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Digital Empowerment of Women: The Role of the Internet in an Online University Setting

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Abstract. This study explores the impact of digital empowerment on female students in online university settings, focusing on internet connectivity, digital tools, and barriers to success. Using a survey distributed through Google Forms, we collected responses from 120 female participants across four faculties: Medical, Economics, Computer Science, and Education. The purpose was to assess how reliable internet access influences academic performance and engagement, evaluate the effectiveness of digital resources for professional skill development, and identify obstacles affecting women's participation. Results revealed that reliable internet access significantly enhances academic performance and engagement. Digital tools were highly rated for their effectiveness in skill development and career advancement. However, technological limitations and socio-economic factors were identified as major barriers. The findings suggest that while online universities offer valuable opportunities, addressing technological and socio-economic challenges is crucial for maximizing their benefits. Recommendations include improving internet infrastructure and providing targeted support to overcome socio-economic barriers. Future research should explore the longitudinal effects of digital empowerment initiatives and their impact on long-term academic and career outcomes for women.

Keywords: Digital Empowerment, Online Education, Internet Connectivity, Professional Development, Socio-Economic Barrier.

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1. Introduction

The advent of digital technologies has profoundly transformed the landscape of education, particularly within online universities. These platforms provide unprecedented opportunities for women to pursue higher education and professional development with flexibility and accessibility. Digital empowerment, which refers to the capacity to use digital tools and resources effectively, plays a crucial role in this transformation. It is essential to explore how the internet can act as a powerful catalyst for women's educational and professional advancement in online settings.

Reliable internet connectivity is fundamental to this empowerment. For female students, especially those in underserved or remote areas, consistent access to the internet is critical. Reliable internet facilitates participation in online classes, access to educational resources, and engagement with peers and instructors. Research indicates that improved internet connectivity significantly enhances academic performance and engagement by allowing seamless communication and access to a broad range of learning materials [1][2]. This access is integral to achieving higher completion rates and better educational outcomes for women [3].

Online universities also offer a wealth of digital tools and resources that are pivotal for women's professional development. These resources include virtual laboratories, industry-specific software, and online networking platforms that collectively contribute to skill development and career progression. Studies have shown that such digital tools are essential for equipping women with practical experience and industry knowledge, which are increasingly valued in today's job market [4],[5]. These resources not only support the acquisition of technical skills but also provide opportunities for networking and professional growth [6],[7]. However, the path to digital empowerment is not without its challenges. Barriers such as technological limitations, social impediments, and economic constraints can significantly hinder women's access to online education and their success in these environments.

Technological issues might include inadequate devices or unreliable internet connections, while social barriers can involve cultural attitudes towards women's education [8][9]. Economic constraints may also play a role, affecting the affordability of internet access and educational materials [10],[11]. Identifying and addressing these obstacles is crucial for ensuring that online education serves as an inclusive and effective tool for women's empowerment [12],[13]. In conclusion, the internet plays a vital role in transforming online education for women, providing essential tools for academic and professional advancement while also presenting challenges that must be addressed. By examining the impact of internet connectivity on academic performance, exploring the benefits of digital resources for career development, and identifying barriers to participation, we can better understand and enhance the potential of online education as a means of digital empowerment for women [14],[15].

The digital empowerment of women through online education platforms has become a critical area of research, reflecting broader discussions on gender, technology, and education. Reliable internet connectivity plays a pivotal role in shaping the academic experiences of female students in online universities. Studies indicate that consistent and high-speed internet access significantly impacts academic performance and engagement. Anunobi and Mbagwu [1] highlight the gender disparities in internet use in Nigeria, emphasizing that better connectivity can bridge educational gaps. Similarly, Apuke and Iyendo [2] explore how university students' internet access influences their research and learning, underscoring the importance of reliable connectivity for academic success.

Digital tools and resources provided by online universities are crucial for women's professional development. Beck [3] emphasizes the benefits of internet-based interactions for women, noting how online platforms can support career advancement and skill acquisition. Borah and Kalita [4] discuss how information and communication technology (ICT) fosters women's empowerment, particularly through access to educational and professional resources. Hakimi et al. [5] further assert that digital tools are instrumental in enhancing women's skills and opportunities, especially in contexts like Afghanistan where traditional barriers are significant.

However, barriers to effective online education persist. Hilbert [6] critiques the so-called digital gender divide, arguing that technological empowerment is not universally experienced due to persistent inequalities. Hussain et al. [7] explore how socio-economic and educational factors impact Afghan women's access to ICT, highlighting significant challenges in leveraging digital tools for empowerment. Hussain and Phulpoto [8] also discuss the role of digital literacy in overcoming these challenges, emphasizing that access alone is insufficient without the requisite skills.

Kwapong [9] provides an empirical analysis of ICT for rural women's empowerment, showing that while technology offers opportunities, its impact is unevenly distributed.

Kyrgidou and Petridou [10] discuss how e-mentoring can enhance women entrepreneurs' knowledge and skills, illustrating the potential of targeted digital interventions. Miniesy et al. [11] further explore how social media impacts women and youth entrepreneurs in Egypt, emphasizing the role of digital platforms in economic empowerment. Golzard [12] reviews the economic benefits of internet access for women in Iran, reinforcing the link between digital tools and economic advancement.

Shirazi [13] and Shukla et al. [14] both address the role of ICT in women's empowerment, though from different regional perspectives, demonstrating how access to technology can influence women's economic and social positions. Mughal Awan and Awan [15] focus on digital empowerment in developing countries, emphasizing the potential for technology to enhance women's economic status. Pattanaik and Mishra [16] anticipate the impact of AI on women's empowerment, highlighting emerging opportunities and challenges. Quraishi et al. [17] provide a case study of digital literacy integration in higher education, showing how digital skills can support academic and professional success.

Despite the growing prominence of online universities as a platform for education, significant challenges remain in the digital empowerment of women. Reliable internet connectivity is a crucial factor, yet many female students, particularly in remote or underserved areas, face difficulties accessing stable and high-speed connections. This lack of connectivity hampers their ability to fully participate in online courses, engage with educational resources, and achieve academic success. Additionally, while digital tools and resources offered by online universities have the potential to enhance professional skills and career opportunities for women, barriers such as technological limitations, social biases, and economic constraints often impede their effective use. Addressing these challenges is essential to ensuring that online education can serve as a truly empowering and equitable platform for women's academic and professional advancement.

This study aims to explore the impact of reliable internet connectivity on the academic performance and engagement of female students. It will examine the role of digital tools and resources offered by online universities in enhancing women's professional skill development and career advancement. Additionally, the research will analyze the barriers that hinder women's participation and success in online university settings, with a focus on technological, social, and economic factors. Through this investigation, the study seeks to provide insights into improving online education for women.

2. Methods

2.1 Study Design

This study employed a quantitative research design utilizing an online survey distributed through Google Forms. The aim was to assess the impact of digital tools, internet connectivity, and barriers on women's academic performance and professional development in an online university setting.

2.2 Participants

The study targeted 120 female students from an online university, distributed across four faculties: Medical (40 participants, aged 18-24), Economics (30 participants, aged 18-24), Computer Science (30 participants, aged 20-25), and Education (20 participants, aged 19-25). Participants were selected to ensure a diverse representation of academic disciplines and age groups.

2.3 Data Collection

Data were collected through a structured online questionnaire developed using Google Forms. The survey included multiple-choice questions designed to measure various dimensions of digital empowerment, including the impact of reliable internet connectivity on academic performance, the effectiveness of digital tools for professional skills development, and the significance of technological, social, and economic barriers.

2.4 Instrumentation

The survey instrument consisted of validated questions with a 5-point Likert scale to assess respondents' perceptions and experiences. Questions were designed to capture the extent to which internet connectivity and digital tools influence academic engagement and career advancement, as well as the perceived obstacles faced by participants.

2.5 Data Analysis

Responses were analyzed using descriptive statistics to summarize the data and identify patterns. The analysis involved calculating frequencies and percentages to determine the distribution of responses for each question. This approach facilitated an understanding of the participants' views on digital empowerment and the challenges they encounter.

2.6 Ethical Considerations

Participation in the survey was voluntary, with informed consent obtained from all respondents. The study ensured confidentiality and anonymity by aggregating responses and securely storing data. Participants were assured that their responses would be used solely for research purposes.

3. Results and Discussion

3.1 Result

The results section presents the findings from the survey conducted among 120 female participants across various faculties. It provides a detailed analysis of how digital tools, internet connectivity, and barriers affect academic performance, professional skill development, and overall engagement in an online university setting.

Table 1. Demographic Distribution of Female Participants by Faculty and Age

Faculty	Number of Participants	Age Range
Medical	40	18-24
Economics	30	18-24
Computer Science	30	20-25
Education	20	19-25
Total	120	

Table 1 illustrates the demographic distribution of 120 female participants from an online university, segmented by faculty and age group. The largest group comprises students from the Medical Faculty (40 participants) aged 18-24, reflecting a robust representation in this area. The Economics and Computer Science faculties each contribute 30 participants, with age ranges slightly overlapping (18-24 for Economics and 20-25 for Computer Science). The Education Faculty, with 20 participants, includes students aged 19-25. This distribution ensures diverse insights across faculties and age groups, allowing for comprehensive analysis of digital empowerment factors.

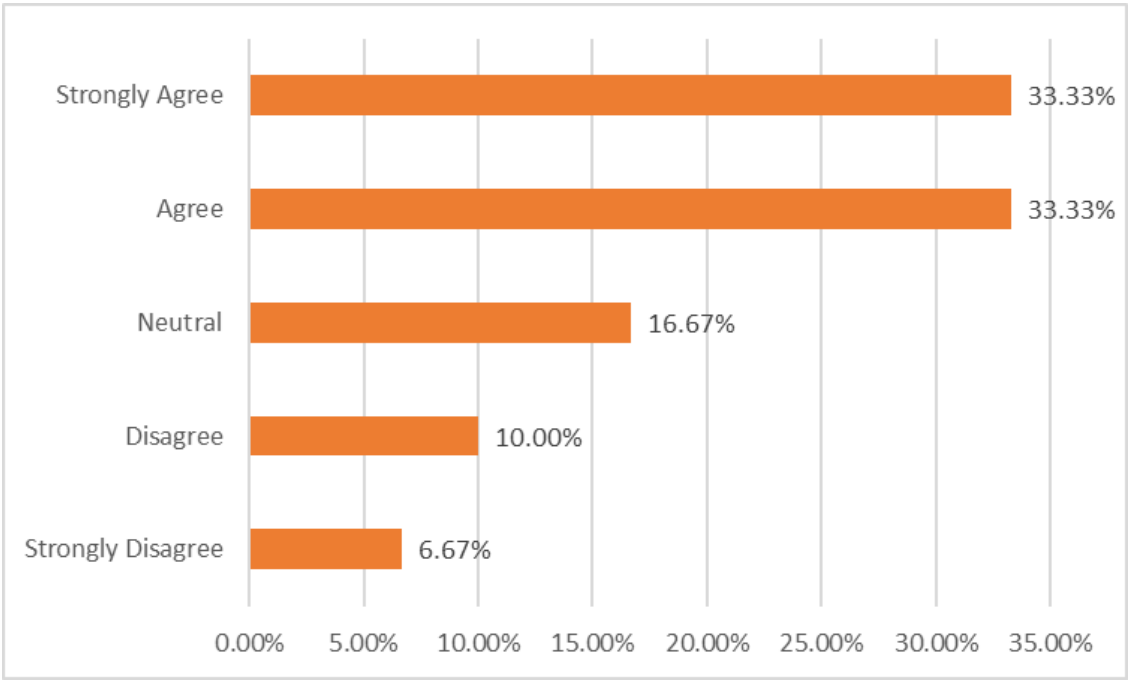

Figure 1. Responses to the Impact of Reliable Internet Connectivity on Academic Performance

Figure 1 illustrates the distribution of responses among 120 participants regarding how reliable internet connectivity influences academic performance. A significant portion of the participants (33.33%) agreed and another 33.33% strongly agreed that reliable internet connectivity enhances their academic performance. A smaller percentage of participants felt neutral (16.67%), while 10.00% disagreed, and 6.67% strongly disagreed. This distribution highlights that most participants perceive reliable internet connectivity as a crucial factor in their academic success.

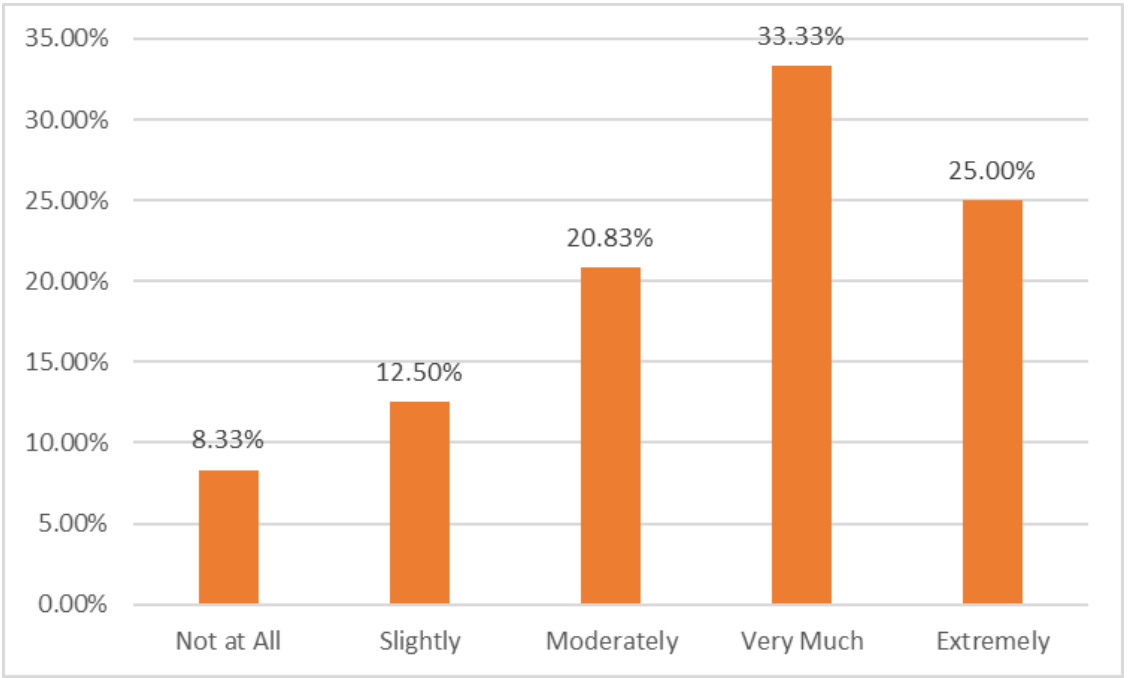

Figure 2. Responses to the Impact of Stable Internet Access on Engagement in Online University Activities

Figure 2 displays the distribution of responses regarding how stable internet access affects participants' engagement in online university activities. The majority of participants (33.33%) reported that stable internet access affects their engagement "Very Much," and 25.00% indicated "Extremely." A notable percentage (20.83%) felt that stable internet access affects their engagement "Moderately," while 12.50% found it to affect their engagement "Slightly," and 8.33% believed it has no impact. This distribution

underscores the critical role that stable internet access plays in enhancing engagement in online university settings.

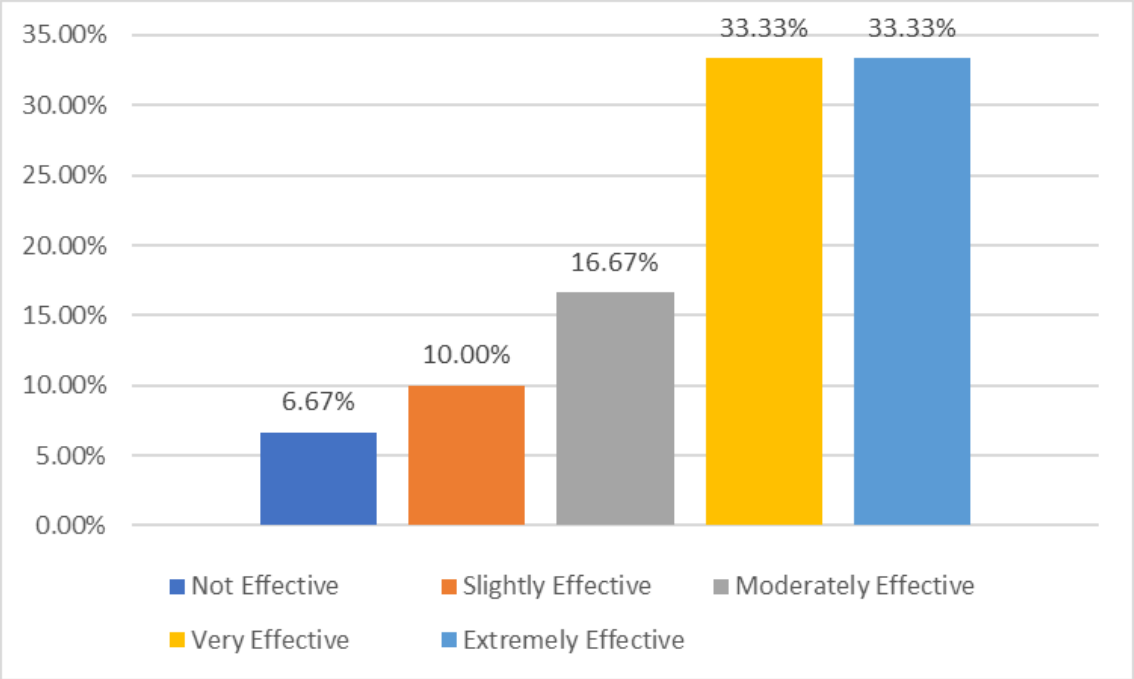

Figure 3. Effectiveness of Digital Tools and Resources in Improving Professional Skills

Figure 3 presents the distribution of responses regarding the effectiveness of digital tools and resources provided by the online university in enhancing participants' professional skills. The majority of participants rated the tools as "Very Effective" (33.33%) and "Extremely Effective" (33.33%). A significant portion (16.67%) found them "Moderately Effective," while 10.00% felt they were "Slightly Effective," and 6.67% considered them "Not Effective." This distribution indicates a strong positive perception of the digital tools and resources in contributing to professional skill development among the participants.

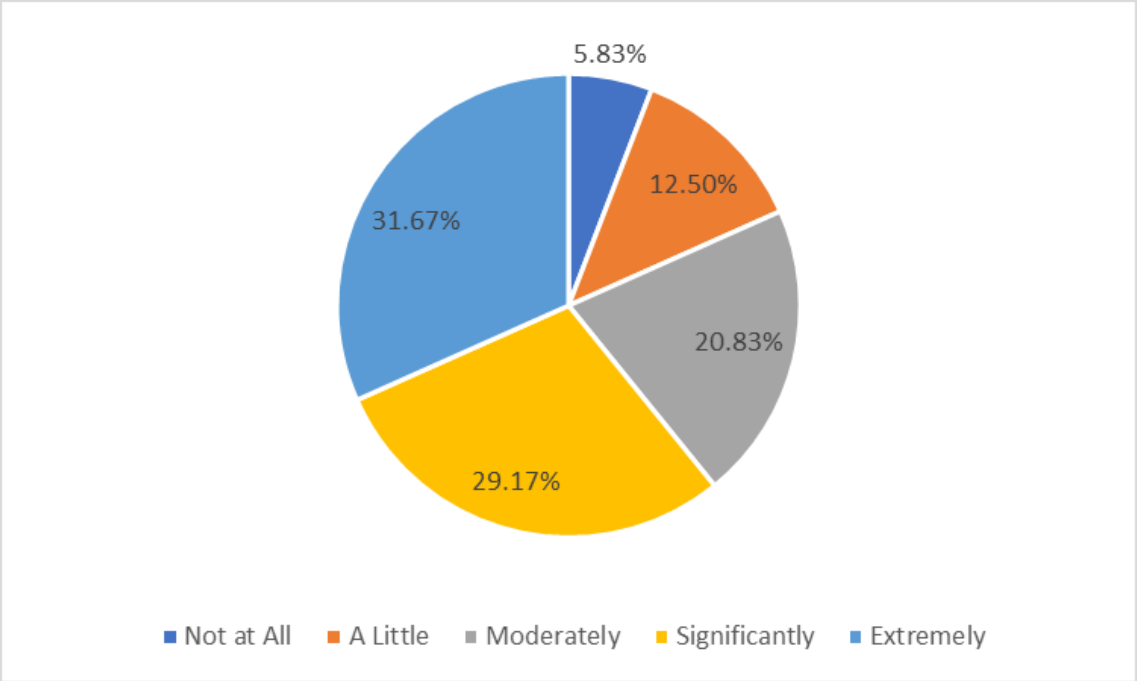

Figure 4. Contribution of Online University Resources to Career Advancement

Figure 4 displays the distribution of responses regarding how online university resources contribute to participants' career advancement. The majority of respondents rated the contribution as "Significantly" (29.17%) and "Extremely" (31.67%). A substantial

portion (20.83%) found the resources to be "Moderately" beneficial. Fewer participants felt the resources contributed "A Little" (12.50%) or "Not at All" (5.83%). This data suggests that most participants perceive the resources provided by the online university as significantly or extremely valuable for their career advancement.

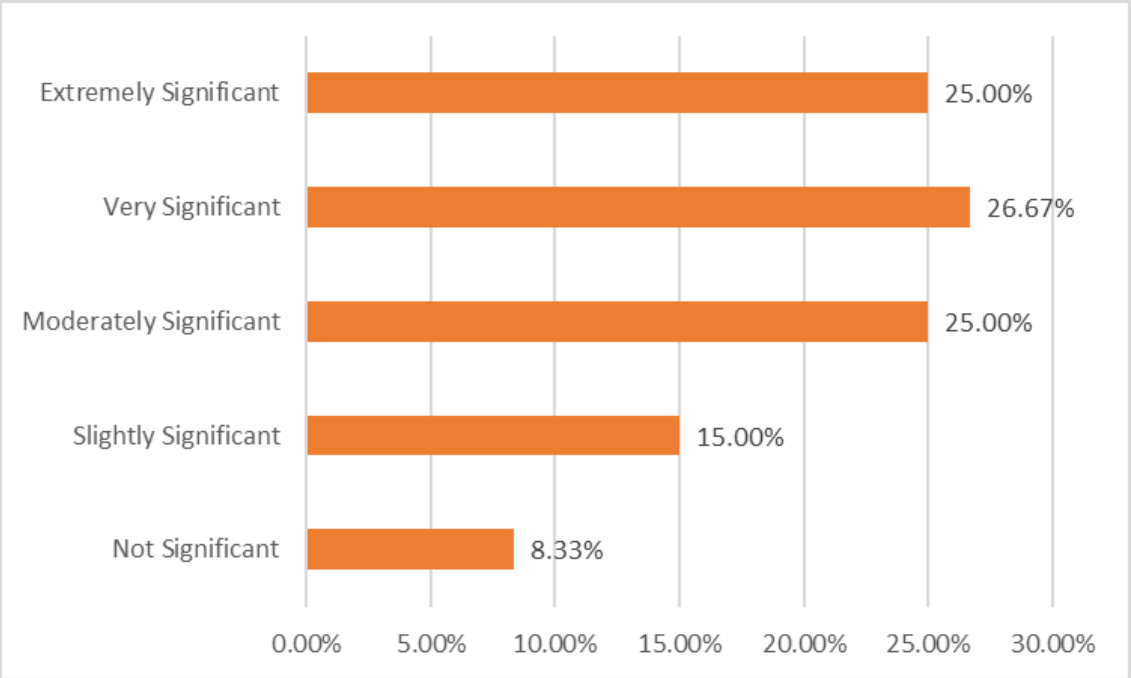

Figure 5. Significance of Technological Limitations as an Obstacle to Success in Online University Settings

Figure 5 illustrates how participants perceive the significance of technological limitations, such as outdated devices and slow internet, as obstacles to their success in online university settings. A notable portion of respondents identified these limitations as "Very Significant" (26.67%) and "Extremely Significant" (25.00%). A significant number also considered them "Moderately Significant" (25.00%). Fewer participants felt the limitations were "Slightly Significant" (15.00%) or "Not Significant" (8.33%). This distribution highlights that technological constraints are widely recognized as substantial barriers to success in online learning environments.

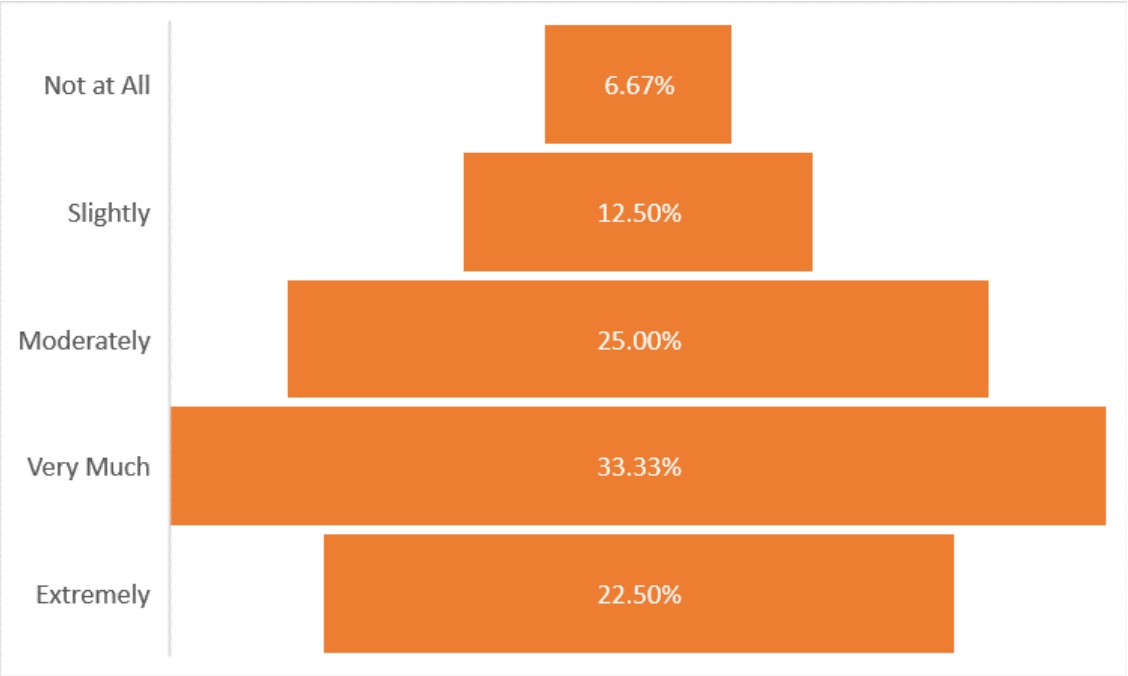

Figure 6. Impact of Social and Economic Factors on Participation and Success in Online University Courses

Figure 6 presents the distribution of responses regarding how social and economic factors, such as family responsibilities and financial constraints, impact participants' ability to engage in and succeed in online university courses. A substantial proportion of respondents felt these factors affected them "Very Much" (33.33%) and "Extremely" (22.50%). Additionally, 25.00% indicated a "Moderate" impact, while 12.50% reported a "Slight" impact, and 6.67% felt these factors had no impact at all. This distribution underscores the significant role that social and economic challenges play in shaping the experiences of students in online learning environments.

3.2 Discussion

The digital empowerment of women through online university platforms is a multifaceted issue influenced by various factors, including reliable internet connectivity, digital tools, and socio-economic barriers. This discussion explores these elements based on the gathered data and literature. Reliable Internet Connectivity: The findings underscore the critical role that reliable internet access plays in academic performance and engagement. As depicted in Figure 1, a substantial majority of participants (66.66%) either agreed or strongly agreed that reliable internet connectivity enhances their academic performance. This is consistent with existing literature, where Anunobi and Mbagwu [1] highlight that better connectivity helps bridge educational disparities, and Apuke and Iyendo [2] emphasize its importance for research and learning. The data indicates that stable internet access not only supports academic achievement but also significantly influences engagement levels in online university activities, as shown in Figure 2. The majority of participants (58.33%) reported that stable internet access affects their engagement either "Very Much" or "Extremely," reflecting its integral role in the learning experience.

Effectiveness of Digital Tools: The positive perception of digital tools and resources in improving professional skills is evident in Figure 3. Most participants rated these tools as either "Very Effective" or "Extremely Effective" (66.66%), aligning with Beck's [3] assertion that internet-based interactions support career advancement and skill acquisition. Similarly, Borah and Kalita [4] and Hakimi et al. [5] have noted the substantial benefits of digital resources in empowering women and enhancing their professional opportunities. This perception is crucial, as it underscores the value of digital tools in providing professional development opportunities. Career Advancement: Figure 4 reveals that a significant portion of respondents believe online university resources contribute "Significantly" or "Extremely" to their career advancement. This aligns with Golzard's [12] findings on the economic benefits of internet access for women and Miniesy et al.'s [11] research on the impact of social media on entrepreneurship. The data suggests that participants recognize the substantial value of these resources in advancing their careers.

Technological and Socio-Economic Barriers: Technological limitations, such as outdated devices and slow internet, are perceived as significant obstacles to success, as shown in Figure 5. This finding resonates with Hilbert's [6] critique of the digital gender divide and Hussain et al.'s [7] exploration of socio-economic and educational barriers. Figure 6 further highlights the considerable impact of social and economic factors on participation and success, emphasizing that these challenges are significant for many students. This supports the views of Kwapong [9] and Hussain and Phulpoto [8], who argue that while technology offers opportunities, its benefits are unevenly distributed.

4. Conclusion

The investigation into the digital empowerment of women in online university settings reveals that reliable internet connectivity and effective digital tools are crucial factors in enhancing academic performance and professional development. The majority of participants in this study perceive reliable internet access as a significant contributor to their academic success and engagement. This is supported by the high levels of agreement that stable internet access greatly influences their participation in online activities and academic performance. Digital tools and resources provided by online universities are recognized as highly effective in improving professional skills and advancing careers. Participants have shown a strong positive perception of these tools, highlighting their role in supporting skill acquisition and career progression. This suggests that online platforms offer valuable opportunities for women to enhance their professional capabilities and achieve career goals.

However, the study also identifies significant barriers to success in online education settings. Technological limitations, such as outdated devices and slow internet, are seen as major obstacles that impede academic and professional progress. Additionally, social and economic factors, including family responsibilities and financial constraints, significantly affect women's ability to participate in and succeed in online courses. These barriers underscore the need for targeted interventions to address technological and socio-economic challenges. To address these issues, universities should prioritize improving internet reliability, invest in technological infrastructure, offer digital literacy training, and provide financial aid and flexible scheduling to support women in balancing educational and personal responsibilities.

5. Acknowledgments

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6. Declaration

Author contributions and responsibilities - The authors made major contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

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Competing interests - The authors declare no competing interests.

Did you use generative AI to write this manuscript? - I do not use AI assistance in my manuscript.

Declaration of generative AI and AI-assisted technologies in the writing process - During the preparation of this work the author did not use AI to write, edit, or other things related to the manuscript.

7. References

[1] Anunobi, C., & Mbagwu, F. C. (2009). Prevalence of gender discrepancy in Internet use in Nigeria: implication for women empowerment. African Research Review, 3(1). https://doi.org/10.4314/afrrev.v3i1.43572

[2] Apuke, O. D., & Iyendo, T. O. (2018). University students' usage of the internet resources for research and learning: forms of access and perceptions of utility. Heliyon, 4(12). https://www.cell.com/heliyon/fulltext/S2405-8440(18)34122-7

[3] Beck, C. T. (2005). Benefits of participating in Internet interviews: Women helping women. Qualitative health research, 15(3), 411-422. https://doi.org/10.1177/1049732304270837

[4] Borah, S., & Kalita, H. C. (2019). Information communication technology and women empowerment. Journal of Pharmacognosy and Phytochemistry, 8(5S), 365-368. https://www.phytojournal.com/special-issue?year=2019&vol=8&issue=5S&ArticleId=9214

[5] Hakimi, M., Quchi, M. M., Hasas, A., & Fazil, A. W. (2024). The Transformative Power of Information and Communication Technology in Empowering Women in Afghanistan. Journal of Social Science Utilizing Technology, 2(1), 275-287. https://doi.org/10.70177/jssut.v2i1.702

[6] Hilbert, M. (2011, November). Digital gender divide or technologically empowered women in developing countries? A typical case of lies, damned lies, and statistics. In Women's studies international forum (Vol. 34, No. 6, pp. 479-489). Pergamon. https://doi.org/10.1016/j.wsif.2011.07.001

[7] Hussain, F., Amin, S. N., & Rezaie, R. (2024). ICTs for Afghan women's empowerment in the pre-and new-Taliban era: Roles of gender, education, and crises. The Electronic Journal of Information Systems in Developing Countries, e12326. https://doi.org/10.1002/isd2.12326

[8] Hussain, N., & Phulpoto, S. (2024). Digital Literacy: Empowering Individuals in the Digital Age. Assyfa Learning Journal, 2(2), 70-83. https://doi.org/10.61650/alj.v2i2.231

[9] Kwapong, O. A. T. F. (2008). An empirical study of information and communication technology for empowerment of rural women in Ghana. African Journal of Information & Communication Technology, 4(3). https://doi.org/10.5130/ajict.v4i3.970

[10] Kyrgidou, L. P., & Petridou, E. (2013). Developing women entrepreneurs' knowledge, skills and attitudes through e-mentoring support. Journal of Small Business and Enterprise Development, 20(3), 548-566. https://doi.org/10.1108/JSBED-04-2013-0061

[11] Miniesy, R., Elshahawy, E., & Fakhreldin, H. (2022). Social media's impact on the empowerment of women and youth male entrepreneurs in Egypt. International Journal of Gender and Entrepreneurship, 14(2), 235-262. https://doi.org/10.1108/IJGE-06-2021-0085

Golzard, V. (2020). Economic empowerment of Iranian women through the internet. Gender in Management: An International Journal, 35(1), 1-18. https://doi.org/10.1108/GM-11-2017-0145

[12] Mughal Awan, M. Z., & Awan, S. A. (2023). Digital Empowerment: Advancing Women's Economic Status in Developing Countries. Journal of Global Peace and Security Studies (JGPSS), 4(2). Retrieved from https://www.pa

[13] Pattanaik, S., & Mishra, M. (2024). Empowering Women Through Ai: An Anticipation. Journal of Digital Economy, 3(2), 442-461. https://journalofdigitaleconomy.org/index.php/JDE/article/view/87

[14] Quraishi, T., Ulusi, H., Muhid, A., Hakimi, M., & Olusi, M. R. (2024). Empowering students through digital literacy: A case study of successful integration in a higher education curriculum. Journal of Digital Learning and Distance Education, 2(9), 667-681. https://doi.org/10.56778/jdlde.v2i8.208

[15] Shahbazi, H., Hakimi, M., Ulusi, H., Rahimi, B., & Quraishi, T. (2024). Exploring the Impact of Artificial Intelligence on Women's Empowerment: A Comprehensive Survey. Edutrend: Journal of Emerging Issues and Trends in Education, 1(2), 108-120. https://doi.org/10.59110/edutrend.333

[16] Shirazi, F. (2012). Information and communication technology and women empowerment in Iran. Telematics and Informatics, 29(1), 45-55. https://doi.org/10.1016/j.tele.2011.02.001

[17] Shukla, A., Kushwah, P., Jain, E., & Sharma, S. K. (2021). Role of ICT in emancipation of digital entrepreneurship among new generation women. Journal of Enterprising Communities: People and Places in the Global Economy, 15(1), 137-154. https://doi.org/10.1108/JEC-04-2020-0071