

Emerging Trends In Ict Utilization For Social Informatics Research: A Saudi Arabian And Jordan Perspective

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Abstract

This study explores the impact of information and communication technology (ICT) on social informatics, with a particular focus on Saudi Arabia and Jordan. The objective is to gain a comprehensive understanding of the utilization of Information and Communication Technology (ICT) in these countries and its impact on the outcomes of research. This qualitative study involved conducting in-depth interviews with individuals engaged in social informatics research, including researchers, professors, and professionals. The material acquired is subject to thematic evaluation in order to derive significant insights. The study's findings reveal the emergence of several noteworthy patterns. The advent of information and communication technology has enabled scientists to analyze extensive databases, resulting in comprehensive and refined discoveries. The proliferation of internet usage in contemporary society has resulted in the emergence of a significant impediment known as the digital divide. Capacity development and training programs are deemed essential for researchers to optimize their utilization of ICT tools and approaches. It is emphasized that the optimal utilization of Information and Communication Technology (ICT) in social informatics research necessitates the imperative collaboration among academia, business, and government.

Keywords: ICT, Social Informatics, Research Emerging Trends.

Introduction

The utilization of Information and Communication Technology (ICT) plays a significant role in shaping various aspects of contemporary society, including the field of social informatics. The integration of Information and Communication Technology (ICT) in research has facilitated the creation and experimentation of novel methodologies, data collection techniques, and analytical approaches (Aharony et al., 2011). The objective of this study is to investigate contemporary advancements in social informatics research that employ information and communication technologies, as perceived from the perspectives of Saudi Arabia and Jordan.

The significance of investigating novel ICT adoption patterns for the domain of social informatics cannot be overstated. The significance of comprehending the effective implementation of ICT in research is escalating due to the growing interconnectedness and digital mediation of society (Srivastava & Panigrahi, 2019). This necessitates keeping pace with the constantly evolving nature of social phenomena. By assessing the changing trends in the consumption of information and communication technology (ICT), researchers can enhance the caliber and comprehensiveness of their investigations, generate novel perspectives, and address societal issues with greater efficacy.

The advancement of state-of-the-art technologies such as big data analytics, artificial intelligence, and the Internet of Things (IoT) has had a significant impact on the field of social informatics, as noted by Akbulut (2020). Contemporary researchers have the capacity to collect and scrutinize extensive quantities of data, thereby enabling them to gain deeper insights into social phenomena and detect hitherto undiscovered patterns. The field of social informatics has utilized big data analytics to explore complex social networks and uncover fundamental social dynamics in real-world scenarios, as demonstrated by Aharony et al. (2011). The utilization of artificial intelligence and machine learning techniques on extensive datasets has enabled scholars to formulate more accurate prognostications and gain a deeper understanding of the mechanisms governing social systems.

The acceptance and utilization of ICT in research is contingent upon various factors such as infrastructure, legislative

frameworks, and organizational support, as noted by Attallah et al. (2021). Within the realm of social informatics research, it is imperative to comprehend the current state of information and communication technology (ICT) utilization in Saudi Arabia and Jordan to discern potential hindrances and opportunities. The integration of ICT in the education and healthcare sectors of Jordan has shown significant progress (Al-Hassan, 2018). However, despite the advancements, there exist certain hindrances that impede its widespread adoption (Mdanat et al., 2018). In contrast, Saudi Arabia has implemented measures aimed at promoting the utilization of Information and Communication Technology (ICT) in Research and Development (R&D) through the initiation of programs geared towards enhancing innovation and collaboration, as posited by Elbanna & Mahama (2019). An exploration of the experiences and perspectives of researchers in these countries can provide insights into the distinct opportunities and challenges they encounter when utilizing ICT for social informatics research (Wulf et al., 2021).

The present research contributes to the existing body of literature by offering a regional outlook on the increasing patterns of information and communication technology (ICT) utilization for social informatics research. The study places particular emphasis on the viewpoints of Saudi Arabia and Jordan. This study aims to gain insights into the extent of ICT adoption in various countries and the potential and obstacles they encounter when utilizing ICT for social informatics research. The findings of this research will provide valuable insights for scholars, policymakers, and professionals who seek to effectively incorporate emerging technologies into their work, while also considering the unique cultural and social customs prevalent in Saudi Arabia and Jordan.

This study holds significant academic value as it adopts a regional perspective to examine the perspectives of Saudi Arabia and Jordan in order to discern emerging patterns in the utilization of ICT within the domain of social informatics research. The objective of this research is to contribute to the growing field of social informatics and provide direction for future research and policy decisions (Guha & Kumar, 2018). This will be achieved by analyzing the implementation of

information and communication technology (ICT) in various contexts, identifying challenges, and highlighting opportunities.

Research Objective

The main objective of this research is to investigate the present condition and potential future of utilizing information and communication technologies (ICTs) in social informatics research, as perceived from the perspectives of Saudi Arabia and Jordan. The present study aims to contribute to the existing knowledge on the utilization of Information and Communication Technologies (ICTs) in social informatics research. Specifically, it seeks to provide insights into the prevailing and prospective patterns, challenges, and opportunities in the context of Saudi Arabia and Jordan. The outcomes of this study are expected to have practical implications for decision-makers, scholars, and professionals, offering recommendations on the optimal utilization of ICT in social informatics research and promoting economic development in emerging economies.

Literature Review and Previous Studies

The area of social informatics investigates the bidirectional relationship between information technology and social occurrences, exploring the potential impact of technology on society and vice versa. In recent years, there has been a significant surge in the utilization of information and communication technology (ICT) in social informatics research, leading to innovative approaches in conducting studies within this domain (Smutny & Vehovar, 2020). This section presents a comprehensive review of the existing literature pertaining to the utilization of information and communication technologies in the field of social informatics. The analysis primarily centers on the perspectives of Saudi Arabia and Jordan.

The utilization of Information and Communication Technology (ICT) in the field of social informatics research has demonstrated transformative outcomes. A study conducted by Aharony et al. (2011) entitled "Social fMRI" demonstrated the potential of mobile sensing devices enabled by information and communication technology (ICT) to investigate and impact social systems in natural settings. The discourse revolved around the potential utilization of mobile devices for in-depth examination of social interactions (Ahmed, et al., 2017).

Against the backdrop of the Fourth Industrial Revolution, Akbulut (2020) expounded upon novel technological advancements, innovative practices, and entrepreneurial pursuits. The significance of utilizing information and communication technologies and recent advancements, such as artificial intelligence and the Internet of Things (IoT), in social informatics research was underscored by the author. The technological advancements have created novel avenues for acquiring data and comprehending societal concerns.

The extent and geographical distribution of ICT utilization among researchers varies across nations and regions. Mumtaz (2000) conducted a case study in Jordan to examine the factors that influence students' utilization of information and communication technology (ICT) for educational purposes. The study conducted by the researchers demonstrated that the availability of appropriate technological resources, adequate training, and supportive administrative policies were essential factors in enhancing the utilization of information and communication technologies (ICTs) within educational settings. The present study underscores the importance of contextual factors in social informatics research pertaining to the utilization of information and communication technologies.

Attallah (2020) presented a comprehensive analysis of the utilization of Information and Communication Technology (ICT) in Saudi Arabia, with a particular emphasis on the challenges faced by the country and the anticipated advancements in this field. The study underscored the significance of strategies and programs that promote the adoption of information and communication technology (ICT) in research and development (R&D) endeavors. The impact of Information and Communication Technology (ICT) on Research and Development (R&D) in Saudi Arabia was examined by Elbanna & Mahama (2019). Their study emphasized the potential of ICT to enhance research outcomes and stimulate innovative practices.

The burgeoning popularity of big data analytics has significantly influenced the domain of social informatics (Kumar & Singh, 2018). The study conducted by Dutton & Blank (2011) examined the concept of "next-generation users" and the importance of big data analytics in ascertaining user

preferences. The authors drew attention to the potential of analyzing large datasets to gain insights into societal dynamics and inform policy decisions.

The utilization of artificial intelligence (AI) and machine learning techniques has experienced an upsurge in social informatics research (Duan et al., 2019).. Castells (2009) emphasized the potency of communication and underscored the potential for artificial intelligence to revolutionize social systems. The utilization of AI and machine learning enables researchers to analyze vast amounts of data, make precise prognostications, and attain a deeper understanding of complex social phenomena (MacEachern & Forkert, 2021).

The employment of Information and Communication Technology (ICT) in social informatics research has witnessed a significant advancement with the advent of the Internet of Things (IoT). The Internet of Things (IoT) facilitates the acquisition of contemporaneous data on social interactions and environmental factors by interlinking diverse devices and sensors. The aforementioned statement by Dutton & Blank (2011) highlights the potential for conducting research on social phenomena within their authentic environments.

The emergence of mobile technology has also had an impact on the methodologies employed in social informatics research. The advent of smartphones and mobile applications has facilitated novel prospects for data collection, communication, and engagement of participants. In practical scenarios, scholars may employ mobile technology to conduct surveys, interviews, and gather data in real-time (Aharony et al., 2011).

Existing literature frequently underscores the transformative capacity of employing information and communication technology (ICT) within the realm of social informatics research. Scholars have emphasized the importance of advancements such as big data analytics, artificial intelligence, the Internet of Things, and mobile technologies. Nonetheless, a scarcity of literature exists regarding the utilization of Information and Communication Technology (ICT) in Saudi Arabia and Jordan. The present study aims to address the aforementioned gap in knowledge by examining the perspectives of researchers in the aforementioned countries, exploring the potential opportunities and challenges they encounter, and providing

suggestions for enhancing the utilization of information and communication technology in the field of social informatics research.

Methods

This study employed a qualitative methodology to investigate the recent advancements in the utilization of Information and Communication Technology (ICT) in social informatics research, with a particular emphasis on Saudi Arabia and Jordan. The research encompassed various aspects such as data collection, sampling techniques, ethical considerations, and data analysis.

Initially, a global examination of literature pertaining to the utilization of information and communication technology (ICT) in the domain of social informatics research was conducted. Subsequently, a more focused literature review was carried out, specifically analyzing studies conducted in Saudi Arabia and Jordan. The determination of the current state of knowledge and identified gaps in the subject matter was conducted through a comprehensive review of pertinent scientific literature, reports, and publications.

The methodology employed for data collection involved conducting in-depth interviews. The study employed purposive sampling technique to select participants from Saudi Arabia and Jordan who possessed expertise and experience in the field of social informatics research. Individuals who employ and leverage ICT for academic purposes, such as researchers, professors, and professionals, were present at the event. The study employed both face-to-face and virtual video interviews to investigate the participants' perceptions and encounters with diverse facets of integrating information and communication technology (ICT) into social informatics research.

The interviews were transcribed verbatim and subsequently analyzed using thematic analysis. Multiple stages of data analysis were conducted. Initially, the transcripts were thoroughly examined multiple times to familiarize oneself with the data. Subsequently, we generated initial codes to facilitate the identification of significant data segments related to the emergence of patterns in our utilization of Information and Communication Technology (ICT). The aforementioned identifiers have been organized into broad classifications. The

themes underwent iterative modification, examination, and categorization to ensure their relevance and interrelatedness. The final themes observed in social informatics research indicate the evolving patterns in the utilization of information and communication technologies.

Results

Importance of ICT in Social Informatics Research

"By giving academics access to cutting-edge resources and methods, ICT has dramatically advanced the field of social informatics. Recent developments in big data analytics have made it possible to examine massive databases, allowing us to better understand societal events by discerning previously unseen patterns."

The aforementioned statement exemplifies the increasingly widespread agreement that Information and Communication Technology (ICT) has brought about a transformative impact on the domain of social informatics. The importance of utilizing big data analytics to gain novel insights and enhance comprehension of complex social dynamics is emphasized.

"Information and communication technology have provided fresh opportunities for studying and gathering information. Researchers may connect with people in their natural settings using mobile technology, gathering richer, more nuanced data on social interactions."

This statement underscores the importance of mobile technology within the realm of social informatics. In order to enhance comprehension of social interactions and contextual factors, there is a focus on the ability of researchers to collect data in naturalistic environments.

Challenges in ICT Utilization for Social Informatics Research

"The digital gap is one of the obstacles we must overcome. There are still pockets of the population without enough access to technology and digital literacy, despite developments in ICT. This creates a barrier to achieving diversity in our study population."

The aforementioned quotation exemplifies the issue of the digital divide, which arises due to the unequal distribution of technological resources and digital competency among various

segments of the population. Ensuring diversity in social informatics research highlights the importance of closing this divide.

" When using ICT for research, privacy and security of data are key problems. There has to be strict safeguards in place to preserve people's privacy and keep data secure, especially in light of the growing trend of collecting and analyzing personal information."

In the context of using information and communication technology (ICT) for social informatics research, the aforementioned statement brings to light the difficulty of protecting the confidentiality of research data. The declaration highlights how important it is to establish stringent safeguards to ensure the confidentiality of persons and the veracity of information that is gathered.

Opportunities for ICT Utilization in Social Informatics Research

" There are promising new avenues to explore in the field of social informatics thanks to the development of AI. We can learn a lot about public opinion and societal trends by using AI-powered algorithms to scan social media data and look for patterns."

The use of artificial intelligence (AI) in the field of social informatics is shown by the citation that follows as an example. This demonstrates the effectiveness of AI algorithms in analyzing enormous volumes of data from social media in order to uncover significant patterns. These patterns have the potential to give insights on changes in public attitude and cultural shifts.

" With the use of ICT, new kinds of cross-disciplinary partnerships may be formed. Researchers from many fields are now able to collaborate through digital platforms and communication technologies, bringing unique insights to bear on challenging societal problems."

The aforementioned statement serves as an explanation of how the subject of social informatics may gain benefits from the usage of information and communication technology for the purpose of cooperation, and it exemplifies these advantages in a manner that is clear and concise. The essay places a strong emphasis on the role of digital platforms and communication

technologies in easing the process of multidisciplinary cooperation and bringing together a variety of viewpoints and areas of expertise for the purpose of resolving complex problems facing society.

Strategies for Effective ICT Utilization in Social Informatics Research

" In order for researchers to make successful use of ICT in social informatics research, capacity development and training programs are essential. It is possible to improve researchers' use of ICT tools and procedures if they are equipped with the appropriate knowledge and skills."

This statement highlights the significance of establishing training and capacity-building programs in order to improve the researchers' ability to use information and communications technology (ICT). The need of educating and training researchers in order for them to make effective use of information and communication technology (ICT) resources and procedures in the area of social informatics research is emphasized by the statement.

" In order to fully use ICT in social informatics research, collaboration between academic institutions, private companies, and public agencies is essential. We can build a thriving ecosystem that promotes innovation and helps us tackle social problems if we work together and pool our resources."

In the field of social informatics research, the aforementioned remark is a perfect example of how important it is for academic institutions, business entities, and governmental bodies to work together in joint initiatives. The necessity of working together and sharing resources is emphasized throughout the document in order to foster innovation and solve pressing issues facing society.

Impacts of ICT Utilization on Social Informatics Research Outcomes

" Thanks to advances in information and communication technology, we were able to recruit a more representative sample of the population at large. By using the internet and

other digital resources, we can contact people from all walks of life and collect more nuanced data."

The aforementioned remark exemplifies how the incorporation of information and communication technology into the process of recruiting and assembling study participants for social informatics research has resulted in a significant paradigm shift in this previously described procedure. This remark highlights the ability of online platforms and digital technology to promote greater involvement between academics and people, which ultimately results in the production of a dataset that is more varied and conclusions that are more thorough.

" With the help of modern communication technologies, academic results may now reach a bigger audience and have a greater influence. Sharing our findings with a worldwide audience via the internet and social media increases the rate at which new information spreads and motivates people to take action for the better."

This instance exemplifies the potential of information and communication technology in facilitating the dissemination of newly discovered facts and findings. The statement highlights the significance of online platforms and social media as a means for academics to reach a worldwide audience, thereby facilitating the exchange of information and generating favorable outcomes for society.

Discussion

The current investigation conducted in Saudi Arabia and Jordan can be juxtaposed with previous research endeavors that have examined the role of information and communication technology (ICT) in the domain of social informatics. Numerous investigations have examined various aspects of Information and Communication Technology (ICT) utilization, including its impact on research outcomes, hindrances to implementation, and prospective remedies.

In 2018, Smith and colleagues conducted an investigation examining the impact of information and communication technology (ICT) on research outcomes within the domain of social informatics. The utilization of ICT tools and platforms has been demonstrated to enhance the process of data collection and analysis, resulting in more comprehensive and refined

outcomes. The findings of the current study align with this assertion, as the respondents highlighted the significance of information and communication technology (ICT) in enabling researchers to analyze vast amounts of data and gain deeper insights into societal phenomena.

Ivezić et al. (2019) conducted a study to examine the challenges that scientists encounter while utilizing ICT for social informatics research. The study revealed that the digital divide significantly impeded the capacity of specific demographics to obtain and utilize digital resources and expertise. The present study's results align with this conclusion, as participants acknowledged the challenge posed by the digital divide and emphasized the significance of incorporating diversity in utilizing ICT for scientific inquiry.

The issue of efficient use of ICT was investigated by Bhowal (2020), who determined that capacity development and training programs played a crucial role. The effectiveness of researchers in utilizing information and communication technology (ICT) tools and procedures was found to enhance subsequent to undergoing training in these domains. The findings of this study suggest that enhancing researchers' ICT skills through training and capacity-building programs is crucial to facilitate the utilization of ICT tools in social informatics research, as emphasized by the study participants.

Wang et al. (2021) conducted a study aimed at investigating the impact of Information and Communication Technology (ICT) on the recruitment process and diversity of research participants. The utilization of ICT-enabled platforms and tools was found by researchers to enable the recruitment of a more comprehensive sample of the general population. The current study's participants highlighted the potential of ICT to engage individuals from diverse backgrounds and perspectives, thereby enhancing the research process. This finding aligns with the study's overall conclusion.

Furthermore, the study conducted by He et al. (2019) examined the influence of technology on the dissemination of research. The authors found that the utilization of the internet and social media platforms provided researchers with a novel avenue to distribute their discoveries to a global audience, thereby facilitating the dissemination of knowledge and instigating

positive measures. In accordance with this finding, respondents of the current study recognized the importance of information and communication technology (ICT) in enhancing the distribution of research outcomes and facilitating greater impact.

The aforementioned studies shed light on the utilization of ICT in social informatics. However, it is important to acknowledge that their focus may have been on a distinct geographical or study area. The current study's results demonstrate the challenges, opportunities, and strategies for effective utilization of information and communication technology (ICT) in social informatics research, with a specific emphasis on Saudi Arabia and Jordan.

The present study reveals similarities and intersections in the importance of ICT within the realm of social informatics research, when compared to previous studies. As a result, it can be concluded that there is a certain level of consistency in this regard. The findings are in line with previous research regarding the impact of ICT on research results, the challenges faced during implementation, strategies for successful adoption, and the significance of ICT in recruiting participants and disseminating information. The consistent outcomes of this study enhance our understanding of the utilization of ICTs by researchers, paving the way for novel avenues of investigation and progress in the field of social informatics.

Conclusion

The findings of the study shed light on emerging patterns in the utilization of Information and Communication Technology (ICT), revealing current methodologies, technological advancements, and challenges in Saudi Arabia and Jordan as observed by researchers. The research has illuminated the transformative function of Information and Communication Technology (ICT) within the field of social informatics, including the utilization of big data analytics, mobile technologies, and artificial intelligence. The aforementioned has underscored the imperative of mitigating the digital divide and implementing educational and skill-enhancing programs to optimize the utilization of information and communication technologies.

Furthermore, the research has contributed to the field by examining the challenges that researchers encounter, such as

concerns regarding data privacy and security, as well as the benefits that information and communication technology (ICT) provides, such as increased participant engagement and wider dissemination of research findings. The aforementioned discoveries possess the capability to impact policy and practice through their ability to provide guidance for the development of endeavors, collaborations, and other undertakings that strive to optimize the benefits of social informatics research utilizing ICT.

Furthermore, the research has contributed to filling a gap in knowledge by providing scholars in Saudi Arabia and Jordan with a locally relevant perspective on the utilization of ICT in social informatics research. The aforementioned work has made a valuable contribution to the existing knowledge in the field and has the potential to serve as a basis for comparative research and further exploration in related domains.

The present study addresses a void in the current body of literature and enhances the domain of research on the utilization of ICT for social informatics research. It accomplishes this by furnishing a contextualized comprehension, detecting emerging patterns, scrutinizing obstacles and prospects, and presenting recommendations for policy and practice.

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