal the net effect of predictor variable towards a particular criterion variable at a specific point of time. Due to the limitation of cross-sectional study, the outcomes and findings of the research are not capable to "explain why the observed patterns are there" (Easterly-Smith, Thorpe & Lowe, 2003).

3. There are restrictions the sampling technique (convenience sampling) which indicates that the outcome of the study cannot be generalized because data is collected from readily available respondents which does not represent the whole population.

4. Our sample size is 200 and collected data through survey questionnaire tool hand by hand, for future research data can also be collected online in this way sample size also increases will fill the questionnaire.

5.6 Suggestions for future research

We have developed an integrated model for building brand equity through customer engagement in social media. Qualitative analysis and empirical research is now needed for ontological adequacy of propositions. Researchers may also wish to investigate the relationship between the sub-processes of customer engagement (such as Brodie et al. (2013) suggested five sub-process of customer engagement as learning, socializing, sharing, c-creating and advocating) and the dimensions of brand equity.

5.7 conclusions

The present study has examined the impact of social media marketing on brand equity, mediating effect of customer-brand engagement. To meet the purpose of the study research objectives and hypothesis were developed. A model is find out the nature of relationship and their corresponding effect of the variables. Findings of this research reveal that, most significant factor that shows the impact of social media marketing on brand loyalty, perceived quality , and found that there is a

significance relationship between social media marketing and customer-brand engagement , also there is a significance relationship between customer-brand engagement and brand equity, which leading to the last finding which is the mediating effect of customer-brand engagement on the relationship between social media marketing and brand equity which was found to be partially significant. Hence, every activity enabled by the use of social media enhance customer engagement and brand equity.

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