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The double-edged sword of social media usage during the COVID-19 pandemic: demographical and cultural analyses

Khaled A. Alshare

Murad Moqbel
The University of Texas Rio Grande Valley, murad.moqbel@utrgv.edu

Mohammad I. Merhi

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Structured Abstract

Purpose
This exploratory research aims to (1) investigate the bright and dark sides of social media use during the COVID-19 pandemic; 2) explore the impact of demographic factors on social media usage; and 3) assess the effects of cultural dimensions on social media usage.

Study design/methodology/approach
The data are collected through an online survey. Factors derived from a grounded theory and models such as affordance theory and Hofstede cultural framework were considered. Spearman correlation and nonparametric analysis were used to test the hypotheses.

Findings
The results revealed that social media usage was positively associated with healing, affiliation, and low self-control from the bright side of social media affordances. From the dark side perspective of social media affordances, there are positive associations between social media usage and sharing information related to COVID-19 without verification, perceived reliability of COVID-19 information on social media, and relapse. The impact of demographic and cultural factors indicated significant effects of gender, age, marital status, educational level, power distance, and collectivism on social media usage, sharing information, perceived information reliability, healing, and affiliation.

Originality
This study contributes to the notion of technology affordances by examining social media's positive and negative affordances in a new context (COVID-19 pandemic). From the positive side, this study explores the use of social media for healing and affiliation. As for the negative impact of social media during the pandemic, this study assesses the user's addiction to social media use (relapse) and perception of the social media information reliability and information sharing without verification. It is among few of this kind of research endeavors conducted in a non-Western country. Moreover, this study also examines the influence of demographic and cultural factors on social media users. The results provide insights for both researchers and policy makers regarding social media usage.

Keywords: COVID-19 pandemic, social media, information sharing, information reliability, culture dimensions, demographic variables

Introduction

Social media has been one of the most influential information technology (IT) components in recent years. The different social media platforms have affected all aspects of people's daily life. It has been estimated that there are about 4.33 billion social media users across the globe (Datareportal, 2021). The COVID-19 pandemic has intensified the need for social media usage for different purposes (Gunaningrata, 2021). In 2020 alone, there were 521 million new social media users (Kemp, 2020). This increase in social media use results from people's behavior change due to COVID-19 lockdowns (Kemp, 2020). The most popular social media platform was Facebook (2.7 billion users) (Olafson, 2021), followed by WhatsApp (2 billion users). Social media users spend, on average, about 2.5 hours per day on social media.

People in the Philippines spend the most significant number of hours per day on social media (about 3 hours per day), while Japanese users spend the least number of hours (0.75 hours per day) (Olafson, 2021). About 99% of social media users access social media platforms from their mobile devices (Report, 2020). The use of social media during the COVID-19 pandemic has shown an increase (Banhart, 2021). It has been reported that there was an increase of about 2 million per day in social media users during the period of July – September 2020. Data have shown that employees use WhatsApp (79%) as the second channel of communication, after email (92%), with their colleagues (Banhart, 2021). Since people are looking for more information about the new virus (COVID-19), they rely on social media to learn about it and share it with their close circuit. The impact of social media on users and the way users react during a pandemic has not been fully studied.

The positive and negative impacts of social media usage are considered in this study. On the positive impact, this study explores the use of social media for healing, affiliation, and self-control.

This study examines the user's addiction to social media use (relapse) and perception of social

media information reliability and information sharing without verification as the negative impact

of social media during the pandemic. This study also examines the influence of demographic and

cultural factors on social media users. More specifically, the following research questions are

raised:

RQ1: What is the impact of social media on people during the COVID-19 pandemic?
RQ2: How do demographic factors influence social media usage during the COVID-19
      pandemic?
RQ3: Do cultural dimensions influence social media usage?

Theoretical Framework and Hypothesis Development

This study uses theoretical support from the affordances theory to formulate a research model for

measuring how social media usage is associated with bright affordances, dark affordances,

demographics, and cultural dimensions. Figure 1 depicts our research model.
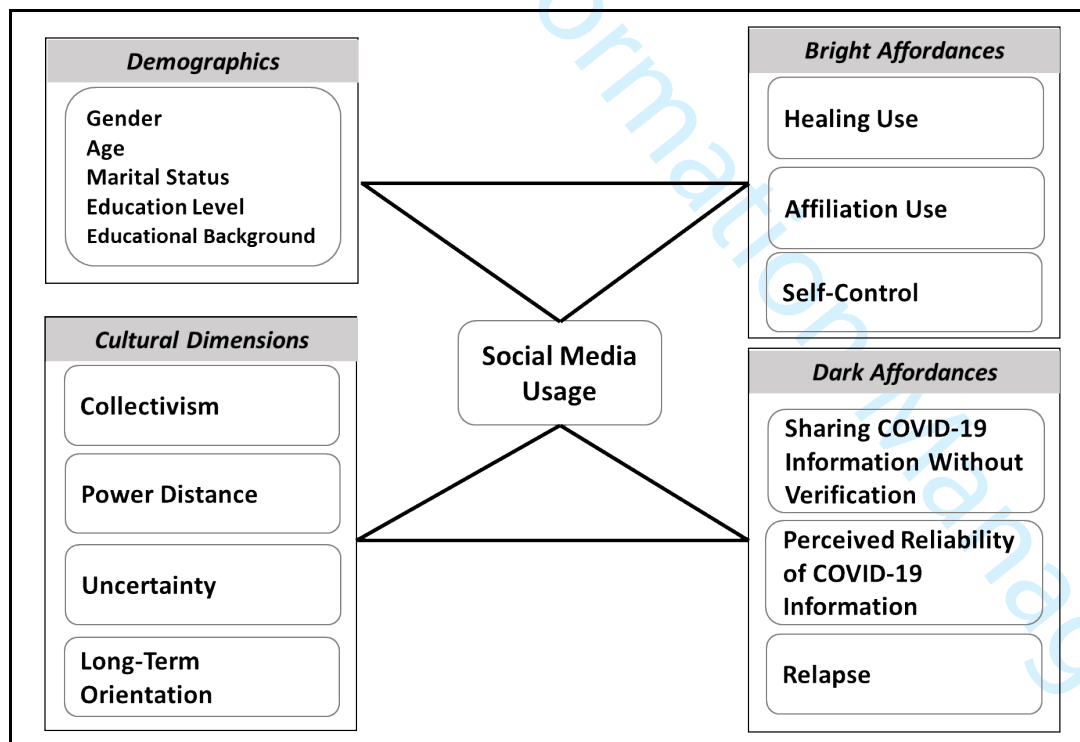

Figure 1: Research Model

3

Affordance Theory

Psychologist James Gibson introduced the term affordance and posited that "The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill" (1979, p. 127). The affordance theory, which was first originated from the ecological psychology field, has been used as a theoretical framework in several fields, including human-computer interaction (HCI) (Norman, 1988; Sutcliffe *et al*., 2011), education (Dalgarno and Lee, 2010; Gamage *et al*., 2011; Mantziou *et al*., 2018), engineering (Durugbo, 2020; Maier and Fadel, 2009), and information systems (IS) field (Anderson and Robey, 2017; Chatterjee *et al*., 2020; Leonardi, 2013; Leonardi *et al*., 2019; Majchrzak *et al*., 2016; Strong *et al*., 2014).

Affordance helps explain the interplay between human actions and an artifact's materiality (Leonardi, 2011; Majchrzak *et al*., 2013). Users subjectively determine how to use an artifact's features to achieve their goals (Flyverbom *et al*., 2016; Seidel *et al*., 2018). As such, individuals choose how to use an information technology artifact (e.g., social media) based on their action goals (Seidel *et al*., 2018). This intrinsic flexibility of technology use helps explain why the same technology artifact may provide different affordances (Ellison *et al*., 2014), positive or negative. Hence, we use the concept of affordances as a theoretical lens to understand the bright and dark affordances of social media.

In particular, the affordance theory helps explain the relationship between the material nature of IT and its context of use (Orlikowski and Iacono, 2001). As such, our study focuses on this stream of research by introducing new theoretical understandings into social media (i.e., IT artifact) affordances, both the bright and the dark sides. In the context of this study, we define the part of the environment as the technical artifact (i.e., social media) and its affordances to the IT users, the bright and the dark ones. In particular, in this study, we consider the positive affordances

4

of social media in terms of augmenting social affiliation and healing among users as well as the negative affordances, including reducing self-control, increasing sharing without verification, believing social media information, and increasing the propensity to relapse to an addictive social media usage.

Bright Side of Social Media Use

Social media usage and healing

In the medical literature, healing is described as "a process of bringing together all aspects of oneself, body, mind, and spirit to achieve and maintain integration and balance" (Dossey, 2005). It is argued that adults escape from life issues to use technologies such as social media, online gaming, etc., to escape unpleasant realities and distract themselves from unhappy events that are bothering them (Merhi, 2016). Users also find social media sites/applications as venues to establish interpersonal relationships and social support, which affect healing (Grumme and Gordon, 2016).

Researchers found that healing is a significant factor in technology use, especially social media and online gaming (Leiner *et al*., 2018; Xu *et al*., 2012). Grumme and Gordon (2016) collected qualitative data of 126 retrospective postings from 58 participants over 20 months and found that "healing, as a therapeutic benefit of embeddedness," is evident in the postings. They also found that transplant recipients use social media sites to share their overwhelming gratitude, feelings, and emotions in what they consider to be a safe and healing environment. Based on the discussion above, we postulate that:

H1: Social media usage is positively associated with healing

Social media usage and affiliation

Social media is a way for individuals to learn about social events, keep in touch with friends and provide a channel for interpersonal communication that enhances the level of gratification for individuals (Leiner *et al.*, 2018). Gratifications credited to social media usage include relationship maintenance, establishing new relationships, active information sharing, social surveillance, and self-portrayal (Choi, 2016). Users can use social media to share their thoughts, feelings, campaigns and create communities using hashtags. Zappavigna and Martin (2018) found that users use hashtags as a communing resource to achieve one of three functions: convoking, finessing, and promoting. Convoking asks a particular group of people to converse around a value in a way like face-to-face conversations. Finessing, a way of engagement resource, considers the value of the post concerning other potential values shared on social media. The promoting function stresses a value shared in a post, which makes it more communed around. Thus, one can expect that the more a person uses social media, the higher the level of affiliation they experience. Based on this, we hypothesize:

H2: Social media usage is positively associated with affiliation

Social media usage and self-control

Another issue of social media is the ability to self-control its usage. Self-control is defined as an "individual's motivation and capacity to inhibit or override a desire that stands in conflict with an endorsed self-regulatory goal or value" (Hofmann *et al.*, 2018). Researchers have demonstrated the importance of social media self-control (Brevers and Turel, 2019; Du *et al.*, 2019; Du *et al.*, 2018). With time, it becomes hard for users to quit using social media. Du *et al.* (2019) found that early intervention such as trying to be proactive and prevent irresistible situations is more effective than later intervention. They suggest that those around the social media users, e.g., families,

teachers, and health professionals, should instruct the users about social media self-control strategies. Users who cannot exert self-control need more help than those who can because self-control can cause aggression. Hameed and Irfan (2021) found that the aggression caused by social media self-control failure is transmissible to those associated with those individuals. Based on this discussion, we hypothesize:

H3: Social media usage is negatively associated with self-control

Dark Side of Social Media Use

Social media and information sharing and reliability

People have become more dependent on digital resources to gain information about almost any topic with technology advancements. It has been noticed that people tend to rely on Internet, mobile health applications, and social media posts to search for information about medical issues (Swire-Thompson and Lazer, 2020). Unfortunately, not all health information published online or on social media applications are accurate and reliable. There is some reliable scientific health information published in peer-reviewed journals or medical organizations. Individuals should be looking for these types of information because inaccurate information may lead to dangerous consequences. Suarez-Lledo and Alvarez-Galvez (2021) defined health misinformation as "a health-related claim that is based on anecdotal evidence, false, or misleading owing to the lack of existing scientific knowledge. (p.1)" Health misinformation is not a new phenomenon and has been the main concern for both individual and public health levels to the degree that governing bodies are realizing its significance and trying to limit its effects (Chou *et al*., 2018; Merchant and Asch, 2018). It has also been noticed that misinformation spreading exacerbates during public health emergencies such as Ebola and Zika outbreaks (Miller *et al*., 2017; Oyeyemi *et al*., 2014).

Since the beginning of the COVID-19 pandemic, and while the virus was rapidly spreading among people, the world noticed a significant increase in the quantity of information circulated through social media. In an attempt to quantify the spread of the information (false and correct) about COVID-19, Kouzy *et al*. (2020) analyzed data collected from 673 tweets posted on Twitter. They found that 24.8% of the tweets collected included misinformation and 17.4% of them included unverifiable information regarding the COVID-19 epidemic. Social media applications do not require professional verification, making it easy to share information (accurate and false). Anyone can write a story and share it with friends and relatives. These stories may include personal beliefs, political bias, and identity (Chou *et al*., 2018). Since COVID-19 is a new virus that we did not have enough information about and because people fear it, the spread of its information became amplified. People are constantly looking for new information. Once new information is received, these individuals tend to share it with others in their network without checking the accuracy of the information. Pennycook *et al*. (2020) found that people share false and misleading information without considering its accuracy because social media focuses their attention on personal factors such as political alignment and personal beliefs.

Social media is also used to spread reliable and accurate health information. Ben Lazreg *et al*. (2018) found that social media sites/applications are a very important means of sharing information with other citizens in emergencies, such as the extreme weather where users share live information from their sites that reporters might not be able to reach. In the case of COVID-19, countries such as Australia, Singapore, France, Italy, and the United Kingdom used WhatsApp to provide reliable information to their citizens (Australian, 2021). Even the World Health Organization (WHO) also used this app to provide updated, reliable information about the virus (WHO, 2020). The WHO and these countries selected WhatsApp because it is the most used social

media messaging app globally (Iqbal, 2020). In addition to sharing information with the public, social media, especially WhatsApp, was used among physicians to share information. For instance, the French union of dermatologists created a text messaging group on WhatsApp to share administrative information about teledermatology and scientific reviews about the pandemic (Duong *et al.*, 2020). Gottlieb and Dyer (2020) argue that social media has shown to be an effective tool for reliable knowledge translation during COVID-19. They assert that social media allow health care professionals to directly communicate with the public faster than the traditional way of communication like medical journals. Based on this discussion, we hypothesize:

H4: Social media usage is positively associated with sharing COVID-19 information without verification
H5: Social media usage is positively associated with the perceived reliability of COVID-19 information

Social media usage and relapse

Relapse, a component of addiction, is one of the negative aspects of social media usage (Köse and Doğan, 2019), which occurs when a user cannot stop using social media or reduce its usage (Rosenberg, 2014). A study on social media addiction disorder management by Dogan *et al.* (2019) found that relapse is the most critical factor among the six addiction factors (relapse, conflict, salience, tolerance, withdrawal, and mood modification). Users of social media cannot stop using the platforms/applications for an extended period. They tend to revert to its addictive usage. Turel and Vaghefi (2019) investigated the success factors of social media abstinence/detox by challenging users to detox from their most used social media site for up to one week. They found that excessive use of social media urges the use of social media during the abstinence period and increases the negative association between the urge during abstinence and the abstinence time. Based on this discussion, we hypothesize:

H6: Social media usage is positively associated with relapse

Impact of Demographic Factors

This section examines the impact of relevant demographic factors such as gender, age, marital status, educational level, and educational background on the participants' responses. It should be noted that there were mixed reports about the usage of social media and gender. While a higher percentage of females, compared to male users, using a particular social media platform (e.g., 51% of Instagram users are females and 59% of Snapchat users are females), a higher percentage of males than females used certain social media platforms. For example, 70 % of Twitter users are males (Banhart, 2021; Olafson, 2021). It should be noted that there is no consistent trend across the globe and the use of social media by gender varies by country. In general, for most social media platforms, female users are more active than males. According to a Report (2020), there was a digital gender gap concerning social media users. For example, in countries of Southern Asia, only 24% of social media users are female. On a global scale, about 55% of social media users are males.

Interestingly, only in North and South America and northern Europe are female users almost equal to the male users. In the rest of the world, the number of male users exceeded the number of female users. The period of social usage varies among different platforms; however, on average, the time spent on social media usage ranged from 25-40 minutes per day (Report 2020).

Concerning the users' age, usage depends on the social media platform. For example, the largest percentage of the age group for Facebook and Instagram users was between 25-35 years. On the other hand, the largest percentage of the age group for Twitter users was 30-49 (Banhart, 2021). About 77% of Internet users in the USA who use YouTube are between 15-25 years (Tankovska, 2021). It should be noted that the age distribution among social media users is

different by country. For example, about 60% of all LinkedIn users worldwide are between 25 to

34 years old, while in the USA, 40% of American Internet users between 46 and55 years old used

LinkedIn (Olafson, 2021). It has been reported that 92% of the young generation (less than 24

years old) use messaging applications (e.g., WhatsApp) to communicate with their colleagues,

compared to 51% of older people (55 years and older) (Kemp, 2020). This could be alarming for

management to consider a consistent policy for communication inside their organizations.

It has been reported that college degree holders utilize certain social media platforms (e.g.,

Twitter); for example, about 56% of Twitter users had a college degree in the US. On the other

hand, about 43% of Instagram users in the US hold a college degree (Olafson, 2021). About 80%

of Americans who used YouTube had a college degree, and about 83% of them earned $75,000 or

more per year (Olafson, 2021). As it can be seen that there are different views about the

relationship between demographic factors and social media usage, this study intends to explore the

relationships between these demographic factors and the bright and dark use of social media. Thus,

we formulated the following hypotheses for each of the demographic factors (gender, age, marital

status, educational level, and educational background):

Hypotheses related to gender
H7a: There is a significant difference in social media usage between males and females.
H7b: There is a significant difference in information reliability between males and females.
H7c: There is a significant difference in information sharing between males and females.
H7d: There is a significant difference in healing between males and females.
H7e There is a significant difference in relapse between males and females.
H7f: There is a significant difference in affiliation between males and females.
H7g: There is a significant difference in self-control between males and females.

Hypotheses related to age
H8a: There is a negative association between age and social media usage.
H8b: There is a positive association between age and information reliability.
H8c: There is a positive association between age and information sharing.
H8d: There is a positive association between age and healing.
H8e: There is a positive association between age and relapse.

11

H8f: There is a positive association between age and affiliation.
H8g: There is a positive association between age and self-control.

Cultural Impact

It is essential when researchers study the impact of social media on individuals to consider their

cultural backgrounds. The relationship between the cultural dimensions and technology adoption,

including social media platforms, is well established in the literature (Huang *et al.*, 2019; Huang

et al., 2003; Taras *et al.*, 2011). In this study, we consider Hofstede's culture framework since it

is the most accepted framework in the literature and one of the most cited works in the Social

Science Citation Index (Alshare *et al.*, 2011; Gravili, 2016; Srite and Karahanna, 2006; Straub *et

al.*, 2002). Hofstede (2011) introduced six cultural dimensions:

1) *Power distance*--This dimension relates to the level at which individuals accept and expect an

   unequal distribution of power.

2) *Collectivism/individualism*--This dimension is a representation of the extent to which

   individuals associate with one another in a group; it reflects the notion of "I" versus "we."

3) U*ncertainty avoidance*-- This dimension reflects whether a person is a risk-taker or risk avoider

   and reacts to regulations and insecurities.

4) *Masculinity/femininity*-- This dimension demonstrates the difference between the roles based

   on gender; masculine cultures focus on career achievement, and feminine cultures tend to focus

   on the quality of life.

5) *Long-term orientation vs. short-term orientation*-- This dimension measures individuals'

   perceptions on how they evaluate decisions based on future benefits versus short-term benefits.

6) *Indulgence vs. restraint*-- This dimension reflects the level of fulfillment of enjoyment.

   The four most relevant cultural dimensions (power distance, collectivism, uncertainty

avoidance, and long-term oriented) to social media usage are considered in this study. The impact

of cultural dimensions on sharing information behavior using social media has been studied (Dadgar *et al.*, 2017). Moreover, it has been reported that there are relationships among culture, knowledge-sharing behavior, and social media communication (Gravili, 2016; Richardson and Smith, 2007). As reported by Gravili (2016) and Ford and Chan (2003), individuals who espouse masculine (e.g., Japan, USA, China) and individualistic (e.g., USA, UK) cultural values are less willing to share knowledge. People from individualistic and masculine cultures usually care for themselves and value authority and achievement in their careers. On the other hand, individuals who espouse collectivism (e.g., China, Chile, and Qatar) and feminine (e.g., Sweden, Norway, and Netherlands) cultural values have a propensity for relationships, fostering loyalty. Thus, it is expected that people from such societies are willing to share information using social media platforms.

Individuals from societies with high scores on power distance (e.g., China and Arab countries) are willing to share information since they expect an unequal distribution of power and share their knowledge with their friends and supervisors (Dadgar, 2017). People from societies with a low uncertainty avoidance score (e.g., USA, UK, and Denmark) are expected to be more willing to share information. They have a stronger belief in the reliability of social media information. Individuals from countries with a low uncertainty avoidance score tend to try new things and take more risks than individuals from societies with high uncertainty avoidance scores (e.g., Russia, Japan, and Arab countries). For the long-term orientation dimension, people who espouse long-term orientation cultural values (e.g., Japan and China) focus on future benefits at the expense of short-term benefits. Thus, we expect these individuals to be less willing to share information and have more self-control when it comes to the use of social media.

For each of the cultural dimensions (power distance, collectivism, uncertainty avoidance, and long-term oriented), the following hypotheses are listed as an example for power distance dimension:

H9a: There is a significant association between power distance and social media usage.
H9b: There is a significant association between power distance and information reliability.
H9c: There is a significant association between power distance and information sharing.
H9d: There is a significant association between power distance and healing.
H9e: There is a significant association between power distance and relapse.
H9f: There is a significant association between power distance and affiliation.
H9g: There is a significant association between power distance and self-control.

Methodology

The process of developing the research framework consists of five stages, as shown in Figure 2. In Stage I – Formulation of Research Questions, the proposed three research questions were identified based on the researchers' observations and current literature related to social media usage during the COVID-19 pandemic. The intensity of social media usage during the COVID-19 pandemic stimulated our interest in exploring the impact of social media on people. We aimed to include both the bright and dark sides of social media usage. Stage II – Establishing Theoretical Framework and Developing Hypotheses includes identifying and introducing the related theoretical background and proposing the research hypotheses. In Stage III – Instrument Development and Data Collection, the research instrument based on prior well-established instruments were developed after a rigorous procedure. The instrument was submitted to the institutional review board committee for approval. The online questionnaire survey was then used to collect the data. Stage IV – Data Analysis and Results includes reporting and interpreting the results. Finally, in Stage V – Conclusion, theoretical and practical implications were discussed. Additionally, the key themes emerged from the study, and the study limitations and possible future research endeavors were reported.
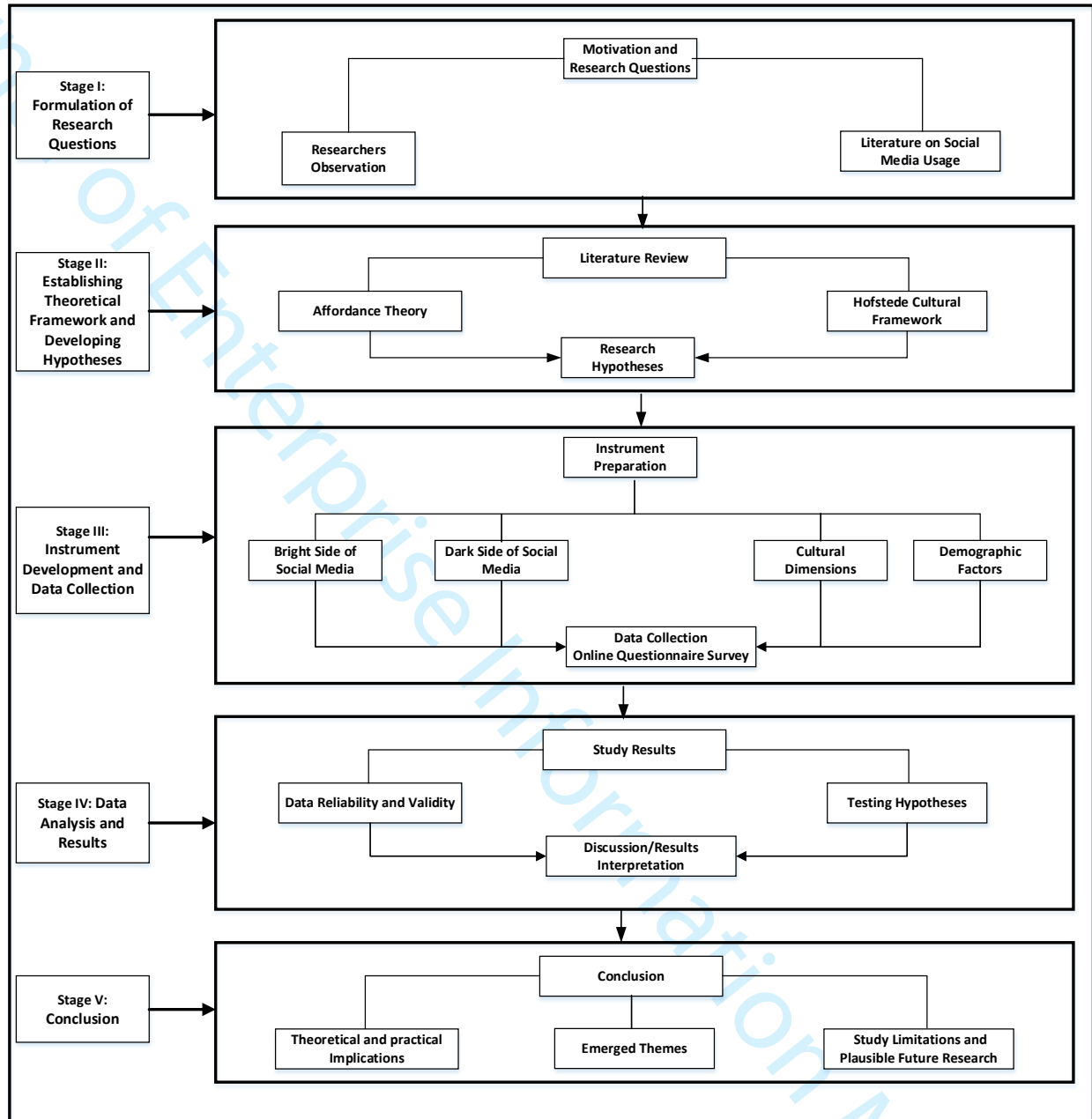
Figure 2: Research Methodology

Survey development and data collection

An online survey was developed to collect the relevant data. The questionnaire survey had two

sections. The first section contained a few demographic questions regarding gender, age, marital

status, educational level, and educational background. The second section addressed the primary

factors of the study, such as social media usage, information reliability, information sharing,

healing, relapse, self-control, and the cultural dimensions. Each factor included a few statements

ranged from strongly disagree (1) to strongly agree (5). The items for the factors are mainly

adopted from prior studies (Khan and Idris, 2019; Moqbel and Kock, 2018; Srite and Karahanna,

2006; Xu *et al.*, 2012) and modified to fit the context of the current study. The social media use

was measured by reporting the number of hours spent using social media (WhatsApp) based on

battery usage. The back-translation method (Brislin, 1986) was employed to increase the content

validity of the survey since it was administered in both languages (English and Arabic). The survey

was pilot-tested by asking a few participants to provide their feedback on the questionnaire. Based

on the received feedback, the survey instrument was modified. The list of items is reported in

Appendix A. The descriptive data analysis and the reliability and validity of the constructs were

performed using the Statistical Package for the Social Sciences (SPSS 27). Nonparametric analyses

were used to test the proposed hypotheses.

Samples Profile

A total of 234 useable responses were received. Fifty-three percent of the participants were

females. The average age of the respondents was 36.7. Approximately two-thirds of the

participants were married. About fifty percent hold undergraduate degrees, and the rest hold

graduate degrees. One-third of the respondents indicated that their educational background was

business, and one third reported their educational background as sciences/engineering. About

three-quarters of the participants were full-time employed. It should be noted that forty-six percent

and 40 percent use iPhone and Samsung phones, respectively. The participants reported that the

percentage of WhatsApp usage of their free time per day is 17 percent. On average, the participants

spend about 50 minutes per day using WhatsApp, which is less than the average (2.5 hours/day)

reported on social media usage in general (Report, 2020).

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Reliability and Validity of the Constructs

According to Hair *et al.* (2006), Cronbach's Alpha of 0.60 is considered acceptable for exploratory studies. The values for Cronbach's Alpha, which measures the reliability of the constructs, are above the 0.60 cutoff, as shown in Table 1. Principal Component Factor Analysis with varimax was employed to measure the constructs' convergent and discriminant validities. As shown in Table 1, all items had a loading of more than 0.70, the recommended threshold, and all items loaded on their intended constructs. Additionally, no item had a cross-loading greater than 0.36. These results indicate that the constructs had satisfactory reliability and validity.

Table 1: Scale Items Reliability and Validity Assessment Results

Items	Info Sharing	Info Reliability	Healing	Relapse	Affiliation	Self-control
Information Sharing1	**0.833**	0.084	0.062	0.079	0.072	-0.068
Information Sharing3	**0.801**	0.232	0.104	0.158	-0.027	-0.006
Information Sharing2	**0.796**	0.224	0.171	-0.009	0.023	-0.027
Information Reliability2	0.143	**0.843**	0.14	0.158	0.012	-0.024
Information Reliability1	0.092	**0.823**	0.079	0.109	0.115	-0.048
Information Relaiability3	0.282	**0.76**	0.066	0.004	-0.007	0.07
Healing3	0.123	0.177	**0.796**	-0.021	0.087	-0.021
Healing1	0.093	0.147	**0.795**	0.27	0.085	0.124
Healing2	0.177	0.016	**0.733**	0.119	0.362	0.018
Relapse2	0.104	0.162	0.107	**0.877**	0.031	-0.003
Relapse1	0.102	0.104	0.175	**0.853**	0.145	-0.072
Affiliation2	-0.002	0.12	0.144	-0.03	**0.849**	-0.094
Affiliation1	0.053	-0.022	0.185	0.188	**0.803**	-0.073
SelfControl2	-0.037	0.044	0.114	0.009	0.03	**0.886**
SelfControl1	-0.055	-0.069	-0.019	-0.101	-0.297	**0.789**
Cronbach Alpha	**0.83**	**0.8**	**0.81**	**0.87**	**0.69**	**0.78**

Results

This section includes three sub-sections; the first sub-section summarizes the results for the hypotheses H1-H6. The second sub-section discusses the effect of demographic factors, and the third sub-section reports the impact of the cultural factors (hypotheses $H7_a$–$H9_f$).

17

Testing hypotheses H1-H6

Spearman correlation test was used to test the relationship among the studied variables. As shown in Table 2, there are significant positive relationships between social media usage and perceived information reliability, information sharing, healing, affiliation, and relapse. On the other hand, there is a significant negative association between social media usage and self-control.

Table 2: Results of Correlation Tests

Factor	Age	Self-Control	Info Sharing	Info Reliability	Healing	Affiliation	Relapse	Collectivism	Power Distance	Uncertainty Avoidance	Hour/day
Age	1.00										
Self-Control	-.04	1.00									
Info Sharing	.356***	-.187**	1.00								
Info Reliability	.364***	-.086	.438***	1.00							
Healing	.216***	-.041	.425***	.341***	1.00						
Affiliation	-.089	-.185***	.051	.0.135**	.346***	1.00					
Relapse	.179***	-.126**	.282***	.295***	.338***	.205***	1.00				
Collectivism	-0.01	.11	.002	-.175*	.07	.144**	.105	1.00			
Power Distance	.149**	.025	.390***	.303***	.502***	.003	.347***	-.04	1.00		
Uncertainty Avoidance	.024	.157**	-.253***	-.064	-.054	.166**	.039	.174**	-.337***	1.00	
Hour/day	.093	-.138**	.109*	.210***	.281***	.148**	.374***	.129**	.259***	.041	1.00

***Correlation is significant at the 0.01 level   **Correlation is significant at the 0.05 level   *Correlation is significant at the 0.1 level

Effects of demographic variables

Nonparametric analysis was used to test the hypotheses (H7a-H8g) because the normality assumption was not met. Mann-Whitney test and Kruskal Wallis procedure were used to test if there are significant differences in means of the identified factors in the study (social media usage, information sharing, information reliability, healing, affiliation, relapse, and self-control) for each demographic factor such as gender, marital status, age, and educational level and backgrounds. As shown in Table 3, there was a significant difference in social media usage (hours per day) between male and female users and between married and single persons. Females and married users, compared to males and single users, spend more time using social media. On the other hand, old, males, and married users, compared to young, females, and single users, seemed to be more willing to share information related to COVID-19 on social media without verification. It is interesting to

18

find out that the same group (old, male and married users) had more trust in the reliability of the

information related to COVID-19 on social media. It should be noted that female users used social

media more for affiliation purposes. Old and married people, compared to young and singles, used

social media more for healing purposes and returned to social media after abstinence with the same

intensity level.

Table 3: Results of Mann-Whitney and Kruskal Wallis Tests for Demographic Impact

Factor	Gender (Means)				Marital Status				Education Level			
	Males	Females	(Sig.)	Effect* Size	Married	Single	(Sig.)	Effect* Size	Undergrad	Graduate	(Sig.)	Effect Size*
Hour/day	0.74	1.35	**0.015**	0.72	0.94	0.63	**0.001**	0.37	0.82	0.65	0.957	0.20
Information Sharing	2	1.51	**0.0002**	0.60	1.89	1.47	**0.001**	0.52	1.59	1.91	**0.003**	0.39
Information Reliability	2.12	1.87	**0.015**	0.35	2.17	1.69	**0.001**	0.68	1.92	2.07	0.116	0.21
Healing	2.48	2.32	0.169	0.17	2.55	2.11	**0.001**	0.47	2.26	2.54	**0.035**	0.30
Affiliation	3.36	3.52	**0.1**	0.16	3.49	3.35	0.416	0.14	3.42	3.46	0.505	0.04
Relapse	3.03	3.04	0.435	0.01	3.24	2.66	**0.001**	0.33	2.93	3.14	0.176	0.17
Self-Control	3.86	4.28	**0.0001**	0.53	4.03	4.16	0.114	0.16	4.11	4.05	0.414	0.08

*. A measure of practical significance; is calculated as follows: the effect size (d) = Difference in means for the two groups divided by the pooled standard deviation (J. Stevens, 1996)

Users with graduate degrees shared information without verification and used social media

for healing purposes concerning educational level. Users with business educational backgrounds,

compared to users with sciences and engineering educational backgrounds, used social media for

connection purposes. It should be noted that the phone brand did not influence the respondents'

responses. However, iPhone users, compared to Samsung users, spent more time on social media.

On the other, Samsung users believe in the reliability of social media information related to

COVID-19 and are more willing to share such information without verification.

Culture impact

Table 2 reports the results of the Spearman Correlation test for the hypotheses (H9a-H9g). The

most significant cultural dimension was power distance. There were significant positive

associations between power distance and social media use, information sharing, information

reliability, healing, and relapse. Thus, the hypotheses H9a-H9e were supported. More specifically, there were significant differences between users with low scores in power distance and users with high scores in social media usage, information sharing, information reliability, healing, and relapse. People with high scores on power distance, compared to people with low scores, spent more time using social media, share without verification, trust information related to COVID-19 on social media, use social media for healing, and are more addicted to usage of social media. Social media users with a low collectivism score had relatively more trust in the reliability of COVID-19 information on social media. On the other hand, users with high collectivism scores used social media for creating friendships (affiliation purpose). While people from society with low uncertainty scores share more information related to COVID-19 without verification, people with high uncertainty scores and low long-term scores have more self-control regarding social media addiction (corr. for UA=0157** and corr. for LT=-.141**).

Discussion

The results indicated that individuals differ in their usage and perceptions regarding COVID-19 information disseminated on social media. Social media has a strong impact on individuals' behavior concerning COVID-19 information sharing and reliability. The study revealed that people are, to some extent, addicted to social media usage. This finding sheds light on the dark side of technology affordances and the misuse of social media. Naïve users could be easily misled by disseminating false information on social media. This raises the need for educating the public to be more critical of unauthenticated sources of information. The impact of fake news has recently been getting more attention due to its effect on people's opinions and behaviors. Additionally, the more time people spend on social media, the more likely they will be victims of fake news either

by believing in it or sharing such information without verification. On the positive side, people use social media for healing and affiliation purposes, especially during difficult times. Thus, it is the individual's responsibility to follow the appropriate social media group to obtain the most benefits. Information on social media spreads like a virus, and individuals need to protect themselves by filtering and processing the information before sharing it.

This study confirms the findings of few studies that contended that technology affordances can be not only enabling but also constraining (Strong *et al*., 2014). In fact, our study confirms Majchrzak (2013)'s framework of technology affordances and constraints theory by identifying positive affordances of social media in terms of augmenting social affiliation and healing among users as well as the negative affordances, including reducing self-control, increasing sharing without verification, believing social media information, and increasing the propensity to relapse to an addictive social media usage. Hence, the technology affordance theoretical perspective is a valuable lens for scholars to study what a technological artifact such as social media affords, both for good and for bad.

The study findings support prior studies' conclusions regarding the impact of demographic factors such as gender, age, marital status, and educational level on social media usage (Banhart, 2021; Report, 2020). Females and married individuals spend more time on social media. When putting these findings in the study's context, a collectivist society with high power distance where married women socialize more by forming groups, this finding agrees with Dadgar (2017) investigation. However, old married men who shared COVID-19 information without verification indicate that they trust such information. Even though women use social media more, men are more willing to share information. The COVID-19 pandemic is a driving force behind the increase of social media use and bringing new players (e.g., older people), governments, and organizations

to utilize social media platforms to communicate with a wider variety of audiences (Kemp, 2020). Additionally, older people seem to trust information related to COVID-19 on social media and are willing to share it without verification.

Our results suggest that people from societies with high scores on power distance and collectivism (e.g., China, Arab countries, Chile) need to be more cautious when surfing social media platforms to obtain information related to COVID-19 since they are more likely to believe in it and share it without further verification. Policymakers and managers in such countries should educate their citizens/employees about the dark side of social media platforms.

Theoretical Implications

As cited by Venkatesh *et al*. (2012), Alvesson and Kärreman (2007) contend that using an existing theory in a new context provides additional understanding of the phenomenon understudying and will lead to enhanced applicability of such theory by either altering the original hypothesized relationships to be non-significant, shifting the direction of the relationships, or forming new relationships. This study contributes to the notion of technology affordances by examining social media's positive and negative affordances in a new context (COVID-19 pandemic). It should be noted that a few studies have employed the notion of technology affordances in non-Western countries (Leong *et al*., 2016). This study is among few of this kind of research endeavors conducted in a non-Western country, stimulating researchers' interest in developing comparative studies. Additionally, one of the relatively recent aspects of research in social media usage has been the inclusion of the cultural dimensions in the research models used in investigating this area of research (Dadgar *et al*., 2017). It is essential now more than ever to examine the applicability of the affordance theory across different cultures. McCoy *et al*. (2005, p. 211) stated, "as

globalization of business and systems continues to increase, our understanding about the adoption

and use of IT needs to apply to other cultures." In line with this assertion, the research framework

of the study included the impact of the cultural dimensions and demographic factors on social

media usage.

While the majority of research on social media affordances focus on organizational affordances,

digital transformation, and technology adoption (Kozanoglu and Abedin, 2020; Vyas *et al*., 2017),

this study focuses on the individuals' affordances, which is the most appropriate model to enhance

our understanding of the impact of social media on individuals' during the pandemic. The research

mentioned above represents an extension to social media and the affordance theory studies which

added insights to our understanding of social media usage's bright and dark sides of during the

pandemic in a non-Western country.

Managerial Implications

Discussing the implications of the results of any study requires researchers to consider the

statistical significance and the practical significance. However, examining practical significance

depends on the study context and objectives (J Stevens, 1996). In this study, the "effect size"

measure was used to calculate the practical significance. As reported in Table 3, the estimated

effect size values for significant relationships range from 0.30 to 0.72. According to Cohen's

classifications (Cohen, 1977), [0.2 is a small effect, 0.5 Medium, 0.8 large, and 1.3 very large

effects], the vast majority of the estimated effect size values would have been medium to large

effect size (Stevens, 1996).

The results of this study have implications for practitioners and decision-makers. For the

public, the results found in this study urge decision-makers to form policies that, to some extent,

regulate the spread of fake news through social media in their countries. It is also the responsibility

of decision-makers, whether in the public or private sector, to educate the citizens of their nations.

Campaigns supported by medical practitioners should be used to target their citizens. Social media

can be used in these campaigns to help fight the spread of fake news and replace it with accurate

ones.

At their organizations, decision-makers need to also educate their employees about digital

literacy and the impact of spreading fake news. Sharing fake news about COVID-19 may increase

the level of anxiety, which could affect employees' performance (Ma *et al*., 2021). Instead of

focusing on their tasks, employees will get distracted by the terrifying news about the pandemic

impacting lives everywhere in the world. In their study, Olfat *et al*. (2019) found that public social

networks and enterprise social networks directly affect employees' job satisfaction. The authors

found that the positive impact of the public social network on job satisfaction is stronger than the

effect of enterprise social networks. Wagner *et al*. (2014) argue that social media may support

knowledge creation within organizations. Thus, sharing unreliable news would affect the quality

of the knowledge created within the organization, especially if employees form a habit of data

sharing without verifying its validity and reliability.

Conclusion

This study began with three main objectives: 1) investigating the bright and dark affordances

of social media use during the COVID-19 pandemic; 2) exploring the impact of demographic

factors on social media usage; and 3) examining the impact of the cultural dimensions on social

media usage. The results identified relationships between social media use and information

reliability and sharing, healing, affiliation, and relapse. Our empirical research findings suggest

that social media usage, information reliability, and sharing are affected by gender, age, marital

status, and educational level. The two significant cultural dimensions were collectivism and power

distance. Towards these ends, the study achieved its objectives.

Key Lessons Learnt

Many key lessons emerged from the results of this study, which include the following:

- In unprecedented/urgent cases, people are more eager to obtain information.
- There is a need for increasing public/employees awareness about the dark side of social media usage.
- Educational programs should be offered about the impact of social media addiction.
- Information disseminated through social media should not be taken at its face value.
- There is evidence that there is an interplay between social media usage and cultural dimensions.
- The purpose and intensity of use of social media vary by gender, marital status, and cultural background. As such, one should consider these factors when utilizing social media as a means for contacting citizens/customers.
- Officials should rely on social media channels to disseminate reliable and authentic information during urgent situations.

Limitations of the Study

The limitations of this study, which include the relatively small sample, and self-reported

information, should be noted. The common method variance concern was examined using

Harman's single factor test. The threshold value is 50% (Podsakoff *et al.*, 2003). The result

indicated that about 24% of the variance is accounted for by one factor of less than 50%. Therefore,

the common method variance is not a concern in this study.

Future Research Recommendations

This study provides an opportunity for researchers to conduct comparative studies across

different countries. One possible future research could be including more factors related to social

media usage at work and home. Another research endeavor could be measuring the bright and dark

side of social media using physical/bio measures such as level of stress, blood pressure, among

others. To pursue another research project, it would be interesting to investigate social media usage's direct and indirect impact on employees' productivity.

Conflicts of Interest

None Declared.

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Appendix A: List of Scale Items

Factor	Item Description	Mean	Std. Dev.
Relapse α = 0.87	1. I resume using WhatsApp without self-control after periods of abstinence	3.10	1.17
	2. I revert to my previous pattern of using WhatsApp after I have cut back	3.05	1.15
Affiliation α = 0.69	1. Using WhatsApp allows me to form friendships and associations	3.34	1.18
	2. Using WhatsApp allows me to have fun with other people	3.54	1.04
Healing α = 0.81	1. I usually use WhatsApp so I can avoid thinking about some of real-life problems or worries	2.32	1.11
	2. I usually use WhatsApp in order to relax from the day's work or study stress	2.61	1.14
	3. I often use WhatsApp to alleviate my depression	2.25	1.02
Self-control α = 0.78	1. I am self-disciplined in using WhatsApp	4.09	0.90
	2. I have strong self-control when it comes to using WhatsApp	4.08	0.87
Information Reliability α = 0.80	1. The information about Coronavirus I get from WhatsApp is reliable	1.9957	0.81
	2. I can trust information about Coronavirus that I got from a WhatsApp buzzer	1.9316	0.86
	3. I trust information about Coronavirus from my WhatsApp, thus I do not have to check it	2.0598	0.83
Information Sharing α = 0.83	1. In the last 10 days, at least once I shared information about Coronavirus from WhatsApp without reading the whole article	1.82	0.97
	2. In the last 10 days, at least once I shared information about Coronavirus from WhatsApp without verifying its truth	1.73	0.95
	3. In the last 10 days, at least once I shared information about Coronavirus that later I found out as a hoax/fake	1.68	0.80
Collectivism α = 0.77	1. Group success is more important than individual success	3.57	1.02
	2. Being loyal to a group is more important than individual gain	3.39	1.05
Power Distance α = 0.70	1. Managers should make most decisions without consulting subordinates	2.18	0.99
	2. Managers should not ask subordinates for advice because they might appear less powerful	2.05	0.85
Uncertainty α = 0.78	1. Rules and regulations are important because they inform workers what the organization expects of them	4.30	0.63
	2. Order and structure are very important in a work environment	4.26	0.70
Long-term α = 0.76	1. Thrift is important in private life	4.56	0.62
	2. Following long-term planning	3.91	0.85