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The Impact of Psychological and Social Factors on the Public's Use of Smart Phone Applications in the UAE

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Abstract

Smartphones have evolved into an integral facet of daily life. It elicits an inadvertent sense of reliance characterized by addictive tendencies towards the device and its diverse applications. The current study examines the impact of psychological and social factors on the use rate of smartphone applications of various types (practical, entertainment, informational, and social media), focusing on their impact on performance expectancy, encompassing both addiction and habituation tendencies. In addition, the study examines whether the rate of use of different types of smartphone applications impacts the elements of expected performance. A quantitative survey research approach was utilized to collect the required data. An online survey was administered to a sample of 240 participants across the population in the United Arab Emirates. Within the framework of the study model, it was concluded that attitudes toward materialism significantly impacted the rate of individuals' use of smartphone applications of various types (informational - practical - entertainment - social media).In contrast, the feeling of loneliness did not significantly impact the rate of use of these different applications. Self-regulation significantly influences Practical, informational, and social media use. The findings suggest that social media usage is crucial in shaping individuals' habits and addiction to smartphone applications.The study sheds light on the intricate psychological factors influencing smartphone application usage in the UAE. By examining age-related preferences, gender dynamics, and the impact of attitudes and social satisfaction on addiction and habituation, the current research sets the stage for tailored interventions and policies, promoting a healthier digital ecosystem within the unique sociocultural fabric of the United Arab Emirates.

Keywords: *Psychology, social, smartphone applications, addiction, Habituation.*

Introduction

In contemporary society, consumer behaviour has significantly changed due to the widespread integration of smartphone applications. These applications provide users with access to various activities, such as reading newspapers, streaming movies, and social interactions. The Telecommunications and Digital Government Regulatory Authority reports that internet usage in the United Arab Emirates has reached 99% penetration, with smartphone download speeds increasing by 2.3% annually(25). The smartphone has become an integral part of daily life, eliciting an addictive tendencies towards the device and its diverse applications. This has led to

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studies categorizing smartphone user behaviour into 'Addictive' and 'Habitual' classifications, reflecting the increasing importance of digital interfaces in modern society. The Telecommunications and Digital Government Regulatory Authority's August 2023 report highlights the multifaceted utility of the internet in various sectors, including social interaction, professional activities, information retrieval, education, entertainment, e-commerce, and public services.

Research Problem

The smartphone has evolved into an integral facet of daily life. It elicits an inadvertent sense of reliance characterized by addictive tendencies towards the device and its diverse applications, encompassing practical, informational, entertainment, and social media functions. As a result, certain studies categorize smartphone user behaviour into 'Addictive' and 'Habitual' classifications (9). Therefore, the current study aims to investigate the influence of psychological - attitudes towards materialism and feelings of loneliness— and social factors -- social satisfaction and self-regulation - on the usage rate of different types of smartphone applications among consumers in the UAE, with a focus on their impact on performance expectancy, encompassing both addiction and habituation tendencies. In addition, the study examines whether the rate of use of different types of smartphone applications impacts the elements of expected performance.

Research Objectives

1- Determine the impact of psychological factors —attitudes towards materialism and feelings of loneliness—on the rate of usage of practical apps(e.g., banking, productivity), entertainment apps (e.g., streaming services, games), informational apps (e.g., news, educational), and social media apps.

2- Identify the impact of social factors - social satisfaction and self-regulation— on the use rate of different smartphone applications.

3- Examine the impact of both psychological and social factors on the elements of performance expectancy when using smartphone applications, focusing on addiction and habituation.

4- Identify the extent to which the use rate of different types of smartphone applications affects the elements of performance expectancy.

Review of Literature

Smartphone addiction is a global issue, with studies revealing its impact on young individuals in the UAE. For instance, AlQaderi et al. (2023) found a significant correlation between smartphone addiction, anxiety, and depression, with higher rates among females (6). Al Jenaibi and Almansouri (2020) found that smartphone usage has positive and negative effects on the UAE youth demographic, with obesity being a prominent adverse health outcome (3). Moreover, Zhang, Pu, He, et al. (2022) examined the impact of adverse psychological factors on behavioral addiction related to smartphone applications and social media (28). The study concluded that demographic characteristics, family environment, and psychosocial factors were associated with internet gaming addiction, social media addiction, and smartphone addiction. In addition,

Negative psychological factors (such as anxiety and depression) play an essential role in different behavioral addictions.

Qenawi (2019) found that smartphone usage is primarily driven by entertainment, ease of use, and cultivating a favorable social image (22). At the same time, Barnes et al. (2019) found a higher prevalence of smartphone addiction compared to addiction to social networking services (SNS) among business school students (8). Al-Hassan et al. (2018) observed a correlation between smartphone addiction levels and user demographics, with school-educated individuals exhibiting greater degrees of depression and low levels of self-control as contributing factors (2). Many researches on smartphone addiction have shown significant gender disparities and a significant influence of stress on addiction (13,14). Additionally, studies have found that 48% of university students in the Arab world have smartphone addiction, attributed to factors such as affordability, accessibility, ease of use, and compactness. However, excessive smartphone use has been linked to social anxiety and loneliness among participants (4). On the other hand, High school students in Beijing have also reported increased smartphone usage due to academic workloads and limited group activities (27). In another study, harmful parenting practices, such as lack of involvement or refusal to engage with children, have been linked to smartphone addiction (21).

Vân Deursen et al. (2015) investigated the impact of habitual smartphone use on social relationships, concluding that individuals using smartphones primarily for social purposes exhibited a quicker escalation toward addictive behavior. At the same time, Age played a negative role in this pattern, with older individuals displaying lower tendencies towards habitual and addictive smartphone behavior (26). Contrastingly, Saumell et al. (2019) identified eight determinants influencing the intention to use the MARSR application for restaurant reservations. However, neither gender nor Age significantly affected the intention to use the application (24). Finally, Alatawy (2019) discovered a robust correlation between subjective standards and customers' inclination to use smartphone applications for online shopping among 150 individuals from Saudi society (1).

The literature review on smartphone addiction presents a mosaic of insights with discernible trends and variations. Studies like AlQaderi et al. (2023) and Zhang et al. (2022) underscore a strong correlation between smartphone addiction and adverse psychological factors like anxiety and depression. However, their findings may be limited by sample sizes and lack of quantitative measures (6,28).

Research Model:

The Unified Theory of Acceptance and Use of Technology (UTAUT) model developed by Venkatesh in 2003 was utilized(7). The below model investigates the influence of psychological and social factors on smartphone application use among users in the UAE, with a focus on their impact on performance expectancy.

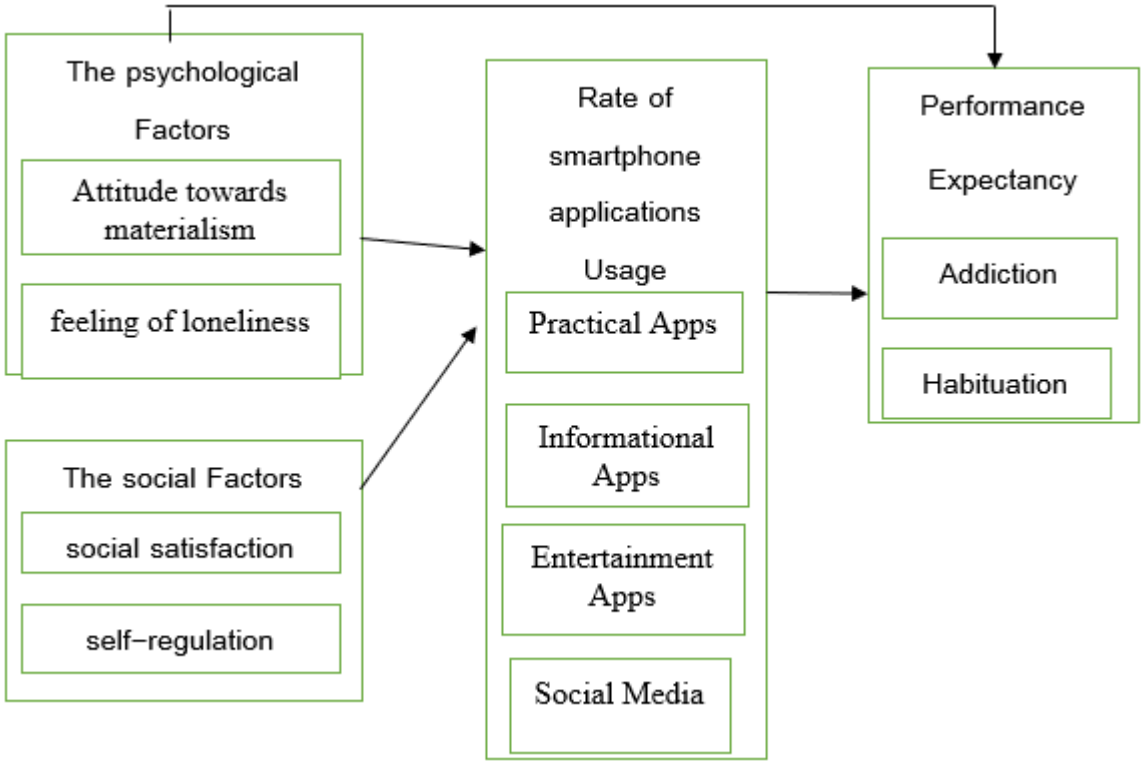

Figure (1) Research Model

Two significant sets of factors are hypothesized to shape individual engagement with various app categories: psychological and social. The psychological dimension considers the impact of attitude toward materialism (23) and feelings of loneliness (11). Social factors also play a critical role in influencing app use patterns. Social satisfaction, stemming from fulfilling relationships with family, friends, and colleagues (15), may be associated with reduced engagement with social media platforms, as individuals' social needs are already met. Conversely, individuals seeking connection or experiencing lower social fulfilment may utilize these applications more extensively. Additionally, self-regulation, the ability to effectively manage time and tasks (18), is expected to positively correlate with the use of practical applications that enhance productivity and goal attainment (5). Entertainment applications, encompassing games, music, and streaming services, offer avenues for leisure and enjoyment. Practical applications, such as banking, scheduling, and shopping tools, facilitate daily tasks and simplify routines. Informational applications provide convenient access to knowledge and news, while social media platforms enable connection, communication, and community building. Finally, this model conceptualizes performance expectancy as the combined likelihood of both addiction (10) and habituation (16) resulting from smartphone app use. The UAE is experiencing a shift in smartphone app usage, with individuals increasingly using practical applications for personal goals and productivity. This research aims to understand the drivers of smartphone app use in the UAE, providing insights for responsible technology development and promoting healthier user behaviors in the dynamic digital landscape.

Research Hypothesis:

H1: There is a significant effect of psychological factors (on the rate of use of smartphone applications of different types.

H2: There is a significant effect of social factors on the rate of use of smartphone applications of different types.

H3: There is a significant effect of psychological factors on individuals' levels of addiction and habituation towards smartphone applications.

H4: There is a significant effect of social factors on individuals' levels of addiction and habituation towards smartphone applications.

H5: The rate of use of smartphone applications of different types affects individuals' levels of addiction and habituation towards smartphone applications.

H6: There are statistically significant differences in individuals' rate of use of different types of smartphone applications based on their demographic characteristics.

Research Method

The study is considered descriptive-exploratory as it describes the present situation's present status, attitudes, and progress. A quantitative survey research method was employed to gather the required data. For the current study, convenience sampling is the non-probability sampling technique utilized to identify the study sample. To explore the correlation between user behavior and psychological and social factors influencing smartphone application usage, an online survey was administered to a sample of 240 participants across the population in the United Arab Emirates. The self-administered questionnaire consisted of three sections. The first section used a 5-point frequency scale to assess participants' engagement with four app categories: informational, practical, entertainment, and social media. The second section measured key variables using statements developed based on validated instruments and presented on a 5-point Likert scale. These variables included attitude towards materialism, loneliness, self-regulation, social satisfaction, addiction, and habituation. Finally, the third section measured the demographic characteristics of the study participants.

Table 1. Sample's Demographic Profile

Demographics		%
Gender	Male	49.2
	Female	50.8
Age	Below 22	27.1
	22-34	34.6
	35-44	23.3
	45 and above	15
Education	High School	18.8
	Bachelor's degree	65.8
	Postgraduate	15.4

Validity and Reliability

The overall study scales demonstrated robust reliability, with a Cronbach's alpha coefficient of.803 and Spearman-Brown and Guttman Split-Half coefficients of.707 and.703, respectively. These coefficients validate the reliability and stability of the research variables and scales.

Findings

H1: There is a significant effect of psychological factors on the rate of use of smart phone applications of different types.

Table 2. The impact of psychological factors on the rate of use of smart phone applications.

Dependent Variable	Independent Variable	R	R^2	F		Beta	T	
				Value	Sig.		Value	Sig.
Informational Apps	Attitude towards materialism	.196	.038	4.729	.010	.163	2.464	.014
	Feeling of loneliness					.075	1.131	.259
Practical Apps	Attitude towards materialism	.260	.068	8.583	.001	**Beta**	**Value**	**Sig.**
	Feeling of loneliness					.269	4.137	.001
						-.056	-.866	.387
Entertainment Apps	Attitude towards materialism	.369	.136	18.662	.001	**Beta**	**Value**	**Sig.**
	Feeling of loneliness					.369	5.896	.001
						.000	.002	.998
Social Media	Attitude towards materialism	.328	.108	14.275	.001	**Beta**	**Value**	**Sig.**
	Feeling of loneliness					.339	5.336	.001
						-.072	-1.134	.258

Table 2 shows that attitude towards materialism significantly influences the usage rates of all app types. Furthermore, the T-values consistently confirm the significant influence of attitude towards materialism on app usage. Conversely, feelings of loneliness showed non-significant relationships across app types. Therefore, H1 is partially accepted.

H2: There is a significant effect of social factors on the rate of use of smart phone applications of different types.

Table 3. The impact of social factors on the rate of use of smart phone applications

Dependent	Independent	R	R^2	F		Beta	T	
				Value	Sig.		Value	Sig.
Informational Apps	social satisfaction	.197	.039	4.805	.009	-.051	-.785	.433
	self-regulation					.199	3.088	.002
Practical Apps	social satisfaction	.237	.056	7.069	.001	**Beta**	**Value**	**Sig.**
	self-regulation					-.055	-.860	.391
						.240	3.753	.001
Entertainment Apps	social satisfaction	.143	.021	2.488	.085	**Beta**	**Value**	**Sig.**
	self-regulation					.082	1.253	.211
						.105	1.611	.108
Social Media	social satisfaction	.245	.060	7.585	.001	**Beta**	**Value**	**Sig.**
	self-regulation					.150	2.356	.019
						.170	2.666	.008

The study found that self-regulation significantly influences both Practical and Informational Apps usage. However, for Social Media Apps, both self-regulation and social satisfaction significantly influence usage rates. Therefore, the influence of social factors on smartphone application usage rates is partially accepted.

H3: There is a significant effect of psychological factors on individuals' levels of addiction and habituation towards smartphone applications.

Table 4. The impact of psychological factors on individuals' levels of addiction and habituation towards smartphone applications**.**

Dependent	Independent	R	R^2	F		Beta	T	
	Attitude towards materialism			Value	Sig.		Value	Sig.
Addiction	Feeling of loneliness	.578	.334	59.464	.001	.528	9.681	.001
						.144	2.638	.009
	Attitude towards materialism					Beta	Value	Sig.
Habituation	Feeling of loneliness	.346	.120	16.134	.001	.315	5.026	.001
						.088	1.409	.160

Table 4 revealed that Attitude towards materialism significantly affects the level of addiction towards smartphone applications, explaining 33.4% of the variance. It also significantly influences the level of habituation, explaining 12% of the variance. Additionally, feelings of loneliness show only significant impact on the level of addiction towards smartphone applications, explaining 33.4% of the variance. Therefore, based on the previous results, H3 is partially accepted.

H4: There is a significant effect of social factors on individuals' levels of addiction and habituation towards smartphone applications.

Table 5. The impact of social factors on individuals' levels of addiction and habituation

Dependent Variable	Independent Variable	R	R^2	F		Beta	T	
	social satisfaction			Value	Sig.		Value	Sig.
Addiction	Self-regulation	.188	.035	4.360	.014	-.051	-.795	.427
						.190	2.936	.004
	social satisfaction					Beta	Value	Sig.
Habituation	Self-regulation	.360	.129	17.603	.001	.020	.320	.749
						.356	5.789	.001

The study results indicated that self-regulation shows a statistically significant impact on addiction and habituation but there in no significant impact of social satisfaction on either addiction or habituation toward smartphone applications. Therefore, based on the previous results, H4 is partially accepted.

H5: The rate of use of smart phone applications of different types affects individuals' levels of addiction and habituation towards smartphone applications.

Table 6. The impact of the rate of use of different smart phone applications on individuals' levels of addiction and habituation

Dependent	Independent	R	R^2	F		Beta	T	
				Value	Sig.		Value	Sig.
Addiction	Social Media	.459	.211	15.705	0.001	.338	4.701	.001
	Entertainment Apps					.170	2.343	.020
	Practical Apps					-.048	-.683	.496
	Informational Apps					.076	1.137	.257
Dependent	**Independent**	.390	.152	10.529	0.001	**Beta**	**T**	

							Value	Sig.
Habituation	Social Media					.222	2.979	.003
	Entertainment Apps					.175	2.329	.021
	Practical Apps					-.126	-1.717	.087
	Informational Apps					.199	2.876	.004

The study reveals a significant impact of social media and Entertainment apps on addiction and habituation towards smartphone applications. The frequency of practical and informational apps usage does not show a significant impact on addiction levels. Informational applications usage significantly impact habituation levels. The frequency of practical apps usage does not show a significant impact on habituation levels, indicating that H5 is partially accepted. The findings suggest that social media usage plays a crucial role in shaping individuals' habits and addiction towards smartphone applications.

Table 7. The differences in individuals' rate of use of different types of smartphone applications according to age

Rate of usage	Age	Mean	F-Value	Sig.
Social Media	Less than 22	2.7692	17.361	.001
	22 to 34	2.6386		
	35 to 44	2.2500		
	45 years and over	2.2500		
Entertainment Apps	Less than 22	1.9385	21.796	.001
	22 to 34	1.9518		
	35 to 44	1.3036		
	45 years and over	1.2222		
Practical Apps	Less than 22	2.2769	.679	.566
	22 to 34	2.2410		
	35 to 44	2.2321		
	45 years and over	2.3889		
Informational Apps	Less than 22	2.2000	3.259	.022
	22 to 34	2.4217		
	35 to 44	2.3750		
	45 years and over	2.5556		

Table 8. The differences in individuals' rate of use of different types of smartphone applications according to education

Rate of usage	Education level	Mean	F-Value	Sig.
Social Media	High school	2.8222	11.207	.001
	Bachelor's degree	2.4873		
	Postgraduate	2.3243		
Entertainment Apps	High school	1.9111	5.383	.005
	Bachelor's degree	1.6899		
	Postgraduate	1.4054		
Practical Apps	High school	2.3778	3.496	.032
	Bachelor's degree	2.2025		
	Postgraduate	2.4324		
Informational Apps	High school	2.3778	1.360	.259
	Bachelor's degree	2.3354		
	Postgraduate	2.5135		

According to one Way ANOVA Test, there are notable differences in usage patterns for social media, Entertainment, and Practical Apps across various education levels, particularly among

users with a high school education.

Discussion

The results of the current study provide a comprehensive view of smartphone application usage patterns and the intricate interplay between psychological factors and digital behaviors among the sampled individuals. The hierarchy of app usage reveals a pronounced preference for social media applications, highlighting the paramount importance of social connectivity and content consumption in the digital landscape. WhatsApp, Instagram, YouTube, Snapchat, TikTok, and Facebook have emerged as the dominant platforms, underscoring their pervasive role in individuals' daily interactions and information consumption.

This study revealed that attitude towards materialism significantly influences the usage rates of all app types, exhibiting a consistent and substantial effect. Conversely, feelings of loneliness showed varied and non-significant relationships across app types, demonstrating significance in certain categories (Informational and Practical) but lacking meaningful impact in others (Entertainment and social media). Thus, while attitude towards materialism consistently shapes smartphone app usage, feelings of loneliness exhibit selective influence, affirming the nuanced role of psychological factors in app utilization. Therefore, based on the previous results, H1 is partially accepted. Self-regulation consistently influences Practical, Informational, and social media apps, while social satisfaction notably impacts Social Media App usage. These findings suggest a deep-seated connection between consumerist attitudes and digital engagement, indicating that the perception of materialism significantly influences the choice and frequency of app usage among individuals.

H2, proposing the influence of social factors on smartphone application usage rates, is partially accepted, in which attitudes toward materialism significantly affects the level of addiction and habituation towards smartphone applications. Additionally, feelings of loneliness show a significant impact on the level of addiction to smartphone applications. However, feelings of loneliness do not significantly impact the level of habituation towards smartphone applications. Therefore, H3 is partially accepted. Comparisons with previous studies highlight both agreements and discrepancies. The alignment with Lee et al. (2015) regarding attitudes towards materialism impacting smartphone use corroborates earlier findings(20). However, distinctions arise in the study's contrast with Bolle's (2014) results on the influence of self-regulation and social satisfaction on habitual usage(10). This divergence suggests the evolving nature of digital engagement and its ties to factors unique to the Emirates, such as the prevalence of smartphones in daily life for various services.

Regarding addiction and habituation toward smartphone applications, the study results indicated that self-regulation shows a statistically significant impact on addiction and habituation toward smartphone applications**.** On the other hand, there is no significant impact of social satisfaction on either addiction or habituation toward smartphone applications. Therefore, H4 is partially accepted.

In the context of addiction, the study indicated a significant direct impact of the rate of social media usage on the level of addiction towards smartphone applications. Furthermore, there exists a substantial impact on the addiction levels related to smartphone applications attributable to the utilization of entertainment apps. Additionally, the findings revealed a

significant direct influence on the degree of habituation toward smartphone applications, as influenced by the frequency of social media usage. Similarly, there is a significant direct impact for both entertainment and informational applications usage rates on the level of habituation towards smartphone applications. The frequency of practical app usage is relatively low in the levels of habituation toward smartphone applications. Therefore, H5 is partially accepted. Differences in findings from other studies, such as Qenawi's (2019) emphasis on smartphones as a symbol of social prestige(22) or Aljomaa et al.'s (2016) contrasting rates of smartphone addiction(4), may stem from demographic variations and cultural contexts. Notably, this study encompasses diverse age groups, potentially contributing to variances in perceptions and behaviors towards smartphone usage.

Demographic factors such as age and education level showcase notable variations in app usage patterns. Younger users exhibit distinct utilization rates, particularly in social media and entertainment apps, suggesting generational disparities in digital consumption habits. Educational disparities also influence app preferences across social media, entertainment, and practical app categories, signifying the need for targeted approaches in app design and marketing strategies.

Regarding social media usage, substantial differences were observed between age groups. Mainly, users under 22 years show a notably higher mean than older age groups. Similarly, the utilization of Entertainment apps also demonstrates significant differences among age categories. Users below 22 years exhibit a substantially higher mean than their older counterparts. However, the analysis does not reveal statistically significant disparities among age categories for Practical app usage. According to education level, there are no significant variations in Informational app usage; notable differences in usage patterns are evident for social media, Entertainment, and Practical. Therefore, H5 is partially accepted. (a supportive study, give logical explanation).

The study's implications extend to practical interventions and policies aimed at promoting responsible technology use. Understanding the nuanced relationships between psychological factors and smartphone application usage facilitates the design of interventions that address attitudes towards materialism and feelings of loneliness, while enhancing social satisfaction and self-regulation. Additionally, acknowledging cultural norms and demographic differences is crucial for context-specific approaches in fostering healthier smartphone usage behaviors in the Emirates.

Conclusion

The intricate interplay between psychological predispositions, societal dynamics, and the constantly evolving nature of technology forms the foundation for smartphone usage in the United Arab Emirates. Materialism's pervasive influence is evident in heightened engagement with entertainment and social media platforms, a phenomenon akin to the observations of Lee et al. (2014) regarding consumerist values shaping digital behavior(21). While not significantly altering overall app usage, loneliness subtly influences individuals, leading them to seek connections online, as noted by Cha (2018)(12). Self-regulation emerges as a powerful guide, steering individuals towards practical and informational applications for goal achievement, in line with Kang and Jung's (2014) findings(17). This complex web of influences extends to app-specific tendencies, where addiction and habituation demonstrate intricate correlations with materialism and self-regulation, contributing to a deeper comprehension of psychological influences on digital engagement (19). Interestingly, social satisfaction displays unexpected

associations with addiction and habituation, suggesting a potential cultural preference for in-person interactions within Emirati society despite widespread smartphone use. The practical implications of this study are far-reaching, offering insights for designing targeted interventions and policies aimed at promoting responsible technology use. Understanding the multifaceted relationships between psychological factors and smartphone application usage facilitates the development of interventions that address attitudes towards materialism and feelings of loneliness while enhancing social satisfaction and self-regulation. Tailoring approaches to account for cultural norms and demographic differences is paramount in promoting balanced and mindful smartphone usage in the Emirates. In conclusion, this study sheds light on the intricate landscape of psychological factors influencing smartphone application usage in the UAE. By examining age-related preferences, gender dynamics, and the impact of attitudes and social satisfaction on addiction and habituation, this research sets the stage for tailored interventions and policies, promoting a healthier digital ecosystem within the unique sociocultural fabric of the Emirates.

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