TOWARD THE EFFETENESS FOR USING THE SOCIAL MEDIA APPLICATION WITH ACCEPTABLE LEVEL OF PRIVACY IN SAUDI COMMUNITY: Quantitative Case Study

by

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Social media represent one of the primary outcome of the digital economy revolution. It represents the fundamental aspects for communication between individuals by using the systems that helps to facilitate the lifestyle of developed societies. In contrast, with the spread of the Corona pandemic, which prompted societies and companies alike to take advantage of social communication technologies to fill the gap that occurs as a result of precautionary measures taken by many countries to limit the spread of infection. However, many users believes that their data and information in their device become accessible by these applications, which threatens the of trust and privacy significantly for these applications. Thus, it might affects the dealing of user and these applications. Therefore, the study's question is what the basic requirements that should be provided at last to be available in social media applications to increase the level of acceptance for the users. A quantitative sample is collected from different ages and educational levels from Saudi Arabia to design the integrated approach that helps to increase the level of trust and use of social media applications appropriately for the individual and organizational level. This study is considered a way to increase the use of social applications, which represent one of the most key features of digital transformation that can be lead the contemporary digital economy.

Keywords: *online social media, social network sites, owom, media risk, functional & non functional requirements*

Introduction

As a result of the fourth economic revolution and spread of its impacts on a large scale with the expanded use of smart phones, the number of smartphone users worldwide represents about 66% which equivalent 4.92 billion people. The beginning of the Internet revolution that began in the mid-2000's and relevant massive development of social networking sites and applications led to increased participation and user interaction through sharing photos, videos, voting, measuring, and building special interest groups. This expansion leads to the fact that more than half of smartphone users use a variety of social networking applications. Indeed, human acceptance of social media use will have a significant impact on the country's social, cognitive and economic landscape. Users use social media extensively to

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attract users' opinions for gaining common ground for social network beneficiaries [1]. Social media networks and applications are drawing new shape of many different lifestyles in commercial, government departments, and public services. The Transparency Policy for using of beneficiaries' information by the companies that own these applications is one of the essential aspects to accept and dealing with various means of communication, whether on data privacy or the policies that are applied to the beneficiaries. Additionally, the biggest challenges that facing the developers of social media applications are great competition that could be offering for present various advantages to increase the number and their changing that could affect directly on the consumer satisfaction and loyalty [2]. Thus, these changes reflect the significant impact and ability to accept use as well as to increased level of trust to deal with various social media applications [1]. Besides that, social media applications are considered free service applications for the end user and therefore need various financial resources for sustainability and the continuity of these applications in pioneering ranks, so the data of customers and their actual uses on these applications is one of the most important resources of information that are used in terms of marketing on advertising marketing companies and e-marketing entities, which represents one of the most important resources of real income for the owners of these applications [3]. Furthermore, recent consumer convictions are changing rapidly and can be adaptation rapidly to other offerings from different social media applications, and thus it is necessary for suppliers to keep moving with changes of consumer value that directly affect consumer satisfaction, loyalty, and trust to social applications [4, 5].

This study consists of an overview of social media applications. It also focuses on studying the literature in the requirements of social communication applications field and its importance. Also, the study covering the theoretical framework, hypotheses, study methodology, followed by a focus on the main results, discussion, and implication.

What are social media applications?

Social media can be defined as sites or smart devices applications and are designed with complete dependence on the Internet to facilitate the process of communication between people over the world, through interaction, publications, conversations, voice, or video calls [3]. Social media aims to build and facilitate communication between communities around the world, by sharing people's interests, activities, and opinions through sharing information, the latest photos, the most prominent audio, or video recordings, whether recorded or livestreaming [1].

These applications can enable to exchange of personal information easily. It is turn to share content from photos, publications, events. Thus, it changes the way of the live, added new ways to share information, helps to create popular information content that contributes greatly to refining skills, and spreading experiences, as it helps facilitate many of the work of Individuals in societies [4]. Additionally, most companies, government, and private agencies have become accounts for them on various social media apps, as well as hiring employees for this purpose, such as representatives of institutional communication support to increase the opportunity for communication between different sectors and the final beneficiary [6].

The importance of social apps at the personal and institutional level

Previously, social media sites were intended to be a tool for people to use to interact with friends and family. In contrast, to the present time it has become more important for various business sectors. The companies have used various means of communication because they belief and desire to take advantage of social means to reach the largest possible number of customers who wish to deal with them and develop their business. Additionally, social

media sites help to communicate and exchange information with various societies in the world. Thus, it helps the possibility of using the communication sites to search for work as a job opportunity, exchanging practical experiences, and specialized skills by searching for people who are interested in the same field through social media networks [1].

Besides that, social networking sites and applications are important as it represent one of the necessary tools for businesses to find customers, launch the interacting with them, increase sales, enlarge advertising campaigns, and work on promoting new products. To be known by many possible of people. Social networking sites help to get some people's interests in specific products through promotional advertisements. The target group are chosen as they are interested to particular products which could led them to start interacting with the company and communicating to obtain the product. Many companies and institutions are working on attracting customer by use their data to know customer trends and what they interested with [5].

Disadvantages of social networking sites and applications

The excessive use of social media may lead to addiction, nervous tension, and depression. Additionally, the lack of real restrictions and close follow-up from the management of social media applications may lead to the inappropriate content that could be violates the policy and restrictions of societies which leads to drift, extremism and many bad morals. This contents could be examples that led to the suspension of the service of a number of applications in some countries for violating the policy of publishing and displaying the contents, [7, 8]. Furthermore, the wide policies of social networking applications could lead to the possibility of benefiting from personal user data to market it to many different interested entities such as companies and research institutions that wish to reach the target segment data through their accessing and registration in social applications [9]. Additionally, many applications force the users to complete the user's profile information periodically or make it essential to complete registration as it helps introducing and marketing the person and possibility to communicate with followers, groups, friends, hashtags, mentions, and others activities through these applications [7, 10], (Elsaesser *et al*., 2021). Collecting information in this way means that the detailed user data will be in the hands of the parties that will market and publish it in the information space.

Aspects of the importance of social networking applications in commercial – service – educational – governmental sectors

Social media applications target the people who are interested to deal with many things such as publishing some new, important and urgent information, services, products, or educational programs. Social Application provide the most widespread ways to express admiration, interest, anger, sadness, or support through the availability of some buttons in these applications. As well as the apps provide section that helps to freely write opinions, suggestions and comments [7]. Social media applications also allow publishing, saving, and updating information. Publishing can be interacted by broadcasting photos and videos. Notifications that arrive on applications can be used to participate in commenting or liking, which are used by many organizations to present various services or products to the target segment. Also, the apps ask about the user aspirations to raise the level of content presented in a more professional manner [4]. Therefore, many companies use it to publish their products, as it is considered a successful business opportunity by being a free advertising platform. Also it supports successful ideas and disseminates among the largest number of people interested in the same field. The research study that conducted by the Tourism Development and Investment Company in Abu Dhabi indicated that the importance and significant influence of Social

applications in terms of performance, efforts, social impact, and facilitating communication with the target segment in the government sector through a number of social communication applications and text messages in OSN channels, where the previous factors indicated the large, effective and actual use of OSN in the Emirati society [6, 10].

Literature review

The value of intent to use and actual use is one of the most important aspects that express the measures of acceptance and satisfaction use in dealing with social media applications. Where a number of studies refer to one of the determinants of use, satisfaction, and acceptance, which is intention to use and actual use. The study of AYI-BONTE and others, indicated that building trust in social media applications through the framework of Delone and Mcleans and some other constructs such as information quality, service quality, and system quality remain critical factors on the intent to use and actual use of social media applications with governmental and private enterprises [4].

A number of other studies indicate the value of use, which is that users want to use through the experience of an idea made by a friend, peer pressure, or for the purpose of meeting new people. Using the word of mouth considered one of the main determinants for wide spread of social applications, especially the youth stage, which has the greatest level of aspiration, keeping step with new and keenness on change based on the recommendations of peers and friends [3]. The Wan *et al*. [3] hinted that one of the main reasons for increase in the level of dealing with electronic applications is the users are getting significant levels benefits and new experience, which positively affects user satisfaction and loyalty for online serving and browsing. The benefit can be summarized through saving time and effort, providing a competitive price and services, excellence in service and speed of technical support provided to customers, as these aspects represent the most prominent aspects of benefit through dealing with social networking applications [3].

Many studies that focus on the requirements of social networking applications in order to increase the chances of dealing with it professionally is focus on the financial benefit and reaches to more interested users through applications could more beneficial to collect the followers and comments throughout improving digital content, where visual interaction, entertainment, and escape from work pressure help to interact with these applications. Thus, the digital content can help to increase the level of acceptance and spread in a variety of societies [2, 7].

New generations of government officials are using social media accounts as resources to connecting with people, providing services, making decision-making and assessments, as well as completing some less lengthy requests [11]. The fabric of modern societies and its impact on personal and social aspects through various modern media cannot be ignored [12]. The current approach of government seems to focus on a one-way communication *model* in the flow of information from government to citizens and the opposite rarely happens [13]. As a result, citizens are more receptive rather than conscious producers of information, data, ideas, solutions, and decisions in the context of public policies. The Falco and Kleinhans [14] study indicated that government agencies need more requirements that help provide dialogue governance and identify requirements for the purposeful application of social media. The Falco and Kleinhans [14] study pointed to three ways to increase the level of acceptance and trust in communication platforms from a government perspective: redefining the classification of the relationship between citizens and government based on social media. Clarify the difference between challenges and risks related to government implementation of social media and define the classification of government challenges, and defining government require-

ments as an indispensable condition for overcoming these challenges in advance. These three aspects have allowed for more effective two-way interactions between governments and citizens and will help increase the level of acceptance and trust to deal with social media applications broadly. Additionally, Mergel and Bahaddad [15, 16] study indicated the importance of information flow and communication technology in governmental sectors on positive impact of communication activities through social applications. It is allowing policy makers to amplify their digitization and maintain renewed content through their social application accounts. The capabilities and information content provided by government agencies due to the growth of the information and communication technology sector will lead to the employment of competencies and the quality of services in various sectors of the country will benefit from the development of information and communication technology [12].

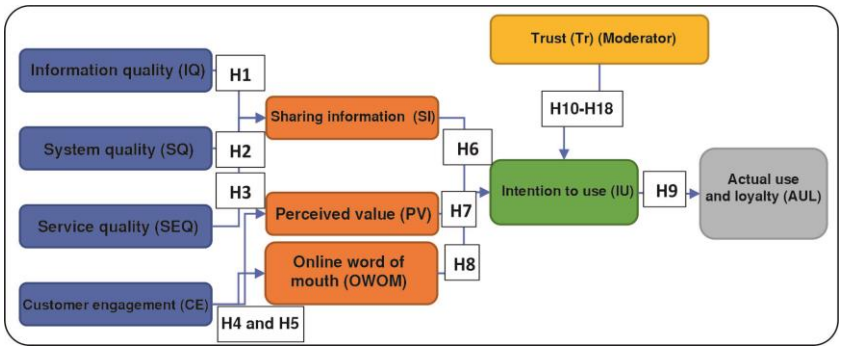

Figure 1. The fundamental construct of the theoretical

Theoretical framework

The transfer of competition in the information industry and the speed of technological changes will help to increase the level and value of competition broadly [14]. Therefore, the importance of this study lies in increasing the value of competition by developing a conception of the acceptable privacy in social media applications and how to protect it, work on developing it, and expanding it to provide an appropriate and safe environment for the various use segment in social media applications [12]. Therefore, the appropriate value is of great importance, which helps to logically develop the appropriate frameworks for the research case [7]. Thus, through current study, it is possible to come up with a unified framework that helps to increase confidence in dealing with social media applications and working on it without restrictions or caution.

The theoretical framework of this study, fig. 1, is used on a mixture of the information system success (ISS) framework mainly with the CPOL model, which focuses on (Customer Engagement – Perceived Value – OWOM – Loyalty). The focus will be on measuring the features and requirements of social media applications as a basis of acceptance for social applications. Additionally, the perceived Value, level of use, and trust as auxiliary tools to increase the level of acceptance of application requirements and thus increase the level of acceptance and use.

The theoretical framework of this study provides a comprehensive evaluation of the most important aspects that are focused on in the evaluation process for the current requirements and are they meet the essential requirements for users to increase their level of confidence and the application use. Thus enable us to answer the research question in an extensive manner. The theoretical framework includes nine basic construct and one moderator.

Information quality (IQ)

This part can be defined as focusing on the basic information of application which includes setting reports, information displayed on the screen, profile information, what policies the dissemination of information through applications, and information that defines user characteristics such as cookies, history and cookies [17]. So the hypotheses for this construct are made as follows:

H1: Information Quality content of the social media application has a positive relationship with the sharing Information.

System quality (SQ)

System quality is a prerequisite that helps to accept and compatibility of basic application properties with the operating system on the device. For examples of system quality are ease and flexibility of the system, the reliability of the system, and the possibility of learning the complexities in it smoothly and easily [17]. So the hypotheses for this part are made as follows:

H2: System quality related to the social media application usage has positively impact on the sharing Information.

Service quality (SEQ)

This construct includes the competitive advantages that should be presented by designing companies of social media applications and platforms as competitive features to reach the largest possible number of subscribers. Also, it focuses on what companies designed for technical IT support to users of for social media applications and platforms. For example, response, reliability, accuracy, efficiency, and privacy. Quality of service has been adapted as one of the key factors in marketing and considered as one of the basic common measurement tools [18], as it was added in later versions of the ISS model [17]. So the hypotheses for this construct is:

H3: Service quality related to the social media application usage has positively relationship to the sharing Information

Customer engagement (CE)

Although this construct is new during the literature review, but still there are accumulations in previous studies which gives a somewhat sufficient perception about the various aspects and dimensions to study the relationship between the requirements of social media applications from one side and the trust with privacy on the other side [7]. Customer engagement through social media applications is defined as facilitating interactions, collaboration, and sharing of content through applications or relevant websites [13]. The engagement of user contents in social application can be appeared in multiable number of forms such as texts, videos, images, *etc* [13]. Osei-Kojo [12] found a significant impact of customer engagement with content across social media applications and its impact on consumers' usage decisions. With the emergence of Web 2.0 influences and the diversified growth of social media applications, Digital study brand popularity by looking at the number of likes or preferences given to a particular post depending on the trade mark [19]. However, there are a number of limitations that directly affect customer engagement. For example, the number of likes can be used as an indicator of consumers' attitudes towards products and services, but in fact it only measures the emotional side of the application's uses. The behavioral response presented on social media platforms is not discussed, and social applications do not give the authority to measure

behavioral response and that it contains materials or texts that violate morals or the ethics of communication [13]. The method of retweet was used as an approval for the participation of customers, but in case that the text is not useful or has reservations from the behavioral side, the opinion for reader cannot be expressed about it. Therefore, it is essential to have a fair discussion about Customer Engagement and its relationship with Perceived Value and Online Word of mouth (OWOM). So the hypotheses for this construct is made as follows:

H4: The Customer Engagement content of the social media applications has positive relationship with Perceived Value.

H5: The Customer Engagement content of the social media applications has positive relationship with OWOM.

Sharing information (SI)

Information sharing in ISS framework deals mainly with the success factors of theoretical information systems frameworks [13]. It has been observed in a number of interested studies that there is a direct relationship between the increase in the level of information disclosure as well as the level of expansion and using the use of social networking applications and the extent to which they provide the requirements of customers and users extensively [20]. Information sharing construct is added as one of the basic component to focuses on measuring progress in many technological services and the extent of user acceptance of them. The measuring progress represents success in a number of areas such as dissemination of the information aspect and strengthening channels of communication between users that can be used in enriches communication between beneficiaries and the social application owners as an aspect of successfully business side [2]. In this study, the ISS entities provide a comprehensive assessment of the effectiveness of social media platforms and applications in terms of the needs of the beneficiaries and improving their experiences with the individual, which helps to communicate how to build mutual trust and create feedback loops. So the hypothesis for this is:

H6: The Shearing Information content in social media applications has positive relationship with intention to use.

Perceived value (PV)

The perceived value aspect focuses on the value that the customer obtains by activating a specific technology or feature in social media applications. This simply means the trade-off between what is earned and given [21]. Thus, the importance of perceived value aspect stems from the economic and psychological dimensions of the concept and its ability to generate competitive advantages for companies [2]. It has been noted by a number of researches as the main construct for understanding consumer behavior, and number of researchers have experimentally observed significant relationships between the perceptual value of intention to use [22, 23]. Despite the importance of PV in the investigation of consumer behavior, little emphasis has been placed on the PV of social media marketing [13]. The behavioral decisions of consumers while considering alternative products or services are made according to an increase in the level of utility and beneficiary in social media applications. Therefore, this study hypothesizes that investigating PV via social media will help to understand its impact on intent to reuse, as well as on loyalty and actual use in the future. the hypothesis for this part is:

H7: There is positive relationship between Perceived Value and Intention to Use.

Online word of mouth (OWOM)

The OWOM is a new marketing tool in retailers that is emerging in the digital age. It can be leveraged to reach desired consumer groups and influence consumer opinions through informal communications between online communities [13]. The OWOM enables consumers to interact socially as well as share experiences through conversations conducted through various possible conversation means such as blogs – discussion forums – product reviews – social networking sites – social or verbal groups. A number of literatures has also focused on the characteristics of OWOM that can be grouped into seven main pillars: increase in size, dispersal, persistence, observation, anonymity, deception, parity, and community participation [24]. There is a positive relationship between OWOM and the desire to communicate with social media applications through the purchase of products and therefore the relationship between OWOM is observed and helps in reducing promotional expenditures and creating a form of community support for the brand [24]. The current study aims to focus the effect of OWOM on intention to use and both role in influencing behavioral loyalty and trust in the future. So the hypothesis for this part is:

H8: There is positive relationship between OWOM and Intention to Use.

Intention to use (IU)

The intention to use is one of the basic construct that can be used target segments to measure the acceptance level of using technology, and thus provides the appropriate opportunity for the customer to use it. This construct indicates the possibility of using the system regularly in the future and giving it more than one opportunity to try and deal with it. Therefore, there are a number of criteria and indicators that are used by employees and customers to take advantage of technical capabilities in social media applications and platforms. For example, nature of use, frequency of use, amount of use, and purpose of use [13, 17]. Besides that, the intention to use part is affected by a number of other constructs, namely the importance of the desire to disseminate information, whether personal or professional, as well as the trust that is linked to users through advice from colleagues and friends, as well as the perceived value that can be benefited from achieving many personal, professional and financial gains from through the use of social media applications and platforms. This helps to build the loyalties required in the use of social media applications to reaching the actual frequent use of the applications. So the hypothesis for this part is:

H9: Intention to use social media platforms positively reflects a user's final decision to use the platform and increase their loyalty.

Actual use and loyalty (AUL)

Customer loyalty can be defined as the customer's attitude and behavioral intentions towards dealing with complete confidence with social media without restrictions and repetition of actual usage behavior whenever the opportunity arises whenever the opportunity arises [13]. Loyalty is assumed to be regulated by the level of use, frequency of experience, as well as the number of individuals who are satisfied with the customer or user. The link between intent to use and real use has been established by a number of researchers [25]. However, there is a lack of studies that have examined this relationship in the context of social media applications to examine the relationships between Actual Use & Loyalty and intention to Use [13]. Information System Performance (IS) theory provides a comprehensive assessment of the effectiveness of government social networking platforms from an individual's needs. It

helps to communicate how government meets its people in the municipality, building consensus, and creating feedback loops [4].

Trust (Tr)

The trust aspect relates to acceptance level and dealing with the information provided in the system. The trust component represents an external factor that is indirectly affected by a number of factors that were previously reviewed in this study, such as CE, SI, OWOM, PV in social media which focus on the benefit from using the social applications field. A number of studies also indicate the importance of measuring user satisfaction through a number of technical tools as one of the valuable factors to increase confidence and its positively affecting the intention to use [16]. So the hypothesis for this part is:

H10: Trust can positively moderate the user's intention to use and actual usage of social media platforms and Application.

Methodology

The construction of the theoretical framework was measured by extracting the proposed constructs of the framework from the available literature on the models and concepts described. The model consists of ten constructs which represent Information Quality (IQ), Service Quality (SQ), System Quality (SEQ), Customer Engagement (CE), Sharing Information (SI), Trust (Tr), Perceived Value (PV), Intent to Use (IU), OWOM, Actual Use and Loyalty (AUL). The combinations were calculated using multi-item scales, and the items were modified by the scale factors that were fetched from previous studies and measured during this study. A number of theoretical framework elements such as IQ, SQ, SEQ, SI, IU and AUL have been modified based on a number of studies [4, 13, 17, 26].

In this study, the analytical study approach is followed for a number of social networking applications, which are widely spread in the Gulf Cooperate Consul (GCC) region. As well as, applying the analysis process to a diverse segment of electronic applications users [13]. The study also focuses on comparing a number of aspects for different users of applications in order to find out the research gap in realizing the current value of social media applications and to know the requirements of the target segment to bridge the aspects of privacy between the consumer and developers. The current and proposed value to reach a competitive value for these applications, therefore customer value was developed as a measurement tool by setting standards to assess the value of privacy for customers and how this value can be converted into a product that can be applied and measured by the target segment.

Data gathering

The data is collected by sending e-mail to a variety of surrounding circles, using several channels such as e-mail, as well as social communication groups in a number of popular communication applications such as Twitter, LinkedIn, WhatsApp and Telegram. This study used a snowball sampling method, and a group of local government social media users were invited to answer the questionnaire. A 68 items in Likert scale questionnaire is also developed, the scale has five levels of 5 being 'strongly agree' and 1 'strongly disagree'. The data was collected by sending an electronic version of the self-administered questionnaires using a questionnaire from Google services, which took six months to collect the information.

A number of conditional questions are used to filter the participants' responses, so the only participants who are allow to complete the questionnaire those who have communication accounts through communication applications and have experience of several years

answer the questionnaire, in order to sort the respondents who did not meet the requirements for the study and their information can be dispensed with later. The rate of omitted data was only 5% (23 responses where more than 90% were not answered). The total sample was 360 respondents, of whom 51.4% were males and 43.6% were females.

Data analysis and main finding

Data sampling and method phases

The method in this study is worked in two parts. Firstly, it is going to select a sample of social networking applications, which are considered a widespread sample in GCC region and in Saudi Arabia in particular. Secondly, it is collecting the requirements that appeared in these features individually, which could help to increase the level of acceptance for these applications to target audience in GCC and KSA according to their opinion.

Table 1. Common Social Media Applications in KSA

WhatsApp	Discord	Overtone	Instagram	Zoom	YouTube	LinkedIn	Viper
Facebook	Skype	Line	Telegram	Pinterest	Tango	WeChat	Studio Pro
Tumblr	Reddit	Snapchat	Mixer	Teams	TeamSpeak	BAT	Sina Weibo
Twitter	FaceTime	Vimeo	Flickr	TikTok	Imo	Twitch	GoToMeeting

A sample of 32 social networking applications are selected and are presented in tab. 1 and their features are collected after being examined and evaluated individually. The participants are groups of male and female students in Saudi universities who have IT background, they have good experience to design and analyze the systems, and represent the wide uses of social applications. The aim of choosing previous group of participant is assist to examine the technical evaluation processes, which gives a clear perception of the advantages in selected social applications. The number of this segment that carried out the first part of collecting the requirements, reached 180 participants who collected 68 basic features in social applications, which are interested to Saudi society desires to be provided in social networking applications, in order to increase their chances of acceptance and work on these application in the future. The output of second previous step of research method, will help to determine the functional and Non-Functional requirements in social applications. These requirements have been divided into three basic groups, namely, Functional Requirements, which include both content and features, as well as development and support processes in the application, and the second group consists of Non-Functional Requirements, which includes protection, privacy, as well as ease of use requirements. The third group, is special requirements that appear in applications in particular and not others, they are collected in separate part of special requirements of social networking applications.

After collecting features for functional and non-functional requirements, in the second stage of method is complete the second stage of data collection. This stage is divided the requirements into three sections:

- The fundamental requirements that the users are believe for social networking applications are basic and indispensable in social networking applications.
- The complementary requirements that increase the user's desire to deal with these particular applications in the future without thinking to work with other social applications.
- The requirements that help to increase the level of trust and privacy of the user and the level of acceptance could be increased when dealing with particular applications that have a high level of privacy.

In the second phase of questionnaire is distributed to a number of participants randomly by using the snowball technique to reach the required number of participants. The appropriate sample size that should be calculated at a confidence level of 95% and a margin error level of 5% is 385 participants [27]. The number of actual responses to the study was 457.

Ensure appropriateness of questions to participants

At the beginning of the analysis, it is ensured that the level and reliability, consistency, and the interdependence of the questions that are measured. The questionnaire was distributed including research objectives are briefly presented in the questionnaire, and their participation is voluntary and they can leave to complete the survey without giving reasons. It should be noted that the missing part in acceptable participations in this study not exceed more than 5% of the total answers in the questionnaire [28, 29]. Around 21 participants of the total participants is eliminated which is equivalent to 4.59%. The reliability test is conducted to ensure the data credibility and the internal consistency between the elements in the constructs of proposed theoretical framework of research model in order to remove abnormal elements. The minimum used in this study is 0.6 as recommended by a number of meta-analytical studies [28]. Table 2 presents Cronbach's alpha values for the ten constructs where the values ranged from 0.601 to 0.880, indicating internal consistency and reliability of the data extracted from the questionnaire.

Table 2. Frequency of responses for examined means, SD, Skewness, and Kurtosis

Group of factor code	Mean	SD	Skew	Kurtosis	Cronbach's alpha	CR	AVE	Rotated factor loadings
IQ	3.65	0.773	0.631	0.474	0.699	0.6684	0.858	0.827
SQ	3.957	0.841	0.898	0.578	0.79	0.643	0.843	0.728
SEQ	3.958	0.841	0.899	0.583	0.79	0.642	0.821	0.728
CE	3.955	0.841	-0.896	-0.572	0.79	0.642	0.765	0.73
CE	3.957	0.839	0.899	0.579	0.788	0.643	0.712	0.726
SI	3.962	0.843	0.902	0.596	0.792	0.641	0.842	0.728
PV	3.945	0.841	0.887	-0.539	0.789	0.642	0.687	0.736
OWOM	3.962	0.832	0.907	0.602	0.781	0.644	0.744	0.712
IU	3.895	0.835	0.842	-.367	0.779	0.644	0.742	0.759
AUL	4.014	0.804	0.966	0.79	0.759	0.65	0.889	0.639
Tr	3.977	0.855	-0.912	0.647	0.805	0.636	0.839	0.736

Descriptive the demographics questions

Demographic questions are categorized into four main groups. The first group defines the basic characteristics of the participants and focuses on the participants' gender, ages and educational levels. The second group focuses on determining whether the participant is a student or an employee, and the public or private sector for the employee participants. The third group displays the job status of the participant and whether he / She use social applications in the work field or only the personal field or both. The fourth group focuses on the devices that are used in order to deal with social networking applications by the beneficiaries.

Evaluate standard deviations and a normal distribution

The standard deviation (SD) and the normal distribution (ND) are calculated to ascertain the level of dispersion in the data and its distance from the normal distribution area. Where the SD must be less than 1.0 to be acceptable result and the sample represent a good

target audience [29]. Associated with a normal distribution is the skewness and kurtosis test. The skewness and kurtosis values should be between 0 and 2.50+ [28]. In this study, the skewness and kurtosis values were from -0.912 to 0.966 and -0.572 to 0.790, respectively, and these values are within the acceptable region in this analysis, see tab. 2.

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA)

The EFA helps determine the strength of study items and their close association with constructs [28]. When acting an EFA, a number of detailed tests are performed which are the Kaiser-Meyer-Olkin (KMO) text, Bartlett's B test, and the eigenvalue. The suggested value of KMO in social studies is more than 68.13% for the sample test of this study the result is up to 77.166% and the same suggested number of constructs that is presented in fig. 1. Also, the suggested value in Bartlett's B test for the level of correlation is statistically significant at the 0.001 level, see tab. 3. Furthermore, the CFA tests focus on the connections between constructs and the relationships between, which is beneficial test of the theoretical framework and relationships between its constructs [28]. Also, the CFA focuses to test the relationships through structural equation modeling (SEM), which can be defined as a set of tests that generate a more rigorous interpretation of the theoretical framework compared to EFA tests [28]. The results of CFA and SEM have been presented in tab. 4 as it shown the CFA main tests, suggested results, and actual result. Additionally, a composite reliability (CR) scale, average variance extracted (AVE), a composite reliability (CR), and average extracted variance (AVE) scale, were implemented, see tab. 2. The results of CFA tests are shown in tab. 4 where the acceptable value for measurement in CR is 0.6 and the acceptable AVE value is more than 0.5 [30]. In this study the results are reassuring as the constructs and the relationships between them were related significantly.

Table 3. Total variance explained

Component	Initial eigenvalues			Extracted sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.521	35.125	35.125	11.521	35.125	35.125
2	3.356	13.913	49.038	3.339	13.913	49.038
3	1.687	7.035	56.073	1.688	7.035	56.073
4	1.274	5.384	61.457	1.292	5.384	61.457
5	1.133	4.599	66.056	1.104	4.599	66.056
6	0.712	3.265	69.321	0.784	3.265	69.321
7	0.652	3.079	72.4	0.739	3.079	72.4
8	0.533	2.443	74.843	0.586	2.443	74.843
9	0.577	2.323	77.166	0.577	2.323	77.166
10	0.536	2.197	79.363			
11	0.522	2.011	81.374			

Note: Extraction method – PCA – Eight components extracted

Assessment of model fit and measurement model & testing the hypotheses

Testing the main hypotheses

It is important to measure the relationships between the constructs in order to test the hypotheses presented between them through three main tests: t-value, p-value and Standard-

ized Regression Coefficient. In this study, the three tests are conducted to indicate the strong and weak relationships between the entities. The values for hypotheses for H1 to H9 between 0.845 and 0.368 and were statistically significant at the 0.001 level. The *t*-value ranged from 11.018 to 6.168. The results in tab. 5 also indicate that all tested factors have met the acceptance criteria for the proposed theoretical framework model, which is the basic requirement of SEM. The results of the entire constructs indicated positive effects of the basic requirements of social networking applications and how they relate to the basic entities in the theoretical framework. Through this study, it was found that all the relationships between the basic entities and the associated hypotheses have a meaningful relationship as shown in the tab. 5.

Table 4. Indicators of the CFA test

Test	Estimation Indices	Suggest results	Actual Result
X^2	Chi Square (X^2)		5361.82
Df	Degree of Freedom (df)		357
X^2/df		$X^2/df < 3.0$	15.02
GFI	Goodness-of-Fit Index	GFI > 0.90	0.923
TLI	Tucker–Lewis Index	TLI > 0.90	0.944
NFI	Normed Fit Index	NFI > 0.90	0.927
CFI	Comparative Fit Index	CFI > 0.90	0.959
IFI	Incremental Fit Index	IFI > 0.90	0.932
AGFI	Adjusted Goodness-of-Fit Index	AGFI > 0.80	0.845
RMR	Root Mean Square Residual	RMR < 0.08	0.046
RMSEA	Root Mean Square Error of Approximation	RMSEA < 0.08	0.032

Testing the moderator hypotheses

The moderator is used to determine particular target segment for accept to work on social applications, but it does not rise to the sufficient level of trust and they use the social applications without looking at the standards of trust and privacy required in these applications. The trust moderator may help with a limited level of acceptance that is needed to use social networking applications without considering important aspects of privacy and transferring users' data to other parties or other negatively effects by a number of users. Thus, the affect will be caused to impact on the acceptance and use of electronic systems in the future. According to AYI-BONTE and other study, mediators influence various aspects that are useful for accepting technical systems, and moderators help to deal with theoretical models based on the unique characteristics of particular societies [4]. In the previous study, the basic analytical requirements were completed and focused on reliability as a primary objective for the stability of the theoretical framework. In this study, there is one highlighted moderator which is trust. It can ask the target group: Are you confident to using social networking applications that deal with required privacy level with users and do you feel that your personal data is in a safe place with the presence of social networking applications on your device. The answer is different between the participants and on the basis of it the participants are divided into two groups, a confident group and an unconfident group. The two groups represented a somewhat similar level, as in the results of tab. 6.

In tab. 7 Correlation coefficients, critical ratios, and p-values for each structure are used to determine the differences in the relationships between the constructs. χ^2 and d are also key values for calculating the differences between groups in constructs. Thus, the differences between the two sides in the constructs will contribute to calculating the amount of two groups of the moderator in order to determine the primary path in the model and the study associated with it after that. Also, the unimportant paths and effective paths in the moderator

group are removed. Then, χ^2 and d are calculated for the constrained and unconstrained models to determine the level of change in the model and to identify significant pathways [31]. According to the division of the moderator in the theoretical model and according to the number of two group of trust moderator in tab. 6, the relationships between construct are important, which means that the trust moderator reflects the different and great interest in using social networking applications through smart devices in various sectors of government, private and personal communication. Restricted and unrestricted tests indicated that there is significant difference between IU and AUL which mean that the actual use and loyalty will be increased with the increase the level of trust. The trust in part of privacy and secure the personal data on the smart devices when using the social applications. As shown in tab. 7, the pathways to confidence in trust moderator are significant with both sides of study group. IU and AUL were not significant in trusted side for the theoretical framework entities of this study.

Table 5. Correlation matrix and discriminant validity of the measurement model + path coefficients, *t*-values and *p*-values

R of Path	IQ	SQ	SEQ	CE	CE	SI	PV	OWOM	IU	AUL	Hypothesis No.	Estimate	*t*-value (R2)	Path	*p*-value
IQ	0.762										H1	0.739	8.722	IQ→SI	***
SQ	.739**	0.841									H2	0.788	6.168	SQ→SI	***
SEQ	.686**	.673**	0.825								H3	0.745	7.674	SEQ→SI	***
CE	.691**	.586**	.739**	0.785							H4	0.644	10.020	CE→PV	***
CE	.597**	.823**	.742**	.825**	0.723						H5	0.697	8.596	CE→OWOM	***
SI	.578**	.462*	.754**	.898**	.569**	0.875					H6	0.845	9.718	SI→IU	***
PV	.634**	.623*	.712*	.673**	.542**	.673**	0.836				H7	0.368	7.312	PV→IU	***
OWOM	.810**	.445**	.632**	.842**	.644**	.731**	.673**	0.852			H8	0.698	10.325	OWOM→IU	***
IU	.712**	.597*	.596*	.623*	.623**	.569**	.789**	.545**	0.781		H9	0.732	11.018	IU→AUL	***
AUL	.628**	.748**	.584*	.431*	.842**	.512**	.586**	.710**	.565**	0.799					

Table 6. Sample distribution by four moderators group

Moderator	Group Level	Sample Distribution by Moderator Group	
		N	*P*
Trust	Trusted	745	86.94%
	Not Trusted	112	13.07%

Discussion

The spread of social media technology has led to a significant improvement of the application industry that is interested in social relations between the parties that designed these applications as a direct investor in the field of technology and digital transformation, and the parties of the three beneficiary parties (Sender – Receiver - the sectors that are benefiting from the interests of previous two parties), which gave a good technological transformation in the scope of using the various communication options between the beneficiaries. These entities will play an important role in the planning processes and rapid development in social communication field. As indicated by a number of previous studies, which were raised by scholars and practitioners of public relations in social media studies such as [32].

The requirements of social media application have evolved in general, where users deal with the features of social media with a bit of professionalism and excellence. High level

of dealing with communication applications means that social media has become the focus of the attention of many interested parties of users' data, which can be used and relied upon by analyzing it to know what is the next trend to deal with social applications are more accelerated to be more acceptable by the beneficiary group [32, 33].

Table 7. Table 2: Summary of path coefficients, *t*-values and *p*-values for gender and experience moderators

Gender		Trustd, N = 745, 86.94%			Not Trusted, N = 112, 13.07%			Constrained model		Unconstrained model		$\Delta(df = 1)$	Testing result
		Estimate	t-value	P	Estimate	t-value	P	χ^2	df	χ^2	df		
H10	IQ→SI	0.591	5.091	***	0.691	6.189	***	3187.4	54	3506.2	60	6.71	Supported
H11	SQ→SI	0.713	5.313	***	0.641	6.454	***	3323.9	56	3656.3	62	9.69	Supported
H12	SEQ→SI	0.761	5.461	***	0.646	6.637	***	3418.1	57	3760	64	8.76	Supported
H13	CE→PV	0.685	5.485	***	0.558	6.665	***	3432.5	58	3775.8	64	9.68	Supported
H14	CE→OWOM	0.917	5.817	***	0.54	7.065	***	3638.5	61	4002.4	68	6.72	Supported
H15	SI→IU	0.868	5.368	***	0.592	6.517	***	3356.3	56	3692	63	10.77	Supported
H16	PV→IU	0.989	5.289	***	0.757	6.426	***	3309.4	56	3640.4	62	11.69	Supported
H17	OWOM→IU	0.729	4.929	***	0.665	5.985	***	3082.3	52	3390.6	58	8.73	Supported
H18	IU→AUL	0.653	4.776	345	0.57	5.802	***						Not Supported

Notes: IQ = information quality, SQ = system quality, SEQ = service quality, CE = customer engagement, SI = sharing information, PV = perceived value, OWOM = online word of mouth, IU = intention to use, AUL = actual use and loyalty, - *p < 0.1, **p < 0.05, ***p < 0.001

It has been promoting many new features of social media applications in the audio-visual media. The pace of development has become continuous and at a great acceleration due to response of people pressures of people who are benefiting from various media. For example, in WhatsApp application, the number of new and updates features in the application between 2021-2022 is equivalent to 15 updates, where 21 new features have been introduced into the application based on the wishes of the end beneficiary [33]. This means that the outputs of this study will directly contribute to the mechanism of developing social media applications directly, as well as to increasing the chance of acceptance and dealing with it. Furthermore, people's interest in social networking applications is constantly increasing and it's based on the level of services provided in these applications to the target segment. The analysis in this study indicated that people's interest was built on quality in both information and the institutional structure of systems and services, entire these services are no value as long as the participation of the target audience is not at the required level. The quality with participation will help the emergence of information will help to publish a number of sub-benefits, e.g. people's acceptance of social media applications based on the perceived value, sharing information as long as the applications maintain the privacy of users, and allow to post the information that is approved by the beneficiary. By this privacy approach the applications will become in accepting to the user rather than his/her information is published without prior consent. Also, the privacy approach will help the user's acceptance of a specific social networking application and enhances the advice to use specific applications through OWOM, which will eventually lead to increase the actual use and loyalty in the future if the requirements of the target segment are met.

Work with social networking applications is dealing subjectable to users' trust, which increases or decreases based on the previous factors that are branch from Functional

Requirements & Non-functional Regalements, which represent the advantages that help increase the level of acceptance of social networking applications and thus increase the user's intention to use and increase the level of loyalty, which can be developed and enhance by increasing the level of trust via customers. This will help the continuity to deal with the future if there is a stable and fossilized environment to work on social applications [13]. Through the analysis in this study, it appeared to us that the level of trust does not greatly affect the acceptance of users to deal with social media applications, as there is no significant difference between the two sides of the segment participating in the questionnaire, and this means that users of social media can use various social media applications Either those applications whose properties can be trusted or those that cannot be trusted.

Through the analysis stage of this study, it appeared to us that the level of trust does not greatly affect the acceptance of users to deal with social media applications, as there is difference between the two sides of the segment participating in the questionnaire, and this means that users of social media can use various social media applications Either those applications whose properties can be trusted or those applications that cannot be trusted. This means that there is a lot of information that the applications are expected to benefit from collecting it and analyzing it for users' personality and can sell it to the parties interested academic research centers without reach to the user's trust in these applications or not. Using the users' experience and their behaviors without get their permission, leads to the possibility of violating the principle of privacy for the user. The main reason for continuation of this act is the lack of awareness what personal information should be secure in social applications and what of them can be share to others. The research centers and advertising companies are considering this information like treasure to build a persona about users and what are their characteristics.

By focusing on utilizing social media to spread knowledge through audiovisual media, social media sites are allowing authorities in a number of countries to circumvent their resources to build massive networks of people in which interested people are deeply involved, rather than passive or uninterested audiences. The features of spread information in social networking are used to increase the enthusiasm for more people to enter it and take advantage of the characteristics of their data and their uses to build various content and characteristics for users [4]. Therefore, when taking advantage of the social media application requirements of the target segment, it is expected that there will be four potential effects of social media channels on the end user, which can be summarized in (enhancing the transparency of the data used and which is available to other users - improving the user's decisions to publish his/her personal information or not - enhancing community services through the dissemination of general knowledge in various aspects of life - improvement of knowledge management and informational participation in it through the dissemination of various aspects of knowledge to the user) which helps to increase confidence in social applications.

Although social media is viewed positively as a constructive tool for building new mutual relationships between users, those responsible for social applications must have strict and clear policies to ensure effective, safe, and privacy-conscious use of users due to the importance of effective communication networks and their role in strengthening Communicate and actively participate in building beneficial and safe community relationships online [34]. The positive attitude is not without pitfalls and obstacles because many social media applications struggle with limited funds and the increased demands of participants in communication platforms to reach the financial flow that is required to the appropriate continuity of social media platforms at the future period [35].

Implication

Current generations of users are using social media and digitalization as resources to connect with others, share information, and use feedback to make decisions about it. The connection via smart devices cannot be underestimated due to the penetration of social media into the fabric of modern societies, as its impact on personal, social, and organizational to rise in the foreseeable future [4]. Social media is a critical influential factor on the personal and societal level, so the decision to continue using it is depending on the acceptable to deal with particular application or switch to another, and this means personal information and the privacy level will be a major concern among most applications, some of them lack the lowest level of preserve of beneficiary privacy. Thus, the influx of information will help to improve Internet activities and their implications for policy makers in social applications. Writing the policy in appropriate way increase user confidence in applications, especially in tools that penetrate the privacy of the beneficiary and provide general rules for framing the quality of services, system, and information that can be placed in social applications, and thus could help to increase the level of acceptance, trust, and frequent actual uses of social applications.

From a technical perspective, the main objective to determine the functional and non-functional requirements, which should be available in social media applications can make social applications more efficient and effective for society. Also, identify and determine social application requirements provide policy makers with rich perspectives on how to benefit and invest in social media applications field to build capabilities and facilitate to increase the ability and expand the number of users in the future. The relationship between information quality, system quality, and service quality was great, therefore, we suggest that the developers of social applications continue to focus on improving these three constructs through effective and fruitful communication channels with the end consumer in order to enhance confidence and benefit from it in increasing number of users of these applications. Also, the quality services and feedback can affect the actual usage and it is an important reason for improving user satisfaction of social media applications.

Finally, it should be noted the importance of bilateral communication between application users and developers in order to hearing the users' opinions about what services and capabilities that must be developed to increase the opportunities for exchanging information with others and to predict the practices and features that the last user needs for the continuity of use of social applications. Good communication will help to increase consumer satisfaction in social media services and more awareness in the future.

Limitation

There are some limitations in this study, which focus on the influence of demographic characteristics on the constructs of this study theoretical framework. It may help to impact on the constructs of the theoretical framework in the future. Availability of sufficient information in impact of demographic characteristics on social application uses will help policy makers to make informed choices about the operational and actual use of social media applications. Furthermore, an in-depth examination of people's opinions and responses using qualitative analysis is expected to help understanding the actual requirements of social media applications that help users increase the level of trust, usage, and loyalty of specific social media applications. Additionally, the maturity of such type of studies depends on the sufficient time, therefore longitudinal or multi-stage studies will help shed more light on the real functional and non-functional requirements, which can help to build an integrated approach to the requirements of social networking applications for specialized societies.

Conclusion

This study focused on exploring the functional and non-functional requirements and the prevailing concerns for using social networking applications from the user's point of view. Providing the real functional and non-functional requirements clearly help to Increase the level of acceptance, trust, frequent use of these applications when the privacy for the user is achieved. The theoretical framework that has been proposed in this study is conducted to ensure the actual use and build loyalty and identifies the basic requirements of information quality, system quality, services quality, and sharing information with other construct to increase the level of acceptance of social media applications. The confidence and trust to share information and OWOM for using specific applications after being convinced of the perceived usefulness of them. The analysis shows support for all the hypotheses in this research, and the presence of a trust moderator indicate that the use of applications can be used to perform many tasks without the need for a high level of trust. The use of social networking applications will provide a great awareness of the best practices and policies that should be available in social networking applications if they are used frequently. Using the social media frequently help to develop the structure of social networking applications and continuous to flow of information about when using social networking applications, which will be reflected on actual use of social application. The previous study, indicated that sharing information as a variable to accept dealing with social media applications is one of the signs of actual use, which will greatly affect the intention and actual use of social media applications. Also, it should be noted that using of social media applications is generally indispensable, so the user's opinions needs play a vital role in building appropriate tools and requirements to increase trust and disclosure. It is recommended that these studies be conducted in different countries and at different levels to broaden the generalizability of the results. Where cultural values and the continuous development of conceptual framework structures play an important role in the intent to use and the actual use of innovative technologies.

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Conflicts of interest

The author declare that they have no conflicts of interest to report regarding the present study.

References

[1] Mahyuddin, K., *et al*., Behavior of the Resources in the Growth of Social Network, *Proceedings*, Int. Conference on Electrical Engineering and Informatics, Denpasar, Indonesia, 2015, pp. 496-499
[2] Chang, J. H., *et al*., Would you Change Your Mind? An Empirical Study of Social Impact Theory on Facebook, *Telematics and Informatics, 35* (2018), 1, pp. 282-292
[3] Wan, W. S., *et al*., What WeChat can Learn from WhatsApp? Customer Value Proposition Development for Mobile Social Networking (MSN) Apps: A Case Study Approach, *Journal of Theoretical and Applied Information Technology, 97* (2019), 4, pp. 1091-1117
[4] Ayi-Bonte, A. N. A., *et al*., Utilization of Social Media Platforms for Local Government Engagements: An Empirical Study of the Accra Metropolitan Assembly, *North American Academic Research, 3*, (2020), 11, pp. 303-324

[5] Ho, R. C., Rezaei, S. Social Media Communication and Consumers Decisions: Analysis of the Antecedents for Intended Apps Purchase, *Journal of Relationship Marketing, 17* (2018), 3, pp. 204-228
[6] Ameen, A., *et al*., Determining Underlying Factors that Influence Online Social Network Usage Among Public Sector Employees in the UAE, *Proceedings*, 3rd International Conference of Reliable Information and Communication Technology, Kuala Lumpur, Malaysia, pp. 945-954
[7] Alobaidi, E. A study of Outline to the Advantages and Disadvantages of Social Media, *Academicia: An International Multidisciplinary Research Journal, 11* (2021), 1, pp. 1437-1444
[8] O'Keeffe, G. S., Clarke-Pearson, K., Council on Communications and Media, The Impact of Social Media on Children, Adolescents, and Families, *Pediatrics, 127* (2011), 4, pp. 800-804
[9] Alemany, J., *et al*., Enhancing the Privacy Risk Awareness of Teenagers in Online Social Networks Through Soft-Paternalism Mechanisms, *Int. J. of Human-Computer Studies, 129* (2019), Sept., pp. 27-40
[10] Elsaesser, C., *et al*., Small Becomes Big, Fast: Adolescent Perceptions of How Social Media Features Escalate Online Conflict to Offline Violence, *Children and Youth Services Review, 122* (2021), 105898
[11] Martin-Rojas, R., *et al*., Social Media Use and the Challenge of Complexity: Evidence from the Technology Sector, *Journal of Business Research, 129* (2021), May, pp. 621-640
[12] Osei-Kojo, A. E-Government and Public Service Quality in Ghana, *J. of Public Affairs, 17* (2017), 3, e1620
[13] Ajina, A. S. The Perceived Value of Social Media Marketing: An Empirical Study of Online Word-Of-Mouth in Saudi Arabian Context, Entrepreneurship and Sustainability Issues, 6 (2019), 3, 1512
[14] Falco, E., Kleinhans, R. Beyond Information-Sharing. A Typology of Government Challenges and Requirements for Two-Way Social Media Communication with Citizens, *Electronic Journal of E-Government, 16* (2018), 1, pp. 32-45
[15] Mergel, I., *et al*., Defining Digital Transformation: Results from Expert Interviews, *Government Information Quarterly, 36* (2019), 4, 101385
[16] Bahaddad, A. A. The Concept of Quality Assurance in M-Commerce Applications in Arabic Societies, *International Journal of Computer Science and Network Security, 22* (2022), 1, pp. 758-775
[17] Scott, M., *et al*., Measuring E-Government Success: A Public Value Approach, *European Journal of Information Systems, 25* (2016), 3, pp. 187-208
[18] Pitt, L. F., *et al*., Service Quality: A Measure of Information Systems Effectiveness, *MIS quarterly, 19* (1995), 2, pp. 173-187
[19] Mergel, I., Bretschneider, S. I. A Three-Stage Adoption Process for Social Media Use in Government, *Public administration Review, 73* (2013), 3, pp. 390-400
[20] Cui, Y., *et al*., Understanding Information System Success Model and Valence Framework in Sellers' Acceptance of Cross-Border E-Commerce: A Sequential Multi-Method Approach, Electronic Commerce Research, 19 (2019), 4, pp. 885-914
[21] Caruana, A., Fenech, N. The Effect of Perceived Value and Overall Satisfaction on Loyalty: A Study Among Dental Patients, *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing, 5* (2005), 3, pp. 245-255
[22] Liu, F., *et al*., Roles of Perceived Value and Individual Differences in the Acceptance of Mobile Coupon Applications, *Internet Research, 25* (2015), 3, pp. 471-495
[23] Seol, S., *et al*., Exploring Factors Affecting the Adoption of Mobile Office in Business: An Integration of TPB with Perceived Value. *International Journal of Mobile Communications, 14* (2016), 1, pp. 1-25
[24] King, R. A., *et al*., What we Know and Don't Know About Online Word-of-Mouth: A Review and Synthesis of the Literature, *Journal of Interactive Marketing, 28* (2014), 3, pp. 167-183
[25] Suki, N. M., Suki, N. M. Mobile Social Networking Service Users' Trust and Loyalty: A Structural Approach in: *Mobile Electronic Commerce*, CRC Press, Boka Raton, Fla., USA, 2014
[26] Aladwani, A. M. The Moderating Influence of Socially-Inspired Trust on the Connection Between Persuasive Governmental Social Media Quality and Success *Proceedings*, World Conference on Information Systems and Technologies, Galicia, Spain, 2019, pp. 242-247
[27] ***, Raosoft, Sample Size Calculator. Retrieved from http://www.raosoft.com/samplesize.html, 2019
[28] Hair, J. F., *et al., Multivariate Data Analysis: A Global Perspective*, 7th ed., Pearson, N. J., USA, 2010
[29] Tabachnick, B. G., Fidell, L. S. *Using Multivariate Statistics*, Pearson Education, Inc., Boston, Mass., USA, 2007
[30] Koufteros, X. A. Testing a Model of Pull Production: A Paradigm for Manufacturing Research Using Structural Equation Modeling, *Journal of operations Management, 17* (1999), 4, pp. 467-488
[31] Shah, R., Goldstein, S. M. Use of Structural Equation Modeling in Operations Management Research: Looking Back and Forward, *Journal of Operations Management, 24* (2006), 2, pp. 148-169

[32] Allagui, I., Breslow, H. Social Media for Public Relations: Lessons from Four Effective Cases, *Public Relations Review, 42* (2016), 1, pp. 20-30
[33] ***, WhatsAppLLC, New Features for More Privacy, More Protection, More Control at WhatsApp, 2022
[34] Parveen, F., *et al*., Social Media Usage and Organizational Performance: Reflections of Malaysian Social Media Managers, *Telematics and Informatics, 32* (2015), 1, pp. 67-78
[35] Medaglia, R., Zheng, L. Mapping Government Social Media Research and Moving it Forward: A Framework and a Research Agenda, *Government Information Quarterly, 34* (2017), 3, pp. 496-510

Appendix A

Main requirement's that have been collected by target audience for social applications

Content and Features: This part contains the features and basic information that should be included in the social application	Related Construct	ID
The social app should contain text messages.	Information Quality (IQ)	IQ1
The social app should contain the messages or post contain a limited number of characters.		IQ2
The social app should contain upload and download video files during the conversation or the messages.		IQ3
The social app should contain upload and download audio files during the conversation or send the message.		IQ4
The social app should contain upload and download image files during the conversation or send the message.		IQ5
The social app should contain emoji features to be used while chatting or sending a messages.		IQ6
The social app should contain effects' features on the image files before publishing it.		IQ7
The social app should contain effects and filters' features for video files before publishing it.		IQ8
The social app should contain share files (audio - image - text - video) with other users or applications.	Service Quality (SEQ)	SEQ1
The social app should contain a list of shared games with other customers?		SEQ2
The social app should contain a platform that works on the PC to supports the smart phones application.		SEQ3
The social app should contain require to get approval prior to access the list of contacts.		SEQ4
The social app should contain a feature to make voice calls through the application.		SEQ5
The social app should contain a feature to make video calls through the application.		SEQ6
The social app should contain a feature to make group calls through the application.		SEQ7
The social app should contains join the chat via invitation links or QR code.	Customer Engagement (CE)	CE1
The social app should contain sharing screen feature with colleagues in the group.		CE2
The social app should contain private groups that can be invited and participated in.		CE3
The social app should contain public groups that can be invited and participated in.		CE4
The social app should contain current share location or live share location		CE5
The social app should contain share promotional ads		CE6
The social app should contain an electronic payment tools through the application.		CE7

Development and Support: This part contains the method used to identify the supporting steps that mainly help to develop the application	Related Construct	ID
The social app should contain various rewards system for those who find security gap in the application.	System Quality (SQ)	SQ1
The social app's Infrastructure can manage, delete, and filter virus messages before they reach the users.		SQ2
The social app should contain a mechanism to detect hacked or virus-containing messages.		SQ3
The social app should contain an appropriate mechanism related to resetting passwords.		SQ4

The social app should contain a clear mechanism for recovering the account in case of losing it.		SQ5
The social app should contain a clear mechanism for recovering lost or forgotten passwords.		SQ6
The social app should contain free spaces uses for sent files.		SQ7
The social app should contain restrictions to link the app's account with application through (mobile number - email - username)		SQ8
The social app should contain the availability to work in the application depend on the availability of the Internet at all times.		SQ9
The social app should contain face or finger Verification or QR to open the application.		SQ10

Protection and privacy: This part contains the definition of standards and characteristics that help to maintain and product the confidentiality of users' data and uses from abusers or hackers.	Related Construct	ID
The social app should contain two-factor authentication when using the app	Perceived Value (PV)	PV1
The social app should contain there three-factor authentication when using the app		PV2
The social app should contain unwanted dialogues blocked feature.		PV3
The social app should contain search feature for the messages that have been sent or received through the application.		PV4
The social app should contain search feature for the image files that have been sent or received through the application		PV5
The social app should contain search feature for the audio files that have been sent or received through the application		PV6
The social app should contain search feature for the video files that have been sent or received through the application		PV7
For security reason, the social app should require a password to enter the application from different environment.		PV8
The social app should require a strong password based on choosing a combination of uppercase and lowercase letters and numbers for passwords.		PV9
The social app should contain End to End encryption between the speakers.		PV10
The social app should contain the feature that make and send messages to everyone.	Sharing Information (SI)	SI1
The social app should contain the feature that make messages limited to a specific numbers or users.		SI2
The social app should require an effective official email to communicate with the technical support in case of urgent support.		SI3
The social app should be complex, so that it takes advantage of limited experience of users for prevent them from hacking their accounts.		SI4
The social app should to be back up the data for using it in another device.		SI5
The social app should contain the feature to verify and identity the person who using the application.		SI6
The social app should contain feature to ask the users for share their information with third parties.		SI7
The social app should contain feature to delete the user's personal data from the main server upon request.		SI8

Protection and privacy: This part contains the definition of standards and characteristics that help to maintain and product the confidentiality of users' data and uses from abusers or hackers.	Related Construct	ID
The social app should contain the feature that protect personal data stored within the application form not authorized person.	Online Word Of Mouth (OWOM)	OWOM1
The social app should let the user to use the application without require create an account.		OWOM2
The social app should contain feature to keep the history of the accounts that have been visited through the application.		OWOM3
The social app should contain feature the HTTPS protocol to secure the browsing visiting data the application.		OWOM4

The social app should contain feature to allow and access web pages through the application.	Intention to Use (IU)	IU1
The social app should contain analyze user data that has been accessed through the application.		IU2
The social app should contain feature that access and analyze the personal data within using the application.		IU3
The social app should contain awareness feature to fundamental privacy and security aspects through the application.		IU4
The social app should contain and use the MMTLS protocol to protect the sent and received data through the application		IU5
The social app should use trusted electronic payment tools through the application.		IU6
The social app should use safety payment tools safe in the application (require a SMS code to complete the payment transaction).		IU7
The social app should use a payment channels as third party to accomplish payment transaction.		IU8

Ease of use & use: This part focuses on identifying the basic requirements that help ease of use and spread widely	Related Construct	ID
The social app should be available wide geographical area and more than one continent.	Actual Use & Loyalty (AUL)	AUL1
The social app should contain the smart device feature to enter the application e.g. fingerprint or face.		AUL2
The social app should contain multiable known language (the most important ones)		AUL3
I can use the social app when the number of the application user is high and wide.		AUL4
I can use the social app when the number of the application downloaded is global and high		AUL5
Is there any more features or requirements that that is not mentioned previously, please mention it here		AUL6

Appendix B

Rotated Factor Loadings of M-Commerce Application integrated with ISS Model

ID	Indicators	Component								
		1	2	3	4	5	6	7	8	9
IQ1	Information Quality (IQ)	.645								
IQ2		.755								
IQ3		.754								
IQ4		.744								
IQ5		.529								
IQ6		.674								
IQ7		.788								
IQ8		.693								
SEQ1	Service Quality (SEQ)		.745							
SEQ2			.635							
SEQ3			.641							
SEQ4			.741							
SEQ5			.641							
SEQ6			.622							
SEQ7			.634							
CE1	Customer Engagement (CE)			.532						
CE2				.754						
CE3				.534						
CE4				.685						
CE5				.722						
CE6				.615						

CE7				.735						
SQ1	System Quality (SQ)				.745					
SQ2					.635					
SQ3					.785					
SQ4					.567					
SQ5					.852					
SQ6					.625					
SQ7					.645					
SQ8					.678					
SQ9					.612					
SQ10					.841					
PV1	Perceived Value (PV)					.624				
PV2						.845				
PV3						.635				
PV4						.745				
PV5						.856				
PV6						.652				
PV7						.754				
PV8						.862				
PV9						.635				
PV10						.715				
SI1	Sharing Information (SI)						.657			
SI2							.745			
SI3							.655			
SI4							.567			
SI5							.523			
SI6							.541			
SI7							.623			
SI8							.602			
OWOM1	Intention to Use (IU)							.518		
OWOM2								.732		
OWOM3								.742		
OWOM4								.553		
IU1	Intention to Use (IU)								.742	
IU2									.793	
IU3									.751	
IU4									.631	
IU5									.723	
IU6									.642	
IU7									.762	
IU8									.642	
AUL1	Actual Use & Loyalty (AUL)									.566
AUL2										.705
AUL3										.712
AUL4										.663
AUL5										.815
AUL6										.603

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