

The Impact of Adhering to Islamic Ethical Principles in Digital Service Design on the Quality of Life of Persons with Disabilities in the Digital Age

Ahmed Abdulla Rashed Sulaiman Alshamsi, Nurazmallail Bin Marni

Academy of Islamic Civilization, Faculty of Social and Islamic Sciences, Universiti Teknologi Malaysia, Malaysia

Email: abdullarashed@graduate.utm.my, nurazmal@utm.my

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Abstract

This study explores how adherence to Islamic ethical principles in digital service design influences the quality of life of persons with disabilities, especially amid rapid digital transformations. These transformations offer significant opportunities but also pose challenges that require clear ethical foundations. The research adopts digital ethics as a value-based framework that regulates behaviour in digital environments, ensuring fairness, safety, and inclusivity. It emphasizes key Islamic ethical principles justice, compassion, human dignity, and the alleviation of hardship as guiding values for developing digital systems that protect users' rights and enhance their well-being. The study examines the multidimensional concept of quality of life for persons with disabilities, including health, social integration, empowerment, and access to digital resources. It reviews global and regional literature demonstrating the positive impact of digital services on improving the lives of individuals with disabilities, while also highlighting persistent ethical challenges such as the digital divide, accessibility limitations, privacy risks, and inadequate inclusive design. Furthermore, the study analyses how Islamic ethics can strengthen digital service design by promoting digital justice, safeguarding data, enhancing usability, and ensuring equality among users. The findings reveal that integrating Islamic ethical principles into digital design provides an effective approach for supporting the rights and well-being of persons with disabilities. This integration bridges ethical values with technological practices, creating systems grounded in fairness, responsibility, inclusivity, and privacy protection. The study recommends incorporating Islamic ethical frameworks in digital development processes, involving persons with disabilities in decision-making, and adopting policies that advance social justice and full digital inclusion.

Keywords: Digital Ethics, Islamic Ethical Principles, Quality of Life, Persons with Disabilities, Ethical Digital Service Design

Introduction

Over recent decades, global societies have undergone an accelerated shift toward comprehensive digitalization—a transformation that extends beyond tools and communication methods to reshape the cultural, cognitive, and moral structures governing human interaction with the digital world. Within this context, digital ethics emerges as a critical framework for ensuring responsible and dignified engagement with expanding digital environments. Both Arab and Western scholarship have emphasized the importance of this field, particularly from educational and moral perspectives. For instance, Bukhait and Al-Sulami (2023) highlight that digital citizenship is rooted in ethical values promoting responsible use and conscious interaction. Similarly, Al-Ahmad et al. (2017) note that the openness and information flow characteristic of digital modernity necessitate ethical practices that balance freedom with responsibility.

These concerns become even more pressing when addressing the needs of persons with disabilities, who face compounded challenges in achieving digital inclusion. Ensuring the protection of their digital rights and enhancing their quality of life requires the development of digital services that accommodate their unique needs and circumstances.

Amid this transformation, reconsidering the relationship between Islamic ethics and digital service design becomes increasingly important. Islamic ethics represent a comprehensive moral framework emphasizing human dignity, justice, compassion, and responsibility across all forms of interaction, including technological engagement. Islamic educational literature affirms that ethical principles in Islam do not merely complement technological processes but actively guide and regulate them to ensure public good and protect individual rights. Bukhait and Al-Sulami (2023) underscore this point by discussing the centrality of ethical foundations in shaping digital participation. This perspective aligns with Al-Mulaibi (2023), who argues that enhancing the quality of life for persons with disabilities in the digital age requires ethically informed digital service design to promote inclusivity and prevent marginalization. Similarly, Al-Bashri and Hafez (2024) emphasize that the quality of life of individuals with disabilities is closely linked to society's ability to provide supportive digital environments that respect human dignity and meet essential needs—placing ethical commitment at the forefront of digital service design.

Global research has expanded significantly in studying the role of technology in empowering persons with disabilities and enhancing their quality of life. Kandeel et al. (2024) demonstrate that digital health interventions have improved health outcomes, social participation, and independence among individuals with disabilities, provided these interventions adhere to clear ethical and inclusive standards. Rathee et al. (2023) similarly argue that emerging technologies such as trusted edge computing can enhance quality of life when designed with fairness, privacy, and security in mind. Kolotouchkina et al. (2022) reveal that the digital divide in smart cities contributes to disparities in quality of life, especially among persons with disabilities, emphasizing the need for equitable and inclusive digital design. Fortune et al. (2024) further support this view by showing that the effectiveness of remote services during

the pandemic depended heavily on adherence to ethical values related to privacy, justice, and equal access.

Accordingly, this study highlights the necessity of examining the impact of Islamic ethical principles on the design of digital services for persons with disabilities an inquiry that bridges timeless moral values with contemporary digital needs. It seeks to advance a model of digital services that is more humane, more just, and more capable of enhancing quality of life in the digital age.

The Concept of Digital Ethics

Digital ethics are defined as the value-based and normative framework that regulates the behavior of individuals and institutions within technological environments and virtual spaces. This framework governs digital practices through a set of principles that safeguard human dignity and digital rights while ensuring the responsible use of technology. In an era characterized by rapid transformation and the massive expansion of information flows, digital interaction has become an integral part of daily life as well as institutional and organizational structures across various sectors. According to Bukhait and Al-Sulami (2023), digital citizenship is not merely a technical skill but an ethical system founded on awareness, responsibility, and respect for others' privacy, and is grounded in the understanding that the digital realm, like the physical world, is a space where rights and duties coexist. Contemporary literature affirms that digital ethics are essential for ensuring digital safety, information protection, and reducing violations arising from the misuse of technological tools.

From a social and humanistic perspective, recent research views digital ethics as a necessary mechanism for regulating interactions among users and fostering a fair and inclusive digital environment. Al-Ahmad et al. (2017) note that the communicative shifts imposed by digital modernity have rendered digital ethics indispensable, particularly amid increasing challenges such as misinformation, security breaches, and cyberviolence. Scholars further emphasize that digital ethics extend beyond legal regulation to encompass value-based awareness and personal responsibility. This underscores the need to build a digital culture grounded in respect for others, the protection of rights, and adherence to responsible practices that prevent digital harm and support human security. Digital ethics therefore constitute a foundation for enabling societies to benefit from technology while minimizing its risks—an objective that requires the promotion of ethical awareness alongside technological advancement.

From a comprehensive development perspective, digital ethics play a critical role in achieving digital justice and ensuring that all segments of society can access digital services safely and equitably. International literature highlights the importance of reinforcing ethical values in digital environments to guarantee that vulnerable groups, including persons with disabilities, can access fair and rights-respecting digital spaces. According to Kolotouchkina et al. (2022), the digital divide is not merely a technological gap but an ethical one related to accessibility, justice, and equality. Fortune et al. (2024) further demonstrate that the success of digital services provided to persons with disabilities during the COVID-19 pandemic was directly linked to the degree of adherence to ethical principles protecting privacy and promoting inclusion. This confirms that digital ethics are not a theoretical construct but a practical

requirement for designing sustainable digital environments capable of serving all members of society without discrimination.

Islamic Ethical Principles

Islamic ethical principles constitute an integrated system of values that regulate human conduct in relation to oneself, others, and society, encompassing all spheres of life, including the digital domain. These principles are grounded in universal values such as justice, compassion, truthfulness, trustworthiness, and respect for human dignity values that remain applicable across time and context, including modern technological environments. Bukhait and Al-Sulami (2023) explain that the Islamic educational perspective offers a robust ethical framework capable of regulating interaction within digital environments by promoting responsibility and fulfilling the higher objectives of the Sharia, which include the preservation of life, intellect, property, and honor. Islamic ethics maintain that every human action is subject to moral accountability, making ethical commitment in the digital sphere not only a social duty but also a religious and moral obligation.

The importance of Islamic ethical principles lies in their comprehensiveness and their capacity to prevent injustice, harm, deception, and violations of privacy all of which are closely associated with contemporary digital environments. The literature affirms that Islamic values remain compatible with technological advancements by offering clear criteria for distinguishing acceptable from unacceptable behavior in the digital realm. Al-Ahmad et al. (2017) emphasize that religious ethics constitute a fundamental reference point for interpreting and regulating digital behavior because they activate the moral conscience, prompting individuals to feel accountable before God prior to being accountable before the law. Islamic values also encourage learning, research, and innovation qualities aligned with the needs of the digital age while simultaneously regulating this openness by preventing ethical deviations such as defamation, fraud, and the misuse of information.

The strength of Islamic ethical principles derives from their ability to balance technological advancement with moral imperatives. They do not reject technology; rather, they guide its use toward serving humanity and enhancing quality of life, especially for vulnerable groups such as persons with disabilities. Al-Bashri and Hafez (2024) affirm that protecting the rights of persons with disabilities requires a clear ethical framework that upholds justice and compassion—two fundamental Islamic values. Likewise, Al-Mulaibi (2023) argues that improving the quality of life of persons with disabilities in the digital age cannot be achieved without an ethical system grounded in responsibility and fairness. These insights demonstrate that Islamic ethical principles represent a flexible yet powerful framework for guiding the design of digital services in ways that uphold human dignity and safeguard the rights of all members of society.

The Concept of Quality of Life for Persons With Disabilities

Quality of life is a comprehensive concept encompassing physical, psychological, social, and cognitive dimensions that ensure human well-being. Its importance becomes even more pronounced when applied to persons with disabilities, who often face additional challenges related to health, social inclusion, professional empowerment, and access to services. Specialized literature, as noted by Al-Bashri and Hafez (2024), emphasizes that quality of life for persons with disabilities extends beyond health indicators to include autonomy, social

participation, decision-making capacity, access to appropriate support, and the availability of an enabling environment responsive to their needs. Quality of life also encompasses access to services, information, and opportunities, making the modern digital environment one of the most influential factors in shaping the well-being of persons with disabilities.

Recent studies highlight that quality of life is closely linked to a society's ability to provide flexible and inclusive services that meet the needs of individuals with disabilities. Al-Mulaibi (2023) stresses that improving the quality of life of persons with disabilities in the digital age requires designing educational, health, and service environments that are tailored to their needs and offer equal opportunities. Global research, such as the study by Kandeel et al. (2024), demonstrates that digital health interventions have enhanced both health and social well-being by improving access to health services, facilitating follow-up and treatment processes, and expanding opportunities for community participation. These findings suggest that when the digital environment is designed ethically and inclusively, it becomes a key factor in enhancing the quality of life for persons with disabilities.

The literature also links quality of life with the rights of persons with disabilities to equitable digital access without discrimination. Rathee et al. (2023) argue that technological advancements can empower persons with disabilities provided that inclusion is ensured through accessible, safe, and privacy-respecting technologies. Fortune et al. (2024) show that the quality of life for persons with disabilities significantly improved during the pandemic when they used digital services specifically designed for their needs, enabling them to continue their education, therapy, and social interactions remotely. Such evidence underlines that the quality of life of persons with disabilities is now largely dependent on how effectively institutions design ethical digital services that uphold their independence, dignity, and overall well-being.

Digital Service Design

Digital service design refers to the processes through which platforms, applications, and technological systems are developed to deliver services in areas such as education, health, and social protection. This process is built on principles that ensure usability, efficiency, security, and inclusiveness—principles inherently tied to digital ethics. Contemporary literature affirms that digital service design must be user-centered, particularly when serving persons with disabilities, whose needs may require tailored sensory, cognitive, or mobility accommodations. Kolotouchkina et al. (2022) emphasize that smart cities that overlook accessibility standards exacerbate the digital divide, thereby highlighting the need for equitable and inclusive digital service design.

Scientific studies show that responsible digital design requires the integration of transparency, privacy, and data protection principles from the early stages of development. Rathee et al. (2023) note that emerging technologies, such as edge computing, require well-defined ethical standards to safeguard users from digital risks. Fortune et al. (2024) demonstrate that institutions providing health and social services to persons with disabilities during the pandemic were able to expand their reach by adopting privacy-centered, accessible digital designs, thereby enhancing professional practice within digital environments and improving service effectiveness.

In the context of digital transformation, research underscores the importance of involving persons with disabilities directly in the design process to ensure that services meet their real needs. Kandeel et al. (2024) argue that digital health interventions yield better outcomes when informed by users' lived experiences. Arabic literature similarly stresses that ethical digital design must align with societal values, as Al-Mulaibi (2023) explains, noting that designing services within the challenges of the digital age requires ensuring quality and equity for persons with disabilities. Accordingly, digital service design represents an integrated ethical and technical process aiming to build safe, effective, and inclusive environments for all members of society.

The Relationship between Islamic Ethics And Digital Services

The relationship between Islamic ethics and digital services is characterized by a clear integration between religious values and technical design principles. Islamic ethics provide a normative framework guiding the development of digital services to be more just, humane, and inclusive. The literature affirms that Islamic values—centered on human dignity, justice, and equality—serve as a strong foundation for designing digital services that respect users and uphold their rights. Bukhait and Al-Sulami (2023) explain that digital citizenship from an Islamic perspective is built on awareness and responsibility, elements that can be effectively incorporated into digital environments that prioritize privacy and restrict the misuse of information.

Islamic ethical principles significantly contribute to strengthening digital justice, a central concern in digital service design. Al-Ahmad et al. (2017) assert that Islamic values reject all forms of injustice and discrimination, making them essential for ensuring equal access to digital services. The literature also indicates that adherence to Islamic ethics safeguards the rights of vulnerable groups, including persons with disabilities, given that Islamic law seeks to remove hardship and empower individuals to fulfill their responsibilities and maximize their capabilities. Al-Mulaibi (2023) notes that improving the quality of life of persons with disabilities in the digital age requires adherence to principles of fairness and responsibility—core components of Islamic ethics. This demonstrates that digital services become more effective when grounded in clear religious values that protect human beings and uphold their rights.

The connection between Islamic ethics and digital services is also evident in the domain of privacy and data protection—critical issues in the digital era. Rathee et al. (2023) highlight that modern technologies require rigorous ethical frameworks to protect users from digital threats, aligning closely with Islamic teachings that prohibit spying and the violation of others' privacy. Kolotouchkina et al. (2022) indicate that justice in digital environments necessitates designing services that prevent exclusion and ensure equality, a principle consistent with the higher objectives of Islamic law that seek to preserve rights. Therefore, integrating Islamic ethics into the design of digital services is not merely an optional enhancement but a foundational approach for building digital environments that are just, safe, and inclusive.

The Impact on the Quality of Life of Persons with Disabilities

Adherence to Islamic ethical principles in the design of digital services constitutes a fundamental factor in enhancing the quality of life of persons with disabilities. These principles ensure justice, compassion, respect, and the provision of a safe and inclusive digital

environment. Recent literature indicates that the quality of life for individuals with disabilities improves significantly when digital services are developed according to ethical standards that respect their privacy and address their specific needs. Al-Bashri and Hafiz (2024) demonstrate that the quality of life for persons with disabilities is closely linked to the extent to which societies provide fair and inclusive technological environments—an outcome that can be readily achieved when guided by Islamic values that emphasize justice and equity. Similarly, Al-Mulabi (2023) notes that institutional commitment to ethical values enhances the ability of persons with disabilities to participate more fully in social, educational, and professional life.

Global studies confirm that ethically designed digital services can produce substantial positive transformations in the lives of persons with disabilities when developed in an inclusive manner. Fortune et al. (2024) found that remote health and social services provided to persons with disabilities during the pandemic improved their quality of life by ensuring fair and supportive access that addressed their needs and reduced mobility and social barriers. Further studies, such as Kandeel et al. (2024), affirm that ethically informed digital health interventions contribute to improving overall health and social participation among persons with disabilities. These findings align with Islamic principles that call for the removal of harm and the promotion of human well-being, thereby strengthening the role of Islamic ethics in guiding digital-service design to support the quality of life of persons with disabilities.

The relationship between Islamic ethics and improved quality of life for persons with disabilities becomes even clearer when examining the role of digital justice in empowering this group. Rathee et al. (2023) show that technologies that uphold privacy, security, and equality foster greater independence and social inclusion for persons with disabilities. Kolotouchkina et al. (2022) further highlight that the contribution of smart cities to enhancing quality of life depends on their ability to bridge the digital divide affecting persons with disabilities. This supports the Islamic vision of comprehensive justice and the necessity of providing digital services that enable persons with disabilities to access their fundamental rights. Accordingly, commitment to Islamic ethical principles in the design of digital services serves as a key driver for improving their quality of life, achieving full digital inclusion, and ensuring their active participation in society.

Ethical Challenges in Implementing Digital Services for Persons With Disabilities

The ethical challenges associated with implementing digital services for persons with disabilities represent one of the most significant issues confronting institutions in the digital transformation era. Contemporary literature reveals a clear gap between the vast potential offered by technology and the extent to which it is applied in ways that ensure justice, equity, and inclusivity for this group. Kolotouchkina et al. (2022) report that ethical challenges are primarily manifested in the digital divide, which hinders the participation of persons with disabilities in smart cities and limits their ability to benefit from electronic services. This underscores that the mere availability of technology does not guarantee fairness or inclusivity.

Similarly, Rathee et al. (2023) caution that although modern technologies can enhance quality of life, they may also pose significant threats if not designed with clear standards for privacy

and security particularly given the heightened reliance of persons with disabilities on digital systems, which makes them more vulnerable to data breaches or informational exploitation. Another major ethical challenge lies in the insufficient consideration of individual differences among persons with disabilities during digital-service design. As demonstrated by Fortune et al. (2024), remote services provided during the pandemic were not equally effective across all disability groups, despite their overall success for those able to use them. This suggests that the challenge involves not only providing the service but ensuring its suitability for diverse needs whether related to hearing, vision, cognition, or mobility. Al-Mulabi (2023) adds that one of the most prominent issues facing Arab institutions is the absence of unified standards for systematically designing services that accommodate the needs of persons with disabilities, resulting in inconsistent quality and unequal access. Thus, the ethical dimension emerges as a fundamental factor in ensuring digital fairness and equality in service delivery. Moreover, the most significant ethical challenge stems from the lack of a clear legislative and ethical framework obligating institutions to provide fair and inclusive digital services. Al-Bashri and Hafiz (2024) emphasize the need for robust ethical frameworks that protect the rights of persons with disabilities and guarantee equal opportunities, arguing that the absence of digital regulations exacerbates access barriers and limits social integration. These observations are supported by Kandeel et al. (2024), who show that successful digital health interventions rely on clear policies that safeguard users and reinforce justice. In light of these challenges, ethical commitment becomes an essential requirement for ensuring the success of digital services and achieving the goals of inclusivity and empowerment for persons with disabilities.

A Proposed Islamic Framework for Enhancing the Digital Quality of Life for Persons With Disabilities

The proposed Islamic framework for enhancing the digital quality of life for persons with disabilities presents an integrative model that brings together ethical values derived from Islamic law and the technical requirements of modern digital systems. This framework ensures the creation of a fair, safe, and inclusive digital environment. It is grounded in core Qur'anic values justice, compassion, facilitation, and the preservation of human dignity values emphasized in recent Islamic literature on digital citizenship, such as in the study by Bakhit and Al-Salami (2023), which argues that Islamic principles can regulate digital behavior through a system rooted in awareness and responsibility. The framework requires that digital services be aligned with the higher objectives of Islamic law (*maqāṣid al-sharī'ah*), which aim to protect life, intellect, property, and personal dignity objectives closely linked to protecting digital users from informational risks and the misuse of personal data.

This Islamic framework is based on several practical pillars that support the improvement of the digital quality of life for persons with disabilities. Among the most important is the promotion of digital justice as a foundational Islamic principle, as Islamic law emphasizes equality and non-discrimination a point highlighted by Al-Ahmad et al. (2017) in their work on communicative ethics. Consequently, digital services designed in accordance with this framework must provide equal opportunities for all users, account for individual differences, and prevent all forms of technological exclusion.

The framework also emphasizes the principle of ease and facilitation (*taysīr*), as noted by Al-Mulabi (2023) in the context of supporting persons with disabilities. This requires digital

services to be user-friendly and accessible to individuals with mobility or cognitive impairments, employing interface designs compatible with their needs. Additionally, the framework underscores the principle of ethical responsibility, particularly regarding user privacy—an emphasis consistent with the warnings raised by Rathee et al. (2023) concerning data breaches in modern digital systems.

Rewritten Academic English Version

The proposed Islamic framework is capable of enhancing the quality of life for persons with disabilities not merely because it provides technical standards, but because it establishes a profoundly human-centered vision that places human dignity at the core of the digital experience. Global literature, including studies by Fortune et al. (2024) and Kandeel et al. (2024), demonstrates that inclusive digital services grounded in ethical principles contribute to higher levels of health, education, and social participation for individuals with disabilities. This aligns with the argument presented by Al-Bashri and Hafiz (2024), who emphasize the need for a value-based approach to strengthening disability rights. Thus, the Islamic framework is not a theoretical addition; rather, it represents a practical model that offers solutions responsive to the challenges of the digital age. It ensures the development of digital services that improve quality of life, promote autonomy, and enhance the meaningful participation of persons with disabilities in society, in accordance with both humanitarian and Islamic ethical values.

Conclusion

The analytical discussion and comprehensive theoretical examination reveal that contemporary digital transformation despite its unprecedented opportunities imposes profound ethical, intellectual, and value-based responsibilities that extend far beyond technical considerations. This is particularly true for persons with disabilities, who represent one of the groups most in need of digital services that are fair, safe, and human-centered. Both Arab and international literature consistently demonstrate that the success and effectiveness of digital services are not determined solely by their level of technological advancement, but by the degree of ethical commitment embedded in their design and implementation. Findings from Fortune et al. (2024) and Kandeel et al. (2024) confirm that digital services enhance quality of life for persons with disabilities only when they are developed according to standards that safeguard privacy, ensure digital justice, and guarantee equal access for all users. This corresponds with the conclusions of Al-Bashri and Hafiz (2024) and Al-Mulabi (2023), who underline the central role of ethical values in shaping digital services that directly impact the well-being of persons with disabilities.

The study also shows that Islamic ethics with their emphasis on justice, compassion, preservation of human dignity, alleviation of hardship, and promotion of human welfare offer a flexible and robust framework capable of guiding the design of digital services in ways that ensure inclusivity and humanity. Studies by Bakhit and Al-Salami (2023) and Al-Ahmad et al. (2017) demonstrate that the Islamic ethical perspective can regulate digital behavior, enhance moral responsibility, and strengthen awareness among both individuals and institutions. When these values are applied to the context of digital services for persons with disabilities, it becomes evident that Islamic ethics constitute not merely a theoretical framework, but a foundational mechanism capable of addressing the gaps in digital justice and confronting the challenges identified by Kolotouchkina et al. (2022) and Rathee et al.

(2023), including risks related to the digital divide, technological marginalization, and privacy violations.

From this integrated analysis of digital ethics, Islamic principles, and digital-service design, it becomes clear that the quality of life of persons with disabilities in the digital era is not a product of technology alone, but the result of an ethical vision that restores the human being to the center of the digital process. Technology regardless of its advancement remains merely a tool; its value lies in its capacity to serve human beings with dignity and fairness. Accordingly, adherence to Islamic ethical values in the design of digital services endows the digital process with a deeply human dimension, ensuring the creation of digital environments that meet the needs of persons with disabilities, protect their rights, and open new horizons for empowerment, participation, and independence.

Therefore, the study clearly demonstrates that integrating Islamic ethical principles into the design of digital services is the most impactful pathway toward ensuring equitable access, enhancing quality of life, and achieving genuine digital inclusion for persons with disabilities. This necessitates that institutions, developers, and policymakers adopt a coherent value-based vision that draws upon both Islamic ethics and global best practices to develop digital services that improve lives rather than deepen existing inequalities. Consequently, there is a pressing need for further applied research to test Islamic ethical models in real digital environments and to develop policy frameworks that promote privacy, inclusivity, and justice consistent with contemporary requirements and the higher objectives of Islamic law.

This study contributes theoretically by advancing the understanding of how Islamic ethical principles can be effectively integrated within the framework of digital service design to promote justice, dignity, and inclusion for persons with disabilities. It expands the discourse in digital ethics by situating Islamic values as a dynamic and practical guide rather than a purely normative ideal, thereby bridging gaps between ethical theory and technological practice. Contextually, the research highlights the significance of applying these principles within culturally and religiously specific environments, demonstrating their relevance and adaptability beyond secular models. These findings enrich existing knowledge by providing a culturally grounded ethical framework that addresses contemporary challenges in digital inclusion, offering policymakers and practitioners a viable model to enhance equitable access and empower marginalized populations in the digital era.

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