

Impact Of ICT On Social Science Research Process: Evidence From Saudi Arabia And Jordan

Dr. Mohamad Ahmad Saleem Khasawneh

Assistant Professor, Special Education Department,
King Khalid University, Saudi Arabia, mkhasawneh@kku.edu.sa.
<https://orcid.org/0000-0002-1390-3765>

Abstract

The objective of this research is to contribute to the extant literature by conducting a comparative analysis of the outcomes of this inquiry on the adoption, benefits, and challenges of information and communication technologies. A quantitative research methodology was employed to collect data through a survey administered to scholars in both countries. Descriptive statistics were employed to analyze the data, resulting in insights regarding the prevalence of information and communication technology (ICT) usage, the most commonly utilized methods for data collection and analysis, as well as the perceived benefits and drawbacks associated with the integration of ICT. The findings indicate that the rates of ICT adoption in Saudi Arabia and Jordan are comparable, despite prevailing misconceptions. Online surveys have emerged as the preferred mode of data collection in both countries, superseding traditional methods such as interviews and document analysis. The predominant approach to data analysis involved the utilization of statistical tools, with supplementary use of qualitative analysis software. The integration of Information and Communication Technology (ICT) is purported to yield several benefits such as enhanced productivity, improved data management, and increased cooperation. However, there are also several challenges associated with this integration, including limited resources, inadequate digital skills, and ethical concerns.

Keywords: ICT, Social Science, Research, Comparison.

Introduction

In recent years, there has been an increase in the utilization of Information and Communication Technology (ICT) in social science research. Globally, researchers are enhancing their efficiency through the utilization of information and communication technologies. Al-Maliki (2013) conducted a study in Saudi Arabia to investigate the utilization of information and communication technology (ICT) in social science research. Their research focused on identifying the factors that motivated researchers to adopt these methods. The study has identified crucial factors that drive the adoption of ICT, such as the presence of technological infrastructure, the proficiency of researchers, and institutional backing.

Abuhashesh et al. (2021) conducted a study to examine the effects of the implementation of novel technologies on social science research in Jordanian academic institutions. The study emphasized advantages such as increased productivity, improved data management, and enhanced collaboration among researchers. Furthermore, the authors drew attention to the requirements of researchers, including the provision of training and support to enable the effective utilization of information and communication technology (ICT) tools.

The utilization of information and communication technology (ICT) within the realm of social science research possesses the capacity to fundamentally transform the methods by which data is collected (Selwyn et al., 2003). A study conducted by Alqurashi et al. in 2015 examined the utilization of mobile devices by social science researchers for the purpose of information gathering. The utilization of mobile devices was found to have a positive impact on data collection, precision, and the duration of data entry and cleansing.

The impact of Information and Communication Technology (ICT) on social science research is evident in the realm of data processing and interpretation. Faheem et al. (2019) conducted a study in Pakistan to examine the utilization of statistical software for the purpose of data analysis. The importance was emphasized regarding researchers acquiring the requisite skills to effectively utilize statistical software for intricate inquiries.

The utilization of Information and Communication Technology (ICT) has brought about a transformation in the collaborative practices and information sharing methods employed by

scientists. Al-Rahmi et al. (2018) conducted a study to investigate the potential of social media in enhancing interdisciplinary collaboration. The researchers were able to collaborate across geographical boundaries and disciplinary boundaries due to the convenience of sharing and discussing their research outcomes on social media platforms.

The utilization and adoption of information and communication technology (ICT) in social science research practices in Saudi Arabia and Jordan have been influenced by various factors. Al Zayer et al. 2019) conducted an empirical investigation in Jordan to identify the factors that influence the utilization of information and communication technology (ICT) in social science research. The level of integration of ICT was found to be influenced significantly by the perspectives of researchers, the accessibility of funding, and the support provided by institutions.

The incorporation of information and communication technologies in social science research has raised the issue of research ethics. The study conducted by Aljoumaa et al. (2018) examined the challenges and ethical considerations associated with conducting social science research through the utilization of information and communication technologies (ICT) and online platforms. The importance of safeguarding the privacy and confidentiality of research subjects when utilizing information and communication technology (ICT) tools for research purposes was emphasized.

Therefore, the integration of Information and Communication Technology (ICT) in social science research procedures has the capability to revolutionize the field by providing researchers with advanced tools and techniques to enhance data collection, analysis, collaboration, and dissemination. Studies conducted in Saudi Arabia and Jordan shed light on the advantages, challenges, and contextual factors that influence the adoption and utilization of information and communication technology (ICT) in social science research. In order to fully harness the potential of ICT and advance the field of social science research, it is imperative for researchers, policymakers, and academic institutions to comprehend the impact of ICT on the research process in these countries.

Research Objective

The primary objective of this study is to examine the impact of information and communication technology (ICT) on the research methodology employed in social science studies conducted in Saudi Arabia and Jordan. The outcomes of this study will provide valuable insights for scholars, decision-makers, and educational establishments in Saudi Arabia and Jordan, facilitating their endeavors to optimize the advantages of information and communication technologies (ICT). Moreover, the findings will assist in overcoming challenges and promoting the utilization of data to guide social science policy. The comparative analysis between Saudi Arabia and Jordan can facilitate mutual learning and establish a foundation for future collaborative research initiatives and advancements.

Literature Review and Previous Studies

The investigation of the impact of information and communication technologies on the field of social science is informed by various theoretical frameworks. The Technology Acceptance Model (TAM) developed by Davis et al. (1989) is frequently employed to examine the factors that influence the inclination of researchers to adopt and utilize information and communication technology (ICT). As per the Technology Acceptance Model (TAM), individuals' inclination to adopt technology is significantly impacted by their perceptions of the technology's usefulness and ease of use. The Technology Acceptance Model (TAM) has been employed by scholars in Saudi Arabia and Jordan to examine the integration of information and communication technologies within the realm of social science research.

The Innovation Diffusion Theory (IDT) proposed by Rogers (1995) has been employed to examine the proliferation of Information and Communication Technology (ICT) within academic environments. The critical variables in IDT that influence the rate of adoption of new technologies include innovation characteristics, adopter traits, and the social system. Al-Rahmi et al. (2021) conducted a study utilizing IDT to examine the integration of ICT by researchers in Saudi Arabia in their exploration of social issues.

Numerous studies have been conducted on the utilization of information and communication technology (ICT) tools and technologies in social science research procedures. Alshurideh

et al. (2021) conducted a study on the influence of information and communication technology (ICT) on academic research in the field of social sciences within universities in Jordan. The researchers found that scholars employed information and communication technologies (ICTs) for diverse purposes, including conducting literature reviews, gathering data, performing analyses, and collaborating with colleagues. In a study conducted by Al-Rahmi et al. (2021), an analysis was performed on the adoption of ICT in research institutes in Saudi Arabia. The study yielded similar findings to previous research, highlighting the significance of accessible infrastructure, proficient researchers, and institutional backing.

The significance of mobile devices has increased in the domain of data collection. The utilization of mobile devices for data collection may prove to be advantageous for social science researchers, as evidenced by the findings of Alqurashi et al (2022). The rationale behind the utilization of mobile devices is attributed to their ability to facilitate real-time data collection, enhance data precision, and reduce the duration required for data input and cleaning.

The incorporation of Information and Communication Technology (ICT) has significantly influenced the handling and analysis of data. Faheem et al. (2019) underscored the benefits of employing statistical software for intricate data analysis in their study on the utilization of statistical software in social science research in Pakistan. The importance of researchers acquiring the requisite knowledge and skills to effectively utilize these resources was emphasized.

The integration of Information and Communication Technology (ICT) in social science research has been demonstrated to yield numerous benefits. Abuhashesh et al. (2021) have identified several advantages of information and communication technology, such as enhanced efficiency, improved data management, increased collaboration among researchers, and wider dissemination of research findings. Al-Rahmi et al. (2018) demonstrated that the adoption of ICT in research institutes in Saudi Arabia resulted in enhanced research efficiency and improved accessibility to research resources.

Notwithstanding, there exist impediments to the assimilation of Information and Communication Technology (ICT) into social

science research. Alrashidi (2023) have identified specific impediments that hinder the extensive adoption of information and communication technologies (ICT) in Jordan. It is imperative to consider ethical considerations when utilizing information and communication technology (ICT) for research purposes. Ahmad et al. (2019) conducted an investigation into ethical issues related to the utilization of ICT tools and online platforms, covering subjects such as data privacy, confidentiality, and informed consent.

Studies have been conducted to compare the utilization of information and communication technologies (ICT) in social science research between Saudi Arabia and Jordan. According to the research conducted by Al-Gahtani et al. (2007) there exists a disparity in the adoption rates of ICT tools among nations, with Saudi Arabian academics exhibiting a lower tendency to utilize such tools in comparison to their peers in other countries. Al Rashidi & Alhumaidan, (2017) discovered that the utilization of ICT in social science research in Jordan was influenced by factors such as institutional support and resource availability, which stands in contrast to the conditions observed in the Saudi Arabian environment.

Previous studies have emphasized the importance of incorporating Information and Communication Technology (ICT) into research procedures within the social sciences. The broad adoption of ICT tools and technology has led to enhancements in productivity, data management, collaboration, and the dissemination of research findings. However, there exist impediments that must be surmounted, including insufficient resources, limited knowledge, inadequate education, and deficient ethical standards. Comparative studies between Saudi Arabia and Jordan have shed light on the contextual factors that influence the adoption of information and communication technology (ICT) in these countries. The present study contributes to the extant literature on the utilization of information and communication technologies in social science research within the contexts of Saudi Arabia and Jordan.

Methods

A quantitative research methodology was employed to investigate the impact of ICT on social science research in Saudi

Arabia and Jordan. The present study aimed to obtain a quantitative understanding of the effects of ICT adoption on various research types. To this end, pertinent data was gathered and analyzed. The methodology employed in this study involved the conceptualization of the research design, collection of pertinent data, identification of a representative sample, analysis of the findings, and implementation of any requisite ethical safeguards.

The investigators employed a cross-sectional research design to gather data in a single instance. This configuration facilitates a comprehensive examination of the impact of information and communication technology on methodologies employed in social science research. The principal aim of the investigation was to gather information regarding the viewpoints and encounters of researchers concerning the integration, benefits, and applications of Information and Communication Technology (ICT).

The primary modality employed for data collection was a survey instrument in the form of a questionnaire. The survey comprises a set of methodical inquiries pertaining to the utilization of information and communication technology (ICT) in social science research. These inquiries encompass various aspects such as data acquisition, data interpretation, teamwork, and distribution. For the purpose of enhancing participation rates and facilitating convenience, the survey was exclusively administered through online means.

The study's cohort comprised of professors and researchers hailing from Saudi Arabia and Jordan, who specialize in the domain of social science. The study employed a purposive sampling technique to select participants who possessed research proficiency and demonstrated a willingness to partake in the research. The study participants were recruited through a comprehensive utilization of their professional and academic networks, in addition to online resources, as per the findings of the researchers.

The data obtained was subjected to statistical methods to obtain quantitative insights. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to characterize the data obtained from the study participants. A comparative analysis was conducted to

examine the adoption and utilization of Information and Communication Technology (ICT) in Saudi Arabia and Jordan, with the aim of identifying the primary distinctions and similarities between the two nations.

Results

Table 1: Participants' Demographic Information

Demographic	Saudi Arabia	Jordan
Gender (Male/Female)	75 (60%)	50 (40%)
Age (years)	Mean: 38.5	Mean: 42.2
	SD: 6.2	SD: 5.8

Table 1 displays the demographic information pertaining to the participants from Saudi Arabia and Jordan. The sample from Saudi Arabia consisted of 75 male participants, accounting for 60% of the total sample, and 50 female individuals, accounting for 40% of the total sample. The mean age of the Saudi Arabian participants was 38.5 years, with a standard deviation (SD) of 6.2 years. The Jordanian sample exhibited a gender distribution of 60% female (75 individuals) and 40% male (50 individuals). The study found that the Jordanian participants had an average age of 42.2 years with a standard deviation of 5.8 years.

Table 2: ICT Adoption in Social Science Research

ICT Adoption	Saudi Arabia	Jordan
Data Collection Methods		
- Online Surveys	90 (72%)	80 (64%)
- Interviews	50 (40%)	60 (48%)
- Document Analysis	30 (24%)	40 (32%)
Data Analysis Techniques		
- Statistical Software	85 (68%)	90 (72%)
- Qualitative Analysis Software	40 (32%)	35 (28%)

Table 2 illustrates the utilization of technology in enhancing social science research in nations such as Saudi Arabia and Jordan. The study findings indicate that a majority of the Saudi Arabian participants, specifically 72%, reported utilizing online polls as their preferred method of data collection. In-person interviews were reported by 40% of the participants, while 24% stated that they relied on document analysis. The data analysis was conducted by 85 participants, which accounts for 68% of the total sample, through the utilization of statistical software. On the other hand, 40 participants, which represents 32% of

the sample, employed qualitative analysis software to analyze the data. In the Jordanian sample, a majority of 64% reported utilizing online surveys, whereas 48% acknowledged conducting interviews and 32% reported analyzing documents. Seventy-two percent of the participants utilized statistical software while twenty-eight percent employed qualitative analysis software to analyze the data.

Table 3: Benefits and Challenges of ICT Integration

Benefits/Challenges	Saudi Arabia	Jordan
Benefits		
- Increased Productivity	70 (56%)	65 (52%)
- Improved Data Management	80 (64%)	75 (60%)
- Enhanced Collaboration	55 (44%)	60 (48%)
Challenges		
- Limited Resources	45 (36%)	50 (40%)
- Lack of Digital Skills	60 (48%)	55 (44%)
- Ethical Considerations	35 (28%)	40 (32%)

Table 3 enumerates the benefits and drawbacks associated with the utilization of Information and Communication Technology (ICT) in social science research conducted in Saudi Arabia and Jordan. The results of the survey indicate that 56% of the Saudi Arabians surveyed (n=70) identified better data management as a positive outcome, while 64% (n=80) cited more effective teamwork, and 44% (n=55) reported both outcomes as positive. The survey results revealed that 36% of the participants identified limited resources as a challenge, while 48% reported a deficiency in digital skills. Additionally, ethical concerns were raised by 28% of the respondents. The Jordanian sample reported that 65 individuals (52%) cited an increase in productivity, 75 participants (60%) indicated improved data management, and 60 individuals (48%) mentioned enhanced cooperation. The study revealed that a considerable proportion of the respondents, specifically 40 percent, identified limited resources as a major challenge. Additionally, 44 percent of the respondents cited a lack of digital skills as a significant obstacle, while 32 percent emphasized ethical concerns.

Table 4: Comparison of Reported Benefits of ICT Integration

Reported Benefits	Saudi Arabia	Jordan
Increased Productivity	70 (56%)	65 (52%)
Improved Data Management	80 (64%)	75 (60%)
Enhanced Collaboration	55 (44%)	60 (48%)

Table 4 presents a comparative analysis of the benefits of integrating ICT in social science research in Saudi Arabia and Jordan. The findings indicate that the benefits encountered by both countries were similar in nature. A total of 69 individuals in Saudi Arabia reported an improvement in productivity, while 80 individuals reported enhanced data management, and 55 individuals reported improved cooperation. The study findings indicate that a majority of the respondents, specifically 65 individuals (equivalent to 52% of the sample), reported an increase in their productivity levels upon working in Jordan. Additionally, 75 respondents (60% of the sample) expressed an improvement in their ability to manage data, while 62 individuals (48% of the sample) reported an enhancement in their collaborative work practices.

Table 5: Comparison of Reported Challenges of ICT Integration

Reported Challenges	Saudi Arabia	Jordan
Limited Resources	45 (36%)	50 (40%)
Lack of Digital Skills	60 (48%)	55 (44%)
Ethical Considerations	35 (28%)	40 (32%)

Table 5 presents a comparative analysis of the challenges encountered by scholars in Saudi Arabia and Jordan while integrating ICT into their social science research. The findings suggest that scholars in both countries encounter similar challenges. The survey results revealed that a significant proportion of the respondents in Saudi Arabia, specifically 36%, identified a dearth of financial resources as a major challenge. Additionally, 48% of the participants reported a lack of proficiency in digital skills, while 28% emphasized the importance of ethical considerations. In Jordan, a significant proportion of respondents (40%) reported insufficient financial resources, while a slightly higher percentage (44%) identified a lack of proficiency in digital skills as a barrier. Additionally, a notable proportion of participants (32%) emphasized the importance of upholding ethical principles.

Discussion

The present investigation offers significant perspectives on the utilization of Information and Communication Technology (ICT) in social science research within the contexts of Saudi Arabia and Jordan, as evidenced by its findings. The implications of these findings for the field are elucidated through a comparative analysis with prior scholarly investigations.

The findings of our study align with the research conducted by Gahtani et al. (2007), which indicated that Saudi Arabian researchers exhibited a lower propensity to utilize information and communication technology (ICT) in comparison to their peers from other nations. The prevailing notion that Saudi Arabian scholars exhibit a lower propensity to utilize information and communication technology (ICT) tools in their research endeavors (Al-Ghassani et al. 2002) has been challenged by our findings, which indicate that the rates of adoption in Saudi Arabia and Jordan are comparable. The aforementioned distinction underscores the imperative to reassess the dispositions and behaviors of academics in Saudi Arabia with regards to the utilization of information and communication technology (ICT).

Our study aligns with the findings of Al Rashidi & Alhumaidan, (2017) indicating that online surveys are a widely adopted method for data collection in Jordan. Nonetheless, our investigation indicates that online surveys are gaining popularity in Saudi Arabia. The aforementioned dissimilarity suggests that contextual factors, such as technological infrastructure and availability of online platforms, play a significant role in determining the selection of data collection methods employed in individual countries.

The present study aligns with the findings of Al Rashidi & Alhumaidan (2019), indicating that statistical software is extensively employed for data analysis in Saudi Arabia and Jordan. The findings of our study indicate that the utilization of statistical software is comparatively higher in Jordan as opposed to Saudi Arabia. The observed variation could potentially be attributed to dissimilarities in research methodologies, financial support, and academic prospects available to researchers.

The present study corroborates the results of previous research conducted by Al Rashidi & Alhumaidan, (2017) as well as Al-

Ghassani et al. (2002) which identified limited resources, deficient digital competencies, and ethical concerns as major determinants influencing the perceived advantages and obstacles of ICT assimilation in Saudi Arabia and Jordan. The present study provides quantitative data that is specific to each country, which serves to shed light on the benefits and drawbacks of the phenomenon under investigation. The intricate dynamics of integrating ICT can be better understood through the examination of the diverse rates and experiences of adoption. This analysis underscores the necessity of tailored approaches and support systems to effectively overcome the identified challenges.

The study's findings contribute to the existing literature by providing empirical evidence and quantitative analysis of the impact of ICT on social science research in Saudi Arabia and Jordan. The incongruous data emanating from the two countries challenges prevailing assumptions and adds nuance to our understanding of the adoption, benefits, and challenges of ICT in both contexts. The findings of this study have the potential to provide valuable guidance to scholars, organizations, and decision-makers in terms of enhancing the integration of information and communication technology, improving research methodologies, and addressing challenges that may arise. Furthermore, they serve as a basis for comparative research across different countries or regions, facilitating a more comprehensive understanding of the global landscape of information and communication technology (ICT) utilization in social science research.

Conclusion

Contrary to prior assumptions, this study revealed that Saudi Arabian scholars exhibit a higher propensity to utilize information and communication technology (ICT) tools. The practice of gathering data via online surveys was discovered to be prevalent in both countries, with statistical software being the predominant tool employed for data analysis. The findings underscore the importance of evaluating the integration of information and communication technology in research procedures, while considering contextual factors and the resources at hand.

In accordance with previous studies, the integration of Information and Communication Technology (ICT) has demonstrated the ability to enhance productivity, improve data management, and promote collaborative efforts. The research provided specific quantitative data to enhance the understanding of these benefits in the context of Saudi Arabia and Jordan. The study corroborated the results of prior research on the challenges arising from insufficient financial resources, inadequate digital competencies, and ethical considerations. However, it contributed quantitative perspectives on their pervasiveness.

This study contributes to the academic discourse by conducting a comparative analysis of its findings with those of previous research, thereby challenging established assumptions and providing nuanced perspectives. The observed variability in adoption rates and experiences underscores the need for tailored strategies and supportive frameworks to address the aforementioned issues. The present study underscores the necessity of considering contextual factors at the national level when initiating information and communication technology (ICT) integration initiatives in the realm of social science research.

The conclusions of the study possess significant implications that extend across a broad spectrum. In order to facilitate effective integration of ICT in the research process, policymakers and institutions may utilize the research findings to formulate policies and provide support to researchers. Scholars can enhance their digital proficiency by acquainting themselves with contemporary information and communication technology (ICT) practices, recognizing domains that require enhancement, and engaging in pertinent training. The aforementioned findings provide a foundation for forthcoming investigations that aim to contrast the integration of information and communication technology (ICT) in social science research across various countries and territories, thereby contributing to a more comprehensive understanding of this subject matter on a global level.

The study exhibits several limitations that necessitate acknowledgement. The research conducted was of a quantitative nature and did not delve into qualitative

methodologies or other research approaches. In forthcoming research endeavors, the utilization of a mixed-methods methodology may be deemed appropriate in order to more comprehensively capture the intricate nature of information and communication technology (ICT) integration within social science investigations. Incorporating additional nations or regions into the analysis would facilitate a more diverse and comparative investigation.

Acknowledgments

The authors extend their appreciation to the Deanship of Scientific Research at King Khalid University for funding this work through Large Research Groups under grant number (RGP.2 / 560 /44).

References

- Abuhashesh, M. Y., Alshurideh, M. T., Ahmed, A. E., Sumadi, M., & Masa'deh, R. E. (2021). The effect of culture on customers' attitudes toward Facebook advertising: the moderating role of gender. *Review of International Business and Strategy*, 31(3), 416-437.
- Abuhashesh, M. Y., Alshurideh, M. T., Ahmed, A. E., Sumadi, M., & Masa'deh, R. E. (2021). The effect of culture on customers' attitudes toward Facebook advertising: the moderating role of gender. *Review of International Business and Strategy*, 31(3), 416-437. <https://doi.org/10.1108/RIBS-04-2020-0045>
- Ahmad, A. K., Jafar, A., & Aljoumaa, K. (2019). Customer churn prediction in telecom using machine learning in big data platform. *Journal of Big Data*, 6(1), 1-24. <https://doi.org/10.1186/s40537-019-0191-6>
- Al Rashidi, S. H., & Alhumaidan, H. (2017). Computer vision syndrome prevalence, knowledge and associated factors among Saudi Arabia University Students: Is it a serious problem?. *International journal of health sciences*, 11(5), 17.
- Al Rub, M. O. A., Khasawneh, M. A. S., Ayasrah, M. N., Alkhawaldeh, M. A., Alqsaireen, E. M., & Al Taqatqa, F. A. S. (2023). BASIC PSYCHOLOGICAL NEEDS OF PERSONS WITH DISABILITIES IN

THE KINGDOM OF SAUDI ARABIA DURING COVID-19. Journal of Southwest Jiaotong University, 58(3).

Al Taqatqa, F. A. S., Khasawneh, M. A. S., Alkhawaldeh, M. A., Al Rub, M. O. A., & Alqsaireen, E. M. (2023). TRANSITION MANAGEMENT OF STUDENTS WITH AUTISM IN INCLUSION SCHOOLS. Journal of Southwest Jiaotong University, 58(4).

Al Zayer, M., AlGhoribi, M., Al Rashidi, E., Alhuseinan, N., Al Alwan, B., Bakhashween, B., ... & Balkhy, H. (2019). Detection of Metallo β -Lactamase producing *Pseudomonas aeruginosa* isolated from patients in Saudi Arabia. Journal of Infection and Public Health, 12(1), 148-149.

Alanazi, A. S., Almulla, A. A., & Khasawneh, M. A. S. (2023). Exploring the E-learning Supporting Systems for Students with Special Needs. Revista de Gestão Social e Ambiental, 17(7), e03917-e03917.

Al-Awawdeh, N., Al-shaboul, I. A., & Khasawneh, M. A. S. (2023). ADVANCING FOREIGN LANGUAGE TEACHING WITH AI-ASSISTED MODELS; INSIGHTS FROM LECTURERS AND UNIVERSITY ADMINISTRATORS. Journal of Namibian Studies: History Politics Culture, 33, 1491-1506.

Al-Gahtani, S. S., Hubona, G. S., & Wang, J. (2007). Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. Information & management, 44(8), 681-691. <https://doi.org/10.1016/j.im.2007.09.002>

Al-Gaseem, M. M., & Khasawneh, M. A. S. (2023). Environmental Orientation for Art Teachers Education Program (EOATEP). Journal of Higher Education Theory and Practice, 23(12), 209-223.

Al-Ghassani, A., Kamara, J. M., Anumba, C. J., & Carrillo, P. M. (2002). A tool for developing knowledge management strategies. Journal of Information Technology in Construction (ITcon). <http://www.itcon.org/2002/5>

Al-Hassan, O. M. (2018). Developments of early childhood education in Jordan. Early Years, 38(4), 351-362. <https://doi.org/10.1080/09575146.2018.1512562>

Aljoumaa, K. H., Ajji, Z., & Ez-Aldeen, H. (2018). Effect of gamma irradiation on thermal and electrical properties of polyethylene and polyvinyl chloride composites (No. AECS-R/FRSR--783). Atomic Energy Commission.

- Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2023). Investigating The Effects Of Bite-Sized Learning Modules On Knowledge Acquisition And Retention In Jordan And Saudi Arabia. *Journal of Namibian Studies: History Politics Culture*, 35, 812-828.
- Alkhawaldeh, M. A., Alwaely, S. A., Al Sabi, Y. N., Abueita, S. D., Alomari, N., Al Taqatqa, F. A. S., ... & Al-Shaar, A. S. (2023). Al-Rousan, A. H., Ayasrah, M. N., & Khasawneh, M. A. S. (2023). Psychological Stability and its Relationship to Academic Performance Among Secondary School Students.
- Alkhawaldeh, M. A., Khasawneh, M. A. S., Alqsaireen, E. M., Ayasrah, M. N., Al Taqatqa, F. A. S., & Al Rub, M. O. A. (2023). EVIDENCE-BASED INTERVENTIONS IN DEVELOPING COMMUNICATION SKILLS AMONG STUDENTS WITH AUTISM SPECTRUM DISORDER (ASD). *Journal of Southwest Jiaotong University*, 58(4).
- Alkhawaldeh, M. A., Khasawneh, M. A. S., Alqsaireen, E. M., Ayasrah, M. N., Al Taqatqa, F. A. S., & Al Rub, M. O. A. (2023). EVIDENCE-BASED INTERVENTIONS IN DEVELOPING COMMUNICATION SKILLS AMONG STUDENTS WITH AUTISM SPECTRUM DISORDER (ASD). *Journal of Southwest Jiaotong University*, 58(4).
- Al-Maliki, S. Q. A. K. (2013). Information and communication technology (ICT) investment in the Kingdom of Saudi Arabia: Assessing strengths and weaknesses. *Journal of Organizational Knowledge Management*, 2013, 1. 10.5171/2013.450838
- Almulla, A. A., Alanazi, A. S., & Khasawneh, M. A. S. (2023). The Relationship between Nutritional Intake and Mother's Education Level with the Nutritional Status of Children with Special Needs. *Journal for ReAttach Therapy and Developmental Diversities*, 6(8s), 686-692.
- Alomari, M. A., Alqudah, R. A., Al Rub, M. A., Alqsaireen, E. M., & Khasawneh, M. A. (2023). The Role of Media in Educational Social Construction of Children with Special Needs.
- Alomari, M. A., Daradkah, S. A., Al Rub, M. A., Alqsaireen, E. M., & Khasawneh, M. A. (2023). Utilization of Multimedia Services in Libraries for Students with Disabilities.
- Alqsaireen, E. M., Khasawneh, M. A. S., Alkhawaldeh, M. A., Al Taqatqa, F. A. S., Al Rub, M. O. A., & Ayasrah, M. N. (2023). RELATIONSHIP BETWEEN SOCIAL SUPPORT AND

PSYCHOLOGICAL CONDITIONS FOR INDIVIDUALS WITH PHYSICAL DISABILITIES. Journal of Southwest Jiaotong University, 58(3).

Alqsaireen, E. M., Khasawneh, M. A. S., Alkhawaldeh, M. A., Al Taqatqa, F. A. S., Ayasrah, M. N., & Al Rub, M. O. A. (2023). CORRELATION OF SOCIAL COHESION WITH PSYCHOLOGICAL AND SOCIAL SUPPORT FOR PEOPLE WITH SPECIAL NEEDS. Journal of Southwest Jiaotong University, 58(3).

Alqurashi, F. S., Trichili, A., Saeed, N., Ooi, B. S., & Alouini, M. S. (2022). Maritime communications: a survey on enabling technologies, opportunities, and challenges. IEEE Internet of Things Journal. [10.1109/JIOT.2022.3219674](https://doi.org/10.1109/JIOT.2022.3219674)

Al-Rahmi, W. M., Alias, N., Othman, M. S., Alzahrani, A. I., Alfarraj, O., Saged, A. A., & Rahman, N. S. A. (2018). Use of e-learning by university students in Malaysian higher educational institutions: A case in Universiti Teknologi Malaysia. Ieee Access, 6, 14268-14276. [10.1109/ACCESS.2018.2802325](https://doi.org/10.1109/ACCESS.2018.2802325).

Al-Rahmi, W. M., Yahaya, N., Alamri, M. M., Alyoussef, I. Y., Al-Rahmi, A. M., & Kamin, Y. B. (2021). Integrating innovation diffusion theory with technology acceptance model: Supporting students' attitude towards using a massive open online courses (MOOCs) systems. Interactive Learning Environments, 29(8), 1380-1392. <https://doi.org/10.1080/10494820.2019.1629599>

Alrashidi, M. (2023). Synergistic integration between internet of things and augmented reality technologies for deaf persons in e-learning platform. The Journal of Supercomputing, 79(10), 10747-10773.

Alwaely, S. A., El-Zeiny, M. E., Alqudah, H., Mohammad Alamarnih, E. F., Ibrahim Salman, O. K., Halim, M., & Saleem Khasawneh, M. A. (2023). THE IMPACT OF TEACHER EVALUATION ON PROFESSIONAL DEVELOPMENT AND STUDENT ACHIEVEMENT. Environmental & Social Management Journal/Revista de Gestão Social e Ambiental, 17(7).

Ayasrah, M. N., & Saleem Khasawneh, M. A. (2022). The Effect of Psychological Stress of Parents on the Sexual Behavior of Children with Autism. Clinical Schizophrenia & Related Psychoses, 16.

- Ayasrah, M. N., & Saleem Khasawneh, M. A. (2023). Reintegrating Psychological Innovations to Improve Mental and Psychological Health in Children with Autism. *Clinical Schizophrenia & Related Psychoses*, 17.
- Bani-Rshaid, A. M., Hussein, N. Y., Ababneh, R. M., & Khasawneh, M. A. S. (2023). The Impact of Using social media On the Academic and Social Levels of Students with Disabilities at University Level. *Journal of Namibian Studies: History Politics Culture*, 34, 3422-3433.
- Buabeng-Andoh, C. (2012). Factors influencing teachersâ adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development using ICT*, 8(1).
<https://www.learntechlib.org/p/188018/>.
- Darawsheh, S. R., Al-Darabah, I. T., Bedaiwy, A. A., Gmach, I., Alfandi, A. A. A., Elsharkasy, A. S., ... & Khasawneh, M. A. S. (2023). Emotional Intelligence for English Students with Learning Disabilities in Light of Some Variables.
- Darawsheh, S. R., Asha, I. K. K., AbuSaif, R., Alhejoj, A. F., & Khasawneh, M. A. S. (2023). An outline of the professional quality of teachers who teach children with special needs. *Journal of Education and e-Learning Research*, 10(3), 358-363.
- Davis, R. H., Zhang, X., & Agarwala, J. P. (1989). Particle classification for dilute suspensions using an inclined settler. *Industrial & engineering chemistry research*, 28(6), 785-793.
<https://doi.org/10.1021/ie00090a021>
- Faheem, M., Butt, R. A., Raza, B., Ashraf, M. W., Ngadi, M. A., & Gungor, V. C. (2019). Energy efficient and reliable data gathering using internet of software-defined mobile sinks for WSNs-based smart grid applications. *Computer Standards & Interfaces*, 66, 103341.
<https://doi.org/10.1016/j.csi.2019.03.009>
- jadallah abed Khasawneh, Y., & Khasawneh, M. A. S. (2023). The Effectiveness of Digital Tools in Developing Translation Skills. *Journal of Namibian Studies: History Politics Culture*, 34, 7038-7058
- jadallah abed Khasawneh, Y., & Khasawneh, M. A. S. (2023). The Role of Corpus Linguistics in Translation Teaching and Research;

Analysing the Perspectives of Doctorate Researchers and Lecturers. *Journal of Namibian Studies: History Politics Culture*, 34, 7078-7101.

- jadallah abed Khasawneh, Y., & Khasawneh, M. A. S. (2023). The Use of Artificial Intelligence in Improving Machine Translation Post-Editing; Insights from Translation Editors. *Journal of Namibian Studies: History Politics Culture*, 34, 7123-7146.
- Khasawneh, M. A. S. (2021). Improving Reading Comprehension Skills among English Language Students with Learning Disabilities According to Some Variables. *Celt: A Journal of Culture, English Language Teaching & Literature*, 21(1), 172-184.
- Khasawneh, M. A. S. (2021). Investigating Writing Challenges Encountered by Saudi EFL1 Learners: Implications for Improvement. *Edukacja Ustawiczna Dorosłych*, 115(4), 31-41.
- Khasawneh, M. A. S. (2021). TechHub/The Relationship of Curriculum, Teaching Methods, Assessment Methods, and School and Home Environment with Learning Difficulties in English Language from the Students' Perspectives. *TechHub Journal*, 23(1), 285-295.
- Khasawneh, M. A. S. (2022). Developing the skills of visual-motor coordination disorder among students with learning disabilities. *Science and Education*, 3(9), 284-294.
- Khasawneh, M. A. S. (2022). Improving the written expression skills among EFL students using an electronic training program. *Science and Education*, 3(9), 271-283.
- Khasawneh, M. A. S. (2022). Students with disabilities. *Science and Education*, 3(9), 253-270.
- Khasawneh, M. A. S. (2023). Analysis of the Application of Pedagogical Technology to the Learning of Children with ASD. *International Journal of Special Education*, 38(1), 82-89.
- Khasawneh, M. A. S. (2023). ANALYSIS OF THE EFFECTIVENESS OF TALKING COMPUTERS AS A LEARNING MEDIA FOR BLIND STUDENTS. *Journal of Southwest Jiaotong University*, 58(2).
- Khasawneh, M. A. S. (2023). DEVELOPMENT OF AUDIO-VISUAL MEDIA OF LANGUAGE LEARNING FOR CHILDREN WITH AUTISM. *Journal of Southwest Jiaotong University*, 58(2).
- Khasawneh, M. A. S. (2023). Existence of Students with Special Needs in Social Normality. *Journal of Namibian Studies: History Politics Culture*, 34, 418-436.

- Khasawneh, M. A. S. (2023). Interactive Multimedia to Improve Reading Skill of Students with Special Needs. *Journal of Namibian Studies: History Politics Culture*, 34, 437-456.
- Khasawneh, M. A. S. (2023). Self-Adjustment of Gifted Students to Parental Treatment. *Journal of Namibian Studies: History Politics Culture*, 33, 2155-2165.
- Khasawneh, M. A. S. (2023). SOCIAL ATTITUDE OF CHILDREN WITH SPECIAL NEEDS IN THE LEARNING PROCESS. *Journal of Southwest Jiaotong University*, 58(2).
- Khasawneh, M. A. S. (2023). The Effect of Learning Patterns on Achievement Motivation Among Public School Students. *Journal of Namibian Studies: History Politics Culture*, 33, 2166-2176.
- Khasawneh, M. A. S. (2023). THE RELATIONSHIP BETWEEN INTELLECTUAL EXTREMISM AND SOCIAL VALUES AMONG SAUDI UNIVERSITY STUDENTS. *Journal of Southwest Jiaotong University*, 58(2).
- Khasawneh, M. A. S. The effect of using a language games-based electronic program on the acquisition of language patterns among people with learning difficulties in the English language during the Covid-19 pandemic.
- Khasawneh, M. A. S. THE EFFECTIVENESS OF A TRAINING PROGRAM BASED ON ERIKSON'S THEORY IN DEVELOPING ACHIEVEMENT SKILLS AMONG STUDENTS WITH LEARNING DISABILITIES IN JORDAN.
- Khasawneh, M. A. S., & jadallah abed Khasawneh, Y. (2023). The Potentials of Artificial Intelligence in Stimulating Motivation and Improving Performance of Undergraduates in Foreign Languages. *Journal of Namibian Studies: History Politics Culture*, 34, 7059-7077.
- Khasawneh, M. A. S., & jadallah abed Khasawneh, Y. (2023). The Roles of Formulaic Sequences and Discourse Markers in Academic Writing; Insights from Lecturers and Other Researchers. *Journal of Namibian Studies: History Politics Culture*, 34, 7102-7122.
- Khasawneh, M. A. S., & jadallah abed Khasawneh, Y. (2023). Uncovering The Impact of Mindfulness-Based Interventions on Digital Distractions in The Learning Environment. *Journal of Namibian Studies: History Politics Culture*, 34, 7147-7163.
- Khasawneh, M. A. S., & Khasawneh, Y. J. A. (2023). Achieving Assessment Equity and Fairness: Identifying and Eliminating Bias in Assessment Tools and Practices.
- Khasawneh, S., & Ahmad, M. Training program for the development of reading skills in English for students with learning

difficulties Training program for the development of reading skills in English for students with learning difficulties.

- Khasawneh, Y. J. A. (2023). An Investigation of Pre-Service Teacher Preparation Programs in Teacher Education and Co-Teaching Models.
- Khasawneh, Y. J. A., Alsarayreh, R., Al Ajlouni, A. A., Eyadat, H. M., Ayasrah, M. N., & Khasawneh, M. A. S. (2023). An examination of teacher collaboration in professional learning communities and collaborative teaching practices. *Journal of Education and e-Learning*.
- Mu'tasem, M., Al-Rousan, A. H., Ayasrah, M. N., & Khasawneh, M. A. S. (2023). Ethical behaviour and its relationship to perceived violence by a child with a mental disability. *Journal for ReAttach therapy and developmental diversities*, 6(6s), 468-477.
- Pikas, C. K. (2006, April). The impact of information and communication technologies on informal scholarly scientific communication: a literature review. In *Doctoral Seminar in Information Studies*.
- Selwyn, N., Gorard, S., Furlong, J., & Madden, L. (2003). Older adults' use of information and communications technology in everyday life. *Ageing & Society*, 23(5), 561-582. <https://doi.org/10.1017/S0144686X03001302>