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The Effect of Social Media and Artificial Intelligence (AI) on Fear of Missing Out (FoMo) within Kuwait's Context

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Abstract This study examines the impact of Artificial Intelligence (AI) and Social Media (SM) on the Fear of Missing Out (FoMO) among general social media users in Kuwait and employees of the Ministry of Interior (MOI) of Kuwait. Employing a mixed-methods approach, data was gathered from a diverse sample including social media experts, academics, Kuwaiti users, and MOI personnel. In-depth interviews were conducted and analysed using NVivo software.

Qualitative findings highlight significant ethical concerns, particularly regarding privacy and transparency in the integration of AI within social media platforms. Participants emphasized both individual and collective responsibility in curbing the overuse of AI-driven features. Quantitative results indicate that FoMO is widely perceived as an addictive behaviour, and many respondents find it ethically acceptable to utilize FoMO in marketing strategies.

This study contributes to a deeper understanding of how AI-driven algorithms influence user behaviour on social media. It underscores the responsibility of platforms to strike a balance between personalized content delivery and ethical considerations. The findings also call for stronger policy interventions to address privacy violations and the lack of transparency surrounding AI technologies.

Keywords FoMO; AI; Social media; Ethics; Privacy

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1. Introduction

Artificial Intelligence (AI) has undergone several innovative transformations since its inception during the last few decades. As a result, the AI market crossed $US 184 billion in 2024, which indicated an increment of $US 50 billion over 2023 (Thormundsson, 2024). This staggering market growth is expected to cross $ US$ 826 billion by 2030, as shown in Figure 1 (Thormundsson, 2024).

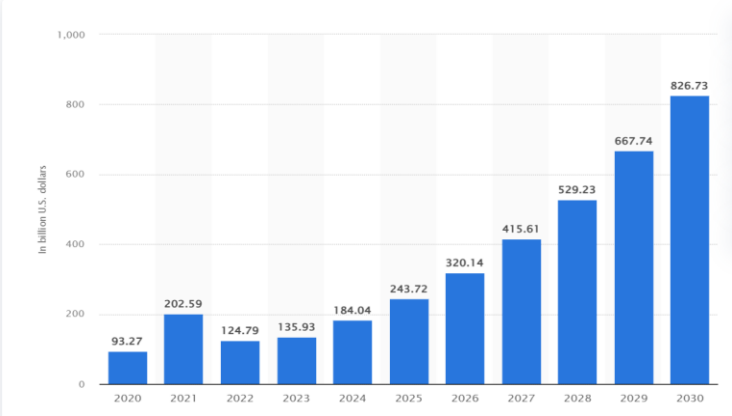

Fig. 1. Global market size of AI (2020-2030) *(Thormundsson, 2024)*

Similarly, with a projected revenue of US$ 2.33 billion, the AI market in Kuwait is expected to grow with a CAGR of 47.7% between 2024 and 2032 (Data Cube, 2024). The AI industry in Kuwait has already crossed US$ 73.8 million in 2023 (Data Cube, 2024). Scholars view this huge popularity of AI as a result of its successful convergence with social media (SM). While this convergence has resulted in several benefits for businesses, including strengthened audience analysis and content generation, there have also been concerns about the ethical implications of this convergence (Saheb et al., 2024). Recently, the integration of machine learning systems in AI has raised ethical concerns regarding transparency (Walmsley, 2021).

Researchers have highlighted the significance of AI tools in allowing companies to use unique algorithms to analyse their target consumer base (Abrardi et al., 2022). However, researchers have also raised concerns regarding the use of AI algorithms as they often manipulate users and invade their privacy. For example, Hacker (2023) highlighted that AI algorithms have found a significant place in the commercial space due to their potential to analyse consumer preferences. However, these algorithms also indicate several concerns related to the manipulation of consumers' weaknesses. Furthermore, another phenomenon, which has been highlighted by researchers concerning the AI integration into SM is the 'Fear of Missing Out" (FoMO) (Roberts & David, 2020). FoMO often indicates the obsession of SM users with missed chances and opportunities, and it also entails fear of missing out on things due to being offline (Alutaybi et al., 2020). Recently, there has been a trend of research on complexities associated with FoMO induced by SM usage (Astleitner et al., 2023).

Considering the growing usage of AI-driven strategies in SM marketing, researchers have highlighted the need to investigate the challenges and trends associated with the integration of AI into SM (Hajli et al., 2022). However, there is a significant gap in the literature in this context. Therefore, this study seeks to fill this gap and examine the current trends and challenges in AI integration within SM platforms. The existing studies also lack a focus on the specific benefits and drawbacks of AI-powered interactions (Lei et al., 2021). Therefore, this study also seeks to explore user perceptions regarding the benefits and drawbacks of AI-enhanced interactions on SM.

Recently, researchers have been investigating ways to investigate the ethical implications of AI usage (Du & Xie, 2021). However, there remains a gap related to the ethical implications of AI-driven personalisation of content on SM platforms. Therefore, it is considered important and significant to investigate the ethical implications of AI's convergence into SM. In addition, the existing literature on FoMO triggered by SM needs more focus on the role of AI in influencing this behavioural outcome among users (Chan et al., 2022; Fang et al., 2020). Therefore, it is crucial to explore the influence of AI technology on users' experiences of FoMO in SM interactions. Furthermore, the rising scholarly concerns about AI's

ethical management indicate the significance of exploring the strategies that can be implemented to mitigate the ethical risks associated with AI on social media.

The present study is immensely significant as it focuses on the convergence of AI and SM to focus on the FoMO among users in Kuwait. This paper will not only help fill the existing gap in the literature but also suggest practical recommendations to curb FoMO among users. This paper comprises six sections. The first section provides the introduction to the whole paper and defines the research objectives. The second section provides a critique of the existing literature. The researcher gives the methodological design of the study in the third section and presents the findings in the fourth section. The fifth section consists of the implications of the research. The final section concludes the whole research.

2. Literature Review

Smartphones have been considered an essential part of life for most people. In December 2018, 871 million users of mobile internet were estimated, with those aged 20-29 making up the largest share at 26.8% (Jin et al., 2023). These smart devices serve various purposes such as socializing, education, entertainment and online payments. Furthermore, smartphones have been shown the facilitate social interactions, strengthen emotional bonds, improve security and satisfy both emotional and social requirements. However, a notable increase in problematic usage among young individuals has also been observed. A survey revealed that approximately 50% of teenagers in America believed that they were addicted to their mobile devices (Jin et al., 2023). Research indicates that young people are more preoccupied with smartphones and are particularly susceptible to their unnecessary use (Kim et al., 2018). In France, 61% of young people acknowledged their reliance on smartphones (Jin et al., 2023). In China, the prevalence of addiction concerning smartphones among teenagers ranges from 10-30 percent, with this figure continuing to rise, and the average age of smartphone users is now as young as 11 years old (Richter et al., 2022).

FoMO has gained prominent focus in the last few years, particularly within the context of social media and the burgeoning influence of artificial intelligence. FoMO is the tendency to exhibit anxiety regarding missing out on the rewarding experiences of others. It has been connected with disruptions in daily life. It is also considered a significant predictor of the internet and the disorders of social network usage or smartphones (Rozgonjuk et al., 2020). FoMO is explained as a new form of dependence that leads to individuals spending excessive time on social networks. It happens due to their fear of missing out on updates and developments shared on these platforms. Hamutoglu et al. (2020) indicate that FoMO activates "problematic social networking behaviour" and is related to addiction to social media. As social media is predominantly accessed through mobile devices, several studies have shown that FoMO contributes towards problematic usage of smartphones. FoMO is consistently associated with the usage of problematic digital technology as demonstrated by numerous different studies regarding disorders of internet and smartphone use (Alt & Boniel-Nissim, 2018; Gul et al., 2022). FoMO is characterised by the subjective feeling of missing out on the rewarding experiences of others, coupled with a perceived need to remain consistently connected to one's social network, such as family and friends. This phenomenon is closely interlinked with negative emotions such as the symptoms of anxiety (Elhai et al., 2016). Research indicates that the greater levels of FoMO are related to enhanced disruptions resulting from the notifications coming on smartphones (Rozgonjuk et al., 2019). It has been indicated that individuals with higher levels of FoMO may be more attentive towards the notifications, and because their attentional resources of attention are occupied partially, they may experience more interruptions and reduced concentration. It also corresponds with the findings that the disorder of using smartphones is associated with less self-reported productivity, possibly facilitated by daily disruptions which are triggered due to higher FoMO (Duke & Montag, 2017; Rozgonjuk et al., 2020). However, the potential effects of FoMO concerning daily activities and productivity remain comparatively unexplored. Research by Roberts and David (2020) described FoMO as a prevalent uneasiness that people might experience from a rewarding experience from which one is absent. Notably, a quarter of young adults have reported experiencing FoMO, particularly concerning enjoyable activities shared by others on social media.

The intersection of social media, artificial intelligence and FoMO can be assessed through the theory of social comparison (Festinger, 1957). The theory suggests that people have an inherent drive to assess their abilities and achievements by comparing themselves to others (Jiang & Ngien, 2020; Suls & Wheeler, 2012). Within the context of social media, users are often exposed to curated and idealized content that highlights the rewarding experiences of others. AI amplifies this by personalizing content feeds (Jahanbakhsh et al., 2023; Sadiku et al., 2021) To show such posts to users that are likely to trigger emotional responses, particularly those related to social comparisons. However, this continual exposure to others' perceived success or enjoyment can potentially exacerbate the feelings of inadequacy and anxiety which drive FoMO.

Corresponding to its nature, social media contains a continuous stream of updates, notifications and posts that expose users to a myriad of activities, experiences and events which have been shared by their peers. This continued exposure results in increased levels of dissatisfaction and anxiety (Bakioğlu et al., 2022). This is because users feel bound to stay connected and updated. In this way, they can avoid missing out. Research has also shown that this phenomenon is particularly pronounced among young users. These are more likely to engage with social media frequently and are more susceptible to social comparisons, which is also a key driver of FoMO. FoMO is a pervasive fear of being excluded from or missing out on the rewarding experiences of others. It has been associated with a variety of negative life experiences and emotions (Gupta & Sharma, 2021). Research has shown that this fear is linked to numerous adverse emotional and life outcomes. It includes feelings of inadequacy, loneliness, and increased social media use. This is because people seek to stay connected to avoid missing out on social events or updates. FoMO has been shown to negatively influence mental health and well-being in various ways. It is also found to be inversely associated with life satisfaction (Błachnio & Przepiórka, 2018). Due to its nature, FoMO has garnered significant empirical attention in the context of social media usage. This is because these platforms provide an effective means to stay associated with others and keep them knowledgeable regarding their experiences (Fioravanti et al., 2021). Furthermore, researchers also identified FoMO as an important predictor of difficult usage of social media (Blackwell et al., 2017). The study by Ozimek et al. (2024) also affirmed that increased social media usage heightens FoMO.

Artificial intelligence has further amplified the influence of FoMO on social media. However, the utilization of AI also involves certain transparency, privacy, and ethical challenges. Research by Mensah (2023) mentioned that transparency is considered a key consideration while implementing AI ethically. In this regard, users should have a clear understanding of the way in which decisions are made by AI. Their research also mentioned that a lack of transparency can lead to distrust and hinder the acceptance of people towards AI systems. Similarly, Felzmann et al. (2019) also discussed that with the rising automatic systems of decision-making, transparency has become an important topic. While the conventional algorithms might have challenged the idea of transparency mostly among non-experts, the systems of AI, which depend on deep learning, enable the procedures to run largely and individualistically from human control. Huriye (2023) discussed that bias, transparency, accountability, and privacy are the main ethical concerns that surround the development and use of AI technology within the developed nations. Apart from transparency and constraints of ethical considerations, AI is also considered vulnerable to advanced and sophisticated techniques of hacking (Oseni et al., 2021).

Korath and Sangheethaa (2024) mentioned that understanding the emotions which influence consumer choices, such as FoMO, aspirations, and the desire for belonging, holds immense importance. The AI-powered recommendation engines and the content feeds assess the viewing history of users and their emotional preferences to deliver tailored content which resonates with their emotions. It heightened the likelihood of discovering relevant and engaging material. In this regard, AI drives FoMO by curating and recommending content which aligns with the emotional states of users and their past behaviours. It also intensifies their engagement and desire to stay connected. In their research, FoMO is considered an emotional motivator which is triggered through social media posts that show others having fun or enjoying new experiences.

The previous literature elucidates the ethical issues under AI as transparency, privacy, and bias, and considers its ability to tailor and increase the FoMO by relating to user emotions and behaviours. Nonetheless, much of this research is abstract, lacking empirical evidence to directly relate AI-driven personalisation to FoMO outcomes, especially in non-Western contexts. The current project bridges such gaps by contributing to the growing phenomenon of FoMO through increased use among Kuwaiti users of AI-driven SM apps and a melt into behavioural implications of offering grounded information that abides by cultural values of the area.

3. Materials and Methods

The present design employed a mixed-method approach (Proudfoot, 2023). In this way, the researcher comprehensively examines the impact of artificial intelligence on the interactions of users and perceptions within the environments of social media. The use of Saunders' research onion (Bianchi, 2021) has guided the research through its different layers. It involves the choice of philosophy (pragmatism), strategy (interviews and survey) and methods (mixed-method) (Allmark & Machaczek, 2018; Gürbüz, 2017; Kallio et al., 2016). In this way, the methodological rigor was ensured along with a comprehensive analysis of the impact of AI on social media and FoMO. This approach was implemented to capture both the breadth and depth of experiences of users with the AI-driven features. Quantitative data was gathered through surveys for the quantification of users' attitudes and behaviours. It also focused on the perceptions regarding AI-driven features on social media platforms. This approach helped in measuring the variables such as frequency and intensity of

FoMO experiences, perceived transparency of AI algorithms and the influence of these factors on user behaviour. It also involved impulsive purchases, which are driven by FoMO. Conversely, the qualitative data was collected through interviews so that the perceptions and opinions of experts could be explored in detail. It also focused on the impact of social media platforms (such as Instagram and WhatsApp) and addiction to the internet on modern society. These interviews also explored the role of FoMO in shaping the behaviour of users and the potential of AI in mitigating FoMO. It also involved the understanding of the responsibilities of social media companies and governments in addressing these issues. This dual approach ensured a holistic view of the phenomenon, enabling both generalizable findings and in-depth analysis.

3.1. Participants and Procedures

The study involved three primary participant groups: general social media users, experts and academics based in Kuwait, and employees of the Ministry of Interior (MOI), Kuwait. Participants selected for the qualitative interviews were specialists in social media and artificial intelligence, chosen for their expertise in user behaviour and the phenomenon of Fear of Missing Out (FoMO). These experts provided nuanced insights into how social media platforms contribute to FoMO and how AI might be leveraged to mitigate its effects. Their inclusion enabled a comprehensive exploration of AI's impact across different social and institutional contexts.

For the quantitative component, 24 structured questionnaires were distributed among general social media users to gather data on their perceptions of AI-driven features and experiences with FoMO. After data cleaning and screening, 193 valid responses were retained for analysis. The questionnaire was developed based on existing literature to capture behavioural patterns and user attitudes.

Participants from the MOI, who use social media for both professional and organizational purposes, were engaged through a combination of quantitative surveys and qualitative interviews. This approach aimed to explore how AI influences social media use in institutional environments, with particular attention to ethical concerns and professional experiences of FoMO. The interviews were designed to elicit detailed narratives, offering a deeper understanding of AI's role in a controlled, policy-bound setting.

All participants were recruited through ethical procedures. Informed consent was obtained, and strict data protection protocols were followed to ensure participant confidentiality and compliance with research ethics standards.

4. Results

This section outlines the findings from both qualitative and quantitative data analyses. For the quantitative data analysis frequency analysis was used to interpret responses from the survey questionnaire. This technique enabled the statistical analysis of users' attitudes and behaviours towards the AI-driven features. For qualitative data, NVivo was employed to conduct a thematic analysis of the interview transcripts. This tool facilitated the systematic coding and categorisation of user experiences and ethical concerns associated with AI-driven social media interactions. Consequently, the researcher was capable of extracting meaningful themes and insights from the in-depth interviews with social media users and Ministry of Interior experts.

4.1. Findings from Interviews

The qualitative findings are based on interviews conducted with a sample consisting of 12 participants. The interviews were held with 12 people from MOI, academics, AI, and SM experts. Table 1 shows the description of participants. Each interviewee brought unique expertise. In this regard, the police officers possessed the sufficient knowledge of AI and social media monitoring, social media marketers and content creators. Table 1 outlines the specifications of participants who were selected to take part in the study because of their ability to understand the behaviour of users, business owners and bankers who use social media for the purpose of branding and customer engagement. These varied insights were assessed through NVivo software. It helped in the identification of recurring patterns and organized them into six major themes.

Table 1: Description of Participants

No	ID	Area of Knowledge
1	Dr.ID	Expert in the field of social media platforms
2	AD	Social media marketer
3	AQ	Banker responsible for marketing strategies
4	AKA	A business owner, and social media marketers
5	AA	Head of translation at the Ministry of Interior of Kuwait
6	AA	Expert in advertising and social media
7	Major YMA	Major police officer serves at the Ministry of interior of Kuwait and has the necessary knowledge about social media and AI
8	Major MSA	Expert in social media and marketing at the ministry of Interior of Kuwait
9	AA	Social media marketer and a business
10	MT	Instagram content creator
11	AD	WhatsApp specialist
12	AA	Expert in the field of business and management

Table 2 presents themes developed from interviews. It was obtained by using NVivo, which helped the researcher categorise and group data under relevant themes and codes. The table organises the qualitative findings into six key themes, each containing specific codes that represent the underlying ideas or patterns identified in the transcript. Table 2 presents six key themes which have been identified through the thematic analysis of interview data. It underscores the relationship between social media, FoMO (Fear of Missing Out), and behaviour of users. The first theme was related with exploring the impact of FoMO and social media on society. It linked with the issues such as problems of mental health, distorted perceptions regarding reality, and negative social behaviours. The second theme addresses the responsibilities of social media platforms. It underscores the codes of reducing AI-driven content, adjusting the systems of reward for creators, and encouraging the authentic engagement. The third theme was related with focusing on the way through which AI can help reduce FoMO, through international regulation and public education. The fourth theme underscored the role of government regulation. It included the persuasive communication and stricter laws so that corporate resistance can be encountered. The fifth theme was related with individual coping strategies. It included the importance of adopting healthier habits and engaging in offline activities. The sixth theme was related with the health impacts of FoMO. It included disruption in sleep and the development of unhealthy routines. Together, these themes shown in table 2 offer a comprehensive view regarding the way FoMO manifests. These themes also highlight that how it might be managed through collective and individual action.

Table 2: Themes developed through thematic analysis

Theme	Key Points
1. Impact of FoMO and social media on society	Mental health issues
	Unhealthy behaviour
	Distorted reality
	Negative social behaviour
2. Social media platform responsibilities	Reduce AI-driven content suggestions.
	Adjust rewards for content creators
	Implement usage notifications
	Promote authentic interactions
3. AI's potential in reducing FoMO	Enact international regulations
	Educate companies and consumers.

4. Government regulation of social media and FoMO	Persuasive communication Fight corporate resistance Stringent regulations
5. Individual strategies to manage FoMO	Engage in outside activities. Adopt healthy habits
6. Health impacts of FoMO	Unhealthy routine Sleep deprivation

The word cloud in Figure 2 shows the words which are most frequently mentioned from the interview transcripts. In the word cloud, the size of each word represents that how often it was mentioned by the respondents. Larger words appear more often. However, the smaller ones appear less frequently. In the present study, words like "believe," "think," "media," "FoMO" (Fear of Missing Out), "social," and "addiction" are prominent. It shows that they were mentioned frequently by the participants in the interviews. These words also showed key themes and ideas which were discussed during the interviews. It involves the elements such as perceptions of social media, the influence of FoMO, and concerns around the addiction. The word cloud provided a quick and visual way so that the main topics and patterns can be understand that were emerging from the data.

Fig. 2. Word cloud for the interviews

Figure 3 presents a cluster diagram. In this regard, the words from the interview transcripts have been grouped into clusters on the basis of their thematic similarities. Each cluster shows a set of related words that frequently occur together or are linked by a common theme. These included words such as "media," "addiction," or "social influence." The cluster diagram was also considered important because it visually shows how different concepts or topics are interconnected in the qualitative data. Thus, the words like "social media," "FoMO," and "addiction" appear in the same cluster which suggested that respondents often linked these ideas together in their discussions. It was also important in identifying the patterns and relationships in the data. Therefore, it provided a deeper understanding of the themes and the way they are connected. The diagram makes it easier to interpret complex qualitative data in a structured and meaningful way.

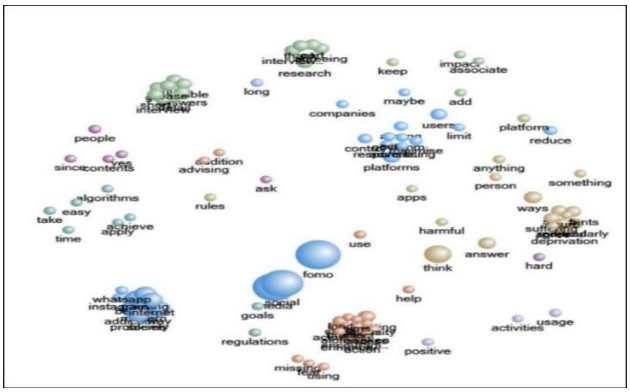

Fig. 3. Cluster analysis for the interviews

The present section has explained the qualitative findings which have been obtained from the thematic analysis of the interviews. The themes have been discussed so that the insights related to the impact of AI integration on FoMO among SM users can be highlighted. The analysis also provided a rich insight regarding the overall societal impact of AI and SM. The first theme showed the harmful impact of FoMO due to SM usage on the mental health of users. These findings contain important implications for the study. According to participant AD, people often experience this consistent urge to keep on using SM and keep themselves up to date following the changing "*lifestyles and trends*". As a result, people are experiencing a damaging impact on their "*mental well-being and sleep patterns*", as noted by the respondent AA.

The second theme focuses on the responsibility of SM platforms to ensure a responsible integration of AI. Participant YMA highlights that SM platforms must integrate a usage notification. This may inform users about their time spent on SM. The third theme highlights the role of SM platforms in reducing the FoMO among users. SM platforms should allow users to curate their feeds. The fourth theme is related to the role of the government in ensuring an ethical integration of AI into SM. Participant AD regards it as the government's responsibility to control FoMO among people. In addition, the findings emphasise the role of users in curbing their FoMO. The interviews with participants reveal that it is also the individual responsibility of users to stay away from SM and stop chasing trends. For example, Participant YMA suggests that people should adopt healthy habits and spend some time away from SM to reduce their FoMO. Similarly, MSA focuses on "*self-regulation*" for controlling FoMO among users. SM users need to realize the consequences of constant presence on SM platforms. Figure 4 indicates the treemap that represents various themes and sub-themes obtained as a result of the thematic analysis. The figure indicates a clear structure and hierarchy of the themes obtained through the analysis. In this study, a treemap has been used so that the data can be presented and organised visually by displaying the relative frequency or importance of themes in the dataset. It was important in the identification of patterns, highlight dominant themes, and visualise the relationships between different categories or sub-themes. Thus, a treemap quickly conveyed the proportion of each theme in relation to others by using colour and size. It also facilitated to interpret complex qualitative data easier and drawing meaningful insights. Fig 4 shows a treemap visualization that categorizes different topics related to internet and social media research. The coloured rectangular sections represent different categories with varying sizes (indicating relative importance or volume), including social media (brown section), sleep deprivation (pink), short interview (green), FOMO research (orange), addiction (blue), and internet addiction (Gray). Each category contains subcategories or related terms within its section, creating a hierarchical visual representation of these interconnected topics. The theme map is dominated by "social media", which occupies the largest portion, indicating it is the most extensively covered theme in the dataset. Other significant themes include sleep deprivation, internet addiction, FoMO research, and short interviews, though they appear to have smaller representation.

Relationships between themes and sub-themes are clear: for instance, under social media, sub-themes like *marketing*, *platforms*, and *usage patterns* suggest a focus on both commercial and behavioural aspects. Similarly, internet addiction and FoMO (Fear of Missing Out) appear closely related, as both are commonly linked to excessive social media use.

Overall, the theme map reveals that the dataset is heavily skewed toward understanding social media's impact, particularly on behaviour and mental health. It highlights interconnected issues like addiction, sleep problems, and FoMO, suggesting an overarching concern with how digital engagement affects well-being.

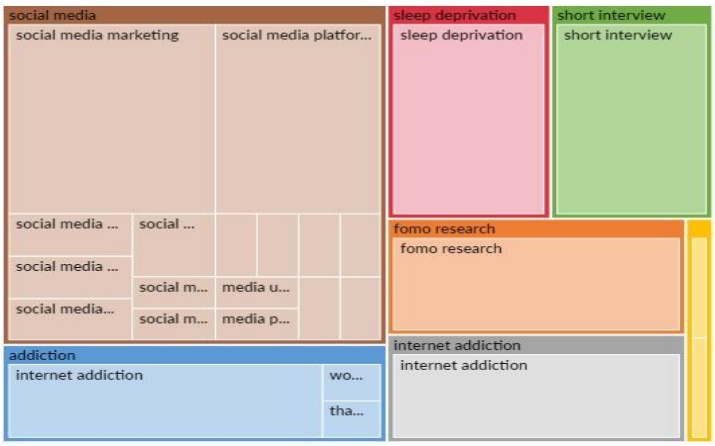

Fig. 4 Treemap for the interviews

4.2. Quantitative Data Analysis

This section presents the quantitative findings from the descriptive frequency analysis of the responses obtained in the surveys. This analysis examines the responses obtained against each question in the survey questionnaire. The quantitative phase of this study involved survey responses from 193 participants. These participants provided insights regarding the effects of FoMO (Fear of Missing Out) and the role of AI and social media (SM) through which the behaviour of users can be shaped. The survey involved 12 key questions. Different areas were covered such as addictive behaviours, impulsive buying, ethical concerns, and time spent on SM.

4.2.1. Descriptive Frequency Analysis

Table 3 shows the results of the frequency analysis of the responses obtained against the question related to FoMO as an addictive behaviour. Question 1 reveals that 43.5% of respondents consider FoMO to be an addictive behaviour, while 29% do not agree with this view, and 20.2% are uncertain. A small percentage, 7.3%, preferred not to answer. These results suggest that a significant portion of the respondents consider FoMO to be an addictive behaviour.

Table 3: Survey Results

Survey Question	Response	Frequency	Percentage (%)
1. Do you consider FoMO to be an addictive behavior?	Yes	84	43.5%
	No	56	29.0%
	I do not know	39	20.2%
	Prefer not to say	14	7.3%
2. Have you ever made impulsive purchases due to FoMO induced by social media advertising?	Yes	62	32.1%
	No	97	50.3%
	Prefer not to say	26	13.5%
	Other	8	4.1%
3. Are marketers leveraging the FoMO in their strategies?	Yes	81	42.0%
	No	21	10.9%
	I do not know	91	47.2%
4. Can FoMO be utilized to increase sales?	1.0	80	41.5%
	2.0	35	18.1%
	3.0	65	33.7%
	4.0	13	6.7%
5. Do you believe that it is ethical to leverage FoMO as a sales strategy?	1.0	45	23.3%
	2.0	99	51.3%
	2.0	5	2.6%
	3.0	41	21.2%
	4.0	3	1.6%
6. On average, how many hours per day do you spend on social media?	1.0	24	12.4%
	2.0	59	30.6%
	2.7	1	0.5%

	3.0	78	40.4%
	4.0	13	6.7%
	5.0	18	9.3
7. How frequently do you use social media platforms?	1.0	158	81.9
	1.2	3	1.6
	2.0	27	14.0
	3.0	5	2.6
8. What are the most common effects of FoMO?	Financial loss	26	13.5
	Sleep deprivation	41	21.2
	Disappointment	1	0.52
	Sorrow	31	16.1
	All the above	92	47.7
	Mental health issues	1	0.52
	Time-consuming	1	0.52
9. Do you think social media platforms must reduce FoMO among their users?	Agree	60	31.1
	Strongly agree	46	23.8
	Disagree	35	18.1
	Strongly Disagree	10	5.2
	I do not know	30	15.5
	Other	12	6.2
10. Do you agree that millennials are the demographic most affected by FoMO?	Strongly disagree.	17	8.8
	Disagree	37	19.2
	Agree	66	34.2
	Strongly agree.	2	1.0
	Prefer not to say.	40	20.7
	Other	28	14.5
11. Which social media platforms do you use the most?	WhatsApp & Instagram	101	52.33
	Facebook	22	11.4
	Snapchat	38	19.7
	X	23	12.0
	All the above equally	9	4.66

In response to Question 2, the results of the survey question asked participants that whether they have ever made impulsive purchases due to FoMO which is induced by SM advertising. It reveals that 32.1% of respondents have made impulsive purchases due to FoMO induced by SM advertising. However, the majority, 50.3%, have not made impulsive purchases for this reason, suggesting that FoMO does not affect every user equally.

In response to Question 3, the results of the survey question asked participants whether they believe marketers are leveraging FoMO in their strategies. It shows that 42% of respondents believe that marketers are indeed leveraging FoMO in their strategies, indicating respondents' awareness of marketing tactics. On the other hand, 10.9% of respondents do not think marketers are using FoMO.

Question 4 explains the responses to a question asking participants whether they believe FoMO can be used to increase sales. It indicates that 41.5% of respondents believe that FoMO can indeed be utilised to increase sales. This shows the awareness of the respondents regarding the use of FoMO-inducing marketing strategies.

Question 5 was related to asking whether participants believe it is ethical to leverage FoMO as a sales strategy. It reveals that the majority of respondents, 51.3%, believe it is somewhat ethical to leverage FoMO as a sales strategy. The data indicates somewhat acceptance of FoMO-inducing sales tactics among the respondents.

Question 6 further summarises how many hours per day respondents spend on SM. According to the results shown in Table 3, the majority of respondents, 40.4%, spend an average of 3 hours per day on social media. This shows that a substantial portion of the sample engages in a moderate consumption of SM content.

Question 7 was related to asking respondents that how frequently respondents use social media platforms. The vast majority of respondents, 81.9%, selected the lowest category (1.0), indicating that they use social media platforms very frequently, as shown in Table 3.

Question 8 was related to asking the responses to a question to participants about the most common effects of FoMO. It reveals that nearly half of the respondents, 47.6%, believe that "All the above" options—financial loss, sleep deprivation, sorrow, mental health issues, and time-consuming effects—are common consequences of FoMO. Sleep deprivation emerges as the most frequently identified single consequence, with 21.2% of respondents selecting it.

Question 9 also presents responses to the question of whether participants believe that SM platforms should reduce FoMO among their users. It reveals that 31.1% of respondents agree that SM platforms should reduce FoMO among users. 23.8% strongly agree, thus reinforcing the idea. This shows that the majority of the respondents recognise the role of SM platforms in controlling FoMO among users.

Question 10 furthermore shows the responses to the question of whether participants agree that millennials are the demographic most affected by FoMO. It reveals that 34.2% of respondents agree that millennials are the most affected demographic. Thus, respondents regard millennials as particularly vulnerable to FoMO.

Question 11 also shows the responses to the question asking participants which SM platforms they use the most. It reveals that 52.3% of respondents use WhatsApp & Instagram the most. 19.7% of respondents use Snapchat the most. 12.0% use X (formerly known as Twitter) the most. 11.4% use Facebook the most.

In conclusion, this section shows the survey findings. These findings underscore the significant impact of Fear of Missing Out (FoMO) on social media users. It revealed that a large portion of respondents view FoMO as an addictive behaviour. Moreover, there are numerous respondents acknowledging its influence on the impulsive purchases and strategies of marketing. Although, FoMO is considered as an important tool through which the sales can be increased. However, there is a mixed perception of its ethical implications which have been shown in table 3. The data showed that the extensive usage of social media, particularly among millennials, can significantly result in negative effects such as sleep deprivation and issues of mental health. Moreover, there is also a strong support for the idea that the platforms of social media should take responsibility in reducing FoMO among the users. These findings underscore a growing awareness of the need through which the marketing approaches can be balanced. Most importantly, it is integral to balance the detrimental effects of FoMO on well-being.

The outcomes of the frequency analysis indicate that FoMO is a familiar issue embedded in the minds of the audience, as they already regard it as an addictive habit and an influential factor in consumer and SM trends. Many respondents have indicated a strong percentage of impulse purchases that were made due to FoMO-driven advertisements, thereby highlighting its potential as a marketing tool. The results can be interpreted more effectively in terms of social

comparison theory, which describes how people assess their lives by comparing them with others (Festinger, 1954). The existence of SM, especially WhatsApp and Instagram, which have been discussed in the given study, offers continuous access to upward comparisons as users receive curated content that displays the successes, lifestyles, and wealth of others. This exposure not only contributes to a sense of inadequacy but also strengthens the compulsive use of platforms to keep up.

The observation that millennials are susceptible to comparison-related anxieties and are considered to be the most vulnerable cohort is indicative of their heavy reliance on social SM FoMO, which causes adverse effects, including sleep deprivation, financial loss, and mental issues, and only underscores the psychological cost of constant comparison. The ambivalent attitudes to using FoMO ethically in marketing demonstrate that people realise its manipulative possibilities, despite their recognition of its ability to sell. Thus, these results indicate that AI-based SM fuels social comparisons, which makes FoMO not only a behavioural issue but also a commercial approach that demands ethical attention.

5. Discussion

The current study investigated the impact of AI and SM on FoMO among users. Findings from the interviews indicate that AI integration into SM poses serious threats to the health and lifestyle of users. In addition, respondents have also highlighted the privacy concerns in the convergence of AI and SM. However, the most damaging impact of AI emerges in the form of negative behavioural outcomes. Respondents view AI as a trigger of FoMO among young people. The findings indicate that respondents view AI algorithms as responsible for encouraging SM users to chase trends. The findings are complemented by the theory of social comparison, which points out that individuals compare themselves to others by evaluating their lives (Festinger, 1954). These findings are reinforced by the quantitative data, as 43.5% of respondents view FoMO as an addictive tendency. Previously, Akyol et al. (2021) have reported that higher levels of problematic usage of mobile phones lead to FoMO among users. This FoMO causes mental health problems among the users. Coco et al. (2020) reported a bidirectional relation between the problematic usage of mobile phones and FoMO. The present study extends the understanding of the link between mental health disorders and FoMO as previously reported by Yuan et al. (2021).

The present study has also highlighted privacy risks associated with AI integration into SM. Respondents expressed their inhibitions regarding the lack of transparency in AI. Previously, Ouchchy et al. (2020) also mentioned a lack of transparency and reduced human input as ethical challenges of AI usage. The findings have also highlighted the impact of AI integration on society. By inducing FoMO among users, AI has the potential to disturb the daily routines of users. For instance, the present study has highlighted how FoMO includes sleep deprivation among users. In addition, the findings also suggest some strategies to reduce FoMO among users. For instance, at the individual level, respondents suggest that people should start engaging themselves in some outside activities. For example, Zhang et al. (2023) highlighted the positive impact of physical activity in removing the negative consequences of mobile phone usage. At the government level, the findings indicate the need for robust regulations. This would help maintain a responsible use of AI. In addition, this study has also revealed the future potential of AI technology. AI can also be used to curb FoMO among SM users. SM platforms should use AI to curate users' feeds. Furthermore, the findings from the survey indicate that the majority of the respondents are aware of the marketability of FoMO. Respondents also regard it as the responsibility of the SM platforms to control FoMO among users. In addition, findings indicate a substantial impact of FoMO on sleep deprivation, mental health issues, and financial loss. Millennials emerge as the most vulnerable population to FoMO. WhatsApp and Instagram emerged as the most popular SM platforms among SM users. The most notable finding related to the ethical implications of FoMO is that the majority of the respondents consider the use of FoMO in sales strategies as ethical.

5.1. Conclusion

The study concludes that AI integration into social media significantly contributes to Fear of Missing Out (FoMO) among users, posing serious threats to their health and lifestyle while raising privacy concerns. AI algorithms trigger negative behavioural outcomes by encouraging users to chase trends, with 43.5% of respondents viewing FoMO as an addictive tendency linked to mental health problems, sleep deprivation, and financial loss. Millennials emerge as the most vulnerable population, with WhatsApp and Instagram identified as the most popular platforms. Interestingly, most respondents consider using FoMO in sales strategies as ethical. The research suggests potential solutions including encouraging outside activities at the individual level, implementing robust government regulations for responsible AI use, and leveraging AI itself to curate user feeds in ways that could reduce rather than amplify FoMO.

5.2. Contributions to Existing Research

The research contributes to the growing body of knowledge regarding the interaction of artificial intelligence, social media and user behaviour, particularly within the context of FoMO (Tanhan et al., 2022). This research has mixed the concepts from social comparison theory and examined the role of AI in personalizing content (Rafieian & Yoganarasimhan, 2023). In this way, the research adds depth to the understanding regarding the way AI-driven algorithms influence the perceptions and behaviours of users (Shin, 2020). The findings highlight the complex association between AI, FoMO and user engagement. It offers new insights regarding the way personalised content can both mitigate and exacerbate FoMO. Additionally, this study shed light on the ethical considerations that surround the use of AI in social media (Gao et al., 2023; Illia et al., 2023). It particularly focuses on the privacy of users, fairness and transparency. It contributes towards the ongoing debate in the field of AI ethics and digital media studies.

By integrating theoretical perspectives with empirical insights, this research bridges a critical gap between psychological constructs like FoMO and technological mechanisms such as AI-driven personalization. It not only enriches academic discourse but also provides practical implications for developers, policymakers, and mental health professionals aiming to create more ethical and user-centric digital environments. This interdisciplinary approach enhances our understanding of how AI technologies can shape emotional and behavioural responses in the digital age.

5.3. Implications for Practice

From a practical perspective, the research can also provide valuable insights for social media platforms, AI developers and policymakers. For social media platforms, the findings can underscore the need to balance personalised content with ethical considerations. In this way, the experiences of users can be enhanced without exacerbating FoMO or violating privacy. AI developers can also use these insights to design algorithms. These algorithms not only improve the relevance of content but also prioritize the well-being of users by minimizing negative emotional impacts such as anxiety or dissatisfaction. Policymakers can draw on the recommendations of this study. The insights can be used to develop frameworks that regulate the practice of AI on social media. In this way, it can be ensured that these technologies are developed responsibly, safeguarding the privacy of users and promoting transparency in AI-driven interactions.

5.4. Strengths, Limitations and Future Avenues

The present study investigated the use of AI and SM on FoMO among users. Using a mixed research design, this study has revealed that AI has led to a transformation in SM marketing as companies now target FoMO-inducing tactics. However, its ethical concern cannot be ignored. The findings also reveal that the AI integration into SM indicates privacy concerns and data security. Moreover, addiction to SM may cause FoMO among users. Therefore, SM platforms should introduce a usage notification and prioritise consumer preferences. Moreover, SM users should engage themselves in outside activities to avoid spending too much time on SM. This study has thus made a significant addition to the literature concerning FoMO and SM addiction (Tandon et al., 2020). Thus, the present study reveals that AI usage not only affects human health but also distorts their sense of reality.

This study involves a few limitations which can be addressed by future research. The focus on specific demographics (users in Kuwait) limits the generalizability of findings to other cultural contexts. The reliance on self-reported data is likely to introduce bias. This is because the responses of participants can be potentially influenced by social desirability and inaccurate self-assessment. Future researchers can address these limitations by employing longitudinal studies to observe changes in user behaviour over time and by expanding the sample to include diverse populations. Future exploration into the impact of AI on different social media platforms and varying user demographics would also provide a more detailed understanding of AI's role in shaping online experiences.

The study is limited in some aspects. The sample includes only SM users, experts, and Ministry of Interior employees in Kuwait, which limits the applicability of the results to broad populations. The participant perceptions risk subjectivity, with the responses being subject to personal attitudes and experiences. Moreover, the combination of two data sources (the survey and the interview) is time-restrained, potentially limiting the ability to capture changes in FoMO or AI-driven behaviours over time. Furthermore, the use of designated platforms, such as Instagram and WhatsApp, might have overlooked FoMO-oriented services on other developing platforms.

The future research should expand the scope of this study by taking a broader and diverse population in diverse cultural and geographical settings to strengthen the generalisation aspect. Comparative studies between developed and developing nations would generate significant results regarding the role of cultural values and technological systems that influence the connection between AI-driven SM and FoMO. Longitudinal research designs will assist in monitoring the ongoing influence of AI characteristics on user behaviour and FoMO. Platform-specific differences can also be studied in the future with a consideration of other platforms, such as TikTok and Snapchat, and explain how their mechanisms deprive users of the feeling of adequacy. In addition, psychological concepts such as self-esteem, impulsivity, and social comparison can be used as mediating or moderating factors. The researchers should also examine the possibility of AI-driven approaches targeting the minimisation of FoMO and healthier technology use, creating a balance between technological advancement and ethical and mental well-being.

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