Relationship Between Four Needs of Meaning and Smartphone Usage

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Abstract. Finding meaning in life (MIL) is one of the central motivations of human life. MIL significantly contributes to the optimal growth of human potential and overall well-being. Baumeister (1991) proposed that four needs: purpose, values, efficacy, and self-worth; shape individuals' quest for MIL. Scholars have suggested that social belongingness and social connection play a significant role in creating MIL. Moreover, social groups play an essential role in satisfying the four needs of MIL. The relationship between humans and technology, such as smartphones, has become intimate. Smartphones have become an integral and inseparable part of humans' life. Smartphones have provided abundant opportunities for constant social connection with family, friends, and diverse social groups. However, the inclusion of smartphones in individuals' lives is 'Janus-faced.' Smartphones provide ample opportunities to build and maintain significant social relationships both in the real and virtual worlds. On the contrary, smartphones tend to overly gratify individuals' pleasure-seeking behaviour and make them addicted to their usage. The study attempts to analyze the intricate relationship between four needs for MIL and perceived smartphone usage. The study considers two aspects of perceived smartphone usage: positive smartphone usage (PSU) and smartphone addiction (SA). A sample of 509 adult participants from India's capital and national capital region responded to questionnaires related to four needs of MIL, PSU, and SA. Data retrieved from this phase was analyzed using product-moment correlation and multiple regression. The analysis of data yielded the following results: (i) purpose was positively associated with PSU, (ii) lower order values were negatively associated with PSU and positively associated with SA; (iii) efficacy was positively associated with PSU and negatively associated with SA; (iv) self-worth was positively associated with both PSU and SA. The results suggested that individuals searching for MIL use their smartphones to build social capital, which provides them mental security, easy access to information, the scope for emotional sharing, and a better image in society. Secondly, the results suggest that helping individuals enhance their efficacy beliefs helps them experience better control of their habits linked with smartphone addiction. Thus, results imply that making people aware of the importance of MIL could help individuals use their smartphones effectively and help curb the disadvantages of smartphone addiction.

Keywords: Meaning in life · Smartphone usage · Smartphone addiction · Self-Efficacy · Self-worth

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1 Introduction

Finding meaning in life (MIL) is one of the central motivations of human life. MIL significantly contributes to the optimal growth of human potential and overall well-being (Steger & Kashdan, 2007). MacKenzie and Baumeister (2014) advocated that social interactions and relationships are the primary sources of MIL. In recent years, certain technologies such as smartphones have become an integral and inseparable part of humans' lives. According to Srivastava (2005), the mobile phone 'has become such an important aspect of a user's daily life that it has moved from being a mere 'technological object' to a key 'social object' (p. 111). Park and Kaye (2018) suggested that the relationship between smartphones and humans can be viewed from an extended-self perspective – 'smartphones extend the human self beyond the human body, and smartphones are becoming part of the "human self" (p. 2)'. Wilmer et al. (2017) advocated that "smartphones seem capable of performing an almost limitless range of cognitive activities for us, and of satisfying many of our affective urges" (p.1). Smartphone promotes a constant allure of perpetual human contact and more independent, close social connections and self-promotions (Katz & Aakhus, 2002; Turkle, 2011). MIL plays a significant role in an individual's life and having a positive social relationship aids in this journey (Baumeister, 1991). Therefore, individuals searching for meaning in life may perceive smartphones as an essential tool, providing ample opportunities to connect with others without any temporal and locative constraints.

The inclusion of smartphones in individuals' lives is 'Janus-faced' (Arnold, 2003). According to Rubin (2002), there are two primary motivations behind media use: instrumental and ritualistic. Instrumental motivation encourages users to use media and its application for goal attainment, whereas ritualistic orientation motivates individuals to use media for non-productive time-consuming activities. Rubin's perspective can also be applied to smartphone usage. Individuals seeking MIL may use instrumental orientation to reach out to content or information that helps them retain and consolidate meaningful social relationships and connections. The built-in gratification feature of smartphones, however, may promote ritualistic orientation among individuals, resulting in smartphone addiction. This study contributes to the existing literature by exploring the intricate relationship between MIL and smartphone usage. An analysis of the relationship between MIL and smartphone usage can provide a new perspective on how MIL can be used to optimize smartphone use. The study takes into account both positive and negative smartphone usage.

1.1 Meaning in Life (MIL)

Baumeister (1991) defined MIL as a 'mental representation of possible relationships among things, events, and relationships (p. 15). The basis of MIL lies in fulfilling four fundamental needs: purpose, value, efficacy, and self-worth (Baumeister, 1991, Baumeister & Vohs, 2002; MacKenzie & Baumeister, 2014). The purpose refers to individuals' perception that their present actions relate to future outcomes, whereas value helps individuals rationalize whether their actions are morally correct. Similarly, efficacy refers to having a sense of control over life situations, and self-worth indicates individuals' desire to feel superior by making a fair comparison. Baumeister also emphasized that

significant fulfilment of these needs is essential for experiencing MIL. Further, he also stated that a healthy social relationship is a catalyst to fulfilling these needs and deriving MIL. Scholars have suggested that social belongingness and social connection play a significant role in creating MIL (Stavrova & Luhmann, 2016). Moreover, social groups play an essential role in satisfying the four needs of MIL.

1.2 Perceived Smartphone Usage

The usage of smartphones is rising by leaps and bounds. The market research firm TechArch (2020) reported over 500 million smartphone users in December 2019 in India. Smartphone use is often considered a double-edged sword (Cong, 2019; Qi, 2019) phenomenon. Smartphones have enabled individuals to establish social connections in real and virtual worlds without being limited by time or space. They provide instant access to information, communication, social connection and entertainment. The smartphone also promotes the allure of constant human contact, with ramifications for several aspects of human behaviour (Katz & Akhus, 2002; Turkle, 2011). The continual allure to be online has 'enveloped' individuals' lives in the 'infosphere' (Floridi, 2012), leading to smartphone addiction.

Scholars have proposed various theoretical perspectives to understand the psychological mechanism behind smartphone usage. The 'uses and gratification theory' primarily concerns how individuals deliberately use media to satisfy their various needs or goals, such as entertainment, socializing and relaxation (Ruggiero, 2000). Stafford et al. (2004) proposed three gratification motives underlying internet usage:

a) Content gratifications in terms of information and entertainment.
b) Process gratification in terms of overall experience gathered due to media usage (e.g., internet and smartphone usage)
c) Social gratification is derived from internet interaction and social networking sites

The uses and gratification theory can also apply to smartphone usage as smartphones are instrumental in providing content, process, and social gratification. A smartphone can also be viewed as an 'instantiation of the extended mind- a kind of cognitive miserliness' (Barr et al., 2015, p. 13). Smartphone technology helps obtain information from various information portals and helps store and maintain information like human memory.

Despite the number of positive uses associated with smartphones, their usage is also related to many problematic behaviours. Turel and Serenko's (2012) 'dual effect model of technology use' suggested that information systems such as smartphones facilitate 'enjoyment', a positive state. However, it can also develop strong habits that may further reinforce smartphone addiction among users. According to Oulasvirta et al. (2012), mobile phones are *habit-forming* devices. Checking one's mobile phone prompts users to surf for other things on their device that may increase their overall usage. According to Zhang et al. (2014), reinforcement motives are important antecedents of compulsive smartphone usage. The instant reinforcement features of smartphones lead to the state of flow (Csikszentmihalyi, 1975). The flow experiences would further lead to cognitive absorption-a condition when an individual's sole purpose is to use the technology

(e.g., smartphone in the present study) rather than engaging in other relevant activities (Agarwal & Karahanna, 2000).

1.3 Present Study

Social groups and connections are instrumental in satisfying the four needs of MIL. Lambert et al. (2010) reported that personal relationships with family and friends are the primary sources of MIL. In their study, Stillman et al. (2009, 2011) found that individuals with greater MIL were rated as more wanted social partners and received more liking from others than individuals with low MIL. Stavrova and Luhmann (2016) reported that MIL is positively associated with greater substantial social connectedness. Thus, healthy social relationships play a catalytic role in finding MIL and having a profound sense of belonging contributes to MIL.

The relationship between smartphones and humans have become intimate as it offers an abundance of opportunity for instant social connections without the constraints of time and space.

The present study employs Baumeister's (1991) model of meaning in life, consisting of four needs: (i) purpose, (ii) value, (iii) efficacy, and (iv) self-worth. *Purpose* refers to individuals' perception that their current life activities are directed toward goals and fulfillments (MacKenzie & Baumeister, 2014). Individuals involved in formulating and attaining goals may their smartphones with instrumental motives for building and maintaining social relationships and accessing information and knowledge. Content and social gratification (Stafford et al., 2004) derived from smartphones may help individuals to use their smartphones constructively. On the contrary, ritualistic orientation may trigger individuals' informational reward system resulting in compulsive smartphone checking behaviour leading to smartphone addiction (Oulasvirta et al., 2012).

Value help individuals rationalize whether their actions are morally correct or not (MacKenzie & Baumeister, 2014). Social and cultural environments play a crucial role in acquiring one's value systems. The smartphone enables access to the virtual milieu of different social and cultural values. Thus, it will open up opportunities for assimilation and acculturation of different value systems.

Efficacy refers to individuals' perception that one has control over life situations and can achieve complex tasks (MacKenzie & Baumeister, 2014). Individuals with an adequate level of self-efficacy may optimally use their smartphones to access the information and enhance their knowledge. Past research has demonstrated the relationship between self-efficacy and addiction, including substance addiction and different forms of technology addiction (Ceyhan & Ceyhan, 2008; Kadden & Litt, 2011; İskender & Akin, 2010; Yang et al., 2019). However, there is a dearth of research examining the relationship between efficacy and smartphone addiction.

Self-worth is defined as individuals' desire to feel superior by making a suitable social comparison (MacKenzie & Baumeister, 2014). In the present study, self-worth will be measured in terms of social comparison. According to Nesi and Prinstein (2015), mobile phone social networking platforms (MSNP's) provide a virtual social platform for social information, sending and receiving feedback. MSNP's leads to the technology-based social comparison that can be used as a medium to derive one's self-worth. On the contrary, the constant allure of social information and feedback from others may

reinforce habits of compulsive usage. Modern-day technologies, such as cell phones, Facebook, and Instagram, promote technology-based behaviours of social comparison and interpersonal feedback-seeking behaviours that could further influence individuals' behaviour in real-life.

There is a lack of research addressing the relationship between MIL and perceived smartphone usage. Individuals seeking MIL may find smartphones to be an enabler of social relationships. The significant social relationships help individuals define the purpose of their lives, boost their efficacy beliefs, and enable them to judge their values and self-worth. On the contrary, individuals not aspiring for MIL may get enticed by smartphones' gratification features, leading to smartphone addiction. Thus, the study explores the relationship between MIL and smartphone usage. The study considers both positive and negative aspects of smartphone usage. The negative aspects of smartphone usage are studied in terms of smartphone addiction.

2 Method

2.1 Participants

The present study sample included 509 adults (n = 313 males and n = 196 females). The data was collected capital and the national capital region of India. The age of the participants ranged from 19 years to 40 years, with a mean age range of 23.9 years (SD = 6.30). The study employs a convenience sampling method. The underlying criteria for choosing this sample selection method for the present study include easy accessibility, geographical proximity, and willingness to participate, and also, it was parsimonious.

2.2 Measures

The measured variables were MIL, PSU and SA. The data was collected through self-administered questionnaires on a seven-point Likert scale.

Meaning in Life. (a) Purpose: Steger et al.'s (2006) meaning in Life Questionnaire (MLQ) was employed to measure the purpose. It is a ten-item scale with a seven-point Likert scale. This scale measures two dimensions: the presence of meaning and searches for meaning. The reported Cronbach's α for the presence of meaning $\alpha = 0.80$ for and for search for meaning $\alpha = 0.90$. (b) Values: The revised version of the sources of meaning profile (SOMP-R) by Reker (1996) was employed. This scale comprised seventeen items with a seven-point Likert ranging from not at all meaningful to extremely meaningful. The reported reliability of the scale range from Cronbach's $\alpha = 0.71$ to 0.81. (c) Efficacy: The general self-efficacy scale by Schwarzer and Jerusalem (1995) was employed. The scale consists of ten items measured on the seven-point Likert, starting from very untrue to very true. The reported reliability of the scale is Cronbach's $\alpha = 0.76$. (d) Self-worth: Social comparison scale developed by Gibbons and Buunk (1999) was employed. It is a unidimensional scale consisting of eleven items. The responses were measured on a seven-point Likert scale. The reported reliability coefficient of the scale is Cronbach's $\alpha = 0.82$.

Perceived Smartphone Usage. (a) Positive Smartphone Usage: A scale was constructed to measure perceived positive smartphone usage due to the unavailability of a standardised scale in literature. An in-depth literature review and open group discussion (n = 15, mean age = 23 years) were conducted to identify the broad dimensions of positive smartphone usage. A total of six dimensions were identified: connectivity, security, utility, expression of emotions, entertainment, and knowledge. Initially, a total of 33 items were constructed for identified dimensions. In addition, six items were also selected from Rosen et al.'s (2013) media and technology usage and attitude scale. These items were reviewed and found deemed fit for the present study. The term 'technology' was replaced with 'smartphone'. All the items were critically reviewed with the help of two other professors in the department. A preliminary administration of the scale with a seven-point Likert scale was performed (n = 15, mean age = 25) to assess item comprehension and clarity. The feedback received at this stage helped the researcher drop an item or merge two conceptually similar items to make the scale more precise, crisp, and meaningful. Finally,19 items were finalised to measure perceived smartphone usage. Exploratory factor analysis is performed to identify the latent structure of the scale (refer to the Results section). (b) Smartphone Addiction: Smartphone addiction inventory (SPAI) developed by Lin et al. (2014) was employed. The SPAI is comprised of 26 items and measures four dimensions: (i) tolerance, (ii) withdrawal behavior, (iii) compulsive behavior and (iv) functional impairment. Seven items of the cyberspace orientation were also used from the smartphone addiction scale (Kwon et al., 2013). The items of cyberspace orientation were deemed fit to measure an important aspect of smartphone addiction. Thus, the final questionnaire consists of thirty-three items on a seven-point Likert scale.

3 Results

The data is analyzed with SPSS version 27 in two phases. In the preliminary phase, items of all the scales are subjected to factor analysis. The Kaiser-Meyer-Olkin (KMO) sampling adequacy test and the Bartlett's Sphericity Test (BTS) is employed to test the suitability of the data for factor analysis. Principal component analysis (PCA) with varimax rotation was used to recognize the underlying pattern of different scale items.

Like the original scale, factor analysis yielded two factor structure of purpose [KMO = 0.79, BTS: χ^2 (45) = 12.5 (p < .00)]: the presence of meaning (Cronbach's $\alpha = 0.76$) and search for meaning (Cronbach's $\alpha = 0.74$). General self-efficacy [KMO = 0.85, BTS: χ^2 (45) = *12.6, (p < .00)]* resulted in single factor structure with Cronbach's $\alpha = 0.81$. Values [KMO = 0.91, BTS: χ^2 *(136) = 29.50, (p < .00)]* resulted in three factors: preservation of traditional values (Cronbach's $\alpha = 0.83$), personal and social involvement, (Cronbach's $\alpha = 0.73$), and materialistic and temporal orientation (Cronbach's $\alpha = 0.61$). Self-worth [KMO = 0.82, BTS: χ^2 *(55) = 98.6, (p < .00)]* resulted into two factors: perceived ability and opinion (Cronbach's $\alpha = 0.62$) and perceived comparison (Cronbach's $\alpha = 0.67$).

Factor analysis [KMO = 0.87, *BTS* χ^2 *(3093.55) = 171, (p < .00)] resulted in five factor structure for PSU: emotional expression via smartphones* (Cronbach's $\alpha =$

Table 1. Summary of correlation coefficients between meaning in life and positive smartphone usage.

	SM	PAO	SE	PTV	EES	HM	SEC	UTI
SM	-	.232**	.201**	.072	.144**	.145**	.129**	.114**
PAO		-	.143	.144**	.169**	.140**	.141**	.106*
SE			-	−.21**	.121**	.106**	.174**	.130**
PTV				-	.044	−.121**	−.079	−.132**
EES					-	.453**	.363**	.461**
HM						-	.456**	.580**
SEC							-	.491**
UTI								-

** ***p < .01, * p < .05***

SM: Search for meaning, PAO: Perceived ability & opinion, SE: Self-efficacy, PTV: preservation of traditional values, EES: Emotional expression via smartphone, HM: Hedonistic motivation, SEC: security UTI: utility.

0.79), hedonistic motivation (Cronbach's $\alpha = 0.59$), security (Cronbach's $\alpha = 0.65$), utility (Cronbach's $\alpha = 0.76$), image enhancer (Cronbach's $\alpha = 0.70$). Factor analysis yielded [KMO = 0.93, BTS: χ^2 *(231) = 0.59, (p < .00)]* a five-factor structure of SA: cyberspace orientation (Cronbach's $\alpha = .85$), problematic smartphone behaviour (Cronbach's $\alpha = 0.87$), personal and social consequences (Cronbach's $\alpha = 0.81$), physical and psychological impairment (Cronbach's $\alpha = 0.83$) and uncontrolled usage (Cronbach's $\alpha = 0.82$). The Cronbach's α for all the scales was 0.82, indicating excellent reliability.

In the second phase of data analysis, correlation and multiple regression analysis are performed. Tables 1 and 2 depicts correlation results. Only significant results are shown in the table. The results demonstrate that four needs MIL are significantly associated with PSU and SA.

Search for meaning, perceived ability and opinion, self-efficacy is positively correlated with emotional expression via smartphone, hedonistic motivation, perceived security and utility. On the contrary, preservation of traditional values is negatively correlated with hedonistic motivation and utility.

Table 2 depicts that perceived ability and opinion, preservation of traditional values, and personal and social involvement positively correlate with smartphone addiction. However, perceived efficacy is negatively associated with smartphone addiction.

Table 3 presents multiple regression results. Only significant results are shown in the table. A total of nine multiple regression models were performed. Results support that MIL significantly predicts both PSU and SA. Search for meaning (purpose), perceived ability and opinion (self-worth), preservation of traditional values, personal and social involvement (values), and self-efficacy emerged as significant predictors of PSU and SA.

Table 2. Summary of correlation coefficients between meaning in life and smartphone addiction.

	PAO	SE	PTV	PSI	CSO	PB	PS	PhPsy	UC
PAO	-	.134	.328	.191	.249**	.181**	.196**	.145**	.014
SE		-	.231	.111	.000	−.041	−.077	−.046	−.121**
PTV			-	.414*	.137**	.111*	.148**	.115**	.028
PSI				-	.239**	.088*	.160**	.157**	.076
CSO					-	.590**	.574**	.392**	−.141*
PB						-	.60**	.323**	−.124*
PS							-	.401**	−.162*
PhPsy								-	−.156*
UC									-

** ***p < .01, * p < .05***

PAO: Perceived ability& opinion, SE: Self-efficacy, PTV: preservation of traditional values, PSI: Personal and social involvement, CSO: Cyberspace orientation, PB: Problematic behavior, PS: Personal and social consequences, PhPsy: Physical and psychological impairment, UC: Uncontrolled Usage.

4 Discussion

The study results demonstrated a significant relationship between MIL and perceived smartphone usage. Individuals pursuing goals or purposes perceive smartphones as an essential tool to satisfy their social, hedonic, and cognitive needs. Search for meaning is significantly associated with PSU dimensions. The results imply that individuals searching for MIL perceive smartphones as an essential tool that provides them with a sense of security, a tool to formulate and maintain social relationships, and a medium to express their emotions with significant others. Individuals searching for meaning perceive smartphones as a tool to satisfy their basic needs of safety, belongingness, information, and entertainment. According to Lukoff et al. (2018), the uses and gratification theory suggests that 'media use is an active choice on the part of a user, driven by the user's desire to seek specific gratifications' (p. 4). Rubin (2002) explained two types of motivation: instrumental motivation- when a user intentionally uses technology to fulfil a specific purpose or goal and habitual motivation- when a user uses technology for no specific purpose but just for time to pass. Thus, results specify that individuals in search of meaning use their smartphones with instrumental motives to satisfy their need for purpose.

Self-worth is another dimension of MIL. In this case, only perceived ability and opinion were significantly associated with both perceived positive smartphone usage. 'Perceived ability and opinion' is defined as "the desire to feel positive by making social comparison" (Baumeitster, 1991, p. 32). The results imply that a higher tendency to feel positive through social comparison motivates individuals to seek various information regarding entertainment, security of sensitive information, and asking for help during a crisis using smartphones. However, results also indicated that constant social comparison via smartphones leads individuals to become addicted to their smartphones. White et al.

Table 3. Summary of multiple regression analysis.

Predictor Variable		Criterion Variable	Model R^2	β	P	T	VIF
	Model 1						
SM		EES	.098	.10 2	.01	2.3	1.12
PAO				.124	.01	2.4	1.14
	Model 2						
SM		HM	.063	.106	.02	2.30	1.12
PAO				.132	.00	2.84	1.14
	Model 3						
PAO		Sec	.072	.109	.00	2.36	1.14
	Model 4						
PAO		UTI	.078	.096	.03	2.08	1.14
	Model 5						
PAO		PS	.119	.150	.00	.666	1.50
PTV				.186	.00	.877	1.14
PSI				.143	.00	.877	1.14
	Model 6						
PAO		PB	.133	.150	.00	.666	1.50
PTV				.186	.00	.875	1.14
PSI				.103	.00	.618	1.61
	Model 7						
PAO		CSO	.151	.076	.00	.666	1.50
PSI				.248	.00	.618	1.61
	Model 8						
PAO		PhPsy	.088	.105	.00	.875	1.14
PTV				.107	.01	.618	1.61
PSI				.173	.02	.660	1.14
	MODEL 9						
SE		UCU	.021	-.063	.05	.666	1.50

SM: Search for meaning, PAO: Perceived ability & opinion, SE: Self-efficacy, PTV: preservation of traditional values, PSI: Personal and social involvement, EES: Emotional expression via smartphone, HM: Hedonistic motivation, SEC: Security UTI: Utility, CSO: Cyberspace orientation, PB: Problematic behavior, PS: Personal and social consequences, PhPsy: Physical and psychological impairment, UC: Uncontrolled Usage.

(2006) suggested that frequent social comparison leads to a condition where individuals treat themselves as an object and, as a result, experience negative emotions. In today's time, mobile social networking platforms (MSNPs) enable individuals to constantly

exchange social information and self-presentation in the best possible manner. Nesi and Prinstein (2015) called this phenomenon 'technology-based social comparison' (TSC). Thus, TSC may act as a reinforcer that, on the one hand, might enhance one's feeling of self-worth, but on the contrary, it makes individuals addicted to their smartphones. Nesi and Prinstein (2015) reported that social comparison tendencies positively influenced technology use. They also reported that TSC and feedback-seeking behaviors were positively associated with depression among adolescents. Most importantly, the constant urge for social comparison was a significant predictor of smartphone addiction.

The results demonstrated an interesting association between values and perceived smartphone usage. For instance, the preservation of traditional values (PTV) was negatively associated with two dimensions of PSU-utility and hedonistic motivation. On the contrary, personal and social involvement (PSI) and PTV were positively associated with smartphone addiction. Min's hierarchy of values (1998) may help explain these results. According to Min, values can be organized in a hierarchy. The topmost values in the hierarchy include absolute values, whereas conservation of self and collective self-such as friends and family are the lowest values in the hierarchy. In other words, Min suggested that the values related to the experience of pleasure and displeasure are elementary levels of values. The values that give mental satisfaction, such as absolute goodness and humanity, are relatively deeper. In the present study, preservation of traditional values and personal & social involvement share similarities with Min's lower level of values (cultivating self and family). It is worth noting here that individuals in the pursuit of satisfying lower-order values would not attain more profound levels of meaning in life. Moreover, over-involvement in hedonic values will make an individual more vulnerable to smartphone addiction. Preference for lower values in life can make individuals compulsive, dependent, cyberspace orientated, and disengaged in the real world. It can also be inferred that smartphone addiction acts as a catalyst for fulfilling lower-order values and an inhibitor to exploring higher-order values. In a nutshell, it can be concluded that motivation to satisfy only lower categories of values leads to smartphone addiction, thus, leaving little scope to take cognizance of higher-order values in life.

Self-efficacy was significantly associated with PSU and SA and smartphone addiction. The term efficacy refers to the belief that individuals have control over their daily life situations. It can be inferred from the results that efficacy is an essential variable for fair usage of the smartphone. Adequate efficacy beliefs help individuals use their smartphone and its application in a meaningful manner, such as goal-attainment rather than using it for virtual connections and entertainment, expressing one's genuine emotions, and enhancing one's social capital with significant others. The present study's findings align with the results of other technology addictions. For instance, Razzaq et al. (2018) investigated the relationship between internet literacy and self-efficacy among university students. Results of the study demonstrated that students with higher self-efficacy and internet literacy perceived smartphones as an essential tool to search for information, maintain interpersonal communication, and feel motivated towards completing their tasks. Koh et al. (2018) also found that online social network addiction was negatively related to self-efficacy. Similarly, Lee et al. (2014) reported that lower levels of self-efficacy induce smartphone addiction among participants. Ceyhan and Ceyhan

(2008) found that computer self-efficacy significantly negatively predicted problematic internet use. Other studies have also reported that university students' self-efficacy was negatively associated with internet addiction (İskender & Akin, 2010; Berte et al., 2019).

The study results supported the uses and gratification theory of mass communication (Katz & Blumler, 1974) and extended its application to smartphone use. This theory has further evolved and has acknowledged the changing nature of communication and various media platforms. The uses and gratification theory assumes that media users are active agents (Peirce, 2007). They attempt to make sense of information received from media from their perspective. Smartphones serve various functions in individuals' lives than mere connectivity. According to Stafford et al. (2004), content, process, and social gratification are three primary gratifying usages associated with different media usage. These gratifications are also inherent in smartphones. Individuals searching for purpose and presence of meaning may find smartphones a vital tool that gratifies their needs in terms of content (utility and hedonistic motivation) and social needs (emotional expression via smartphone, security, and self-image enhancement). In a similar vein, according to Chan's (2014) social identity gratification perspective, social media provides a medium to build one's social capital. Thus, individuals searching for MIL may find smartphones an essential tool. Smartphones help them build social capital, giving them a better sense of security, access to information and satisfying their social needs in a meaningful manner.

The present study has certain limitations that also open up opportunities for future research. The study sample was drawn mainly from India's capital and national capital regions, which may limit the external validity of the findings. Future studies can draw samples from wider regions to improve the external validity of the obtained results. Along with this, it may include longitudinal data to verify the significance of present results. Meaning in life is a developmental concept; future studies can draw samples from cross generations; and compare its relationship with meaning in life, smartphone addiction and well-being.

The study has many important implications for both researchers and the common mass. Firstly, making people aware of the importance of MIL will help in curbing the disadvantages of smartphone addiction. Secondly, the study results may imply that helping individuals enhance their efficacy will help them be inclined to instrumental usage of smartphones rather than ritualistic usage. The results supported that smartphones overly gratified lower-level values that might hamper the search for attaining higher values in life. Thus, it restresses the role of significant others and recreational activities in real life that could be instrumental in consolidating social bonds and finding meaning in life in an in-depth manner.

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