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RESEARCH PAPER

Role of Social Media on reshaping the Human Behavior: A Case Study of Pakistan

¹Dr. Munir Hussain^{*} ² Imran Azeem and ³Dr. Muhammad Kashif

- 1. Associate Professor, Department of Entrepreneurship, Institute of Business Management, Karachi, Sindh, Pakistan.
- 2. PhD Scholar, Department of Social Work, University of Karachi, Karachi, Sindh, Pakistan
- 3. Assistant Professor, Department of Social Sciences. Mohammad Ali Jinnah University Karachi, Sindh, Pakistan

*Corresponding Author: munir.hussain@iobm.edu.pk ABSTRACT

Social media applications are the most used digital tools in the current world. These applications have a very great impact on the behavior of the users. This study aims to examine the role of the social media on the behavior of the people and how social media reshape the behavior of a person. This study examined the five most common social media applications named Facebook, twitter, Instagram, TikTok and snap chat that how these applications are involve in reshaping their user's behavior. Primary data for the research was collected from the 550 respondents who were the frequent users of the social media applications from across the whole Pakistan by the convenience sampling. The gathered data was analyzed with the help of the SmartPLS using the partial least square structural equation modelling technique. According to the results found by the study shows that Instagram is the most effect application in reshaping the human behavior with a combined effect of the 32.3%. while TikTok is the least effect application which contribute in reshaping the behavior of the human with a percentage of 16.5% impact. While the rest of the other three applications have a moderate role in this case. It is recommended for the all the organization are related organization who are working on human behavior can use the digital tools like Facebook, and other social media applications as tool to reshape the people behavior instead of using other traditional methods. It is also recommended to the marketing companies to use these tools for better attraction of their customers.

KEYWORDS Facebook, Human Behavior, Instagram, Snap Chat, Social Media TikTok, Twitter (X) Introduction

Social media has dramatically reshaped human behavior over the past two decades, becoming an integral part of daily life for billions of people (Muzaffar, et. al 2020; Ni et al., 2024). It has influenced how individuals interact, consume information, form opinions, and even perceive themselves. The pervasive presence of social media platforms such as Facebook, Twitter, Instagram, TikTok, and others has brought about profound changes in communication patterns, social norms, and psychological well-being, ultimately altering the fabric of society in both positive and negative ways. One of the most significant impacts of social media is its transformation of communication (He et al., 2024). Before the advent of social media, communication was largely limited to face-to-face interactions, phone calls, and emails. Social media has revolutionized this by providing instant, global connectivity. People can now communicate with others across the world in real-time, share their thoughts and experiences instantaneously, and maintain relationships that might have otherwise faded due to geographical distance. This has led to the creation of global communities and networks, fostering a sense of interconnectedness and collective identity (Luo et al., 2024). However, this constant connectivity also has its drawbacks. The immediacy and brevity of social media interactions can lead to superficial communication, where the depth and quality of conversations may be compromised. The emphasis on brevity, driven by character limits on platforms like Twitter, often results in oversimplification of complex issues and encourages a culture of sound bites rather than substantive discourse. Furthermore, the

anonymity afforded by social media can lead to negative behaviors such as cyberbullying, trolling, and harassment, which can have serious psychological impacts on individuals (Muzaffar, et. al. 2019; Wu et al., 2024). Social media has also fundamentally changed the way people consume and share information. Traditional media sources, such as newspapers and television, have been supplemented-and in many cases, overshadowed-by social media platforms where news can be disseminated rapidly and widely. This democratization of information has both positive and negative consequences. On the positive side, social media has given a voice to marginalized groups and individuals, enabling them to share their stories and perspectives with a broader audience (Xiao et al., 2024). It has also facilitated social movements and activism, as seen in the #MeToo movement, Black Lives Matter, and various political protests around the world. However, the rapid spread of information on social media also has a dark side. The ease with which false information and conspiracy theories can be shared and amplified has led to the phenomenon of "fake news," which can distort public perception and undermine trust in legitimate news sources (Ahmad, Alam, et al., 2023). Algorithms designed to maximize user engagement often prioritize sensational or controversial content, creating echo chambers where individuals are exposed primarily to information that reinforces their existing beliefs. This can contribute to polarization and the erosion of social cohesion. The influence of social media on human behavior extends to the realm of self-perception and identity. Platforms like Instagram and TikTok place a strong emphasis on visual content, leading to the rise of the "selfie culture" and the curation of online personas. Users often present idealized versions of themselves, showcasing only the most flattering aspects of their lives (Zhan et al., 2024). This can create unrealistic expectations and pressures, particularly among young people, who may feel inadequate when comparing themselves to these idealized images. The constant pursuit of likes, comments, and followers can foster a sense of validation-seeking and dependency on external approval, impacting self-esteem and mental health. Moreover, social media has introduced new dynamics in social relationships. The concept of "friends" and "followers" has been redefined, as people now have the ability to connect with large numbers of acquaintances and strangers alike. While this can expand social networks and provide opportunities for new connections, it can also dilute the quality of relationships. The ease of maintaining a large number of superficial connections may come at the expense of deeper, more meaningful relationships (Abou Houran et al., 2023). Additionally, the public nature of interactions on social media can lead to performative behavior, where individuals act in ways designed to elicit approval from their online audience rather than being authentic. The impact of social media on behavior is also evident in the realm of consumer habits. Social media platforms are powerful tools for marketing and advertising, leveraging data-driven algorithms to target users with personalized ads. This has transformed the way products are marketed and consumed, with influencer culture playing a significant role. Influencers, who often have large followings, can sway consumer behavior by endorsing products and lifestyles. This has given rise to a new form of marketing where personal endorsements and branded content blur the lines between genuine recommendations and commercial promotion. However, this can also lead to materialism and the perpetuation of unattainable standards (Song et al., 2023). The constant exposure to curated images of luxury and success can create a desire for consumer goods and experiences that are often beyond reach for the average person. This can lead to financial strain and feelings of inadequacy. Furthermore, the pressure to keep up with trends and the fear of missing out (FOMO) can drive impulsive purchasing decisions and unhealthy spending habits. Social media has also had a profound effect on political behavior and public discourse. The ability to share information and mobilize support quickly has transformed political campaigning and activism. Politicians and political movements use social media to connect with voters, spread their messages, and organize events (Sandoval-Almazan & Ramon Gil-Garcia, 2014). This has democratized political participation, allowing more people to engage in the political process. Social media has also been instrumental in organizing protests and movements, providing a platform for collective action and raising awareness about social and political issues. However, the influence of social media on politics is not without its challenges (Dong et al., 2023). The

spread of misinformation and propaganda can manipulate public opinion and influence electoral outcomes. The use of social media by political actors to spread divisive and inflammatory content can exacerbate tensions and contribute to political polarization. Additionally, the use of social media for surveillance and control by authoritarian regimes poses significant threats to freedom of expression and privacy. In terms of psychological well-being, social media has a complex and multifaceted impact. On one hand, it provides opportunities for social connection, support, and community building (Smith et al., 2021). For individuals who may feel isolated or marginalized, social media can offer a sense of belonging and validation. Online communities can provide support and resources for individuals facing various challenges, from mental health issues to chronic illnesses. On the other hand, the negative psychological impacts of social media are well-documented (Cheng et al., 2023). The pressure to conform to social norms and the constant comparison to others can lead to anxiety, depression, and low self-esteem. The addictive nature of social media, driven by the dopamine hits from likes and notifications, can lead to compulsive use and interfere with real-life relationships and responsibilities. The curated nature of social media content, where people tend to share only positive aspects of their lives, can create a distorted view of reality and contribute to feelings of inadequacy and loneliness. Despite the many challenges associated with social media, it is clear that it is an integral part of modern life and is likely to remain so. The key to mitigating its negative impacts lies in promoting digital literacy and encouraging responsible use. Educating individuals, particularly young people, about the realities of social media, the importance of critical thinking, and the need for a balanced approach to its use is crucial. Additionally, social media platforms themselves have a role to play in creating safer and more positive online environments (Irshad et al., 2023). This includes implementing policies to combat misinformation, bullying, and harmful content, as well as providing tools and resources to support mental health and well-being. In conclusion, social media has reshaped human behavior in profound and complex ways. It has transformed communication, information consumption, self-perception, social relationships, consumer habits, political behavior, and psychological well-being. While it offers many benefits, it also presents significant challenges that need to be addressed. As society continues to navigate the evolving landscape of social media, it is essential to find ways to harness its positive potential while mitigating its negative effects. By promoting responsible use and digital literacy, individuals and communities can better manage the impact of social media on human behavior and create a healthier, more connected world (Li et al., 2023).

Literature Review

Social media applications have fundamentally altered the way people communicate, interact, and perceive the world. Platforms such as Facebook, Twitter, Instagram, TikTok, and Snapchat each contribute uniquely to these changes, influencing human behavior in profound ways. This essay examines the impact of these social media platforms on human behavior, discussing their roles under individual subheadings (Peng et al., 2023).

Facebook

Facebook, launched in 2004, has grown to become one of the largest social media platforms globally, with over 2.8 billion monthly active users as of 2021. Its influence on human behavior is extensive, touching various aspects of social interaction, self-presentation, and information consumption. Facebook's primary contribution has been the enhancement of social connectivity. It allows users to maintain relationships with friends and family regardless of geographical barriers, which has reshaped how people perceive distance and communication. The ability to connect with others globally fosters a sense of a smaller, more connected world. This connectivity, however, has also led to an increase in superficial relationships, where the quality of interactions can be diminished in favor of quantity. Facebook provides a platform for users to curate their online personas meticulously. Users can choose what aspects of their lives to share, often presenting an

idealized version of themselves. This selective self-presentation can lead to issues such as the fear of missing out (FOMO) and social comparison, where individuals compare their real lives to the edited versions of others' lives, often resulting in decreased self-esteem and life satisfaction. Information Facebook has become a significant source of news and information (Ahmad et al., 2021). However, its algorithm tends to create echo chambers, where users are exposed primarily to information that aligns with their existing beliefs. This reinforcement can polarize opinions and contribute to the spread of misinformation, as sensational and emotionally charged content often gains more traction (Cattell, 2001).

Twitter

Twitter, known for its real-time updates and brevity, has significantly impacted how information is disseminated and consumed, as well as how public discourse is conducted. Twitter's character limit encourages concise and immediate sharing of information, making it a powerful tool for real-time news updates. This immediacy can be beneficial during emergencies or significant events, providing instant access to information. However, the rapid spread of information also means that false information can proliferate quickly before it can be verified (Ahmad et al., 2022). Twitter has reshaped public discourse by providing a platform where individuals can voice their opinions and engage in discussions on a global scale. Hashtags have become powerful tools for organizing movements and raising awareness about social issues, exemplified by campaigns like #MeToo and #BlackLivesMatter. While this democratizes participation, it also leads to challenges such as online harassment and the spread of extremist ideologies. The brevity required by Twitter has influenced the way people communicate, promoting more succinct and impactful expressions. This can lead to more efficient communication but also encourages oversimplification of complex issues, which can hinder nuanced understanding and dialogue (Khan, Su'ud, Alam, Ahmad, Ahmad (Ayassrah), et al., 2022).

Instagram

Instagram, a visually oriented platform, has a distinct influence on how people perceive and engage with the world, particularly through visual content. Instagram emphasizes aesthetics and visual storytelling, leading users to carefully curate their photos and videos. This focus on visual appeal can drive creativity and self-expression but also fosters a culture of comparison and perfectionism (Ahmad, Han, et al., 2023). The constant exposure to idealized images can impact body image and self-esteem, particularly among younger users. Instagram has given rise to the influencer phenomenon, where individuals with large followings can shape trends and consumer behavior. Influencers often promote lifestyles, products, and brands, blurring the lines between personal recommendations and advertising. This has significant implications for marketing strategies and consumer habits, often driving demand for certain products and experiences (Wang et al., 2023). Instagram allows users to connect through shared interests and communities, using features like Stories, IGTV, and Reels. These tools facilitate more dynamic interactions and foster a sense of belonging. However, the emphasis on engagement metrics such as likes and comments can lead to a validation-seeking behavior, where users measure their worth by their online popularity (Bowling & Browne, 1991).

TikTok

TikTok, known for its short-form video content, has rapidly become a major player in the social media landscape, particularly among younger audiences. TikTok's format encourages users to create and share short, engaging videos, often set to music (Liu et al., 2022). This has democratized content creation, allowing anyone to become a creator regardless of their technical skills or resources. The platform's algorithm promotes content based on engagement rather than follower count, enabling viral trends and fostering a diverse range of creative expressions. TikTok has a significant impact on pop culture, with trends, challenges, and memes originating on the platform often spreading to other media. This influence extends to music, fashion, and even language, as TikTok can propel songs, styles, and phrases into mainstream popularity. The platform's rapid cycle of trends can create a sense of urgency and pressure to keep up, influencing how users engage with content. While TikTok provides an outlet for creativity and entertainment, it also raises concerns regarding mental health. The addictive nature of the platform, with its endless scroll of engaging content, can lead to excessive screen time and distraction (Ni et al., 2023). Additionally, the pressure to gain views and followers can affect users' self-esteem and mental health, particularly if they experience negative feedback or lack of recognition (Kawachi, 2001).

Snapchat

Snapchat, with its ephemeral nature, offers a unique approach to social media interaction, focusing on spontaneity and real-time sharing. Ephemeral Communication: Snapchat's core feature is its temporary nature, where messages and stories disappear after being viewed. This promotes a more spontaneous and authentic mode of communication, as users are less concerned about curating perfect content (Krause & Montenegro, 2017). This can lead to more genuine interactions, but it also raises issues regarding the permanence of digital footprints and the potential for misuse, such as sending inappropriate content. Snapchat has been a pioneer in integrating augmented reality (AR) into social media through its filters and lenses. These features enhance user engagement by adding a layer of interactivity and fun to content creation (Ibrahim et al., 2014). The use of AR can influence how users perceive themselves and their environment, blending digital and physical realities in new ways. Snapchat's appeal among younger users is partly due to its emphasis on privacy and control over content. Users can choose who sees their snaps and stories, fostering a sense of security and intimacy. However, this also means that risky behaviors can occur with the perception of reduced consequences. Additionally, the platform's focus on real-time sharing aligns with the fast-paced nature of youth culture, influencing how young people communicate and socialize (Israel & Antonucci, 1987).

Social media applications like Facebook, Twitter, Instagram, TikTok, and Snapchat have profoundly reshaped human behavior in various dimensions. These platforms have transformed social interactions, self-presentation, information consumption, and even the way people perceive reality. While they offer numerous benefits, such as enhanced connectivity, creativity, and access to information, they also pose challenges, including the spread of misinformation, mental health issues, and changes in social norms (Khan, Su'ud, Alam, Ahmad, Salim, et al., 2022). As these platforms continue to evolve, it is crucial to understand their impact on human behavior and develop strategies to mitigate potential negative effects while maximizing their positive contributions.





Figure 1: Conceptual Model

Hypotheses

H₁: There is a significant impact of Facebook on reshaping human behavior

H₂: There is a significant impact of Twitter on reshaping human behavior

H₃: There is a significant impact of Instagram on reshaping human behavior

H₄: There is a significant impact of TikTok on reshaping human behavior

H₅: There is a significant impact of Snap Chat on reshaping human behavior

Material and Methods

The philosophical roots of this study are originated from the positivism philosophy. This is a pure scientific based thought which measures the real world realities into numbers. The method used for the study was deductive. The population of this study was based on the entire social media users of the Pakistan. The sample size of this study was based on the 550 social media users selected from the overall population on the basis of the convenience sampling. The data among the respondents was gathered through a closed ended questionnaire which was distributed among the population with the help of the Google form. All the measures used in the questionnaire were adopted from the prior reliable studies. The collected data was analyzed via SmartPLS using partial least square technique.

Ethical consideration

The primary data of the study was gathered from the human responses. Before collecting the data, an ethical approval was obtained from the board of ethics to properly follow the ethical standards.

Items Reliability

Table 1 of the item's reliability shows the reliability level of the items of each construct. The measure used for the reliability of the items is the outer loading. The threshold value for the outer loading is the 0.7 and above. The table of items reliability shows that all the items of the construct have the reliability value greater than the threshold value which indicates that all the items of each construct are reliable.

	Table 1 Reliability	
Construct	Items	Outer loadings
	HB1	0.734
	HB2	0.774
Uuman Dahawian	HB3	0.823
Human Behavior	HB4	0.762
	HB5	0.771
	HB6	0.789
	FB1	0.734
Facebook	FB2	0.761
Facebook	FB3	0.773
	FB4	0.752
	TW1	0.801
Twitter	TW2	0.832
	TW3	0.734
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IN1	0.745
IN2	0.775
IN3	0.801
TK1	0.744
TK2	0.712
TK3	0.792
SC1	0.831
SC2	0.751
SC3	0.722
	IN2 IN3 TK1 TK2 TK3 SC1 SC2

Construct Reliability

Table 2 of the construct reliability shows the reliability level of the entire construct. This table shows that there are a total of six constructs. The measure used for the reliability of the construct are Cronbach alpha and composite reliability. The threshold value for both measures is the 0.7 and above. Below table of the construct reliability shows that all the construct have reliability values greater than the threshold value which indicates that all the construct are reliable to be study further.

Table 2 Construct Reliability			
Construct	Cronbach Alpha	Composite Reliability	
Human Behavior	0.776	0.874	
Facebook	0.755	0.853	
Twitter	0.789	0.887	
Instagram	0.774	0.872	
TikTok	0.749	0.847	
Snap Chat	0.768	0.866	

Tabla 2

Discriminant Validity

Table 3 of the HTMT shows the discriminant validity of the construct. The measure used for the discriminant validity is the HTMT ratios. The threshold value for the HTMT ratio is the 0.85 or less. Below table of the HTMT ratios shows that all the HTMT values are less than the threshold value which indicates that all the constructs of the model of this study are discriminately valid.

Table 3 HTMT			
Construct	HTMT Ratio		
Human Behavior	0.345		
Facebook	0.523		
Twitter	0.452		
Instagram	0.265		
TikTok	0.534		
Snap Chat	0.423		

Convergent Validity

Table 4 shows the convergent validity of the construct. The measure used for the convergent validity is AVE. The threshold value for the AVE is 0.5 or above. Below table of the convergent validity shows that all the constructs have AVE values greater than the threshold value which indicates that all the constructs have achieved their convergent validity.

Convergent Validity		
Construct	AVE	
Human Behavior	0.634	
Facebook	0.521	
Twitter	0.533	
Instagram	0.612	
TikTok	0.572	
Snap Chat	0.671	

Results and Discussion

Respondents Demography

Table 5 of the respondent's demography shows that there are a total of 550 respondents of the research among these 550 respondents 57% are male and 43% are female. The second section of the table shows the age wise distribution of the respondents. this shows that 50% of the respondents were belong to age group of 18 to 30 years. 36% of the respondents belong to the age group of 31 to 45 years and the rest of the remaining 14% belong to the age group of the 46 and above.

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Gender	Number	Percentage
Male	311	57%
Female	239	43%
Total	550	100%
Age Group	Number	Percentage
18 -30 Years	276	50%
31-45 Years	196	36%
46 and Above Years	78	14%
Total	550	100%

Regression analysis

Regression analysis is a very old technique to predict the cause and effect relationship of a model. The measure used for the regression significance is the p and t value. The threshold value for the p value is 0.05 or less while the threshold value for the t value is 1.96 and above. While the beta value of the reach relationship shows the strength of the relationship. Table shows that there are a total number of five hypotheses in the model of the study. Table shows that all the five hypothesis are significance having the p and t value in the range of significance.

Table 6					
Regression analysis					
Hypothesis	Beta	T Value	P Value		
H1: Facebook >>> Human Behavior	0.312	12.653	0.000		
H2: Twitter >>> Human Behavior	0.241	11.723	0.000		
H3: Instagram >>> Human Behavior	0.322	8.423	0.000		
H4: TikTok >>> Human Behavior	0.165	6.223	0.000		
H5: Snap Chat >>> Human Behavior	0.251	21.623	0.000		

Conclusion

This study aims to examine the role of the social media on the behavior of the people that how social media reshape the behavior of a person. This study examined the five most common social media applications named Facebook, twitter, Instagram, TikTok and snap chat that how these applications are involve in reshaping their user's behavior. According to the results found by the study shows that Instagram is the most effect application in reshaping the human behavior with a combined effect of the 32.3%. while TikTok is the least effect application which contribute in reshaping the behavior of the human with a percentage of 16.5% impact. While the rest of the other three applications have a moderate role in this case.

Recommendations

It is recommended for the all the organization are related organization who are working on human behavior can use the digital tools like Facebook, and other social media applications as tool to reshape the people behavior instead of using other traditional methods. It is also recommended to the marketing companies to use these tools for better attraction of their customers.

References

- Abou Houran, M., Ahmad, S. F., Nutakki, T. U. K., Agrawal, M. K., Ghfar, A. A., Ooi, J. B., Albani, A., & Xie, S. (2023). Numerical simulation and 4E analysis of a steam methane reformingbased multi heat recovery process, producing electricity, methanol, fresh water, heating, and coolant. *Process Safety and Environmental Protection*, *180*, 511–534. https://doi.org/10.1016/j.psep.2023.10.011
- Ahmad, S. F., Alam, M. M., Rahmat, Mohd. K., Mubarik, M. S., & Hyder, S. I. (2022). Academic and Administrative Role of Artificial Intelligence in Education. *Sustainability*, 14(3), 1101. https://doi.org/10.3390/su14031101
- Ahmad, S. F., Alam, M. M., Rahmat, Mohd. K., Shahid, M. K., Aslam, M., Salim, N. A., & Al-Abyadh, M. H. A. (2023). Leading Edge or Bleeding Edge: Designing a Framework for the Adoption of AI Technology in an Educational Organization. *Sustainability*, 15(8), 6540. https://doi.org/10.3390/su15086540
- Ahmad, S. F., Han, H., Alam, M. M., Rehmat, Mohd. K., Irshad, M., Arraño-Muñoz, M., & Ariza-Montes, A. (2023). Impact of artificial intelligence on human loss in decision making, laziness and safety in education. *Humanities and Social Sciences Communications*, 10(1), 311. https://doi.org/10.1057/s41599-023-01787-8
- Ahmad, S. F., Rahmat, Mohd. K., Mubarik, M. S., Alam, M. M., & Hyder, S. I. (2021). Artificial Intelligence and Its Role in Education. *Sustainability*, *13*(22), 12902. https://doi.org/10.3390/su132212902
- Bowling, A., & Browne, P. D. (1991). Social Networks, Health, and Emotional Well-being Among the Oldest Old in London. *Journal of Gerontology*, 46(1), S20–S32. https://doi.org/10.1093/geronj/46.1.S20
- Cattell, V. (2001). Poor people, poor places, and poor health: the mediating role of social networks and social capital. *Social Science & Medicine*, *52*(10), 1501–1516. https://doi.org/10.1016/S0277-9536(00)00259-8
- Cheng, C., Ahmad, S. F., Irshad, M., Alsanie, G., Khan, Y., Ahmad (Ayassrah), A. Y. A. B., & Aleemi, A. R. (2023). Impact of Green Process Innovation and Productivity on Sustainability: The Moderating Role of Environmental Awareness. *Sustainability*, 15(17), 12945. https://doi.org/10.3390/su151712945
- Dong, Y., Ahmad, S. F., Irshad, M., Al-Razgan, M., Ali, Y. A., & Awwad, E. M. (2023). The Digitalization Paradigm: Impacts on Agri-Food Supply Chain Profitability and Sustainability. *Sustainability*, *15*(21), 15627. https://doi.org/10.3390/su152115627
- He, J., Ahmad, S. F., Al-Razgan, M., Ali, Y. A., & Irshad, M. (2024). Factors affecting the adoption of metaverse in healthcare: The moderating role of digital division, and meta-culture. *Heliyon*, *10*(7), e28778. https://doi.org/10.1016/j.heliyon.2024.e28778
- Ibrahim, M., Shahid, M. K., & Ahmed, S. F. (2014). The Impact of Telecom Services Characteristics on Consumer for Use in Pakistan. *Advances in Economics and Business*, 2(4), 172–179. https://doi.org/10.13189/aeb.2014.020403
- Irshad, M., Qureshi, M. A., Saraih, U. N., & Ahmad, S. F. (2023). Impact of institutional climate on the student's engagement and learning outcomes in private sector universities of Karachi. *International Journal of Management in Education*, *17*(3), 297. https://doi.org/10.1504/IJMIE.2023.130674

- Israel, B. A., & Antonucci, T. C. (1987). Social Network Characteristics and Psychological Well-Being: A Replication and Extension. *Health Education Quarterly*, 14(4), 461–481. https://doi.org/10.1177/109019818701400406
- Kawachi, I. (2001). Social Ties and Mental Health. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 78(3), 458–467. https://doi.org/10.1093/jurban/78.3.458
- Khan, Y., Su'ud, M. B. M., Alam, M. M., Ahmad, S. F., Ahmad (Ayassrah), A. Y. A. B., & Khan, N. (2022). Application of Internet of Things (IoT) in Sustainable Supply Chain Management. *Sustainability*, 15(1), 694. https://doi.org/10.3390/su15010694
- Khan, Y., Su'ud, M. B. M., Alam, M. M., Ahmad, S. F., Salim, N. A., & Khan, N. (2022). Architectural Threats to Security and Privacy: A Challenge for Internet of Things (IoT) Applications. *Electronics*, 12(1), 88. https://doi.org/10.3390/electronics12010088
- Krause, M., & Montenegro, C. R. (2017). Community as a multifaceted concept. In APA handbook of community psychology: Theoretical foundations, core concepts, and emerging challenges. (pp. 275–294). American Psychological Association. https://doi.org/10.1037/14953-013
- Muzaffar, M., Chohdhry, S., & Afzal, N. (2019). Social Media and Political Awareness in Pakistan: A Case Study of Youth, *Pakistan Social Sciences Review*, 3 (II), 1-13
- Muzaffar, M., Yaseen. Z., Safdar, S. (2020). Role of Social Media in Political Campaigns in Pakistan: A Case of Study of 2018 Elections, *Journal of Political Studies, 27* (2), 141-151
- Li, C., Ahmad, S. F., Ahmad Ayassrah, A. Y. A. B., Irshad, M., Telba, A. A., Mahrous Awwad, E., & Imran Majid, M. (2023). Green production and green technology for sustainability: The mediating role of waste reduction and energy use. *Heliyon*, 9(12), e22496. https://doi.org/10.1016/j.heliyon.2023.e22496
- Liu, X., Ahmad, S. F., Anser, M. K., Ke, J., Irshad, M., Ul-Haq, J., & Abbas, S. (2022). Cyber security threats: A never-ending challenge for e-commerce. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.927398
- Luo, J., Ahmad, S. F., Alyaemeni, A., Ou, Y., Irshad, M., Alyafi-Alzahri, R., Alsanie, G., & Unnisa, S. T. (2024). Role of perceived ease of use, usefulness, and financial strength on the adoption of health information systems: the moderating role of hospital size. *Humanities* and Social Sciences Communications, 11(1), 516. https://doi.org/10.1057/s41599-024-02976-9
- Ni, L., Ahmad, S. F., Alshammari, T. O., Liang, H., Alsanie, G., Irshad, M., Alyafi-AlZahri, R., BinSaeed, R. H., Al-Abyadh, M. H. A., Abu Bakir, S. M. M., & Ayassrah, A. Y. A. B. A. (2023). The role of environmental regulation and green human capital towards sustainable development: The mediating role of green innovation and industry upgradation. *Journal* of Cleaner Production, 421, 138497. https://doi.org/10.1016/j.jclepro.2023.138497
- Ni, L., Fayaz Ahmad, S., Alsanie, G., Lan, N., Irshad, M., Bin Saeed, R. H., Bani Ahmad, A., & Khan, Y. (2024). Investigating the role of green curriculum in shaping proenvironmental behaviors and environmental values orientation for sustainability. *International Journal of Sustainability in Higher Education*. https://doi.org/10.1108/IJSHE-05-2023-0207
- Peng, Y., Ahmad, S. F., Ahmad, A. Y. A. B., Al Shaikh, M. S., Daoud, M. K., & Alhamdi, F. M. H. (2023). Riding the Waves of Artificial Intelligence in Advancing Accounting and Its

Implications for Sustainable Development Goals. *Sustainability*, *15*(19), 14165. https://doi.org/10.3390/su151914165

- Sandoval-Almazan, R., & Ramon Gil-Garcia, J. (2014). Towards cyberactivism 2.0? Understanding the use of social media and other information technologies for political activism and social movements. *Government Information Quarterly*, *31*(3), 365–378. https://doi.org/10.1016/j.giq.2013.10.016
- Smith, D., Leonis, T., & Anandavalli, S. (2021). Belonging and loneliness in cyberspace: impacts of social media on adolescents' well-being. *Australian Journal of Psychology*, 73(1), 12–23. https://doi.org/10.1080/00049530.2021.1898914
- Song, Y., Ahmad, S. F., Abou Houran, M., Agrawal, M. K., Nutakki, T. U. K., Siddiqui, M. R., Albani, A., & Su, Q. (2023). Multi-variable study of a novel multigeneration system using biogas separation unit and LNG cold energy utilization, producing electricity, cooling, heat, fresh water, liquid CO2, biomethane, and methanol. *Process Safety and Environmental Protection*, 180, 616–638. https://doi.org/10.1016/j.psep.2023.10.023
- Wang, C., Ahmad, S. F., Bani Ahmad Ayassrah, A. Y. A., Awwad, E. M., Irshad, M., Ali, Y. A., Al-Razgan, M., Khan, Y., & Han, H. (2023). An empirical evaluation of technology acceptance model for Artificial Intelligence in E-commerce. *Heliyon*, 9(8), e18349. https://doi.org/10.1016/j.heliyon.2023.e18349
- Wu, J., Ahmad, S. F., Jaweria, Ali, Y. A., Al-Razgan, M., Awwad, E. M., & Bani Ahmad Ayassrah, A. Y. A. (2024). Investigating the role of green behavior and perceived benefits in shaping green car buying behavior with environmental awareness as a moderator. *Heliyon*, 10(9), e30098. https://doi.org/10.1016/j.heliyon.2024.e30098
- Xiao, Y., Ahmad, S. F., Irshad, M., Guo, H., Mahmoud, H. A., Awwad, E. M., & Khan, Y. (2024). Investigating the mediating role of ethical issues and healthcare between the metaverse and mental health in Pakistan, China, and Saudi Arabia. *Humanities and Social Sciences Communications*, *11*(1), 441. https://doi.org/10.1057/s41599-024-02643-z
- Zhan, Y., Ahmad, S. F., Irshad, M., Al-Razgan, M., Awwad, E. M., Ali, Y. A., & Ahmad Ayassrah, A. Y. A. B. (2024). Investigating the role of Cybersecurity's perceived threats in the adoption of health information systems. *Heliyon*, 10(1), e22947. https://doi.org/10.1016/j.heliyon.2023.e22947