

Smartphone addiction, data use density while driving, and analysis of the behavior of Kuwaiti youth drivers

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Abstract

This study aimed primarily to examine smartphone addiction, evaluate data use density while driving, and analyze the behaviors of young drivers in Kuwait. A sample of 1431 young Kuwaitis was selected to administer a questionnaire that served as the primary instrument and obtain original information. This study utilized the Smartphone Using During Driving Scale, the Reckless Driving Using Smartphone Scale, the Social Media Density Scale, and the Smartphone Addiction Scale. It employed SPSS and conducted the t-test, Chi-square, One-way analysis of variance, and regression as its major statistical tools. The collected data revealed that using Google Maps, returning calls without a handset, reading the news, chatting with others using WhatsApp, and making calls without a handset were the most performed smartphone actions while driving. Such usage was related to smartphone addiction. The more addicted respondents were to their smartphones, the more they used the devices while driving, and the more traffic violations they committed. Significant differences were found between males and females and between different age groups regarding smartphone use while driving. The collected data disclosed that gender, age, economic status, smartphone addiction, and the density of social media usage were the most predictive and associated variables affecting smartphone use while driving. Smartphone addiction impacts the driving behavior of young individuals. Smartphone use has become an integral part of youth culture and is thus difficult to abandon.

Introduction

The availability and popularity of smartphones have increased dramatically in recent years. This expansion has been accompanied by concerns about the potential harms of excessive smartphone use, especially to the physical and emotional well-being of individuals. Lately, the term “smartphone addiction” has been used to describe compulsive behavior associated with cell phones and the psychological and physical damages that ensue. Smartphone addiction has been linked to reduced gray matter volumes and intrinsic neuronal activity in specific brain regions, which could exert adverse effects on mental and physical health (Horvath et al., 2020).

Addiction to smartphones substantively impacts how people drive, frequently increasing distraction, reckless driving, and accident risk. Many studies have focused on the links between smartphone addiction, data use while driving, and behaviors exhibited by drivers. Excessive reliance on smartphones has been connected to increased device manipulation while driving, which is riskier than just making calls (Yeo & Park, 2021). Some studies have attended to the psychological and cognitive impact of smartphone addiction. Schmidtke (2022) found that drivers highly addicted to smartphones are more affected by cognitive distraction in task conversion. Kita and Luria (2018) focused on personality traits such as extraversion and neuroticism and reported that addiction mediates the favorable correlations between these traits and smartphone use while driving. Another study concentrated on the habits and their relationships with smartphone use and found habitual conduct to be a powerful predictor of addictive behavior (Tan, 2023). Habits represented the best indicator of mobile phone-related distractions and were strongly correlated with subjective norms and perceived behavioral control. The results indicate that habits must be

taken into account when studying smartphone-related distracted driving behaviors and when devising intervention plans (Demir, Du, Hansma, Chen, Gu, & Donmez, 2023).

Smartphone addiction is another name for maladaptive mobile phone use (MMPU). Forty-four studies were reviewed by Rahmillah, Tariq, King, and Oviedo-Trespalacios (2022). These studies confirmed the links between MMPU and dangerous driving behaviors. According to approximately 91% of the analyzed research, road users registering higher MMPU scores are more likely to use their phones while driving, riding a motorcycle, walking, or riding a bicycle. More than half of the analyzed research evidenced that MMPU influences the performance of mobile phone use by drivers using mobile phones. This outcome suggests that MMPU determines the degree of impairment. One-third of the analyzed research revealed that road users with higher MMPU scores are more likely to encounter safety-critical traffic situations.

It has been amply asserted that teenagers and young adults experience a greater risk of developing smartphone addiction (Al-Kandari, 2025; Csibi, Griffiths, Demetrovics, & Szabó, 2019; Olson et al., 2020; Karabey, Palanci, & Turan, 2023; Pribadi & Susanto, 2021). Youngsters are more addicted to smartphones and more affected by smartphone use: the younger the individual, the more addictive their behavior (Haug, Castro, Kwon, Filler, Kowatsch, & Schaub, 2015; Munusamy & Ahmed Ghazall, 2022). The entertainment content of this instrument denotes one of the most important reasons why youth are more addicted to smartphones. Young people may turn to smartphones for entertainment options such as music (Jannusch, Shannon, Völler, Murphy, & Mullins, 2021), and the more they use smartphones for entertainment, the more the chances of addiction (Al-Kandari, 2025).

Thus, many young individuals suffer from smartphone misuse. Numerous studies have related smartphone addiction in youth to their general health, including mental health problems (Alwi, Adi, & Rachmawali, 2022; Goswami & Deshmukh, 2023; Manzoor & Akhtar, 2024), depression (Kanwal, Munir, & Abrar, 2024), poor sleep quality, loneliness, shyness, stress (Munusamy & Ghazali, 2022), self-esteem, self-control, social support (Ding, Wan, Lu, Huang, Liang, Yu, & Chen, 2022), social isolation (Al-Kandari, 2025), and lower physical activity (Haug, Castro, Kwon, Filler, Kowatsch, & Schaub, 2015). The family environment significantly impacts how addicted children become to smartphones (Kim, Min, Min, Lee, Yoo, 2018; Kwak, Kim, & Yoon, 2018).

Some studies have addressed the misuse of smartphones by youth while driving. McDonald and Sommers (2015) found that teens often engage in risky driving behaviors such as using handheld cell phones, sending messages, or utilizing social media apps despite knowing that such actions are dangerous and distracting. Teens described that circumstantial contexts influenced their decisions to make or answer calls, send or receive text messages, or use social media apps. Delgado, Wanner, and McDonald (2016) reported that almost half of American high school students admitted to texting while driving. This result indicates that a sizable proportion of young people in the United States use their smartphones while operating a motor vehicle. Such conduct is linked to a higher risk of collisions, especially when drivers look away from the road for longer than two seconds. Kita and Luria (2018) focused on the youthful personalities of young drivers. Kaviani, Young, Robards, and Koppel (2021) and McDonald and Sommers (2015) reported that young drivers often regard smartphone use while driving as normal and less dangerous than other unsafe activities. They use risk-compensatory tactics because they think self-regulation will help them control dangers.

The Uses and Gratifications Theory (U&G) explains this behavior. The U&G is a framework that facilitates the comprehension of why people utilize particular media and what gratifications they desire to obtain from their media usage. The U&G posits that people select media according to their needs, which include knowledge, amusement, social contact, and stress relief (Dolan, Conduit, Fahy, & Goodman, 2016; Haridakis, 2012; Rubin, 2009). Studies have found different degrees of smartphone addiction and related characteristics. For instance, the usage patterns of introverts and extroverts differ; introverts are more prone to use processes, which are associated with higher degrees of addiction (Rahim, Siah, Tee, & Siah, 2020). According to the U&G, smartphone addiction is linked to individual psychological and social motives along with application or technology design.

A few studies on smartphone addiction have been conducted in Kuwait. One study discovered significant levels of smartphone addiction in young Kuwaitis and found that a number of direct and indirect causes influenced this behavior (Alqallaf, 2022). Another study revealed that nearly half the respondents of a different investigation on secondary and high school students in Kuwait exhibited symptoms of smartphone addiction. That study found significant variations according to gender, type of school, and participation in sports (Buabbas, Hasan, & Buabbas, 2021). In addition, Al-Kandari and Al-Sejari's study disclosed that higher levels of social isolation are typically associated with higher scores for smartphone addiction in young Kuwaitis. Social isolation was also reported to result in youth because of smartphone addiction (Al-Kandari, 2025). To this researcher's knowledge, no study conducted in Kuwait has yet revealed the effects of smartphone use by youth or other age groups on their driving performance.

Official sources in the Kuwaiti Interior Ministry have indicated increased traffic violations and accidents in Kuwaiti society. They have also highlighted a rise in injuries and mortalities because of inattentiveness, which accounts for 92% of such incidents (KUNA, 2022). The problem of inattention leading to a surge in accidents has been linked to smartphone use. Approximately 5,800 traffic accidents occurred per month in 2023, averaging 193.3 accidents per day or approximately eight accidents every hour. Notably, official sources have pinpointed inattentiveness and mobile phone use as some of the prominent causes of these accidents (AlQabas, 2023). Almost 80,000 violations were recorded in Kuwait in 2024 after the enactment of a law prohibiting mobile phone use while driving. The Gulf Cooperation Council countries (GCC), particularly Kuwait, have expressed their concerns about this issue and have dedicated an annual Traffic Week to the theme of "Driving Without a Phone." This focus reflects the Kuwaiti Interior Ministry's recognition of the magnitude and increase of the problem. The number of traffic accidents adds to cases of injury and death in a country. The World Health Organization's latest data on traffic accidents and fatalities in Kuwait illuminate that 8.51% of the total deaths in Kuwait in 2020 occurred due to traffic accidents (WHO, 2019; World Health Rankings, 2020).

This study aims primarily to examine smartphone addiction, ascertain the density of data use while driving, and analyze the behavior of young drivers in Kuwait. The study seeks to answer the following questions:

1. What phone social media applications and data are most used by Kuwaiti youth while driving, and what degree of reckless driving by the study sample can be attributed to the use of smartphones?
2. Does a significant relationship exist between gender (male and female) and youth age groups (21 years old or below and 22 years or above) in case a participant using a smartphone caused an accident or

was hit by another individual?

3. Do significant differences exist between respondents using smartphones and reckless driving (low, medium, and high), smartphone addiction, and scores on the Social Media Using Density Scale?
4. Do significant differences exist between gender (male and female) and youth age (21 years and below and 22 years or above) and smartphone use while driving, reckless driving, and scores on the Smartphone Addiction Scale?
5. What variables most affect smartphone use while driving and cause the misuse of smartphones?

Method

Sample

The sample was extracted from a sizable project sample comprising 1431 young Kuwaitis who volunteered opportunistically and nonrandomly to be selected. The sample age range of above 17 years was selected for this investigation, and youngsters aged below 17 years were not included in the study sample because only individuals. A total of 1298 young male (446; 34.4%) and female (852; 65.6%) students from Kuwait University with a mean of 22.2 (SD = 2.55) years were selected for this study because this population equitably represents Kuwait's youth population as a whole. Effective representation was also guaranteed by the sample's inclusion of both sexes and individuals belonging to all six governorates in Kuwait. Participants were respectfully requested to complete the study questionnaire willingly. Notably, the researcher has employed some of the study variables and methods, including the sample selection, in a broader study conducted by the research team. It needs to be stated here that ethical approval was not required for this study, as it involved anonymous participants, posed no risk, and collected no sensitive or identifiable data; a written informed consent was obtained through a brief consent statement placed at the beginning of the questionnaire, allowing participants to indicate their agreement or refusal to take part. The study followed the college of Social Sciences College procedures. This study is part of a broader research project, from which a related study has previously been published (Al-Kandari & Al-Sejari, 2021).

Variables

A questionnaire served as the primary instrument for this study. Some demographic data were acquired for this study; for instance, participants were queried about their age, gender, and economic status. The economic strata of the respondents was assessed using a ten-point economic scale using the question, "What is your family's overall economic status?"

The following scales were used for this study:

1. Smartphone Using During Driving Scale (SUDDS): This scale was developed by the researcher and comprised 12 items: calling without a handset, returning a call without a handset, using WhatsApp, Snapchat, Instagram, X (Twitter), Facebook, Google Maps or YouTube, taking photos, reading the news, writing or reading email messages. Answers were registered using a six-point scale ranging from “strongly use” (6) to “never use.”
2. Reckless Driving Using Smartphone Scale (RDUSS): This scale encompassed six items and was developed by the researcher. The items included losing direction, suddenly turning right or left, hitting the sidewalk, stopping suddenly, running the red light, and being warned by other drivers. Responses were recorded on a four-point scale ranging from “strongly many times” (4) to “never” (1).
3. Social Media Density Scale (SMDS): This self-rating scale uses six items to ascertain the extent of social media use X (Twitter), WhatsApp, Facebook, YouTube, Snapchat, and Instagram). These social media platforms are the most used by young people in Kuwait. The question for each item reads: “What is the degree of your use of ...?” Answers are registered on a seven-point scale in which the lowest score of (1) signifies “never use it at all,” and the highest score (7) represents “use it at a very high rate.” For this study, the SMDS was used as a one-item instrument that measured the overall extent of social media on smartphones, and a six-point scale ranging from “strongly use” (6) to “never use” (1) was applied. Previous studies conducted in Kuwait have employed this scale (Al-Kandari, Al-Sekari, Al-Aslawi, and Al-Bedaiwi, 2016; Al-Quhas & Al-Kandari, 2023).
4. The Smartphone Addiction Scale (SPAS) comprising 15 items was developed by the researcher and utilized for this project. Some sample items include: “I cannot give up my smartphone,” “The first thing I do when waking up is to use a smartphone,” “Before bedtime, I have to check my smartphone,” “My use of the smartphone takes a great amount of my daily time,” and “Life is nothing without a smartphone.” This scale applied a five-point Likert scale ranging from “strongly agree” (5) to “strongly disagree” (1) and was employed in an earlier study conducted for this project (Al-Kandari & Al-Sejari, 2021).

The questionnaire used in this study was developed as part of a broader research project. Several studies based on this project have previously been published (Al-Kandari & Al-Sejari, 2021; Al-Sejari & Al-Kandari, 2021). The English version of the questionnaire is provided as Supplementary Material. Six faculty members from the College of Social Sciences at Kuwait University reviewed the content validity of the utilized scales, which exhibited acceptable reliability. The Alfa coefficients were computed as .89 for SUDDS, .84 for RDUSS, .89 for SMDS, and .88 for SPAS.

Statistical Procedures

Descriptive and inferential statistics were obtained using SPSS (version 23). Descriptive statistics encompassing percentage, mean, standard deviation, and ranking were utilized to examine the most-used phone social media applications, evaluate data use while driving, and determine the degree of reckless driving by the sample. Chi-square was used to explore the relationships between genders (male and female) and youth age groups (21 years old or below and 22 years or above) in case a participant using a smartphone caused an accident or was hit by another driver. A one-way analysis of variance was performed to examine the differences between respondents using smartphones and reckless driving (low, med, and high), smartphone addiction, and scores on the SMUDS. T-test was conducted to examine gender (male and

female) and youth age (21 years and below and 22 years or above) differences in smartphone use during driving, reckless driving, and scores on the SPAS. A linear regression coefficient was used to determine how some variables affected smartphone use while driving and influenced smartphone misuse.

Results

Table (1) shows the percentages of M, SD, and t-values employed to examine the most utilized phone social media applications and the incidence of data use while driving.

Table (1) here

The data disclosed that young drivers predominantly used smartphones to access Google Maps, return calls without using a handset, read news, chat with others using WhatsApp, and make calls without using a handset. Smartphones were less utilized to write emails or access Facebook or Instagram. Nine of the twelve items were above the mean, and significant differences were found through the one-sample t-test. The data exposed a higher average for smartphone use while driving.

Table (1) records the percentage and means (SD) of reckless driving, which indicates a high percentage (many times) of running red lights (55.8%), hitting sidewalks (43.3%), and being warned by other drivers (41%) because of smartphones use while driving. Also, the other studied variables revealed percentages considered high even though they were lower than a quarter: losing directions (24.3%), stopping suddenly in the middle of the road (22.3%), and suddenly turning right or left (21.8%) because of smartphone use while driving. Many reckless driving incidents were recorded because of the use of smartphones and applications while driving.

Such problems result in traffic accidents. The data presented in Table (2) show that 18.2% of the respondents caused an accident (at least once) because of their smartphone use while driving to search for applications and make calls. In addition, 30.4% of the respondents reported being hit by other drivers because of smartphone use.

In terms of the differences in percentages between males and females and youth age groups ($21 \leq$ and $22 >$ years old), Table (2) clarifies that a higher percentage of males caused accidents (25.8%) compared to females (12.8%). In addition, the older age group registered a higher percentage (20.2%) of crashes compared to the younger age group (14.6%). A higher percentage of males (37%) than females (25.7%) also recorded being hit by other drivers. Moreover, the younger age group recorded a lower rate of getting hit (24.5%) than the older age group (33.7%). These differences were significant at the designated level ($P < 0.001$). The data illuminated that the possibility of accidents increases in tandem with smartphone use to search for applications and make calls.

Table (2) here

Table (3) shows the differences between respondents misusing smartphones and making calls and reckless driving caused by smartphone use due to smartphone addiction and the density of social media use.

Table (3) here

Table (3) displays that respondents reporting higher smartphone use to access applications and make calls while driving also recorded higher means for smartphone addiction and density of social media use. Conversely, participants reporting lower smartphone usage while driving recorded lower smartphone addiction rates and lower social media use densities. In addition, respondents reporting higher reckless driving incidents because of smartphone use registered higher smartphone addiction rates and social media use densities.

Significant differences in using smartphones to access applications and call others while driving were ascertained between males, females, and the younger ($21 < =$ years old) and older ($22 > =$ years old) age groups. Table (4) presents these differences.

Table (4) here

The data displayed in Table (4) illustrate significant differences between 10 of the 12 types of smartphone usage. Males exhibited higher means than females in calling and returning calls without using handsets, accessing WhatsApp, Instagram, X (Twitter), Facebook, and YouTube, and reading news and emails. Conversely, females recorded higher means than males only for using Google Maps. No significant differences were found between the two genders vis-à-vis using Snapchat and taking photos. In terms of the variables studied for reckless driving, males recorded higher means than females in losing directions, suddenly turning right or left, suddenly stopping in the middle of the road, and being warned by other drivers. No significant differences were found between males and females apropos hitting the sidewalk or running red lights.

In terms of the differences between the two age groups, Table (4) elucidates that the older age group ($22 > =$ years older) recorded higher means than the younger age group ($21 < =$ years older) for calling and returning calls without handsets, using WhatsApp, using YouTube, reading news, writing emails, and using applications. No significant differences were found between the two age groups in taking photographs or using Snapchat, Instagram, X (Twitter), and Google Maps. In addition, the two age groups differed significantly only with respect to swerving suddenly to the left or right, with the older age group recording a higher mean than the younger age group. Table (4) also shows the absence of any significant differences in smartphone addiction between the two genders and age groups.

Regression was used to determine the most associated and predictive variables influencing smartphone use while driving and reckless driving. Table (5) displays the relationships and predictive variables.

Table (5) here

The data reveal that gender, age, economic status, smartphone addiction, and social media use density were deemed the most predictive and associated variables affecting smartphone use while driving. Gender, economic status, smartphone addiction, and social media use densities were associated and considered variables more predictive of reckless driving.

Discussion

The results of this study revealed that young adults are more likely to use smartphones intensively while driving. The most smartphone-addicted youngsters use their phones most while driving. Violations, inattention, and traffic accidents are eventually intricately associated with this phenomenon. According to government statistics (AlQabas, 2023), these incidences exacerbate the high rates of traffic infractions and accidents in Kuwait, especially when they are caused by carelessness and cell phone use while driving. Many accidents lead to injuries or mortalities, making traffic accidents the eighth most prevalent reason for death in Kuwait (WHO, 2019; World Health Rankings, 2020). The study findings support this reality because a significant proportion of participants stated that they had been involved in traffic accidents because of their smartphone use or because they were struck by someone else using a smartphone while driving. This outcome demonstrates the dangers of smartphone use while operating motor vehicles. An increase in traffic accidents and infractions is anticipated because of smartphone addiction or MMPU.

It is expected that the number of road accidents that result in fatalities and injuries will rise over time in correspondence with the growth in smartphone addiction. Cell phones and their myriad uses will inevitably induce addiction at higher rates unless the state implements treatment programs, particularly for the youth sector, which is considered the age group most addicted to smartphones. According to other studies (Al-Kandari, 2025; Csibi, Griffiths, Demetrovics, & Szabó, 2019; Olson et al., 2020; Karabey, Palanci, & Turan, 2023; Pribadi & Susanto, 2021), youngsters are more prone to smartphone addiction and become more addicted because they consider this technology primarily an entertainment tool (Al-Kandari, 2025; Jannusch, Shannon, Völler, Murphy, & Mullins, 2021), and their cell phone usage is focused on the element of enjoyment.

Besides Google Maps for navigation, the most popular smartphone applications for this sector while driving are phone calls (calling and returning), WhatsApp, and reading the news while driving. Checking Facebook, emails, Instagram, Snapchat, TikTok, and YouTube are ranked lower. This positioning suggests that for this cohort, cars represent social spaces that necessitate interactions between people rather than the utilization of other means, possibly for amusement. Although Instagram, TikTok, and Snapchat are less commonly used by this age group while driving, it is amply documented that young individuals in Kuwait actually utilize social media and other platforms more for entertainment than social interactions (Al-Kandari, 2025; Al-Kandari & Al-Sejari, 2023). Local conditions crucially mandate direct contact via smartphones.

Arguably, using WhatsApp is the most hazardous activity undertaken by this group while driving because users are significantly distracted from driving. They must repeatedly break several rules to receive messages or respond to them. Numerous investigations have evidenced the risks of such activities while driving. Lyngsie et al. (2013) reported that WhatsApp texting speeds up reaction times and increases the likelihood of near-crash events. Ortiz et al. (2018) found that using WhatsApp while driving impairs driving performance for all age groups: it increases distances of lane transgressions, chances of crashes, and standard deviations of lateral positions. According to Ortiz et al., younger drivers are more likely to willfully break safe driving laws, which indicates that this group does not think using WhatsApp while driving is so dangerous. The driving performance of older drivers deteriorates the most when distracted by WhatsApp. Their risk of crashes while distracted was found to increase by 134.5% compared to baseline conditions,

and their standard deviations of lateral positions increased by 29%. Ortiz et al. concluded that using WhatsApp while driving raises the risk of accidents for people of all ages: this risk increases by 8.3% for young adults, 25.0% for adults, 80.5% for middle-aged adults, and 134.5% for senior drivers. The same is true for the use of phones when making calls while driving. Backer-Grøndahl and Sagberg (2011) linked cell phone use while operating a motor vehicle to an increased risk of collisions. Handheld phone use posed a high risk; however, hands-free use also presented a non-negligible danger.

A significant number of people using smartphones while driving have been observed to run red lights (more than half), collide with sidewalks, and receive warnings from other drivers (more than 40%). Some other studies have addressed these themes and validated these findings. According to Lyngsie, Pedersen, Stage, Vestergaard, and Vestergaard (2013), cognitive distractions from smartphone use can cause drivers to become less aware of their surroundings, which can result in slower reaction times and create higher chances of running red lights. Similarly, Khan, Rizvi, Khusro, Ali, and Chung (2021) reported that smartphone use while driving increases cognitive loads and detracts from the driving task, which could mandate sudden steering adjustments and decreased situational awareness. Pérez et al. (2024) explained that social media use while driving can instigate risky lane shifts and speed variations.

Demographic variables significantly influence addictive smartphone use. The results of the present indicate differences in these variables, specifically pertaining to the gender and age group of young individuals. Male drivers tend to use social media and access data while driving more frequently than females. The examination of the most commonly used platforms elucidates that males most often access WhatsApp, YouTube, X (Twitter), or Facebook, browse news, and check personal emails, whereas females prioritize the utilization of Google Maps. The gender preferences for the types of platforms could significantly impact smartphone use while driving. Local studies (Al-Kandari, 2025; Al-Kandari & Al-Sejari, 2021; in press) indicate that females use Snapchat, Instagram, and TikTok more frequently than males and tend to become more addicted to these platforms compared to their male counterparts. These studies suggest that such platforms could contribute to addiction, but their usage while driving is probably lower because they are characteristically heavily dependent on visual content. Thus, it is more difficult to engage with these platforms than the ones typically used by males. Data from official statistical records evidence that the platforms with which males tend to engage result in higher incidences of traffic accidents involving male drivers compared to females. Such statistics could explain why men are more prone to distraction-related accidents and why social media usage while driving represents a major reason.

Apropos age groups, the study results illuminated that older youth (22 years and above) use and are more addicted to these platforms than younger individuals. This phenomenon is generally associated with continued daily usage over time. The more individuals engage intensively with social media via smartphones, the higher their chances of developing an addiction to the device. Time and persistent usage are key factors fostering smartphone addiction, particularly for information-seeking purposes, which could explain the age-related differences. Some studies (Kardefelt-Winther, 2017) have highlighted the issue of usage times, which contributes to addiction. Certain demographic factors have been noted to influence usage and play significant roles in the differential results attributed to these variables.

Conclusions

Smartphone addiction impacts the driving behavior of young adults. Smartphone use has become an integral aspect of youth culture that is difficult to abandon. This study suggests that this addiction generates massive data utilization while driving and can be evaluated explicitly in the youth demographic. The findings highlight the connections between technology, social media, and human behavior and reveal the effects of smartphones and social media usage on general individual conduct, particularly while driving. Young individuals access information continually throughout the day, even while driving, a task that requires them to remain focused. This finding underscores the importance of future studies that could attend to local and other Gulf communities across discrete social and age groups.

The limitations of this study should be noted. First, the sample was restricted to young individuals classified into two specific age groups. Second, the study was conducted before the enactment of the new traffic law, which imposes stricter penalties on drivers, particularly with respect to attention and mobile phone use. This law was enacted on April 22, 2025, which underscores the need for future research to examine whether differences exist between the two periods before and after the law came into effect.

Declarations

Declaration of Generative AI Use: During the preparation of this manuscript, we used generative AI tools (Chat GPT) solely to improve language, grammar, and clarity. The AI tool did not generate any scientific content, data, analysis, interpretations, or conclusions. All intellectual and scholarly contributions were made by the authors. We reviewed, edited, and verified all AI-assisted outputs to ensure accuracy and appropriateness.

Data Availability: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflict of interest: The researchers claim there are no conflicts of interest.

Funding: No funding was received for this work.

Consent to Participate: Informed consent was obtained from all individual participants included in this study prior to their participation.

Ethics Approval: This study was conducted as part of a research project and adhered to the research procedures of the College of Social Sciences at Kuwait University. According to Kuwait University policy, Institutional Review Board (IRB) approval is not required for anonymous, minimal-risk, questionnaire-based research involving competent adult participants. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki.

Author Contributions:

Yagoub Y. Al-Kandari: Conceptualization, methodology, formal analysis, and writing—original draft preparation.

Maha M. Al-Sejari: Contributed to the conceptualization of the study and assisted in writing the theoretical background and discussion sections.

Both authors reviewed and approved the final version of the manuscript.

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Tables

Table (1). Percentages,* means (SD), t-values, and rankings of the degree of smartphone use while driving and reckless driving

Smartphone use while driving	Never	Rarely	Sometime	Almost	Always	M(SD)	Sig	Rank
Calling without a handset	7.3	10.5	17.0	24.0	31.9	3.69(1.28)	0.000	5
Returning calls without a handset	5.9	8.5	16.3	24.4	34.9	3.82(1.23)	0.000	2
WhatsApp	7.9	11.0	15.7	16.8	37.5	3.73(1.35)	0.000	4
Snapchat	16.2	9.6	13.8	15.5	33.8	3.46(1.52)	0.000	7
Instagram	24.9	13.9	15.0	16.3	19.0	2.89(1.52)	0.000	10
Taking photos	8.2	14.5	19.3	16.9	30.0	3.52(1.34)	0.000	6
Twitter	22.0	14.5	15.9	12.2	24.3	3.03(1.54)	0.000	8
YouTube	23.3	10.6	16.7	16.2	21.9	3.03(1.53)	0.000	8
Reading the news	26.7	13.4	18.2	15.4	15.9	3.76(1.47)	0.000	3
Checking emails	35.8	22.0	16.6	8.9	5.5	2.17(1.24)	0.000	11
Facebook	78.1	6.9	1.9	1.2	.5	1.18(.588)	0.000	12
Google Maps	2.5	5.8	23.5	29.2	28.0	3.83(1.03)	0.000	1
Reckless Driving	Many time	Sometime	Little	Never	M(SD)	Sig	Rank	
Losing direction	24.3	22.1	27.0	7.9	2.23(.985)	0.000	3	
Suddenly swerving right or left	21.8	25.6	23.0	10.1	2.27(.994)	0.000	1	
Hitting the sidewalk	43.3	21.0	11.3	4.5	1.71(.909)	0.000	5	
Suddenly stopping	22.3	25.7	20.5	11.7	2.27(1.23)	0.000	2	
Running the red light	55.8	14.0	7.5	2.9	1.47(.809)	0.000	6	
Being warned by other drivers	41.0	23.0	11.9	4.2	1.74(.898)	0.000	4	

* Other values were missing

Table (2). Differences in percentages between genders (male and female) and youth age groups (21 years old or below and 22 years or above) assuming a participant caused an accident because of smartphone use while driving or was hit by another driver using a smartphone

Variables	Caused an accident because of smartphone use while driving			Hit by another person using a smartphone while driving		
	Yes	No	Sig	Yes	No	Sig
Gender						
Male	25.8	74.2	0.000	37.0	63.0	0.000
Female	12.8	87.2		25.7	74.3	
Total	18.2	81.8		30.4	69.6	
Age						
21 years or below	14.6	85.4	0.029	24.5	75.5	0.002
22 years and above	20.2	79.8		33.7	66.3	
Total	18.2	81.8		30.4	69.6	

Table (3). One-way analysis of variance outcomes of the differences in respondents using smartphones and driving recklessly (low, med, and high), smartphone addiction, and scores on the Social Media Using Density Scale

	Smartphone addiction				Social media use density			
Smartphone misuse	M	SD	F	Sig	M	SD	F	Sig
Using a smartphone while driving	28.84	11.49			14.99	4.75		
Low	35.86	11.35	43.606	0.000	11.08	3.80	100.01	0.000
Med	41.62	10.15			8.32	3.21		
High	36.37	11.55			11.56	4.30		
Total								
Reckless driving								
Low	32.53	10.48			10.07	3.67		
Med	36.31	11.56	29.910	0.000	11.50	4.18	32.261	0.000
High	39.89	11.37			13.03	4.58		
Total	36.37	11.55			11.56	4.30		

Table (4). Differences between genders (male and female) and youth ages (21 years and below and 22 years or above) in smartphone use while driving and reckless driving, and scores on the Smartphone Addiction Scale

Smartphone use while driving	Male	Female	t-value	21> years	22< years	t-value
	Mean(SD)	Mean(SD)		Mean(SD)	Mean(SD)	
Calling without a handset	3.82(1.16)	3.61(1.34)	2.75**	3.58(1.32)	3.76(1.25)	-2.45*
Returning calls without a handset	3.94(1.13)	3.75(1.28)	2.53*	3.69(1.27)	3.91(1.19)	-3.01**
WhatsApp	3.95(1.22)	3.59(3.59)	4.48***	3.59(1.40)	3.82(1.32)	-2.76**
Snapchat	3.49(1.49)	3.44(1.54)	.551	3.48(1.53)	3.45(1.52)	.379
Instagram	3.06(1.52)	2.79(1.51)	2.91**	2.84(1.54)	2.93(1.51)	-.990
Taking photos	3.46(1.27)	3.55(1.39)	-1.13	3.53(1.39)	3.51(1.31)	.290
Twitter	3.26(1.46)	2.88(1.58)	4.01***	3.05(1.59)	3.01(1.52)	.448
YouTube	3.26(1.47)	2.89(1.46)	4.06***	2.93(1.57)	3.10(1.50)	-1.81*
Reading the news	3.13(1.50)	2.54(1.40)	6.77***	2.48(1.42)	2.94(1.47)	-5.27***
Email	2.28(1.25)	2.11(1.25)	2.33*	1.98(1.16)	2.29(1.27)	-4.24***
Facebook	1.26(.687)	1.14(.511)	3.62***	1.07(.358))	1.25(.685)	-5.79***
Google Maps	3.71(1.03)	3.91(1.03)	-3.17**	3.87(1.03)	3.81(1.04)	.844
All items	38.56(10.02)	35.06(12.20)	5.09***	35.01(12.06)	37.24(11.14)	-3.18**
Reckless driving						
Losing direction	2.30(.963)	2.18(.997)	1.98*	2.18()1.04	2.26(.978)	-1.20
Suddenly swerving right or left	2.50(.941)	2.10(.988)	6.53***	2.15(.985)	2.33(.994)	-2.97**
Hitting the sidewalk	1.75(.897)	1.69(.918)	.974	1.71(.913)	1.72(.908)	-.223
Suddenly stopping	2.34(.972)	2.21(1.05)	2.03*	2.25(1.06)	2.28(1.00)	-.420
Running the red light	1.49(.843)	1.45(.785)	.750	1.50(.849)	1.45(.787)	.878
Being warned by other drivers	1.87(.904)	1.66(.884)	3.78***	1.70(.929)	1.77(.880)	-1.24
All items	12.22(4.17)	11.11(4.32)	4.16***	11.30(4.44)	11.71(4.22)	.134
Smartphone Addiction Scale	40.29(.936)	40.43(10.36)	-.252	40.21(10.22)	9.88(9.88)	-.510

Table (5). Regression coefficients on the effects of some variables on smartphone use while driving and smartphone misuse

Smartphone use while driving			
Variables	<u>B</u>	<u>Beta</u>	<u>t. Value</u>
Gender	-2.73	-.115	-3.86***
Age	.304	.060	1.97*
Economic status	-.348	-.052	-1.74*
Smartphone Addiction Scale	-.285	-.247	-7.83***
Smartphone use density	.373	.139	4.35***
Adjusted R square		.145	F = 28.38***
Multiple R		.152	
Gender			
Economic status	-.913	-.103	-3.49**
	-.156	-.062	-2.08*
Smartphone Addiction Scale	-.195	-.440	-14.08
Smartphone use density	.085	.085	2.68**
Adjusted R square		.254	F = 41.145***
Multiple R		.260	

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [SmartphoneAddictionanditsrelationstoSocialvariablesprojectquestionnaire.docx](#)