Marriage in the Metaverse: Redefining Traditional Concepts in the Digital Age

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Abstract

With the emergence of novel technologies such as the Metaverse and blockchain, traditional concepts like marriage are undergoing transformation. The Metaverse, as a three-dimensional virtual space, enables users to interact, live, and even marry within its digital environment. This phenomenon presents new opportunities for redefining human relationships and social institutions, such as marriage. Marriage in the Metaverse is defined as a formal commitment between two or more users within a virtual space, which may include virtual ceremonies, exchanges of commitments, and smart contracts. This type of marriage can occur entirely in the virtual domain or serve as a complement to marriage in the physical world. Marriage in the Metaverse is rapidly expanding due to advantages such as global accessibility, reduced costs, and personalized experiences. This phenomenon can facilitate international relationships and eliminate geographical constraints. However, marriage in the Metaverse also faces numerous challenges that require thorough examination and appropriate solutions. The absence of clear regulations governing marriage in the Metaverse, issues related to divorce, the division of virtual assets, and the identification of real identities, along with concerns regarding the devaluation of physical relationships and negative impacts on family structures, raise critical concerns. Additionally, risks of fraud and misuse in virtual spaces, as well as technological limitations in fully simulating the marriage experience, present significant obstacles. The primary objective of this study is to examine and analyze this emerging phenomenon and its role in redefining traditional concepts such as marriage in the digital era. This article aims to identify the opportunities and challenges associated with marriage in the Metaverse and to propose solutions for addressing these challenges. The proposed strategies include drafting comprehensive legal frameworks to regulate marriage in the Metaverse, encompassing identity verification, rights and obligations of spouses, and divorce-related matters. Furthermore, international coordination for establishing global standards in this domain, the development of security technologies to protect user data and prevent misuse, and the creation of identity verification mechanisms to ensure the authenticity of user information are recommended to overcome these challenges.

Keywords: Metaverse, marriage in the Metaverse, smart contracts, challenges of marriage in the Metaverse, marriage regulation laws in the Metaverse, virtual identity

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1. Introduction

Marriage in the Metaverse refers to the formalization of commitments between two individuals in a virtual environment and the celebration of a wedding ceremony in a digital space. In this setting, two or more individuals, represented by their avatars, enter into a union through platforms such as Decentraland, Sandbox, or VR-based infrastructures like Horizon Worlds. This process may involve symbolic ceremonies, the exchange of digital rings, reciting vows, hosting post-ceremony celebrations, or even utilizing blockchain-based smart contracts (Fikri Abbas et al., 2024).

Individuals may opt for this form of marriage due to factors such as geographical distance, technological enthusiasm, or the desire to create a unique experience. Marriage in the Metaverse can be categorized as Symbolic Marriage, which primarily holds a ceremonial and symbolic nature without establishing any legal or binding obligations in the physical world. This type of marriage is usually preferred by individuals who wish to celebrate their relationship in a virtual space. Alternatively, it can be a Legal Marriage, where couples register their marriage both in the real world and in the Metaverse. In such cases, marriage in the Metaverse serves as a complement to legal marriage.

Avatars play a pivotal role as digital intermediaries in the formation and continuation of Metaverse marriages. These avatars may reflect the real identities of users or, conversely, be entirely fictional and idealized representations. This aspect can influence the level of honesty and trust within relationships (Neykova, 2024).

Marriage, as one of the most fundamental social and legal institutions, has historically been a subject of significance across various societies. This institution plays a crucial role not only in uniting two individuals but also in forming families and ensuring generational continuity. The term "marriage" derives from the Arabic root "Z-W-J" and, in Persian lexicons, is defined as the act of taking a spouse, forming a union, or establishing a conjugal relationship. In authoritative Persian dictionaries such as *Dehkhoda's Dictionary* and *Amid's Dictionary*, marriage is synonymous with *Nikah*, *Zanashooei*, and *Tazwij* (Amid, 1964; Dehkhoda, 1964). Similarly, in *Moein's Dictionary*, marriage is defined as a matrimonial contract that legally binds a man and a woman (Mo'in, 1964).

In Islamic jurisprudence and Iranian civil law, marriage is defined as a contract through which a man and a woman unite to establish a family and share a life together. This contract not only grants both parties the right to sexual enjoyment but also entails legal and financial obligations, such as *mahr* (dower) and *nafaqah* (maintenance) (Sadat Chavoshian & Shahabi Farahani, 2018; Safaei & Emami, 2017). Some Sunni jurists define *Nikah* as a contract that unites a man and a woman for the purpose of forming a family and sharing life responsibilities (Hilli, 2004). Another definition describes *Nikah* as a legal relationship established through a contract between a man and a woman, granting them the right to engage in sexual relations (Katouzian, 2014).

In legal terminology, marriage is defined as a contract that establishes conjugal rights and duties, entitling a woman to receive *mahr* and a man to conjugal relations and cohabitation. This contract is categorized as a binding agreement that necessitates explicit offer (*Ijab*) and acceptance (*Qabul*). The expressions used for *Ijab* in Islamic marriage contracts include "Zawwajtuka," "Ankahtuka," and "Mata'tuka", meaning "I give you in marriage," while *Qabul* is expressed through "Qabiltu al-Tazwij" or "Qabiltu al-Nikah" (Rahmani et al., 2017). Similar to other contracts, a marriage contract requires fundamental conditions such as intention, maturity, sanity, and a lawful purpose, as stipulated in Article 1064 of the Iranian Civil Code. This contract is classified as a consensual contract that is established through the mutual agreement and explicit declaration of the parties' intentions. The legal consequences of marriage are determined imperatively by the legislature (Katouzian, 1996).

Marriage is not solely intended for sexual relations but also serves the purposes of family formation, child-rearing, and fulfilling the emotional and social needs of both parties. Under Iranian law, marriage is conducted in two forms: permanent marriage (*Nikah Daim*) and temporary marriage (*Nikah Munqati*), each with its own conditions and legal consequences (Jafari Langarudi, 1979). In most countries, marriage falls under the category of personal status laws, with regulations varying based

on cultural, religious, and legal frameworks. In private international law, marriage is one of the most significant legal issues requiring attention (Danesh Pazhooh, 2002).

Marriage in the Metaverse differs significantly from *Nikah* in Iranian law. While Metaverse marriages are primarily symbolic and virtual, *Nikah* in Iranian legal jurisprudence is a legally binding contract with religious and legal obligations for both parties. In Metaverse marriages, avatars play a central role, and they may either represent the real identities of users or be entirely fictional, affecting the level of trust and transparency in the relationship (Neykova, N., 2024, p. 139). In contrast, *Nikah* in Iranian law is rooted in religious and legal principles, requiring essential conditions such as maturity, sanity, and intent. Additionally, the consequences of *Nikah*, including *mahr* and *nafaqah*, are explicitly defined in Iran's Civil Code (Katouzian, 2014).

2. Advantages of Marriage in the Metaverse

With the advancement of virtual reality technologies and the increasing popularity of digital spaces, marriage in the Metaverse presents certain advantages. Although this form of marriage offers an innovative alternative for some couples, it is unlikely to replace traditional marriage entirely and is generally considered as a supplementary or alternative option. Some of the key advantages are outlined below:

2.1. Global Accessibility

Global accessibility in the Metaverse allows individuals to participate in events and activities without being constrained by geographical or physical limitations. This is particularly significant for marriage in the Metaverse, as wedding ceremonies can be conducted virtually in a digital environment where individuals, regardless of their physical location, can attend. Marriage in the Metaverse eliminates geographical restrictions, enabling individuals from around the world to participate in ceremonies without the need for physical travel.

The Metaverse provides an opportunity for individuals from any location to take part in marriage ceremonies without incurring high travel costs or visa-related barriers. This is particularly beneficial for couples who reside in different countries or for families and friends who are geographically dispersed. In contrast, traditional marriage often necessitates the physical presence of individuals in a specific location, which can pose challenges such as long-distance travel, visa requirements, or high expenses. The Metaverse removes these obstacles, allowing individuals to participate in wedding ceremonies virtually from anywhere in the world. This feature is especially advantageous for couples in long-distance relationships or families spread across different regions (Fikri Abbas et al., 2024).

2.2. Cost Reduction

One of the most significant advantages of marriage in the Metaverse is cost reduction. Marriage in the Metaverse eliminates many of the traditional expenses associated with wedding ceremonies in the physical world, significantly reducing costs related to venue rental, catering, and transportation. This section provides a detailed analysis of this advantage.

In the real world, renting wedding halls, hotels, or other venues can be extremely expensive. In the Metaverse, these costs are entirely eliminated, as ceremonies take place in a digital environment that can be easily designed and customized. Traditional ceremonies often require substantial spending on venue decorations, floral arrangements, and table settings. In the Metaverse, decorations are created digitally, significantly reducing associated costs.

If couples live in different cities or countries, traveling to a shared location for the ceremony can be expensive. In the Metaverse, the need for travel is eliminated, allowing couples to participate in the ceremony from anywhere in the world. Guests at traditional weddings may need to undertake long journeys, incurring costs for airfare, train or bus tickets, or fuel expenses. In contrast, guests attending Metaverse weddings only require internet access and can participate from the comfort of their homes.

Traditional weddings often necessitate accommodations for guests traveling from other cities or countries, involving additional expenses for hotel stays or other lodging options. In the Metaverse, these costs are entirely eliminated. Additionally,

expenses for food and beverages, which can be substantial in traditional ceremonies, are drastically reduced in Metaverse weddings, as guests remain in their own homes and do not require catered meals.

Bridal and groom attire in traditional weddings can be costly. In the Metaverse, couples can use digital outfits, which are significantly cheaper or even available for free. Similarly, costs related to makeup and hairstyling for the bride, groom, and guests are substantially minimized, as avatars do not require physical grooming.

Metaverse weddings can be easily recorded without hiring professional videographers. Photos and videos are stored digitally, eliminating the need for printing. Many services in the Metaverse are provided digitally, reducing their overall costs.

Traditional weddings require significant time for travel, coordination, and execution. In the Metaverse, time commitment is significantly reduced, as all aspects of the event are managed digitally and remotely. Since participants only need access to the internet and a suitable device (such as a computer, mobile phone, or VR headset), the overall costs are minimized (Najib, 2023).

2.3. Creativity and Personalization

Creativity and personalization are among the most attractive and important advantages of marriage in the Metaverse. In the physical world, wedding design and execution face numerous constraints. However, in the Metaverse, these limitations are significantly reduced, allowing couples to hold their ceremony in a completely unique and personalized manner.

Marriage in the Metaverse enables couples to design every aspect of their wedding creatively and according to their preferences. This includes customizing the wedding environment, avatars, ceremony structure, music and sound, gifts and memorabilia, as well as incorporating unique themes and storytelling elements. Through these features, couples can create a distinctive and memorable experience not only for themselves but also for their guests.

In the Metaverse, couples can hold their wedding in any imagined location, including places that do not exist in the real world. For example, they can exchange vows in an underwater palace, a distant planet, a magical forest, or even in outer space. Additionally, couples can design every detail of the ceremony venue according to their tastes, from wall colors and furniture to lighting and background sounds.

The Metaverse allows for dynamic changes in the wedding environment. For instance, the setting can transition from day to night, or seasons can change automatically, creating a magical and memorable experience for guests.

Couples and guests can fully customize their avatars, even choosing fictional or cartoon characters as their digital representations. This customization extends to appearance, clothing, hairstyles, skin tone, and even facial expressions and gestures. Couples can design exclusive digital wedding outfits for their avatars, which may not be feasible in the physical world.

Guests and couples can change their attire throughout the ceremony. Additionally, couples can create unique digital gifts for their guests, such as digital photos, ceremony videos, NFTs, or virtual objects that guests can use within the Metaverse (Fikri Abbas et al., 2024).

2.4. Security and Privacy

Security and privacy are crucial advantages of marriage in the Metaverse. In the digital world, maintaining privacy and safeguarding personal information has become a primary concern for users. Marriage in the Metaverse offers advanced security solutions and privacy protections, ensuring a safe and secure experience for couples and their guests.

These security measures include access control and participant restrictions, protection of personal data, secure interactions and communications, safeguarding digital identities, secure transactions and payments, content protection for wedding ceremonies, and defenses against cyberattacks.

Through the Metaverse, couples can organize ceremonies that are not only unique and engaging but also take place in a secure, protected environment. Wedding ceremonies in the Metaverse can be held in controlled settings where access is restricted to specific individuals. This feature is particularly appealing for couples who prioritize privacy (Neykova, 2024).

2.5. Temporal Flexibility

Marriage in the Metaverse offers significant temporal flexibility, providing a highly convenient and adjustable experience for couples and their guests. This flexibility includes the absence of fixed time constraints, customizable ceremony duration, the ability to hold the event in multiple stages, the option to record and replay the ceremony, and ease in scheduling and coordination.

Using the Metaverse, couples can organize a wedding that not only delivers a unique and engaging experience but also aligns perfectly with their personal schedules. Metaverse weddings can take place at any time, without the need to coordinate with physical venues or adhere to strict scheduling constraints. Participants can also attend the ceremony at times that suit them best.

In the physical world, scheduling a wedding to accommodate all guests can be challenging, especially if they reside in different time zones. Coordinating venue availability, adhering to fixed dates, and ensuring guest attendance often pose significant logistical difficulties. However, in the Metaverse, these constraints are significantly reduced, enabling couples to plan and execute their ceremony with greater flexibility.

The Metaverse allows for greater scheduling adaptability, even enabling ceremonies to take place at times that are convenient for all attendees. Temporal flexibility is one of the most attractive and significant benefits of marriage in the Metaverse (Neykova, 2024).

2.6. A New and Innovative Experience

A new and innovative experience is one of the most compelling and unique advantages of marriage in the Metaverse. By integrating advanced technologies such as Virtual Reality (VR), Augmented Reality (AR), and Artificial Intelligence (AI), the Metaverse enables the creation of a completely distinct and groundbreaking wedding experience. This experience can be not only memorable and exciting for couples but also for their guests.

Marriage in the Metaverse provides a one-of-a-kind and unforgettable experience, particularly for individuals who are passionate about technology and innovation. This form of marriage can be documented as a special digital event in a couple's life history.

Due to its innovative and novel nature, marriage in the Metaverse offers couples and their guests a completely different and extraordinary experience. This includes creatively designed and personalized digital environments, the use of avatars and digital identities, interactive and engaging experiences, integration of cutting-edge technology, global guest participation, the ability to record and replay the ceremony, and hybrid ceremony options.

By leveraging the Metaverse, couples can create a wedding that is not only unique and engaging but also technologically advanced and unforgettable (Neykova, 2024).

2.7. Participation of Individuals with Physical Disabilities

The participation of individuals with physical disabilities in the Metaverse can bring a significant transformation to the concept of marriage and social interactions. This technology, by offering immersive and accessible virtual environments, provides new opportunities for individuals with physical disabilities who may face various obstacles in the physical world.

For individuals who, due to illness or physical disability, are unable to attend physical ceremonies, the Metaverse offers an opportunity to participate in wedding ceremonies. In the Metaverse, individuals can engage in weddings, social gatherings, or meetings without the need for physical mobility or presence in specific locations. This aspect is particularly crucial for those with mobility challenges, such as wheelchair users or individuals with chronic illnesses.

For example, a person with mobility impairments can attend a virtual wedding in a three-dimensional church or an imaginary garden without the need to navigate stairs or endure physical crowding. There is no need for compliance with physical accessibility standards, such as ramps, elevators, or specially designed seating, as virtual environments are designed from the outset to accommodate all users.

By removing physical and social barriers, the Metaverse provides an unprecedented opportunity for individuals with physical disabilities to participate in the marriage process and establish relationships. This technology not only enhances

accessibility but also contributes to redefining human interactions based on personality and creativity. However, the success of this model depends on the development of necessary infrastructure, clear regulations, and awareness of the inherent limitations of the virtual world (Fikri Abbas et al., 2024).

3. Challenges of Marriage in the Metaverse

Marriage in the Metaverse is an emerging phenomenon that faces numerous challenges, ranging from legal and security issues to emotional and cultural concerns. While the Metaverse offers new opportunities for social interactions and relationship formation, it is not yet a complete substitute for marriage in the real world. To achieve broader acceptance of this phenomenon, there is a need for legal development, technological improvements, and increased public awareness in this domain.

The advancement of digital technology over the past few decades has significantly transformed various aspects of human life, particularly social interactions. The emergence of the Metaverse presents new challenges in multiple areas (Fikri Abbas et al., 2024). This phenomenon is accompanied by several issues, and some of the most critical challenges are discussed below.

3.1. Legal and Regulatory Challenges

One of the primary challenges of marriage in the Metaverse is its legal recognition. Currently, many countries do not recognize virtual marriages, which can lead to legal complications for couples. The legal challenges of marriage in this digital age are evident, as technological advancements rapidly and significantly impact social order, particularly in areas where technology influences marriage laws. Therefore, it is crucial to approach and address this issue seriously. At the very least, the positive and negative impacts must be studied, followed by necessary reforms and assessments to find solutions and maximize the benefits of technology. Otherwise, society may be passively influenced by technological changes.

Technological advancements also affect the implementation and formulation of laws. For instance, the impact of technology on marriage can be observed in virtual wedding ceremonies, online marriage contracts, electronic marriage certificates, digital evidence collection, and online mediation processes. Consequently, the development and influence of technology create challenges for marriage laws. While technology introduces convenience, it also brings challenges, and virtual marriages remain a controversial topic.

Marriage in the Metaverse faces multiple legal and regulatory challenges, primarily due to the lack of alignment between existing laws and emerging digital phenomena, as well as variations in legal systems across different countries. Addressing these challenges requires the development of new legal frameworks and international cooperation to ensure the full recognition of virtual marriages and the protection of the rights of both parties.

In several countries, including the United States, Canada, the United Kingdom, and Australia, the issue of virtual marriage has been widely debated. Some nations, in response to the global COVID-19 pandemic, have temporarily recognized virtual marriages to accommodate social restrictions. The availability of digital technologies facilitated the execution of virtual wedding ceremonies during the COVID-19 crisis. However, virtual marriages have not been widely accepted by society, as they are often perceived as inconsistent with traditional customs and in conflict with existing legal frameworks.

Nonetheless, technological advancements necessitate legal adaptation, as these innovations have already influenced social norms. These developments present future legal challenges that require marriage laws to adapt and respond accordingly. The following sections explore some of the most significant legal and regulatory challenges associated with marriage in the Metaverse.

3.1.1. Legal Validity of Marriage in the Metaverse

The legal validity of marriage in the Metaverse faces significant legal barriers, as the existing laws of most countries, including Iran, do not align with emerging digital phenomena such as virtual marriage. In Iran's legal system, marriage is considered a legal contract that requires the physical presence of both parties, formal registration in official record offices, and adherence to specific formalities (Katouzian, 1996). In contrast, marriage in the Metaverse takes place entirely in a virtual space, often across international borders, and lacks requirements such as physical presence or registration in official records. According to Marthews and Tucker, even if the digital record of such a marriage is stored in a decentralized registry, such as

blockchain, this alone is not legally sufficient, as national legal systems have yet to establish formal mechanisms to recognize such events (Marthews & Tucker, 2019).

Under Article 1062 of Iran's Civil Code, the occurrence of a valid marriage does not require specific formalities and can be concluded using any verbal expression indicating an intention to marry. However, to ensure the rights of spouses and facilitate the proof of marriage, the law mandates official registration. The first law on this matter was the Marriage Act of 1931, which made marriage registration in official record offices mandatory and imposed imprisonment as a penalty for non-compliance. Subsequently, Article 645 of the Islamic Penal Code of 1996 criminalized the failure to register permanent marriages and prescribed imprisonment of up to one year. This provision initially placed legal responsibility solely on men (Sadat Chavoshian & Shahabi Farahani, 2018), but the Family Protection Law of 2012 expanded the scope of responsibility, imposing penalties for failing to register temporary marriages under specific conditions, such as contractual clauses or the presence of children (Safaei & Emami, 2017).

A key legal principle in Iran is that marriage and divorce record offices are the only official institutions authorized to register these events, and their issued documents are considered official records. According to Article 2 of the Marriage Act of 1931, unofficial marriage contracts lack full legal validity and are treated merely as ordinary documents (Moradi & Azimiyan, 2018). These legal requirements aim to ensure the validity of marriage, prevent disputes, and facilitate the enforcement of spouses' rights. For example, marriage registrars are required to verify the identity of both spouses before registration, obtain medical health certificates, and clearly explain the contractual terms to the parties (Azarmnia & Jalali, 2021).

Although Iran's laws have strictly regulated marriage registration, they remain ineffective in addressing emerging technologies like the Metaverse. The core issue is the lack of alternative mechanisms for physical presence and official registration. For example, could digital identity verification in the Metaverse be considered equivalent to physical presence? Could a decentralized registry (blockchain-based) replace government record offices? Answering these questions requires the development of new laws through international collaboration to mitigate legal conflicts between countries. Additionally, Iran's criminal penalties primarily target men, which may be ineffective in the virtual space where identities are sometimes anonymous. Furthermore, the absence of a centralized national database for marital status verification in Iran increases the risk of fraudulent multiple marriages or non-compliance with waiting periods (Iddah) (Azarmnia & Jalali, 2021). A proposed solution is the creation of an online national database that enables marriage registrars to verify an individual's marital status in real time.

Granting legal validity to marriage in the Metaverse requires redefining key legal concepts such as "presence," "identity," and "registration" within the framework of digital law. In Iran, although existing laws emphasize formal registration and strict procedural requirements, new mechanisms could be developed using technologies like smart contracts and digital identity verification. However, this would necessitate international cooperation and amendments to domestic laws to recognize digital records as official legal documents. Until such legal adaptations occur, marriage in the Metaverse will lack legal recognition in Iran and most other countries, leaving the rights of parties vulnerable to violation.

3.1.2. Differences in Legal Systems

The Metaverse, as a borderless and extraterritorial space, enables the formation of emotional and legal relationships between users from different countries. However, this parallel digital world faces a fundamental challenge—the conflict of national marriage laws. While an Iranian user in the Metaverse could enter into a virtual marriage with a user from Germany or Japan, the legal systems of these countries differ significantly in recognizing, enforcing, and dissolving such unions. These differences not only complicate issues such as the division of virtual assets or custody of digital children, but they also raise fundamental questions about the concept of "legal jurisdiction" in the digital age (Najib, 2023).

Leading nations have validated Metaverse marriages using advanced digital signatures and biometric identity verification. In these countries, virtual marriages are registered with legal formalities comparable to physical marriage. However, in conservative nations, particularly Islamic countries, the physical presence of both parties and unity of the marriage session are fundamental requirements for a valid marriage. The Metaverse eliminates these elements, making it inherently incompatible with Islamic family law (Musarrofa et al., 2024).

According to Article 969 of Iran's Civil Code, the formal requirements of marriage (such as registration) are governed by the law of the place where the contract is concluded (Almasi, 1989). Therefore, if an Iranian user enters into a virtual marriage on a Metaverse platform hosted in the United States, the formal aspects of the marriage would be valid under U.S. law, but the substantive elements (such as minimum age, consent, and marriage prohibitions) must still comply with Iranian law (Saljuqi, 2009). This legal duality increases the risk of legal loopholes.

In Iran, Article 987 of the Civil Code stipulates that an Iranian woman who marries a foreign man retains her Iranian nationality, unless her husband's nationality is legally imposed upon her. This rule creates a paradox in the Metaverse, where identities are fluid. If a man using a fake Japanese avatar deceives an Iranian woman into marriage, could Iranian courts establish his real nationality?

While countries such as France and Germany have restricted nationality acquisition through marriage, Iran continues to emphasize family unity in nationality laws. This discrepancy incentivizes "fraudulent Metaverse marriages" for nationality purposes (Razagh Shahid Delfi et al., 2024).

To address the legal conflicts arising from variations in national legal systems regarding Metaverse marriages, three key solutions are proposed. These approaches must be coordinated and complementary, balancing national sovereignty with digital realities:

1. Drafting International Conventions under the Supervision of the United Nations: Inspired by The Hague Convention of 1978, which addresses international marriage and child protection issues, a global treaty could be developed to establish minimum common standards for digital identity verification, Metaverse marriage registration, and legal dispute resolution. This treaty should involve both technologically advanced nations (such as Estonia and Japan) and conservative legal systems (such as Iran and Saudi Arabia) to create a flexible legal framework that respects national sovereignty while safeguarding basic digital rights. For example, a provision in the treaty could mandate that all virtual marriages be recognized only if the real identities of both parties are verified through accredited identity verification authorities (such as Iran's electronic government services or biometric authentication systems in the European Union).
2. Utilizing Multinational Smart Contracts on Blockchain: Blockchain technology, by creating a decentralized and immutable ledger, enables transparent and automated enforcement of marriage-related commitments. Multinational smart contracts could facilitate obligations such as dowry, maintenance, or division of digital assets (e.g., NFTs) based on predefined legal rules. For instance, if an Iranian-German couple marries in the Metaverse, the smart contract could be programmed to automatically calculate and transfer monthly maintenance payments based on the average income of both countries.
3. Establishing Transnational Cyber Courts with Specialized Expertise: These courts, comprising international legal scholars, technology experts, digital psychologists, and religious representatives, could adjudicate complex disputes. For example, if an Iranian woman claims that her Metaverse spouse deceived her with a false identity, the cyber court could review digital interaction logs, identity records, and relevant fraud laws from both countries to issue a fair ruling.

By integrating international conventions, smart contracts, and cyber courts, a comprehensive legal framework can be developed to legitimize Metaverse marriages while addressing legal discrepancies across jurisdictions.

3.1.3. Identity Verification and Proof of Consent

The Metaverse, with its ability to create unlimited virtual identities and avatars, has disrupted the boundaries of traditional marriage. In this extraphysical space, users can interact socially, emotionally, and legally with identities that are entirely different from their real selves, including fabricated gender, age, or nationality. While this freedom of identity expression allows individuals to explore their ideal self, it also raises complex legal consequences in the realm of virtual marriage. As some scholars argue, "proving the real identity of parties and their informed consent is the primary legal challenge in Metaverse marriages" (Musarrofa et al., 2024).

In the real world, marriage is validated through identity verification using official documents (such as birth certificates or passports) and the physical presence of both parties. However, in the Metaverse, user anonymity and the ability to create false identities create opportunities for legal abuses such as forced marriage, emotional fraud, and privacy violations. The Metaverse allows users to redefine their identities beyond physical constraints. This "identity fluidity" enables cross-border relationships

but simultaneously dismantles traditional identity markers such as location, borders, and collective belonging (Ahmadi Jashqani & Qasemi, 2018). For instance, an individual using a male avatar in the Metaverse may be a woman in the real world or even possess a completely fabricated identity. This discrepancy turns "genuine consent" into a legal dilemma.

In physical legal systems, consent is ensured through physical presence, signing documents, and witness testimonies. However, in the Metaverse, these mechanisms lose effectiveness due to the lack of tangible presence. The anonymity of the Metaverse, which is often referred to as "an enabler for identity fraudsters," has two key implications: the ability to freely express suppressed gender or cultural identities in the real world, and the potential for exploiting false identities for deception, forced marriages, or breaches of legal commitments. For example, a male user may deceive multiple Metaverse users by using a female avatar to demand virtual dowries. This highlights how the absence of transparent identity verification mechanisms can become a tool for organized crime (Kheradmandi & Biabani Deh Majnooni, 2019).

To mitigate the legal risks of Metaverse marriage, integrating emerging technologies with legal frameworks is essential. The UNCITRAL Model Law on Electronic Signatures (2001) defines an electronic signature as data attached to a message that verifies the signer's identity and confirms the document's content (Feyzi Chekab, 2010). In Iran, Article 31 of the Electronic Commerce Law recognizes electronic certification service offices as official authorities for identity verification and issuing digital signatures. These offices, utilizing biometric authentication systems, can verify users' real identities before registering a Metaverse marriage. For instance, before the ceremony, users must authenticate their identities by scanning their iris or fingerprint in the National Identity Verification System.

Blockchain technology provides a decentralized and immutable ledger, ensuring transparent and secure registration of virtual marriages. This system "eliminates centralized databases, making identity fraud or data manipulation nearly impossible" (Pour Shayestefard & Omidi, 2017). Within this framework, all processes—from identity verification to financial commitments—are executed through smart contracts. For example, in 2023, the Decentraland platform registered the first blockchain-based virtual marriage using NFT tokens as digital wedding rings.

Integrating biometric authentication methods (such as fingerprint scans or facial recognition) with knowledge-based authentication (passwords) and possession-based authentication (hardware tokens) enhances security. Although some scholars highlight drawbacks such as "privacy threats" and "high implementation costs" (Kheradmandi & Biabani Deh Majnooni, 2019), these costs are justified in critical legal matters such as marriage.

Family law in the Metaverse requires harmonization between national laws and international standards. At the national level, in Iran, the legal system mandates physical presence for marriage (Katouzian, 1996), but Article 2(k) of the Electronic Commerce Law recognizes "secure electronic signatures," paving the way for recognizing virtual commitments. At the international level, a unified convention could be drafted to regulate cross-border marriages in the Metaverse. This convention, inspired by Article 2 of the EU Electronic Signatures Directive, could establish standardized protocols for identity verification, consent, and dispute resolution. However, the success of such frameworks relies on tripartite collaboration between governments, Metaverse platforms, and international organizations. With these solutions, legal rights and security in virtual marriages can be protected.

3.1.4. Ownership of Virtual Assets

In the Metaverse, individuals can own virtual assets such as virtual land, digital goods, and cryptocurrencies. This raises legal challenges regarding asset ownership. In the event of divorce, how should these assets be divided? Are virtual assets considered joint property? Current legal systems do not provide clear answers to these questions, necessitating new legislative developments to address such issues. These challenges lead to uncertainties in legal definitions, the absence of explicit regulations, and concerns over security and privacy.

To resolve these issues, there is a need for technological advancements, legal reforms, international coordination, and collaboration with Metaverse development companies. Protecting ownership rights in the Metaverse also raises concerns about using digital platforms for income generation, such as monetizing content on YouTube, TikTok, Facebook, Twitter, and Instagram, or profiting from web hosting, Google AdSense, and cryptocurrency mining (Musarrofa et al., 2024).

In the digital era, income generation is increasingly shifting online, offering more accessible and promising opportunities. Some couples have incorporated digital assets into marriage agreements, using Bitcoin as dowry, or including Google AdSense accounts and unlimited web hosting services as part of the marriage contract.

Under Iranian law, dowry (mahr) is a financial obligation that the husband must transfer to the wife upon marriage. According to Article 1082 of the Civil Code, the wife owns the dowry immediately upon the marriage contract's conclusion and has full rights to dispose of it (Sadat Chavoshian & Shahabi Farahani, 2018; Safaei & Emami, 2017). This principle emphasizes the absolute financial right of the wife and the central role of dowry in the Islamic marriage contract.

In recent years, some couples have leveraged digital assets such as Bitcoin, Google AdSense accounts, or unlimited web hosting services as dowry. While innovative, this practice raises serious legal and religious concerns regarding its compatibility with Islamic family law and its practical enforceability (Musarrofa et al., 2024).

From the perspective of Islamic jurisprudence and Iranian law, dowry must meet specific conditions, including monetary value, marketability, ownership by the wife, and freedom from uncertainty (gharar) (Safaei & Emami, 2017). For instance, while Bitcoin has global market value, its high price volatility and decentralized nature pose risks, making it an unstable choice for dowry. Similarly, Google AdSense accounts and web hosting services, despite their economic value, depend on third-party platforms and may be subject to account suspension, leading to concerns over long-term accessibility guarantees (Musarrofa et al., 2024).

A major concern is the legal security of women in cases of digital dowries. Unlike traditional dowries (such as gold or cash), digital assets are vulnerable to hacking, loss of access keys, and changes in cryptocurrency regulations. These factors create uncertainty in enforcing a wife's right to dowry. Additionally, the lack of legal recognition for certain digital assets in Iran complicates ownership verification and valuation in court. For instance, if Bitcoin is used as dowry, its price fluctuations could lead to financial disputes upon divorce.

Nevertheless, digital dowries should not be dismissed outright. Developing new legal frameworks to define precise conditions for accepting digital assets as dowry—such as requiring equivalent valuation in local currency at the time of marriage or using smart contracts to ensure enforceability—is crucial. These measures could balance legal and religious principles while addressing technological advancements.

Until such legal reforms are enacted, using digital assets as dowry in Iran will remain legally and religiously controversial.

3.1.5. Child Custody

In Iran's legal system, custody (Hadānat) is defined as both a right and an obligation for parents to care for and raise their children. According to Article 1168 of the Iranian Civil Code, parents simultaneously hold the right and responsibility of custody. However, in cases of separation, Article 1169 grants custody to the mother until the child reaches the age of seven, after which the father assumes custody—unless the court determines otherwise based on the best interests of the child. Additionally, Article 1171 states that in the event of the death of one parent, full custody is transferred to the surviving parent, even if the mother remarries. This legal framework is designed around the physical presence of parents and tangible interaction with the child (Sadat Chavoshian & Shahabi Farahani, 2018).

However, the emergence of phenomena such as marriage and childbearing in the Metaverse has introduced new legal challenges to traditional custody laws. In the Metaverse, couples can form families through their avatars and even have virtual children. This raises complex legal questions: How should custody be determined for a child that exists as a user account or avatar? Can the time parents spend with their child in a virtual environment be equated with "physical presence"? Furthermore, the best interests of the child in the Metaverse require redefinition; traditional factors such as mental and physical well-being must be considered alongside new criteria such as access to digital education, cybersecurity, and data privacy protection.

Moreover, the cross-border nature of the Metaverse creates legal conflicts between jurisdictions. For instance, if the parents reside in different countries, which legal authority has jurisdiction over the custody dispute?

A key challenge is the security and ownership of a child's digital data. A virtual child may exist as an avatar with digital assets (such as gaming accounts or virtual currencies) controlled by one parent. In the event of divorce, how should custody rights over these assets be divided? Would hacking or deleting a child's account constitute a custody violation? These

ambiguities necessitate the development of specialized Metaverse laws that define concepts such as "digital custody" and "responsibility for avatar maintenance."

For example, parents could be required to submit reports on their child's virtual activities to the judicial authorities or use smart contracts to regulate access hours to the child's account. Another solution is international cooperation to establish unified standards. Treaties similar to the United Nations Convention on the Rights of the Child (1989) but adapted for virtual spaces could help determine jurisdictional authority and set minimum security standards.

Furthermore, collaboration with Metaverse development companies is essential. These companies could contribute by designing child-safe zones, implementing two-step identity verification for parents, and creating reporting mechanisms for violations.

Although Article 1104 of the Iranian Civil Code emphasizes parental cooperation in child upbringing, such cooperation in the Metaverse requires modern technological tools. Until comprehensive laws are enacted, custody disputes in the Metaverse may lead to data loss or emotional exploitation. Therefore, the convergence of traditional legal principles, technological advancements, and global cooperation is key to addressing these challenges.

4. Social and Ethical Challenges

The excessive emphasis on individual freedom and autonomy—a defining characteristic of global social change—has led to new forms of relationships, especially among young people. Instead of traditional and stable marriages, non-marital partnerships and informal relationships are becoming more prevalent. This trend reflects a growing desire for personal independence and an avoidance of the responsibilities associated with marriage.

In some cases, this individualism has evolved into self-centeredness, where young individuals increasingly resist assuming the obligations inherent in marriage. As a result, marriage as a traditional institution is gradually losing its significance, being replaced by short-term and informal relationships.

Under these circumstances, marriage in the Metaverse, as an emerging phenomenon, may accelerate this trend. The Metaverse, as an immersive virtual space, enables digital relationships and virtual marriages. However, a critical question arises: Can such relationships achieve the depth and stability of traditional marriages, or will they merely contribute to the superficiality of modern relationships?

In the virtual world, individuals can easily assume multiple roles and create multiple identities, which may reduce commitment and responsibility in relationships. There is concern that instead of fostering deep and lasting relationships, Metaverse marriages may become a tool for temporary and superficial experiences.

Furthermore, since individuals can fulfill many of their emotional and social needs outside of marriage, the normalization of alternative relationships is beginning to take shape. As a result, the traditional family structure is gradually being replaced by alternative partnerships.

This shift not only affects family structures but also challenges the social and ethical values associated with marriage and family relationships.

Ultimately, marriage in the Metaverse introduces new social and ethical challenges. The primary concern is that this type of relationship may lead to superficiality, reduced commitment, and a decline in responsibility. This transformation not only impacts family structures but also questions the fundamental values surrounding marriage and familial relationships.

Therefore, before accepting Metaverse marriages, it is necessary to thoroughly examine their social and ethical consequences to ensure that such developments enhance deep and meaningful relationships rather than contributing to their erosion.

As previously mentioned, with the expansion of digital technologies and the emergence of virtual platforms like the Metaverse, human relationships are increasingly shifting into digital spaces. While this transition creates new opportunities for connection and interaction, it also raises concerns about the superficiality of relationships and their impact on social structures and moral values.

In the virtual world, communication is often text-based, visual, or conducted through avatars. These modes of communication may lack the depth and richness of face-to-face interactions.

In digital environments, individuals interact less in person, which may lead to a decline in intimacy and deep interpersonal connections. Additionally, users tend to focus more on appearances and imagery, leading to a shift away from recognizing individuals' true personalities and inner characteristics.

The fast-paced nature of online interactions may also reduce the level of reflection and deliberation in relationships.

The superficiality of relationships in virtual spaces is a major social and ethical challenge, potentially affecting social structures, interpersonal relationships, and moral values. Addressing these challenges requires education, cultural awareness, and the development of new technologies.

By implementing such solutions, deep and meaningful human connections can be preserved, mitigating the negative effects of superficial digital relationships.

Marriage in the Metaverse raises new ethical questions, such as:

- Can virtual marriages be as stable as real-world marriages?
- Could this form of marriage devalue the institution of marriage in society?

In the real world, individuals hold clear and stable social roles and relationships. However, the expansion of the Metaverse has introduced new technologies, products, business models, and social dynamics.

Virtual identities, representing real users, can assume any role according to their needs, forming diverse social relationships in digital environments.

This ambiguity, variability, and lack of transparency in virtual identities challenge traditional social and legal norms.

For instance, young users may become addicted to immersive romantic experiences in the Metaverse, developing obsessions with virtual objects and losing interest in real-world relationships. Some users may even consider virtual objects as life partners, avoiding real-world relationships and marriage altogether.

Another ethical concern is the rise of remote sexual assault in anonymous social interactions. Due to the anonymity of the Metaverse, incestuous relationships between users may occur unknowingly. Upon the revelation of real identities, serious harm to users' mental and physical health is inevitable, with significant consequences for real-world social and legal norms (Zou & Hu, 2024).

The Metaverse provides extensive opportunities for extramarital relationships, as individuals can easily connect through social media platforms such as WeChat, Facebook, Twitter, and other applications.

Additionally, services such as "rental girlfriends" through Instagram and the rise of cybersex have emerged, further expanding opportunities for borderless relationships and engagements (Najib, 2023).

5. Security Challenges

Marriage in the Metaverse, as an emerging phenomenon, faces numerous security challenges, including serious risks such as fraud and digital identity forgery. The primary aspect of security is "ensuring authenticity," which relates to verifying fake profiles. The concept of security extends beyond the physical realm to emotional security as well. A virtual reality dating app, compared to traditional dating websites, offers users greater control and reduced risk, particularly in the context of initial romantic encounters. In such platforms, "coffee dates" are limited to five minutes, after which the partners are automatically (technically) disconnected. The next interaction is allowed only if both parties express mutual interest. The goal is to enable individuals seeking intimate relationships to invest less time and energy compared to a traditional physical meeting, which typically lasts at least an hour, even when interest is lost early in the interaction (Neykova, 2024).

Identity in the Metaverse is complex because individuals can have multiple identities, which may change depending on the context in which they engage. One approach to identity in the Metaverse is through virtual avatars, which reflect appearance, personality, and behavior in the virtual world. Another approach involves decentralized identities, allowing individuals full control over their identity without requiring approval from technology companies. However, verifying identities in the Metaverse is challenging, as users can operate under pseudonyms or anonymous names, making identity fraud easier.

Unlike the real world, no central authority or government controls identity verification in the Metaverse. To address this issue, various platforms have been developed, and Soulbound Tokens (SBTs) have been introduced to enhance identity

verification in the virtual world. In the Metaverse, users interact through digital identities called avatars, presenting a different version of themselves and engaging with others under these virtual identities (Belk, 2024).

In the digital world, individuals can create avatars that may differ significantly from their real-world identity, including gender, appearance, and even behaviors. From an Islamic perspective, honesty, transparency, and responsibility hold a high moral and ethical status in all interactions. Therefore, using avatars that do not align with one's real identity or engaging in activities inconsistent with Islamic values raises ethical and religious challenges. Additionally, the Metaverse facilitates interactions between non-mahram men and women, which, in Islamic teachings, is regulated to prevent misconduct and inappropriate behavior. These concerns highlight the necessity for greater adherence to Islamic principles in virtual spaces.

In the Metaverse, avatars and digital identities can easily be forged. A person may use someone else's personal information or create a completely fake identity to deceive others into digital marriage. The victim may unknowingly marry someone who does not exist or whose real identity is entirely different (Fikri Abbas et al., 2024).

Understanding the identity of individuals one interacts with is essential for evaluating relationships. However, in the intangible virtual society, identity is ambiguous. Many of the physical cues that we rely on for assessing personality and social roles in the real world are absent. In physical society, identity is anchored by the body, which provides a clear and convincing definition of self. In contrast, in the Metaverse, an avatar's gender representation does not guarantee the user's actual gender, creating challenges in intimate virtual relationships.

The early adopters of virtual worlds established romantic and sexual interaction zones, which quickly became some of the most visited and popular areas in digital spaces. While many virtual sexual encounters were short-lived, in long-term intimate relationships, users sought ways to verify gender identities (Corts, 2014).

Numerous cases of marriage certificate forgery and fraud have been reported for various reasons. For example, a man who fails to obtain his first wife's consent may forge a marriage certificate to enter a second marriage. There are also cases of fraud involving transgender individuals, especially in countries where civil registries do not approve gender identity changes on official identification documents.

Fraud can also occur when couples attempt to marry in jurisdictions with fewer registration restrictions or seek legal loopholes in foreign countries. Such cases often have significant consequences for children born from these marriages (Kamaruzaman et al., 2018).

In the Metaverse, individuals can manipulate emotions to gain trust and then exploit that trust for financial or emotional fraud. A user may promise marriage to solicit money or sensitive personal information, only to disappear afterward. This type of fraud can be deeply damaging, especially if the victim has developed strong emotional ties to the perpetrator.

On many Metaverse platforms, identity verification is not as strict as in the real world. This lack of transparency allows individuals to enter serious relationships, including marriage, without knowing the real identity of their partner. As a result, someone might unintentionally marry a person with a criminal background, psychological disorders, or an entirely different identity.

Additionally, digital evidence and records in the Metaverse can be easily manipulated. Conversations, commitments, and even wedding ceremonies can be forged, leading to legal disputes where one party claims a marriage occurred while the other denies it. Proving or disproving such claims can be extremely difficult.

Since the Metaverse is a relatively new domain, clear legal frameworks for marriage do not yet exist. This legal ambiguity increases risks, such as one party claiming that a Metaverse marriage is legally binding in the real world, while the other denies it. Such conflicts could lead to complex legal challenges.

Furthermore, in the Metaverse, individuals can easily manipulate emotions to coerce partners into actions they would not normally take. This emotional exploitation can cause serious psychological harm to victims.

Marriage in the Metaverse requires the storage and transmission of personal data, making it vulnerable to security threats. Implementing blockchain technology and cryptographic security measures can enhance data protection and prevent fraudulent activities (Neykova, 2024).

6. Cultural and Religious Challenges

Marriage in the Metaverse, as an emerging social phenomenon, faces significant cultural and religious challenges. Religion and culture play a crucial role in shaping attitudes and acceptance toward this form of marriage. In many cultures and religions, marriage is considered a sacred and formal bond between two individuals in the physical world. This traditional concept may conflict with Metaverse marriage, which occurs in a virtual and digital space.

Different cultures vary in their perceptions of technology and virtual interactions. Some cultures readily embrace new technologies like the Metaverse, while others remain more conservative. In highly technology-friendly cultures, Metaverse marriage may be more easily accepted, whereas technology-skeptical societies may resist such changes.

In many cultures, marriage is not just a personal commitment but a union between two families. The Metaverse may lack the family and social dimensions of traditional marriages. As a result, families and societies may reject Metaverse marriages as "real" relationships because they lack traditional familial and social interactions. This social pressure may deter individuals from pursuing Metaverse marriages.

Furthermore, in some cultures and religions, gender roles and specific expectations regarding marriage exist. The Metaverse may challenge these traditional roles, allowing individuals to redefine gender expectations in marriage. Some may view this as a form of liberation, while others may see it as a threat to traditional values.

Religious perspectives on Metaverse marriage also present significant challenges. Since traditional religious doctrines define marriage as a sacred union, the virtual nature of Metaverse weddings raises questions about their religious legitimacy.

Islamic scholars have debated whether Metaverse marriages could be religiously valid. Some argue that as long as Islamic marriage conditions (offer and acceptance, presence of a guardian, two just witnesses, and dowry agreement) are met, Metaverse marriages may be permissible (Fikri Abbas et al., 2024).

Ultimately, whether Metaverse marriages can replace traditional marriages or whether they undermine the sanctity and religious values associated with marriage remains an open question. Answering this requires a deeper examination of the cultural, social, and religious implications of these technological transformations.

7. Technological and Infrastructure Challenges

Marriage in the Metaverse, as an emerging phenomenon, faces numerous technological and infrastructure challenges that can impact users' experiences and even hinder the widespread acceptance of this type of marriage. Marriage in the Metaverse also introduces a new dimension regarding the validity of the offer and acceptance, which is usually performed in-person in a traditional setting. In the virtual world, although the offer and acceptance can be made via video conferencing technology, potential network or technical interruptions can affect the clarity of speech and the continuity between the offer and acceptance, which are vital elements of a valid marriage contract. The clarity of reciting and accepting the offer and acceptance plays a fundamental role in the validity of a marriage. Therefore, virtual weddings in the Metaverse must ensure that no technical interruptions occur that could disrupt the ceremony. This suggests that while the Metaverse offers comfort and accessibility, its application in Islamic weddings requires more attention to technical and legal details to comply with the requirements of marriage (Fikri Abbas et al., 2024).

For a complete Metaverse experience, users require advanced hardware, such as virtual reality (VR) headsets, augmented reality (AR) glasses, and powerful computational devices. These devices can be expensive and may not be accessible to all users. Lack of access to necessary hardware can prevent many individuals from fully participating in a Metaverse marriage or limit their experience. The Metaverse also requires a stable and high-speed internet connection. In areas with weak or unstable internet, users may face issues such as lag, disconnections, or reduced experience quality. These problems can disrupt the Metaverse marriage experience and cause user dissatisfaction. Metaverse platforms require powerful and stable servers. Server downtime, caused by user congestion, technical issues, or cyber-attacks, can result in data loss or disruption of the wedding ceremony. Server failure can cause the entire marriage ceremony to be disrupted or even result in the loss of critical data.

Metaverse software may contain bugs, security vulnerabilities, or performance issues. These issues can make the user experience less seamless and problematic. Bugs and software issues can cause problems such as program crashes, data loss, or graphical glitches during the marriage ceremony. Virtual reality (VR) and augmented reality (AR) technologies are still in the early stages of development and may have limitations such as eye strain, nausea, or movement restrictions. These limitations can prevent users from fully participating in the wedding ceremony or make their experience less enjoyable. Compatibility

issues may arise between different devices and Metaverse platforms. This can prevent users from interacting smoothly or utilizing all the platform's features. Lack of compatibility can limit the user experience and even prevent some individuals from participating in the wedding ceremony. The Metaverse requires a large volume of data that needs to be securely stored and managed. Problems such as data loss, hacking, or issues with data retrieval can create serious challenges. The loss of critical data, such as photos, videos, or even wedding-related information, can lead to user dissatisfaction.

In the Metaverse, users' personal information and privacy may be at risk. Issues such as hacking, identity theft, or data misuse can create serious security challenges. These issues can cause users to feel unsafe and refrain from participating in a Metaverse marriage (Neykova, 2024).

8. Revision of Islamic Laws and Suggested Solutions

In the present era, marriage laws must be updated to align with the social changes brought about by the impact of technology. This is an essential need in the new millennium. Marriage laws must be reviewed to respond to the opportunities and challenges created by technology. This review should consider both the benefits of technology and not overlook its negative impacts. Identifying the challenges and responses related to the development of technology highlights the importance of swift implementation of changes in marriage laws. Technology brings both comfort and challenges, so laws must be continuously updated to keep pace with technological developments. The ultimate goal of these changes is to create laws that, in the age of technology, foster peace, love, and mercy in marital relationships. The laws should be designed to address challenges with alternative approaches and ultimately strengthen stable and healthy relationships.

The nature of legal reforms has always been to guide the legal system towards being more efficient, just, and aligned with the needs of society. The primary aim of these reforms is to create legal certainty and ensure justice for all members of society. In the digital age, the need for legal reforms is more urgent because rapid technological advancements and social changes quickly render existing laws outdated. This is especially true for Islamic laws, which were formulated in a specific historical and cultural context, highlighting the necessity of revising and adapting them to new conditions. The revision of Islamic laws in the digital age is an inevitable necessity. Rapid technological transformations and social changes quickly obsolete existing laws and create the need to redefine key concepts. Legal reforms should be designed to adapt to these changes and ensure justice and legal certainty for society. A reluctance to update laws can lead to legal uncertainty and difficulty in achieving justice. Therefore, it is essential to respond to these challenges through the formation of specialized committees, education and awareness programs, and international collaboration.

Legal reforms are a process where existing laws are examined and assessed to ensure their efficiency, justice, and compatibility with society's needs. In the digital age, these reforms should be directed towards transcendent legal principles that aim to achieve higher goals such as justice, effectiveness, sustainability, and equality. These goals go beyond the material and temporal dimensions of laws and seek to create a legal system that can adapt to the rapid technological advancements and social changes. The digital culture is evolving at an unprecedented speed, and these transformations create unique challenges for legal systems. Laws that are too reliant on material and temporal aspects are quickly outdated. Therefore, legal reforms must be designed to keep pace with the speed of digital developments and offer new definitions that align with these changes. Legal reforms become necessary when the existing legal system is disrupted. This disruption occurs when existing laws can no longer provide satisfactory responses to the complexities of social transformations. In the digital age, social transformations can no longer be explained with old definitions. For example, Islamic laws were written when society was unfamiliar with digital technologies.

The need for legal reforms often arises not from political pressure but from socio-economic pressures. In the digital age, these pressures are felt more acutely due to the rapid development of digital technologies and the social changes associated with them. Social and cultural behaviors that were once regulated by existing laws have now undergone significant changes. For example, online marriages, the emergence of digital dowries (such as Bitcoin, Google AdSense, and other digital assets), and cybersex are examples of social and cultural behaviors that can no longer be explained with old definitions of Islamic laws. These socio-cultural transformations inevitably force Islamic laws to change. A reluctance to update outdated definitions can lead to legal uncertainty, which in turn makes it difficult to achieve legal justice.

Practical examples of the need for reform are as follows:

- Online marriages: In the digital age, online marriages have become a common phenomenon. However, existing Islamic laws on marriage, such as the requirement for witnesses' physical presence and the traditional ceremony, are not compatible with this type of marriage. Therefore, there is a need to redefine concepts such as "marriage witnesses" and "marriage contracts" to align with new conditions.
- Digital dowries: Digital dowries, such as Bitcoin or other digital assets, are now part of people's wealth. However, existing Islamic laws on dowries refer to physical and traditional assets. Therefore, there is a need to redefine the concept of "dowry" to include digital assets.

It is worth noting that legal reforms, particularly regarding Islamic laws, cannot be carried out simply by copying actions from other countries. This approach is often ineffective because legislation deals with issues that are deeply connected to the culture, history, and specific characteristics of each society. For example, the development of Islamic laws in Indonesia is a distinct product designed to regulate the lives of Muslim citizens in that country, with all its unique features. Therefore, legal regulations in Islamic law in Indonesia often differ from similar regulations in other countries. Thus, the updating of Islamic laws to address the challenges of the digital age must be done within the framework of Indonesian society, considering its specific characteristics. Legislation should not only provide normative definitions for current realities but also anticipate potential future changes. This is especially crucial in the digital age, where the pace of technological change is rapid. A law that does not consider the future will quickly become obsolete and may fail to meet society's real needs. This principle is equally valid for Islamic family law reforms. Addressing the needs of society in the field of Islamic family law services depends not only on the law but also on its supporting mechanisms. The law serves as the framework for executing contracts and resolving disputes in the field of Islamic family law, while its supporting mechanisms are necessary to implement public services defined by the law. In response to recent advances in the cyber world, which offer various facilities and speeds in performing tasks, Islamic family law also requires specialized tools. These tools must remain rooted in Islamic traditions while adapting to digital age changes. In other words, laws should be designed to both adhere to Islamic principles and respond to the new needs of society in the digital age, protecting individuals' civil rights in the face of technological transformations.

In the digital age, Islamic family laws require revision and adaptation to technological developments. Some provisions that need to be redefined include the following:

- Presence of two witnesses for the marriage contract is mandatory in Islamic laws. With technological advancements, the possibility of virtual presence of witnesses through online platforms has been created. Electronic signatures are also recognized in new laws, making online marriages with online witnesses valid. To accommodate these changes, Article 26 of Islamic Law should be revised to include digital signatures of witnesses.
- Online marriage contracts: The contract can be valid as long as Shariah conditions are met, such as the presence of two just witnesses and the acceptance of the dowry.

9. Proposed Solutions for Legal Reforms

Adapting Islamic laws to the digital era is a complex and multidimensional process that requires comprehensive collaboration and participation. The formation of specialized committees, education and awareness programs, and international cooperation are among the key strategies that can facilitate this process. These solutions not only help in redefining key concepts in Islamic law, but they also ensure that these changes lead to greater justice and efficiency in society. The following strategies are proposed:

a) Formation of Specialized Committees

Specialized committees should comprise a balanced combination of Islamic jurists, legal scholars, information technology experts, sociologists, and psychologists. Islamic jurists and legal scholars can examine the Shariah and legal foundations of Islamic laws, while information technology experts can analyze digital transformations and their societal impacts. Sociologists and psychologists can study behavioral and cultural changes resulting from digital technologies. The committee should redefine key Islamic legal concepts, such as marriage, divorce, dowry, and inheritance, within the framework of the digital age. The committee must also continuously monitor technological advancements and analyze their impact on Islamic laws. Based on their findings, they should propose legal amendments that align with new digital conditions and assess the practical implementation of these reforms.

For instance, regarding online marriages, the committee can examine whether the physical presence of witnesses is mandatory or if virtual witnesses can be accepted. Additionally, they can evaluate whether marriage contracts can be digitally concluded and whether these contracts are legally and religiously valid.

b) Education and Awareness Programs

Educating and raising public awareness about legal changes and their necessity can facilitate acceptance of these reforms. These educational programs should include:

- Organizing workshops and educational seminars for the general public, particularly young people, to explain the legal changes and their necessity.
- Integrating Islamic legal studies and digital transformations into school and university curricula.
- Utilizing media and social networks to disseminate information about legal changes and the rationale behind these updates.

For example, regarding digital dowries, educational programs can explain how digital assets such as Bitcoin can be used as a dowry and how this impacts spousal rights. They can also elaborate on why redefining the concept of dowry in the digital age is necessary.

c) International Cooperation

In the digital era, adapting Islamic laws to technological advancements and social changes requires an international approach and broad collaboration with various countries and organizations. Sharing experiences and learning from others can help countries adopt best practices in adapting Islamic laws to new conditions. This process involves participating in international conferences, collaborating with international organizations, conducting joint research, and analyzing legal adaptations in other countries.

Collaborating with other countries facing similar challenges can facilitate the exchange of experiences and best practices for adapting Islamic laws to the digital age.

Attending international conferences and forums that focus on adapting Islamic laws to the digital era is an effective means of knowledge exchange. These events provide opportunities for countries to learn from each other and share best practices.

Collaboration with international organizations such as the Organization of Islamic Cooperation (OIC) can facilitate knowledge-sharing and experience exchange in adapting Islamic laws to digital transformations. For instance, the OIC could establish specialized task forces to examine common challenges and propose practical solutions for member states.

Conducting joint research with universities and research centers in other countries facing similar challenges can contribute to the development of knowledge and innovative approaches in adapting Islamic laws. Such research could focus on topics like online marriages, digital dowries, cybersex, and other technology-related legal issues.

Examining the legal frameworks of countries that have successfully adapted their laws to the digital era can help other nations learn from their experiences. Countries like Malaysia and the United Arab Emirates have been pioneers in adapting Islamic laws to digital transformations. Malaysia has introduced legal frameworks for online marriages, while the UAE has recognized digital assets such as Bitcoin as dowry, demonstrating successful legal adaptation.

Leveraging successful strategies and approaches from other countries and tailoring them to local conditions can assist nations in updating their laws. Western countries, for example, have valuable experiences in digital legal frameworks, including electronic contracts, data privacy laws, and cybercrime regulations, which can serve as models for adapting Islamic laws to new digital conditions.

10. Conclusion

Marriage in the Metaverse, as an emerging phenomenon, has significantly redefined traditional marriage concepts. This technology offers advantages such as global accessibility, cost reduction, personalized creativity, and participation of individuals with physical limitations, providing unprecedented opportunities for forming borderless and inclusive relationships. Additionally, by eliminating geographical constraints and allowing for sustainable and environmentally friendly ceremonies, the Metaverse introduces a new model of social interactions that can complement traditional marriages or serve as an alternative in digital-oriented societies.

However, this phenomenon also faces numerous challenges. Legal issues such as lack of official recognition, differences in legal systems between countries, and problems with dividing digital assets necessitate the development of comprehensive laws and international coordination. Security challenges, including identity fraud, scams, and privacy violations, highlight the need for stronger security technologies and robust identity verification mechanisms.

From a social and cultural perspective, concerns exist regarding the superficialization of relationships, the decline of emotional commitments, and the impact on family structures, especially in societies where marriage is a sacred institution rooted in religious values. In the religious domain, the compatibility of virtual marriages with Shariah principles, such as the presence of witnesses and the offer and acceptance process, requires legal reinterpretation while maintaining Islamic principles.

To address these challenges, flexible legal frameworks, international standardization, and security technology advancements are essential. Collaboration between religious, legal, and technological institutions through the formation of specialized committees can facilitate the redefinition of Islamic laws and their adaptation to digital transformations. Public education and awareness programs about the benefits and risks of the Metaverse, along with technological infrastructure development, will further ease the acceptance of this phenomenon.

Ultimately, marriage in the Metaverse should not be viewed as a replacement but rather as an extension of human relationships in the digital age, requiring a balanced integration of innovation, ethics, and fundamental values. The future of marriage in the Metaverse will depend on humanity's ability to align technology with human values, maintain equilibrium between innovation and authenticity, and create peaceful coexistence between the physical and virtual worlds.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

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