The impact of social media brand communications on customer based brand equity.

"An Applied Study on the users of mobile phone network services in Egypt"

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Abstract

The current research aimed to evaluate the impact of firm-created and user-generated social media brand communication on consumer-based brand equity. Also this research focused on differentiating between the impact of firm-created content versus user-generated content on consumer-based brand equity dimensions (brand awareness/associations, perceived quality & brand loyalty).

The active users of mobile network services in Egypt were the population of this research. A sample of the research totaled 435 users who are followers of mobile network provider pages on Facebook, their age ranged from 18 to 34 males and females. The data were collected by conducting standardized questionnaire that were distributed among the sampling units in front of the customer service centers. Finally, the researcher tested the hypothesis using a set of scientific tests such as T. Test, and F. Test accompanying Simple regression analysis.

The research results showed that both firm-created and user-generated social media brand communication have a positive significant impact on brand awareness/associations; whereas, user-generated social media brand communication also has a positive significant impact on perceived brand quality and brand loyalty greater than the influence of firm created content.

ملخص البحث

يهدف هذا البحث إلى تقييم تأثير كلاً من المحتوى الذي تنشأه الشركة والمحتوى الذي ينشأه المستخدم على مواقع التواصل الإجتماعي في تحديد قيمة العلامة التجارية من وجهة نظر العملاء. ويركز ايضاً هذا البحث على التمييز بين تأثر المحتوى الذي تنشأه الشركة مقابل المحتوى الذي ينشأه المستخدم على أبعاد قيمة العلامة التجارية (الوعي بالعلامة التجارية – الإرتباطات الذهنية للعلامة التجارية – الجودة المدركة للعلامة التجارية – الولاء للعلامة التجارية).

يتكون مجتمع هذا البحث من المستخدمين الفعليين لخدمات شركات شبكات الهاتف المحمول في مصر. بيلغ حجم عينة البحث حوالي (435) مستخدم فعلي ومتابع لصفحات مقدمي خدمة شبكات الهاتف المحمول على موقع التواصل الإجتماعي فيس بوك وتتراوح أعمارهم بين 18 و 34 عام من الذكور والإناث. تم تجميع البيانات من خلال إجراء إستبيان موحد تم توزيعه على عينة الدراسة أمام مراكز خدمة العملاء التابعة للشركات محل البحث. وأخيراً إعتمد الباحث على مجموعة من الإختبارات المعملية لإختبار فروض الدراسة مثل إختبار T.Test ، وإختبار F.Test الملازمين لأسلوب تحليل الانحدار البسيط.

وأظهرت نتائج هذه الدراسة أن كلاً من المحتوى الذي تنشأه الشركة و المحتوى الذي ينشأه المستخدم على مواقع التواصل الإجتماعي له تأثير إيجابي كبير على الوعي و الإرتباطات الذهنية للعلامة التجارية، في حين أن المحتوى الذي ينشأه المستخدم على مواقع التواصل الإجتماعي أظهر تأثيراً إيجابياً كبيراً على الجودة المدركة والولاء للعلامة التجارية بشكل أكبر من تأثير المحتوى الذي تنشأه الشركة على مواقع التواصل الإجتماعي.

I. Introduction

Before the emergence of social media communications there's only one way communication channel between firms and customers in only one direction from the firm to customers, but the emergence of social media communications and web 2.0 technologies provide a two-way communication channel for users in a multi-directions from firms to customers, from customer to firms, and finally from customers to customers.

Since the internet usage has been increasing so much in the last 10 years, many companies have begun to take advantage from this web 2.0 Technologies through replacing social media two way communications instead of traditional media one way communications to promote and spread information about their brands.

Nowadays, the number of Egyptians who use the internet exceeds 50% of the overall population, with 39.00 million monthly active members on the social networking site Facebook. (the hootsuite jan,2018 report for Digital Marketing Insights), brands such as (Vodafone, Orange, Etisalat, and We) Use social media channels to communicate with customers and promote their companies' products and services.

Since a result, social media has created new points of contact between consumers and companies on a worldwide scale, resulting in a two-fold effect, as digital media has reshaped both customer and firm roles (Maria, Francesca, Roberto, Alngelo, 2017).

So it's necessary to investigate the influence of social media brand communications in order to differentiate between two types of content: firm-created content and user-generated content (Godes and Mayzlin, 2009). Because firm-created social media communication is under the firm's control, user-generated social media communication is out of the firm's control, this distinction between communication sources is important (Vanden Bergh, Lee, Quilliam and Hove, 2011).

On the other hand, the concept of brand equity and the crucial intangible value that brands provide to organizations has become one of the most popular and potentially crucial marketing issues to emerge in recent years. (keller, 2009). Brand equity is considered as a metric that may be used to evaluate the effectiveness of marketing and communication efforts (Aaker, 1991).

In truth, brand equity is the result of companies' attempts to create a set of symbolic and emotional connotations around their brands (Johansson, Dimofte and Mazancheryl, 2012). Moreover, Positive brand equity allows for a range of competitive advantages, including improved consumer loyalty (Aaker, 1997; Pappu et al., 2005)

Finally, the four components of customer-based brand equity are brand awareness, brand associations, perceived quality, and brand loyalty (Aaker, 1991).

As a result, it's critical to evaluate the impact of social media communications on brand equity as an urgent need to face the world technological developments.

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2. Research terminology:

A basic set of terminologies for this research are listed as follow:

Social media: Social media are online applications, platforms and media which aim to facilitate interactions, collaborations and the sharing of content (Richter & Koch, 2007). They take a variety of forms, including weblogs, social blogs, microblogging, wikis, podcasts, pictures, video, rating and social bookmarking (Angella and Eunju 2012).

User generated content (UGC): Refers to the content made publicly available over the Internet by customers, which reflects a certain amount of creative effort and is created outside of professional routines and practices (Claire, 2016).

Firm created content (FCC): firm-created social media communication is understood as a form of advertising fully controlled by the company and guided by a marketing strategy agenda (Bruno and Dariusz 2016).

Brand equity: Brand equity can be defined as a set of 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 that firm's customers. These assets are brand awareness, brand associations, perceived quality, brand loyalty (Aaker, 1991).

3. The Exploratory study:

The following section is devoted to demonstrate the exploratory study which the researcher has conducted earlier with a number of targeted respondents whose are users of mobile network services who are fans and followers of mobile network provider pages on Facebook.

Purpose: This preliminary study was conducted to comprehensively identify and define the aspects of the study problem, to stand on the point of view of users of mobile network services who are fans and followers of mobile network provider pages on Facebook. This preliminary study was conducted to better understand the problem studied and its dimensions and to generate the variables of the study as a potential cause to explain the research problem (Aaker et al., 2007).

Method: the researcher has conducted Semi-structured interviews with 30 users of mobile network services who are followers for mobile network provider pages on Facebook. Their age ranged from 18 to 34year old. (18 male – 12 female), they are active users of social media network sites specially Facebook. The researcher intercepts them in front of customer service centers for mobile networks in Shebin El kom city, Menofia governorate. (Half of respondents were interviewed in front of Vodafone customer service centers and another half in front of Etisalat customer service centers) during the month of October, 2018.

The researcher was keen on covering a number of points during these interviews:
- Explain what we mean by social media communications both firm created content and user generated content.

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- Explain what we mean by brand equity and its dimensions (brand awareness, brand associations, perceived quality and brand loyalty).
- The influences of user generated content in social media platforms on user's brand awareness, associations, perceived quality and brand loyalty.
- The influences of firm created content in social media platforms on user's brand awareness, associations, perceived quality and brand loyalty.

The researcher was keen on asking a number of questions during these interviews:

- ➤ Are you an actual user of mobile networks in Egypt?
- ➤ Which network company do you use?
- ➤ How old are you?
- ➤ Are you a good user of social media platforms?
- ➤ Are you following the fan pages of mobile network provider companies on Facebook?
- ➤ What are the impacts of user generated content about the brands in your mind?
- ➤ What are the impacts of firm created contact about the brands in your mind?

Results: Through the discussions, the researcher found that that 27 out of 30 with 90 % of participants make a clear distinction between firm-created and user-generated social media communication.

The two types of social media communications which are Firm created content & User generated content influence brand awareness and associations whereas, user generated social media communications influence perceived quality and brand loyalty greater than content created by firms. As they consider content generated by users is more trustable than content created by firms because the former one reflect the user's actual experiences about the product.

4. Previous studies:

There have been considerable researches that Examine and analysis the importance and influence of social media communications on a wide range of topics. These studies provide the theoretical basis for current study which include social media communications (UGC & FCC) and brand equity. Therefore, the researcher will present the previous studies based on the logical sequence of the research subject.

Social media:

Early studies about social media lay emphasis on the effects of word of mouth (WOM) From (Brown, Amanda, Broderick and Nike. 2007) study, which used a qualitative interview with 30 respondents from a wide range of backgrounds and demographic segments. Their ages ranged from 22 to 43, and there were 11 females and 19 males. Their Education varied from high school up to postgraduate degrees, and respondents had occupations ranging from students, administrators, technical specialists, and professionals to high-level managers to differentiate between online versus offline interactions between customers about products and services. Findings

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showed that online community WOM has a stronger impact on product judgments, attitude formation, and decision making than traditional marketing communications.

In another study conducted by (Trusov, et la, 2009), The authors studied the effect of word-of-mouth (WOM) marketing on member growth at an Internet social networking site and compare it with traditional marketing vehicles. They used a Vector Auto regression (VAR) modeling approach. Estimated from the VAR model showed that word-of-mouth positively influence membership growth and have a substantially longer carryover effect than traditional marketing activities.

Several studies have attempted to differentiate the impact of social media with traditional media. As (Stephen 2010) proved that the unit of sales influenced by traditional media communications greater than that by social media however, the greater interactive activities through social media have a comparable effect to traditional media in the case of blogs and online communities.

Since the internet usage has been increasing most within the last ten years, many companies have found new communication tool which called social media to promote their marketing activities. So (Benedikt and Stefan, 2010). found in their study about "social media and the impact on marketing communication" that companies approve social media as effective tool to exceed and support their marketing communications. From that moment social media communications engaged into all fields in the community.

Besides, a recent study investigated the impact sizes of traditional media and social media communications on completely different aspects of brand equity, a total of 393 data sets from three different industries, namely tourism, telecommunications, and pharmaceuticals, were generated using a standardized online-survey. The results showed that social media communications have a stronger positive influence on brand image compared to traditional one, whereas traditional media exert a stronger impact on brand awareness (Bruhn et al. 2012).

Existing literature on information search and decision making has documented that customers consciously differentiate between information senders, thereby ends up to different response to the message (He, yang, 2016). Therefore, social media content as communication stimuli are expected to have influence on consumers' perception of the brand. It is crucial to differentiate between information senders and examine their impact on brands separately.

So In this research the researcher interested in differentiating the influence of firm created content and user generated content within social media activities.

In the research conducted by (Hautz, et al. 2014). investigated the difference between user-generated video and firm-generated video, and their impacts on consumers' perceptions and intended behaviors. A total of 256 data set from students from three universities in Austria and two universities in Germany were generated using a standardized online-survey. The Results showed that user-generated videos have a

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higher degree of source credibility and therefore has a more important influence on consumers' intended behavior.

(Kumar, et la. 2016) investigated the synergistic effects of FCC with television advertising and e-mail communication. A data set for this study came from customers of a large specialty retailer that sells wine and spirits in the northeastern United States through a standard online survey. Result showed that FCC works synergistically with both television advertising and e-mail marketing and also found that the effect of FCC is greater for more experienced customers who's aware of the advanced technology and social media activities.

In terms of marketing, before the purchase decision has been taken, customers depend on user generated contents and firm created contents on social media platforms to gather information about brand they intent to purchase.

From this idea (Hweting, 2017) started to compare between the influence of user generated branding and brand generated advertising on consumers' intentions to purchase. The sample consisted of 539 undergraduate students from a major university in Southeastern USA who voluntarily agreed to participate in this research. In an online survey, the subjects were randomly assigned to one of the two experimental conditions, framed as either a UGB Facebook post or a brand generated ad post. The study results showed that both sources of information play a complementary role in consumer's overall purchase decision. But from my point of view I see that user generated content is more influencer than firm created content as overall customers words about brand revealed from past experiences and realistic use of brand so Firms must pay attention to such user-generated contents to ensure a brand's success in the marketplace, because user generated contents can't be controlled by the firm and any negative words from customers can strongly influence firms badly.

Customer based brand equity:

A considerable amount of literature was reviewed in order to better understand the concept of Customer based brand equity (CBBE).

During the past 15 years, brand equity has been a priority topic for both practitioners and academics. Some researchers examined brand equity on the financial based perspective, which measure the value of the brand (Simon and Sulliva 1993; Rego et al. 2009). Others looked into it from the customer based perspective, (Keller 1993; Yoo et al. 2000; Fischer et al. 2010). This study will adopt the latter angle and analyze brand equity from a cognitive psychological approach, namely the consumer-based brand equity.

A lot of efforts have been made to conceptualize and measure different dimensions under customer based brand equity "CBBE" across a large vary of contexts as (Romaniuk et al. 2010) aimed to reveal the relationship between a consumer's past behavioral loyalty and current propensity to give brand associations. By collected data from 8000 consumers of two hot beverages categories which include six brands

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consumed in the UK, the researchers found that there is a positive relationship between these two variables, where those with a higher buying frequency and a higher share of category requirements are more likely to give brand associations. The findings also showed that share of category requirements is a greater driver of brand association responses than buying frequency.

The study conducted by (Buil et al. 2008) investigated the relationship between brand equity dimensions. After they collected data from 822 consumers of different eight brands in the UK and Spain and used a standard questionnaire, they found that brand equity dimensions are inter-related. Brand awareness has a positive influence on perceived quality and brand associations, which in turn influence brand loyalty. They also found that perceived quality has a negative influence on brand loyalty.

In the same area the study conducted by (Tong, et la. 2009) aimed to examine the practicality and applications of a customer-based brand equity model in the Chinese sportswear market. Based on Aaker's well-known conceptual framework of brand equity, this study employed structural equation modeling to investigate the causal relationships among the four dimensions of brand equity and overall brand equity in the sportswear industry. The data collected from a sample of 304 actual young shoppers their age ranged from 18 to 39 using the intercept survey from the biggest six shopping centers in China's two largest cities.

Finally, they found that brand association and brand loyalty are influential dimensions of brand equity. Weak support was found for the perceived quality and brand awareness dimensions.

Similarly, (Im et al. 2012) examined the relationship among brand awareness, brand image, brand association, and brand loyalty. They found that only brand image and brand association positively affect brand loyalty.

Beside to the recent studies, (Buil, et la. 2013) aimed to propose and test a model to better understand brand equity and sought to investigate the effects of this construct on consumers' responses. Data were collected through a survey from 607 consumers of three product categories and six brands (Adidas and Nike for sportswear; Sony and Panasonic for consumer electronics; and BMW and Volkswagen for cars). The results showed that Brand awareness positively impacts perceived quality and brand associations. Brand loyalty is mainly influenced by brand associations. Finally, perceived quality, brand associations and brand loyalty are the main drivers of overall brand equity. Findings also corroborated the positive impact of brand equity on consumers' responses.

According to the research conducted by (Schivinski & Dabrowski, 2015) there is a significant influence between brand awareness/ association on brand loyalty and perceived quality, but (Bashir & Job, 2017) Conflict with (Schivinski & Dabrowski, 2015) and proved that brand awareness/association only affects perceived quality.

So we can conclude that, the process of building customer – based brand equity begins by increasing consumer awareness of the brand which lead to the creation of

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brand association of the brand. If consumers know about the brand and try to find more information about the brand, it will cause association in their mind, it will affect their perception on brand quality and then attitudinal brand loyalty (Aaker, 1991).

In field of marketing (Boonghee, Naveen, Sungho, 2000) attempted to understand the relationships between selected marketing mix elements and the creation of brand equity. The authors proposed a conceptual framework in which marketing elements are related to the dimensions of brand equity, that is, perceived quality, brand loyalty, and brand associations combined with brand awareness. These dimensions are then related to brand equity. The results show that frequent price promotions, such as price deals, are related to low brand equity, whereas high advertising spending, high price, good store image, and high distribution intensity are related to high brand equity.

Also (Woo, Hong, 2004) investigated the relationship between brand equity and firm's performance. Strong brand equity is significantly correlated with revenues for quick-service restaurants. The study tested four elements of brand equity, namely, brand awareness, brand image, brand loyalty, and perceived quality. Of those attributes, brand awareness had the strongest direct effect on revenues, while loyalty had the least effect. Dividing the Restaurants into high-performing and low-performing groups, the researchers found that customers differentiated the high-performing restaurants on several product-quality measures, including knowledgeable employees and food served on time and as ordered.
Oddly, high- and low-performing restaurants were not differentiated on such other quality factors as making quick corrections to errors, experienced personnel, and cleanliness. One other contrary finding was that although brand equity comprises all four factors being tested, awareness showed the smallest effect on brand equity, far eclipsed by image, loyalty, and product quality.

Social media communications and customer based brand equity:
A considerable amount of literature was reviewed in order to better understand the relationship between social media communications and the Customer based brand equity (CBBE).

(Bambauer-Sachse and Mangold, 2011) wanted to examine the effects of negative online product reviews, a specific type of word-of-mouth communication, on consumer-based brand equity in terms of brand equity dilution. The data were collected from 216 participants (male & female) their age ranged from 19 to 60 who are regularly using the Internet. The results of this empirical study provide support for the assumed detrimental effect of negative online product reviews on consumer-based brand equity.

The study conducted by (ireme, 2012) aimed to identify the effect of social media marketing on brand loyalty of the consumers. The data were collected through the administration of a structured questionnaire with a sample of 338 people who were social media users, and followed at least a brand on social media platforms and tested via stepwise multiple regression analysis. The results of the study showed that brand loyalty of the customers is positively affected when the brand (1) offers advantageous

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campaigns, (2) offers relevant content, (3) offers popular contents, (4) appears on various platforms and offers applications on social media.

Previous research conducted by (Bruhn et la. 2012) said that the perception of communication in the context of brand communication in social media positively influence the perception of individuals towards the brand after collected 393 data sets from three different industries, namely tourism, telecommunications, and pharmaceuticals, were generated using a standardized online-survey and Structural equation modeling was used in the analysis of the data obtained to investigate the interplay of social media and traditional media in general, as well as in an examination of industry-specific differences. Also (Hutter, et la, 2013) said that there is a strong correlation between consumer engagement and fan brand page on Facebook and their perception of brand awareness.

(Katja, Julia, Severin, Johann, 2013) investigated the impact of user interactions in social media on brand awareness and purchase intention. The data were collected from 311 participants who are fans of car brand pages on Facebook through a standard online survey. Findings showed a positive effect of fan page engagement on consumers' brand awareness, word of mouth (WOM) activities, and purchase intention. The findings further indicate that annoyance with the fan page due to information overload leads to negative effects on fan page commitment and to decreased WOM activities.

In another study conducted by (Severi et al., 2014), wanted to examine The Impact of Electronic Word of Mouth on Brand Equity in the Context of Social Media. The study focused on evaluating the roles of various brand equity constructs (including brand loyalty, brand association, brand awareness and brand image) in mediating the interrelation among electronic word of mouth and the dimensions of brand equity in the context of social media. The findings revealed that there is an indirect inter-relationship between electronic word of mouth and the dimension of brand equity, mediated by the respective various brand equity constructs.

(Claire, 2016) was concerned the effect of negative user-generated content on consumer based brand equity comparing brand loyalty versus non-loyal customers in the luxury winery market. A total of 297 data sets were collected from luxury wine customers who are fans on Facebook using a standard online survey. This study found that negative UGC reduces CBBE and customers' perception of the luxury brand is damaged after exposure to negative UGC.

Finally, (Yazdanparast. et la. 2016) found that brand-based SMM is essential in impacting consumers' attitudes toward brands and consequently, CBBE reflected via perceived value for the cost, perceived uniqueness and the willingness to pay a price premium for a brand. Additionally, the main reason for individuals to use social media impacts their attitudes toward and receptiveness of SMM activities of brands.

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> **Commenting on Previous Studies:**

By reviewing studies that explored the area of social media communications through online social networks sites and their impact on brand equity, the researcher came to a set of results.

- There is a general agreement between researchers about, dimensions of social media communications (Firm created content & User generated content) that have been used in measuring the social media communications.
- There is a general difference between previous studies in terms of the dimensions of customer based brand equity, some used Aaker's dimensions of brand equity, some others used keller's dimensions of brand equity while other study used mixed dimensions from Aaker and Keller in explaining brand equity.
- In general, current research differs from previous studies as it used the two dimensions of social media communications simultaneously rather than using each dimension separately which have been done in the previous studies.
- Overall, previous studies have analyzed the function of social media communication and emphasized on their significant role in marketing communications as well as brand management. However, in the context of social media, research still needs to distinct senders of content and their impacts on key marketing outcomes. In line with the former studies, this research will specifically examine the impacts of social media communications both (FCC&UGC) simultaneously on brand equity components.

5. Research Problem & Questions:

The existing literature about social media discusses a wide range of topics such as the motives that drive people to interact with brands and to spread word-of mouth (WOM) or the impact of peer reviews on brand preferences. Nevertheless, the effect of digital media 2.0 on brand equity components has been little investigated.

In particular, some authors investigated the effects of user-generated contents (UGC) or social media marketing activities created directly by firms (FCC – firm-created content) on brand equity, but no one of these literatures investigated the effect of both UGC & FCC Simultaneously on brand equity.

Taking these considerations into account, there is an identifiable gap in the academic literature, issues and challenges faced in using social media communications especially to brand equity. In addition, the study of firm created content and user generated content on brand equity is very rare in Egypt so that the current study aims to highlight issues and challenges of social media communication, both firm created content and user generated content in increasing brand equity in mobile network provider services in Egypt.

The problem statement arises several questions:

- What are the levels of company's brand equity perceived in consumers mind?

- What are the best social media communication practices adopted by companies?

- What are the effects of social media communications (both UGC & FCC) on brand equity?

- How do firm-created and user-generated social media brand communications impact the dimensions of CBBE?

- What are the differences between the impacts of FCC & UGC on customer based brand equity?

6. Research Objectives:

This study aims to the accomplishment of the following objectives:

- Determining the impact of user generated content "UGC" on brand equity.

- Determining the impact of firm created content "FCC" on brand equity.

- Differentiate between the impacts of content created by the firm versus content generated by users through social media activities on customer based brand equity.

7. Research importance:

✓ Unlike previous researches, this study examines the impact of 2.0 media on Facebook site.

✓ This study evaluates the impact of two types of social media communications including both firm created and user generated content on consumer-based brand equity dimensions, a topic that is of interest to both marketers and academics in the era of social media marketing.

✓ The results of such study would help marketers to improve their social media practices to achieve a competitive advantage through achieving the powerful brand equity in consumer's minds.

✓ This study is important for marketers who are developing corporate strategies.

✓ This research will help the advertisers through giving them some information regarding critical variables that have influenced a consumer perception of brands.

8. Research Hypotheses:

To answer the research questions and achieve the objectives of this research, the following hypotheses were proposed:

- **H1. There is no significant impact of firm-created social media communication on brand equity.**

  - (H1a) There is no significant impact of firm-created social media communication on brand awareness/associations.

  - (H1b) There is no significant impact of firm-created social media communication on perceived quality.

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- (H1c) There is no significant impact of firm-created social media communication on Brand loyalty.

- **H2. There is no significant impact of user-generated social media communication on brand equity.**

  - (H2a) There is no significant impact of user-generated social media communication on brand awareness/associations.
  - (H2b) There is no significant impact of user-generated social media communication on perceived quality.
  - (H2c) There is no significant impact of user-generated social media communication on Brand loyalty.

9. Research Methodology:

9.1- Population: the target population of this study is the users of mobile network services in Egypt.

According to the ministry of communication and information technology The Companies that provide mobile network services in Egypt are listed as follows:

- ➤ Vodafone Company.
- ➤ Orange company.
- ➤ Etisalat Company.
- ➤ Egyptian Telecom Company. (WE)

The following table number (4-1) shows the research population which contain the number of users of mobile network services belonging to each company according to the latest report from the natural telecom regulatory authority (NTRA)

Table (1)

The number of users of mobile network services belonging to each company

The company	Number of users
Vodafone	39409938
Orange	28298931
Etisalat	19819455
WE	3145301
The total	**88873625**

The source: the natural telecom regulatory authority (NTRA)

Due to the large size of the research population, the researcher decided to narrow the scope of this population to the following:

1. The Research will be conducted only on users of mobile network services in Egypt who are fans and followers of mobile network provider pages on Facebook.
   - ➤ The researcher chose Facebook as a form of social media platforms because according to (the hootsuite jan,2018 report for Digital Marketing Insights), Facebook ranked as the most active social media platforms by 39 million from 49.23 million of internet users.

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> Also the researcher chose mobile network provider industries because 89.7% of active social media users are actually active mobile users according to the same report. So this industry is suitable for examining the effects of social media communications.

2. The research will be conducted only on users whose ages will range from 18 to 34, male and female.

> The researcher limited the age of his participants ranged from18 to 34 years old according to the same report as the age of the most active Facebook users ranged from 18 to 34 with 64% from the total Facebook users.

3. The sample size was limited to be drawing from Cairo, Menofia, and Gharbia governorates for the following reasons:

> The large size of the research population and its geographical spread throughout Egypt, on one hand and the absence of a specific framework for the research population on another hand.

> The Cairo governorate represents the largest governorates, while Menofia and Gharbia governorates represent the governorates of valley and delta.

> The population of Cairo, Menoufia and Gharbia represents 20% (19496291) of the Egypt's population (98901934) which equivalent to one fifth of the Egypt's population.

Table (2)

The number of the population in Cairo, Menoufia and Gharbia governorates at Dec, 2019

Cairo and Delta governorates	Population in December 2019
Cairo	9840591
El-Menoufia	4473680
El-Gharbia	5182020
Total	*19496291*

The source: Central Agency for public Mobilization and Statistics.

9.2- **Sample:** The researcher conducted the study by drawing a sample from the population under investigation using the intercept sampling method with the use of some rules that reflect the spirit of random samples. Among these rules are the following:

> Random selection of customer service centers within the cities of each governorate In order to reduce place bias.

> The user's dealings with the company should not be less than one year to be able to judge on a level of company's social media communications (FCC & UGC) on one hand, and the company's brand equity (brand awareness, brand association, perceived quality and brand loyalty) on the other hand.

> Intercept one customer every 15 minutes in front of customer service centers of each company.

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> Intercept the users in front of customer service centers in different time periods (morning, afternoon and evening) with the rotation of time period during different days in the week In order to reduce time bias.

The infeasibility of drawing a probability sample is a result of the absence of sampling frame, which is a basic requirement for drawing a probability sample.

The sample size can be estimated according to the following equation:

$$n = \frac{z^2 \times P(1-p)}{e^2}$$

Where:

n = the sample size.

Z = Z value (1.96 for 95% confidence level).

P = percentage picking a choice, expressed as decimal (0.5 used for   sample size needed).

e = confidence interval expressed as decimal (5 %)

$$n = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2} = 385 \text{ users.}$$

The sample size has been raised to 435 to avoid the sampling error.

9.3- Sampling Unit: the sampling unit will be the user of mobile network services. who is follower of mobile network provider pages on Facebook, their age ranged from 18 to 34 males and females.

    Because the sample research consist of groups or layers which make it non-homogenous in terms of some of its characteristics, so the researcher divided the sample research into layers each layer differ from another one.

So the researcher used simple random stratified sampling method which depends on proportion and proportionality.

The researcher conducted the following steps to clarify the steps of drawing the sample:

❖ Determine the total sample size to be selected from the research population, which was estimated at 435 users.

❖ Divide the research community into homogeneous layers within them and Differentiated among them, so the researcher divided the research community into four layers each layer representing the users of a particular mobile phone network company (Vodafone – Orange – Etisalat – WE)

❖ Apply the ratio method for the simple random stratified sample where the sample size was distributed to the target layers according to the number of users in each company until the last statistic report on Dec,2019

Table (3)
Distribute the sample size to the companies under investigation

The company	Number of users until Dec,2019	Percentage (%)	The sample unit
Vodafone	39409938	44%	191
Orange	28298931	31%	135
Etisalat	19819455	22%	96
WE	3145301	3%	13
The total	88873625	100%	435

The source: the natural telecom regulatory authority (NTRA)

❖ The researcher Randomly selected two districts of Cairo Governorate (El-Nasr city & Heliopolis), as well randomly selected to centers for both Menoufia governorate (Shiben Elkoom & Quweisna) and Gharbia governorate (Tanta & El-Mahalla elkobra), where it was taken into account to select the capital of each governorate to reflect the upscale city.

❖ Determine the number of users of each of the four companies distributed proportionately to the centers and neighborhoods of the three governorates as shown in the following tables.

Table (4)
The sample size according to the three governorates by proportional Distribution methods

The company	The city	Number of population	Percentage %	The share of each city from the sample	The share of each governorate from the sample
Cairo	El-Nasr city	729281	15%	65	78
	Heliopolis	138355	3%	13	
El-Menoufia	Shiben Elkoom	750609	16%	70	118
	Quweisna	512362	11%	48	
El-Gharbia	Tanta	1244490	26%	113	239
	El-Mahalla elkobra	1370209	29%	126	
Total sample size		4745306	100%	435	435

The source: Central Agency for public Mobilization and Statistics & the electronic sites of each governorate.

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Table (5)

The sample size of each company distributed to each city of the three governorates.

The company	Number of users until Dec,2019	Percent age %	Share of each company from the sample	The Governorate	The city	Share of each city from the sample
Vodafone	39409938	44%	191	Cairo	El-Nasr city	29
					Heliopolis	6
				Menoufia	Shiben Elkoom	30
					Quweisna	21
				Gharbia	Tanta	50
					El-Mahalla elkobra	55
Orange	28298931	31%	135	Cairo	El-Nasr city	20
					Heliopolis	4
				Menoufia	Shiben Elkoom	22
					Quweisna	15
				Gharbia	Tanta	35
					El-Mahalla elkobra	39
Etisalat	19819455	22%	96	Cairo	El-Nasr city	14
					Heliopolis	3
				Menoufia	Shiben Elkoom	15
					Quweisna	11
				Gharbia	Tanta	25
					El-Mahalla elkobra	28
WE	3145301	3%	13	Cairo	El-Nasr city	2
					Heliopolis	1
				Menoufia	Shiben Elkoom	2
					Quweisna	1
				Gharbia	Tanta	3
					El-Mahalla elkobra	4
The total sample size	88873625		435			435

9.4- Data Collection Methods: data will be collected by conducting standardized questionnaire that will be distributed among the sampling units in front of the customer service centers. This questionnaire was developed based on four major parts. (A); Selective questions. (B); social media communications questions. (C); customer based brand equity questions. (D); social media communications & CBBE questions. (E); questions related to personal information.

9.5- research variables & measurements:

❖ **Independent variables:**

1- **Social media communications** (key independent variable)

➤ User generated content "UGC"

➤ Firm created content "FCC" (Sub-independent variables)

❖ *Dependent variables:*

1- **Customer based brand equity** (key dependent variable)

➤ Brand awareness and associations.

➤ Brand perceived quality. (sub-dependent variables)

➤ Brand loyalty.

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The suggested framework of the research variables can be illustrated in figure (1) as follows:
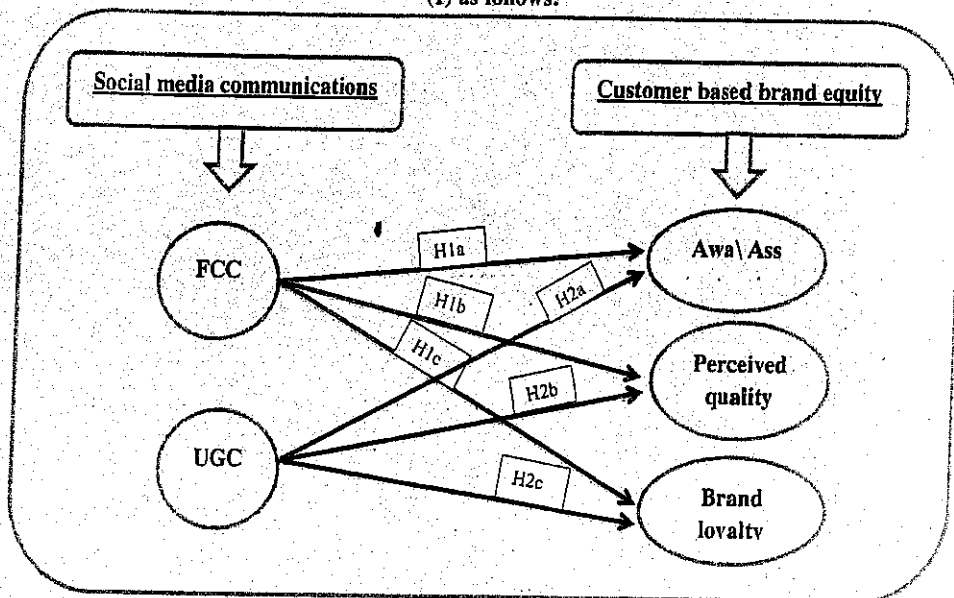

Figure (1): A conceptual frame model.

A. The measurement for the independent variable:

Social media communications (Firm created content and User generated content) were measured by using a scale derived from (Mägi, 2003), (Tsiros et al, 2004), (Bruhn et al, 2012) & (Schivinski & Dabrowski, 2015) both FCC & UGC were measured used (4 items) for each one. These items were measured using a five-point likert scale ranging from 1= (Strongly agree) to 5= (Strongly disagree).

B. The measurement for the dependent variable:

Customer based brand equity represent the dependent variable in the current research and consist of three major factors which are: brand awareness/associations, perceived quality and finally Brand loyalty. Each of these factors was measured by using a scale derived from Aaker's customer based brand equity theory (Aaker, 1996).

1. Brand awareness/associations: were measured by using (9 Items) developed by David Aaker (Aaker, 1996). Each item was measured using a five-point likert scale ranging from 1= (Strongly agree) to 5= (Strongly disagree).

2. Perceived quality: were measured by using (6 items) developed by David Aaker (Aaker, 1996). Each item was measured using a five-point likert scale ranging from 1= (Strongly agree) to 5= (Strongly disagree).

3. Brand loyalty: were measured by using (6 items) developed by David Aaker (Aaker, 1996). Each item was measured using a five-point likert scale ranging from 1= (Strongly agree) to 5= (Strongly disagree).

9.6- Statistical techniques:

The researcher used Statistical Package for Social Science (SPSS v_{23}) and the following statistical methods:

- Statistical descriptive measures, such as mean and standard deviation, in order to characterize the characteristics of the research sample and to analyze sample' responses to the research variables.
- Simple and Multiple regression and correlation analysis: To identify the nature and strength of the relationship between the research variables, simple and multiple correlation and regression analysis was used. Often these two methods are used together for the purpose of revealing the type and strength of the relationship between the dependent variable and the independent variables, and the researcher relied on them for testing the first and second hypothesis.
- The researcher relied on a set of scientific tests to test research hypotheses, such as T. Test, and F. Test accompanying Simple regression analysis, in order to verify the level of statistical significance of strength of the relationship between research variables, and to test the validity of error of the research hypotheses.

10. The field study results:

The main purpose of this chapter is analyzing the data that has been collected from the users of mobile phone network services under investigation and reporting the results of this field study in order to answer the research questions.

10.1- The reliability and validity of the questionnaire.

To verify the reliability and validity of the survey content, the degree of internal consistency between items and the extent of the scale's ability to accurately measure what is supposed to be measured has been evaluated as follows:

10.1.1- Reliability of Measures: Reliability analysis was conducted to investigate the internal consistency of the questionnaire. The internal consistency reliability means the extent to which there is cohesiveness among the questionnaire's items that has been used in the field study (Hair et al., 2010).

Table (6)
Coefficient of reliability and Validity of scales

Item	First set		Second set		item deleted
	Cronbach's Alpha	Number of items	Cronbach's Alpha	Number of items	
User generated content "UGC"	0.702	4	0.702	4	-
Firm created content "FCC"	0.732	4	0.732	4	-
Social Media Communications	0.713	8	0.713	8	-
Brand awareness and associations	0.806	9	0.860	8	9
Brand perceived quality	0.594	6	0.900	5	6
Brand loyalty	0.940	6	0.940	6	-
Brand Equity	0.924	21	0.953	19	2 items

Table (6) shows that the value of Cronbach's Alpha coefficient for Social Media Communications (α) = 0.713, and User generated content "UGC"(α) = 0.702, also Firm created content "FCC" (α) = 0.732. As value of Cronbach's Alpha coefficient is greater than 0.7, which indicates the stability of Social Media Communications scale used in the study. Also the value of Cronbach's Alpha coefficient (α) for Brand Equity = 0.924. But inside the scale there was two Items (item (number 9) for Brand awareness & association – item (number 6) for Brand perceived quality) have an Item-Total Correlation coefficient less than 0.30 so the researcher delete them. For that Brand Equity (α) become 0.953, and Brand awareness and associations (α) = 0.860, also Brand perceived quality (α) = 0.900, and Brand loyalty (α) = 0.940. As value of Cronbach's Alpha coefficient is greater than 0.7, which indicates the stability of Brand Equity scale used in the research.

10.1.2- Validity of Measures: Factor analysis is one of the most effective statistical methods in testing the validity of the measures used.

Table (7)
Factor Analysis outputs for Validity Assessment for Social Media Communications scale

Scale Items	1	2
Firm created content "FCC"		
1. I am satisfied with the company's social media communications for {brand}	0.153	0.763
2. The level of the company's social media Communications for {brand} meets my expectations.	0.352	0.685
3. The company's social media communications for {brand} are very attractive.	0.136	0.633
4. The company's social media communications for {brand} perform well, when compared with the social media communications of other companies.	0.285	0.678
User generated content "UGC"		
5. I am satisfied with the content generated on social media sites by other users about {brand}.	0.716	0.235
6. The level of content generated on social media sites by other users about {brand} meets my expectations.	0.786	0.241
7. The content generated on social media sites by other users about {brand} are very attractive.	0.898	0.093
8. This content generated on social media sites by other users about {brand} perform well, when compared with the social media communications of other companies.	0.635	0.147
Variance percentage %	44.65	29.94
Accumulative percentage %	44.65	74.59

➤ The Results of factor analysis related to social media communications scale shows in table (7) which indicate that all loading factors are more than 0.6 so all the statements in the questionnaire will be included. Also, there are two main factors extracted from the analysis. The first factor is User generated

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content "UGC" and explains 44.6% of total variance, the second factor is Firm created content "FCC" and explains 29.9% of total variance.

Table (8)
Factor Analysis outputs for Validity Assessment for Brand Equity scale

Scale Items	1	2	3
Brand awareness and associations			
1. When presented with a list of brands from telecommunication companies, I would choose for {brand}.	0.434	0.660	0.291
2. When I think about which telecommunication brand to purchase, {brand} definitely comes to mind.	0.305	0.749	0.232
3. When I think about which telecommunication brand to purchase, {brand} definitely comes to mind first.	0.379	0.784	0.172
4. When I think about which telecommunication brand to Purchase, only {brand} comes to mind.	0.469	0.737	0.030
5. I know where to offer {brand} service.	0.203	0.737	0.136
6. When talking with others about telecommunication brands, I would definitely express my opinion about {brand}.	0.084	0.649	0.442
7. Some characteristics of {brand} come to my mind quickly.	0.281	0.733	0.226
8. I can quickly recall the symbol or logo of {brand}.	0.038	0.605	0.065
Brand perceived quality			
9. I am satisfied with the overall quality of {brand}.	0.779	0.236	0.139
10. I believe that {brand} is very high reliable brand.	0.810	0.297	0.139
11. I believe Vodafone is of high quality brand.	0.777	0.355	0.187
12. I believe that quality of services provided by {brand} is convenient for the price.	0.789	0.194	0.101
13. The advertisements of {brand} make me believe that the brand is of high quality.	0.860	0.159	0.298
Brand loyalty			
14. I consider myself to be loyal to {brand}.	0.162	0.429	0.640
15. {brand} would be my first choice.	0.177	0.428	0.627
16. I will not buy other brands if {brand} is available.	0.129	0.357	0.634
17. I willing to say positive things about {brand} to others.	0.068	0.491	0.640
18. I Willing to encourage my close Friends to buy {brand}.	0.079	0.456	0.762
19. I will repurchase my favorite mobile phone line of Vodafone again in the future	0.131	0.436	0.748
Variance percentage %	33.91	23.60	12.53
Accumulative percentage %	33.91	57.52	70.05

➢ The Results of factor analysis related to Brand equity scale shows in table (8) which indicate that all loading factors are more than 0.6 so all the statements in the questionnaire will be included. Also, there are three main factors extracted from the analysis. The first factor is Brand perceived quality and explains 33.9% of total variance, the second factor is Brand awareness and associations and explains 23.6% of total variance, and finally, the third factor is Brand loyalty and explains 12.5% of total variance

Accordingly, it is clear that the measures used in the current research all have a high degree of reliability and Validity.

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10.2- Descriptive analysis of the research variables:

Table (9)
Descriptive analysis of Social Media Communications variables

Statements	Mean	Std. Deviation
Firm created content "FCC"	**4.305**	**0.225**
1. I am satisfied with the company's social media communications for {brand{	5.000	0.000
2. The level of the company's social media Communications for {brand} meets my expectations.	4.072	0.964
3. The company's social media communications for {brand} are very attractive.	3.842	0.577
4. The company's social media communications for {brand} perform well, when compared with the social media communications of other companies.	4.307	0.467
User generated content "UGC"	**3.505**	**0.631**
5. I am satisfied with the content generated on social media sites by other users about {brand}.	3.800	0.852
6. The level of content generated on social media sites by other users about {brand} meets my expectations.	3.840	0.906
7. The content generated on social media sites by other users about {brand} are very attractive.	3.317	0.890
8. This content generated on social media sites by other users about {brand} perform well, when compared with the social media communications of other companies.	3.062	0.935
Social Media Communications	**3.905**	**0.331**

> From the descriptive analysis of Social Media Communications variable in table (9), it is clear to researcher that the level of customer perception about Social Media Communications in general has reached a high level as the mean for it was (3.9), with a standard deviation of (0.331). Also customer perception about Firm created content "FCC" was very high level as the mean for it was (4.3), with a standard deviation of (0.225). Finally, User generated content "UGC" become in high level according to customers perception as the mean for it was (3.5), with a standard deviation of (0.631).

Table (10)
Descriptive analysis of Brand Equity variables

Statements	Mean	Std. Deviation
Brand awareness and associations	**3.668**	**0.678**
1. When presented with a list of brands from telecommunication companies, I would choose for {brand}.	3.695	1.007
2. When I think about which telecommunication brand to purchase, {brand} definitely comes to mind.	3.640	0.955
3. When I think about which telecommunication brand to purchase, {brand} definitely comes to mind first.	3.380	1.043
4. When I think about which telecommunication brand to Purchase, only {brand} comes to mind.	2.675	1.192

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	3.982	0.893
5. I know where to offer {brand} service.		
6. When talking with others about telecommunication brands, I would definitely express my opinion about {brand}.	3.820	0.830
7. Some characteristics of {brand} come to my mind quickly.	3.887	0.861
8. I can quickly recall the symbol or logo of {brand}.	4.270	0.783
Brand perceived quality	3.282	0.855
9. I am satisfied with the overall quality of {brand}.	3.290	1.022
10. I believe that {brand} is very high reliable brand.	3.187	1.019
11. I believe Vodafone is of high quality brand.	3.330	1.033
12. I believe that quality of services provided by {brand} is convenient for the price.	3.077	1.060
13. The advertisements of {brand} make me believe that the brand is of high quality.	3.525	0.914
Brand loyalty	3.202	0.919
14. I consider myself to be loyal to {brand}.	3.332	1.039
15. {brand} would be my first choice.	3.262	1.030
16. I will not buy other brands if {brand} is available.	3.102	1.076
17. I willing to say positive things about {brand} to others.	2.940	1.029
18. I Willing to encourage my close Friends to buy {brand}.	3.242	1.015
19. I will repurchase my favorite mobile phone line of Vodafone again in the future	3.335	1.098
Brand Equity	3.419	0.737

➤ From the descriptive analysis of Brand Equity variable in table (10), it is clear to researcher that Customer perception of Brand Equity reached a relatively desirable level with an arithmetic mean of (3.4) with a standard deviation of (0.737). While all of its dimensions were in a level between high and relatively high, as their arithmetic mean reached (3.6 & 3.2 &3.2), respectively.

10.3- Hypothesis Testing Results:

Following the researcher presents the most important results of the research hypothesis test with an analysis and discussion of these results, and they were divided into two main groups, each of those was devoted to testing one of the two research hypotheses. Before testing the first two hypotheses, the researcher used correlation analysis to describe the nature of the relationship between variables, as follows:

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Table (11)
Correlation Coefficients Matrix

Variables	"FCC"	"UGC"	"SMC"	"BA"	"BQ"	"BL"	"BE"
1. Firm created content "FCC"	1						
2. User generated content "UGC"	0.538**	1					
3. Social Media Communications	0.604**	0.940**	1				
4. Brand awareness and associations	0.561*	0.623**	0.501**	1			
5. Brand perceived quality	0.104*	0.555**	0.420**	0.698**	1		
6. Brand loyalty	0.102*	0.556**	0.426**	0.764**	0.846**	1	
7. Brand Equity	0.477*	0.596**	0.481**	0.901**	0.909**	0.948**	1

** It indicates significant at the level of statistical significance 0.0001.

According to Table (11), there is a positive relationship between all dimensions of Social Media Communications, as well as the existence of a positive relationship between all dimensions of Brand Equity. The results also showed a positive correlation between all dimensions of Social Media Communications and all dimensions of Brand Equity. It is evident from the above that there is a relationship between the variables and thus it is possible to test the hypothesis of the effect for each of the three hypotheses.

A) First Hypothesis Testing Results:

The first main hypothesis discusses the extent impact of firm-created social media communication on brand equity according to customer's perception under study. This states, **"There is no significant impact of firm-created social media communication on brand equity"**. To test that hypothesis, the researcher used Simple Regression Analysis because of its ability to demonstrate the effect of an independent variable on a dependent variable, and the simple regression analysis test was used at the level of 5% significance. The researcher explains in Table (12) the results of simple regression analysis to effect of the independent variable (firm-created social media communication) on brand equity as a dependent variable.

Table (12)

Results of simple regression analysis for firm-created social media communication on brand equity

Dependent Variable	Independent Variable	B	T-Value	Sig.
Brand equity	(Constant)	2.475	4.489	0.001
	firm-created social media communication	0.223	3.368	0.017
R= 0.477 R² = 0.228		F- Value = 35.432 Sig = 0.012		

Table (12) Shows that there is a positive significant effect of firm-created social media communication on Brand equity from customer's perception under study, as the regression coefficient reached (0.223) at the level of significance 0.017, While F-

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value reached (35.432) with a significant level of (0.012), which is less than (5%), that means the model is valid to predict the values of the dependent variable (Brand equity).

As for the explanatory ability of this model, which shows the percentage of change in the dependent variable (Brand equity) due to the change of the independent variable (firm-created social media communication), it was found that the determination coefficient reached (0.228) and this means that the independent variable (firm-created social media communication) model explains an amount of (Only 22.8%) of the change in the dependent variable (Brand equity). Accordingly, it is possible to refuse the first main hypothesis of the study, which states that "There is no significant impact of firm-created social media communication on brand equity", and accept the Null hypothesis.

To test the first sub-hypothesis "There is no significant impact of firm-created social media communication on brand awareness/ associations", the researcher used Simple Regression Analysis because of its ability to demonstrate the effect of an independent variable on a dependent variable, and the simple regression analysis test was used at the level of 5% significance. The researcher explains in Table (13) the results of simple regression analysis to effect of the independent variable (firm-created social media communication) on Brand awareness and associations as a dependent variable

Table (13)

Results of simple regression analysis for firm-created social media communication on Brand awareness and associations

Dependent Variable	Independent Variable	B	T-Value	Sig.
Brand awareness and associations	(Constant)	2.213	4.949	0.000
	firm-created social media communication	0.116	2.703	0.038
R= 0.561 R² = 0.315		F- Value = 29.334 Sig = 0.019		

Results in Table (13) Show that there is a positive significant effect of firm-created social media communication on Brand awareness and associations from customer's perception under study, as the regression coefficient reached (0.116) at the level of significance 0.038. While F- value reached (29.334) with a significant level of (0.019), which is less than (5%), that means the model is valid to predict the values of the dependent variable (Brand awareness and associations).

As for the explanatory ability of this model, which shows the percentage of change in the dependent variable (Brand awareness and associations) due to the change of the independent variable (firm-created social media communication), it was found that the determination coefficient reached (0.315) and this means that the independent variable (firm-created social media communication) model explains an amount of (Only 31.5%) of the change in the dependent variable (Brand awareness and associations).

Accordingly, it is possible to refuse the first sub-hypothesis of the study, which states that **"There is no significant impact of firm-created social media communication on brand awareness/associations"**, and accept the Null hypothesis.

To test the second sub-hypothesis **"There is no significant impact of firm-created social media communication on perceived quality"**, the researcher used Simple Regression Analysis. Table (14) show the results of simple regression analysis to effect of the independent variable (firm-created social media communication) on Brand perceived quality as a dependent variable

Table (14)
Results of simple regression analysis for firm-created social media communication on Brand perceived quality

Dependent Variable	Independent Variable	B	T-Value	Sig.
Brand perceived quality	(Constant)	2.111	2.584	0.010
	firm-created social media communication	0.017	0.769	0.678
R= 0.104 $R^2 = 0.011$		F- Value = 4.058 Sig = 0.167		

Table (14) Show that there is a positive non-significant effect of firm-created social media communication on Brand perceived quality from customer's perception under study, as the regression coefficient reached (0.017) at the level of significance 0.678. While F- value reached (4.058) with a significant level of (0.167), which is more than (5%), that means the model is not valid to predict the values of the dependent variable (Brand perceived quality).

Accordingly, it is possible to accept the second sub-hypothesis of the study, which states that **"There is no significant impact of firm-created social media communication on perceived quality"**, and refuse the Null hypothesis.

To test the third sub-hypothesis **"There is no significant impact of firm-created social media communication on Brand loyalty"**, the researcher used Simple Regression Analysis. Table (15) show the results of simple regression analysis to effect of the independent variable (firm-created social media communication) on Brand loyalty as an dependent variable

Table (15)
Results of simple regression analysis for firm-created social media communication on Brand loyalty

Dependent Variable	Independent Variable	B	T-Value	Sig.
Brand loyalty	(Constant)	1.738	1.981	0.048
	firm-created social media communication	0.014	0.679	0.672
R= 0.102 $R^2 = 0.010$		F- Value = 2.091 Sig = 0.129		

Table (15) Show that there is a positive non-significant effect of firm-created social media communication on Brand loyalty from customer's perception under study, as the regression coefficient reached (0.014) at the level of significance 0.672 While F-value reached (2.091) with a significant level of (0.129), which is more than (5%), that means the model is not valid to predict the values of the dependent variable (Brand loyalty).

Accordingly, it is possible to accept the second sub-hypothesis of the study, which states that **"There is no significant impact of firm-created social media communication on brand loyalty"**, and refuse the Null hypothesis.

B) Second Hypothesis Testing Results:

The Second main hypothesis discusses the extent impact of user-generated social media communication on brand equity according to customer's perception under study. This states, **"There is no significant impact of user-generated social media communication on brand equity"**. To test that hypothesis, the researcher used Simple Regression Analysis because of its ability to demonstrate the effect of an independent variable on a dependent variable, and the simple regression analysis test was used at the level of 5% significance. The researcher explains in Table (16) the results of simple regression analysis to effect of the independent variable (user-generated social media communication) on brand equity as a dependent variable.

Table (16)
Results of simple regression analysis for user-generated social media communication on brand equity

Dependent Variable	Independent Variable	B	T-Value	Sig.
	(Constant)	1.885	9.764	0.000
Brand equity	user-generated social media communication	0.338	8.077	0.000
R= 0.596 R^2 = 0.355		F- Value = 65.239 Sig = 0.000		

Table (16) Show that there is a positive significant effect of user-generated social media communication on Brand equity from customer's perception under study, as the regression coefficient reached (0.338) at the level of significance 0.000. While F-value reached (65.239) with a significant level of (0.000), which is less than (5%), that means the model is valid to predict the values of the dependent variable (Brand equity).

As for the explanatory ability of this model, which shows the percentage of change in the dependent variable (Brand equity) due to the change of the independent variable (user-generated social media communication), it was found that the determination coefficient reached (0.355) and this means that the independent variable (user-generated social media communication) model explains an amount of (Only 35.5%) of the change in the dependent variable (Brand equity). Accordingly, it is possible to refuse the first main hypothesis of the study, which states that "There is no

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significant impact of user-generated social media communication on brand equity", and accept the Null hypothesis.

To test the first sub-hypothesis "There is no significant impact of user-generated social media communication on brand awareness/ associations", the researcher used Simple Regression Analysis because of its ability to demonstrate the effect of an independent variable on a dependent variable, and the simple regression analysis test was used at the level of 5% significance. The researcher explains in Table (17) the results of simple regression analysis to effect of the independent variable (user-generated social media communication) on Brand awareness and associations as a dependent variable

Table (17)
Results of simple regression analysis for user-generated social media communication on Brand awareness and associations

Dependent Variable	Independent Variable	B	T-Value	Sig.
Brand awareness and associations	(Constant)	2.135	12.202	0.000
	user-generated social media communication	0.389	8.904	0.000
R= 0.623 R² = 0.388		F- Value = 79.285 Sig = 0.000		

Results in Table (17) Show that there is a positive significant effect of user-generated social media communication on Brand awareness and associations from customer's perception under study, as the regression coefficient reached (0.389) at the level of significance 0.000. While F- value reached (79.285) with a significant level of (0.000), which is less than (5%), that means the model is valid to predict the values of the dependent variable (Brand awareness and associations).

As for the explanatory ability of this model, which shows the percentage of change in the dependent variable (Brand awareness and associations) due to the change of the independent variable (user-generated social media communication), it was found that the determination coefficient reached (0.388) and this means that the independent variable (user-generated social media communication) model explains an amount of (Only 38.8%) of the change in the dependent variable (Brand awareness and associations). Accordingly, it is possible to refuse the first sub-hypothesis of the study, which states that "There is no significant impact of user-generated social media communication on brand awareness/associations", and accept the Null hypothesis.

To test the second sub-hypothesis "There is no significant impact of user-generated social media communication on perceived quality ", the researcher used Simple Regression Analysis. Table (18) show the results of simple regression analysis to effect of the independent variable (user-generated social media communication) on Brand perceived quality as a dependent variable

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Table (18)
Results of simple regression analysis for user-generated social media communication on Brand perceived quality

Dependent Variable	Independent Variable	B	T-Value	Sig.
Brand perceived quality	(Constant)	1.812	7.888	0.000
	user-generated social media communication	0.219	6.502	0.000
R= 0.555 R² = 0.308		F- Value = 42.271 Sig = 0.000		

Table (18) Show that there is a positive significant effect of user-generated social media communication on Brand perceived quality from customer's perception under study, as the regression coefficient reached (0.219) at the level of significance 0.000. While F- value reached (42.271) with a significant level of (0.000), which is less than (5%), that means the model is valid to predict the values of the dependent variable (Brand perceived quality).

As for the explanatory ability of this model, which shows the percentage of change in the dependent variable (Brand perceived quality) due to the change of the independent variable (user-generated social media communication), it was found that the determination coefficient reached (0.308) and this means that the independent variable (user-generated social media communication) model explains an amount of (Only 30.8%) of the change in the dependent variable (Brand perceived quality). Accordingly, it is possible to refuse the second sub-hypothesis of the study, which states that "There is no significant impact of user-generated social media communication on perceived quality", and accept the Null hypothesis.

To test the third sub-hypothesis "There is no significant impact of user-generated social media communication on Brand loyalty", the researcher used Simple Regression Analysis. Table (19) shows the results of simple regression analysis to effect of the independent variable (user-generated social media communication) on Brand loyalty as a dependent variable.

Table (19)
Results of simple regression analysis for user-generated social media communication on brand equity

Dependent Variable	Independent Variable	B	T-Value	Sig.
Brand loyalty	(Constant)	1.612	6.533	0.000
	user-generated social media communication	0.254	5.547	0.000
R= 0.556 R² = 0.309		F- Value = 42.859 Sig = 0.000		

Table (19) Show that there is a positive significant effect of user-generated social media communication on Brand loyalty from customer's perception under study, as

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the regression coefficient reached (0.254) at the level of significance 0.000 While F-value reached (42.859) with a significant level of (0.000), which is less than (5%), that means the model is valid to predict the values of the dependent variable (Brand loyalty).

As for the explanatory ability of this model, which shows the percentage of change in the dependent variable (Brand loyalty) due to the change of the independent variable (user-generated social media communication), it was found that the determination coefficient reached (0.309) and this means that the independent variable (user-generated social media communication) model explains an amount of (Only 30.9%) of the change in the dependent variable (Brand loyalty). Accordingly, it is possible to refuse the third sub-hypothesis, which states that "There is no significant impact of user-generated social media communication on Brand loyalty", and accept the Null hypothesis.

Table (20)
Summary of Hypotheses-testing Results

There is no significant impact of firm-created social media communication on brand equity.	*Rejected*
There is no significant impact of firm-created social media communication on brand awareness/associations.	*Rejected*
There is no significant impact of firm-created social media communication on perceived quality.	*Accepted*
There is no significant impact of firm-created social media communication on Brand loyalty.	*Accepted*
There is no significant impact of user-generated social media communication on brand equity.	*Rejected*
There is no significant impact of user-generated social media communication on brand awareness/associations.	*Rejected*
There is no significant impact of user-generated social media communication on perceived quality.	*Rejected*
There is no significant impact of user-generated social media communication on Brand loyalty.	*Rejected*

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11.Key Findings and Discussion:

The conceptual framework was based on Brand Equity Model by David Aaker (1991) and extended successfully in the domain of online brand communication. This study was designed to check the impact of firm generated social media communication and user generated social media communication on brand equity elements. In this study two main hypotheses and six sub-hypotheses were developed and tested.

The field study revealed a number of key findings. In this part, a brief of those findings are demonstrated.

11.1- The first main hypothesis:

The result of testing the first main hypothesis indicated that there is a positive significant impact of firm created social media communication on brand equity from customers' perception under this study. That means when customers view contents created by firms on social media platforms, they are impacted by those contents and shape the brand image in their minds.

Emerging from this main hypothesis, three sub-hypotheses have been tested:

➢ The result of testing **the first sub-hypothesis** indicated that there is a positive significant impact of firm created social media communication on brand awareness and associations from customers' perception under this study. Which indicate that customer' brand awareness and associations have been impacted by viewing the contents created by firms on social media platforms.

➢ The result of testing **the second sub-hypothesis** indicated that there is a positive non-significant impact of firm created social media communication on brand perceived quality from customers' perception under this study. Which refer to there is no significant impact of the content created by firms on customers' opinion on the brand perceived quality because they consider FCC is a sort of advertising and focuses only on the main forces and advantages of the brand and ignores its weaknesses and disadvantages.

➢ The result of testing **the third sub-hypothesis** indicated that there is a positive non-significant impact of firm created social media communication on brand loyalty from customers' perception under this study. Which refer to there is no significant impact of the content created by firms on customers' brand loyalty because they consider FCC focuses only on introduce their brand to customers, but the brand loyalty represent the rational outcome of actual using or dealing with the brand.

These findings are consistent to some earlier studies. According to (Schivinski & Dabrowski. 2014) found that firm created contents positively influence only brand awareness and association, but has no influence on perceived quality and brand loyalty.

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On the contrary of that results, (Khadim, Zafar and Younis, 2014) measure the impact of company created content on overall brand equity and found a positive influence of company created contents on all brand equity dimensions. (Hermaren & Achyar, 2018) also found that there is a positive influence of firm created contents on all brand equity dimensions.

11.2- The second main hypothesis:

The result of testing the second main hypothesis indicated that there is a positive significant impact of user generated social media communication on brand equity from customers' perception under this study. That means when customers view contents created by other users on social media platforms, they are strongly impacted by those contents and shape the brand image in their minds.

Emerging from this main hypothesis, three sub-hypotheses have been tested:

➤ The result of testing **the first sub-hypothesis** indicated that there is a positive significant impact of user generated social media communication on brand awareness and associations from customers' perception under this study. Which indicate that customer' brand awareness and associations have been impacted by viewing the contents created by other actual users on social media platforms. Also they form a general impression of the brand based on those contents created by other users and trust them.

➤ The result of testing **the second sub-hypothesis** indicated that there is a positive significant impact of user generated social media communication on brand perceived quality from customers' perception under this study. Which refer to there is a strong significant impact of the content created by users on customers' brand perceived quality because customers believe that UGC reflects the actual reality of the brand, as actual customers express their own opinion about the product or service in a neutral manner, away from the company's interference or control after their actual brand using . So customer trust on this type of content on judging on the brand quality.

➤ The result of testing **the third sub-hypothesis** indicated that there is a positive significant impact of user generated social media communication on brand loyalty from customers' perception under this study. This is due to customers' trust on the user-generated content and depends on it to make a first impression and collect some information about the brand and its quality before purchasing or dealing with it. Based on that, if the customer gets positive first impressions about the brand and its quality through user generated social media communication, then this customer will transform from a potential customer into an actual customer. Then, if the authenticity of the contents generated by users were proven by matched with the actual customer usage, the customer feels completely satisfied and has become loyal to that brand.

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These findings are consistent to some earlier studies. According to (Schivinski and Dabrowski, 2014) user generated contents positively influence on brand association, brand awareness, perceived quality and brand loyalty. (Khadim, Zafar and Younis, 2014) also measure the impact of user generated social media communication on overall brand equity and found a positive influence of user generated social media communication on brand awareness /associations, perceived quality and brand loyalty. On the contrary of that results, (Hermaren & Achyar, 2018) found that user-generated content has significant effect only on brand awareness / association, but has no effect on perceived quality and brand loyalty.

11.3- Discussing the impact of "FCC" VS "UGC" on "CBBE".

In terms of differentiating the impacts of content created by the firm versus content generated by users through social media activities on customer based brand equity, the researcher tested the hypotheses and examined the impact of social media communication on CBBE and found that firm-created social media brand communication influences only brand awareness/associations (β 0.116). Despite the growing expenditures in social media marketing, consumers are reluctant to internalize the value that firms are creating because customers see this social media content as an advertisement created by the company and present only the advantages of the brand and hidden its disadvantages and have all control over such contents. Thus this content positively affects only brand awareness and associations. Also this type of social media communication showed not to directly-influence brand loyalty and perceived quality. In contrast, user-generated social media brand communication positively influences brand awareness/associations (β 0.389), perceived quality (β 0.219) and brand loyalty (β 0.254). The positive evaluation of this type of communication is captured by customers to be trustworthy and reliable. This trust is due to the customers' realization that this type of social media content stems from an actual customer who dealt with the service and realized its advantages and disadvantages in an actual and realistic way. That was consistent with the study's results as the study's results demonstrate that consumers rely heavily on the opinions of family, friends, and other users regarding quality of the services provided by these firms. Another relevant aspect of these findings is the source of credibility. The distinction between firm-created content and user-generated content reveals that consumers consciously differentiate between these sources of information.

12. Research recommendations:

The present study has revealed a number of managerial implications as well as future research opportunities. Based on the findings of the study, this section provides both recommendations for managerial practice and future research recommendations.

> ## Recommendations for managerial practice:
Based upon the study's findings, practitioners belonging to the mobile network provider industry should take some actions. Because customers buy mostly medium- and long-term services in this market, user generated content (UGC) has a distinct role in how they perceive and evaluate brand equity. Here, Marketers should focus on

encouraging customers to create good brand-related social media content. Managers may establish a strong brand/company image by providing good and interesting information about the brand on social media. The benefits that a mobile network provider brand provides to its consumers, as well as communication strategies that boost the consumer's engagement in the creation of brand-related content, should be emphasized. Additionally, marketers should stimulate UGC by promoting exclusive SNS campaigns (free charging cards, free calling minutes, free megabytes for internet ... etc.) that require customers to directly deal with the brand fan page and other customers. Also social media communications marketing managers tend to stay connected with their loyal consumers. That helps them (marketers) to learn more about consumers' perception and attitude towards their brand and services.

In summary, social media platforms provide unlimited ways for consumers to interact, express, share and create content about brands and products. Thus, the joint implementation of firm-created and user-generated social media brand communication offer numerous opportunities for increasing brand equity metrics. Brand managers should incorporate social media brand communication as part of their marketing communication agenda. Practitioners must recognize that Social network sites are an essential aspect of the Internet, and many consumers use them in their daily routines. Social network sites offer firms the opportunity to engage with consumers and even to influence their conversations. Furthermore, practitioners should integrate the findings of this study into their social media strategies to enhance the performance of their brands.

➢ *Recommendations for future research:*
The researcher suggested the following pointes to be subject for future studies:

- The present study was conducted in Egypt; consequently, Future research in this field should be conducted in different countries to a produce a stronger validation and generalization of the findings.

- The present study was applied on telecommunication industry; consequently, a broader range of industries should be examined in future studies. This type of research would give an indication of how consumers perceive brands of different industries in social media platforms.

- The present study examined the social media communications using Facebook platform, therefor future research can measure the influence of social media communication on several other social media platforms.

- This study was quantitative in nature as the researcher used survey questionnaire method to collect the data. Other methods such as focus group discussions and interviews can also be used in future researches which can give more detailed responses of customers and more insights about the phenomenon.

- Future research could also benefit from the implementation of other customer based brand equity framework other than David Aaker (1991) brand equity framework.

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