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Mongolia's land ownership challenges

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Mongolia's land ownership challenges

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Abstract- Although the Constitution guarantees the right of Mongolian citizens to own land, the lack of legal protections in other laws has led to the issuance of legal acts and regulations that fail to ensure proper legal procedures. As a result, the legal framework to regulate this issue remains insufficient. This study aims to analyze and clarify these shortcomings. Also, this article conducts constitutional restrictions in Mongolia, particularly regarding the availability of land resources for private ownership and the separate registration systems for land and immovable property. It compares these aspects with foreign legal systems to identify key challenges citizens face in owning land today.

Keywords: Land privatization, Land ownership, Possession and use rights

1. INTRODUCTION

The 1992 Constitution of Mongolia guaranteed human rights, a market economy, and a democratic state system, and for the first time, recognized private property, including the right of citizens to own land. This decision was made through extensive debate and negotiation, attracting significant criticism and controversy. Revisiting how this decision was made is not only interesting but also crucial for understanding the implementation of the law. The process of granting land ownership to citizens and conducting land privatization, known as land reform,

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officially began in 2003 and continues to this day. As a result, many citizens have acquired privately owned land, improving their livelihood security.

However, several legal and practical challenges have emerged in the process of land ownership for citizens of Mongolia. Due to cautious government policies, land privatization has stagnated, and land ownership rights have been restricted for usage purposes, limiting citizens' freedom to manage and dispose of their land. Additionally, cases of compulsory expropriation of privately owned land have undermined the security of land ownership rights.

According to the Law on Allocation of Land to Mongolian Citizens, land can be allocated for "family needs" and economic purposes. However, the government's reluctance to allocate land for economic activities is inconsistent with current needs, restricting citizens' opportunities to engage in business and services on their land.

Although land has been recognized as an essential component of immovable property under the Civil Code, the registration system continues to separately register land and the immovable property on it. This practice diminishes the fundamental value of land ownership rights. Furthermore, there is an ongoing need to harmonize the legal regulations of land and the immovable property on it across different sectoral laws. This study adopts John Locke's theoretical framework, which identifies the rights to life, liberty, and property as natural rights inherently granted to individuals by nature. These fundamental rights serve as the guiding principles for the research's theoretical and methodological approach.

The existing legal framework governing land ownership for Mongolian citizens enables an assessment of its implementation and the extent to which individuals can effectively exercise their land ownership rights. However, this issue also raises concerns related to national sovereignty and security, highlighting the need for a critical examination of traditional conceptions and evolving perspectives on land ownership.

In Mongolia, the current approach to land tenure involves allocating a limited and viable portion of land for private ownership while maintaining the majority of the territory under state ownership. Based on a comparative legal analysis of these pressing issues, this article aims to propose recommendations for improving and refining land-related legislation. It seeks to identify potential solutions to enhance the land ownership system in Mongolia, accelerate the process of granting land ownership to citizens, expand the scope of land ownership rights for family use, and strengthen legal guarantees for land tenure security.

2. SECURING CITIZENS' LAND OWNERSHIP RIGHTS AND IMPLEMENTING LAND PRIVATIZATION IN MONGOLIA

2.1. Establishment of the Legal Environment for Land Ownership in Mongolia

In 1992, Mongolia transitioned from a centrally planned economy to a market economy, bringing significant social and economic changes to the country. On December 6, 1990, the People's Great Khural of the Mongolian People's Republic (MPR) amended Article 59 of the 1963 Civil Code of Mongolia, allowing for public, private, and mixed forms of ownership. This amendment created the conditions for land to enter civil circulation by specifying in the second sentence of Article 62 that immovable property includes land and buildings. Article 92 of the Civil Code granted Mongolian citizens the right to private ownership, while Article 93 allowed for land,

means of production, other property, and intellectual values to be privately owned [1]. This was the first legal recognition of private ownership, paving the way for all types of property to develop freely.

On October 4, 1990, the State Baga Khural established a 20-member commission composed of representatives from multiple political parties to draft a new Constitution. This commission was led by President P. Ochirbat, with prominent legal expert B. Chimid serving as its secretary. Between 1990 and 1992, the draft was discussed four times by the State Little Khural, publicly debated for three months, and deliberated for over 70 days by the People's Great Khural.

To resolve issues related to land ownership and immovable property, the United Nations sent four experts (from India, Saudi Arabia, the USA, and France) who provided consultations for two months. Additionally, international scholars from Germany, the USA, Japan, Canada, India, and more than 40 other countries participated in two academic conferences, offering essential support and guidance.

In July 1991, a national academic conference titled "Constitutional Draft: Development Trends" was organized, involving members of the State Little Khural, the People's Great Khural, legal experts, and researchers. The draft was also translated into English and sent to international scholars and legal experts, including Amnesty International, Charles Fried, Professor Martin Shapiro, R. Grodin, and Louis Fisher, to gather feedback on each provision.

For example, Professor Louis Fisher from the USA commented on Article 6 of the draft, stating that "it is unclear who exactly can own land... it seems like the state owns the land and leases it to individuals." Charles Fried noted that the provision allowing "only Mongolian citizens to own land" was problematic, questioning what would happen if a foreigner wished to own a private house in the capital city [2].

The draft also stipulated (in Article 16.3) that the confiscation or requisition of private property should be regulated by law, protecting individuals from arbitrary actions by the administration. However, experts warned that if the law violated these rights or if no law was enacted, citizens might not be able to exercise these rights.

The commission responsible for drafting the Constitution improved the draft based on recommendations from the two national and international conferences, input from international organizations, foreign and domestic experts, and public discussions. The revised draft was then submitted to the State Baga Khural [3].

During the deliberation of the draft Constitution, on October 10-11, 1991, a proposal stating that "the state may grant land ownership to citizens of Mongolia" was put to a vote in the State Little Khural and received majority support, laying the foundation for land ownership rights [4].

Throughout the drafting process, numerous public comments were received on whether land should be privately owned. Only "23 people supported private ownership, while 4,426 favored state ownership." A study conducted by the "Academy of State and Social Studies" in Selenge, Uvurkhangai, Uvs provinces, Ulaanbaatar, and Darkhan revealed that "15 out of every 100 respondents supported private ownership, while 56 favored state ownership of land"[5].

Although donor organizations initially supported the land privatization policy in the Constitution, most Mongolian citizens opposed it, as noted in a research report [6].

On January 2, 1992, the People's Great Khural approved a provision with 68% support stating that "except for pastures, public-use areas, and land for special state needs, land may be privately owned only by citizens of the Republic of Mongolia. This does not apply to subsoil

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resources. It is prohibited to transfer privately owned land to foreign citizens or stateless persons through sale, exchange, gift, or mortgage, and to allow others to use or possess it without the authorization of a competent state authority" [7].

The Constitution of Mongolia recognized private ownership and ensured equitable and fair distribution of subsoil resources to all citizens, allowing land ownership exclusively for Mongolian citizens for specific purposes. It also stipulated that ownership rights could be legally restricted, thereby recognizing the natural human right to own property as a fundamental economic right in a market economy.

Throughout Mongolia's 2000-year history as a state, land was first owned by the king and then by the state, with citizens never having private ownership. It was only with the 1992 Constitution that citizens were granted the right to own land.

2.2. Regulation of Land Ownership rights by other laws

Article 76 of the 1994 Civil Code states that an owner has the full right to possess, use, and dispose of their property within the framework of the law. It also specifies that immovable property includes land and things inseparable from the land, and land rights are registered by state authorities. Additionally, Article 103.1 stipulates that a citizen can acquire the right to possess state-owned land for life according to legal grounds and procedures, including the right to inherit this possession [8]. Article 4 of the 1994 Land Law specified that a special law would regulate the relationship of granting land ownership to citizens of Mongolia.

Article 101.1 of the 2002 Civil Code states, "An owner has the right to freely possess, use, and dispose of their property at their discretion within the limits established by law, without violating the rights granted to others by law or contract, and to protect their property from any infringement." Article 102.1 further provides that "All land, except for that owned by citizens of Mongolia, shall be state property." These provisions reaffirmed the right of citizens to own land [9]. The enactment of the Law on Allocation of Land to Mongolian Citizens in 2002 created the necessary conditions for the effective exercise of land ownership rights by citizens. Under this law, every citizen of Mongolia is entitled to receive land once, free of charge, for family needs. For example, citizens can own up to 0.07 hectares of land along state roads connecting the capital city with provincial centers (excluding soum centers). Due to amendments made in 2005, 2008, 2012, and 2018 to the Law on Allocation of Land to Mongolian Citizens and its accompanying regulations, the opportunity to acquire land ownership remains open until 2028 [10].

2.3. The Process of Allocating Land Ownership to Citizens and the Status of Land Resources

In line with the principles of the Constitution, the issue of land privatization was discussed in political circles for many years and began to materialize in 2003 by initially granting land for collective family use. Following the Constitutional Court's decision, on May 1, 2008, the opportunity was opened to allocate land ownership to each citizen rather than to families. As a result of this legal change, land previously allocated to families was transferred to one member of the family, while other members were given the right to receive land ownership once, free of charge, as stipulated by law [10].

Ulaanbaatar, the capital city, which covers an area of 470.4 square kilometers with 3 satellite districts and 6 central districts, has transferred 90% of its land to private ownership. Due to the scarcity of land resources, the allocation of land ownership rights has been suspended indefinitely. As of April 2023, a total of 11,056 hectares of land have been allocated to 207,723 citizens through 254 resolutions issued by the Mayor of Ulaanbaatar [12]. According to the Law on Allocation of Land to Mongolian Citizens, as of the end of 2023, a total of 723,515 citizens nationwide have been granted ownership rights to 71,000 hectares of land in cumulative terms. As of the end of 2023, the total number of landowners, possessors, and users nationwide is 1,233,706 (Table 1).

Table 1. The Scope and Proportion of Land Ownership, Possession and Use rights (2023)

Purpose	Number	Area	Proportion of total land area (%)
For family needs	723515	71 (thousand ha)	0.06
Possession	599,845	7.6 (million ha)	5.5
Use	7795	722 (thousand ha)	0.55

Source: 2023 Land Unified Fund Report (Agency for Land Administration and Management, Geodesy and Cartography - ALAMGC)

Under the Law on Allocation of Land to Mongolian Citizens, by the end of 2023, a cumulative total of 71,000 hectares of land ownership rights were registered for 723,515 citizens nationwide, representing 20.6% of the population. This means approximately 80% of citizens have not obtained land ownership. Only 0.06% of the total land area is privately owned, while 99.94% remains state property [13]. During the discussion of the draft law, it was estimated that 0.9% of the national territory could potentially be privatized to citizens [14]. It is evident that the amount of land to be privatized to citizens constitutes a small portion of the national territory.

From this, it can be concluded that only 20.6% of the total population has acquired land ownership, indicating a slow progress in land privatization. Initially, the government aimed to fully allocate land ownership to all citizens from 2003 to 2028, but as of now, approximately 80% of citizens have not acquired land ownership (Figure. 1).

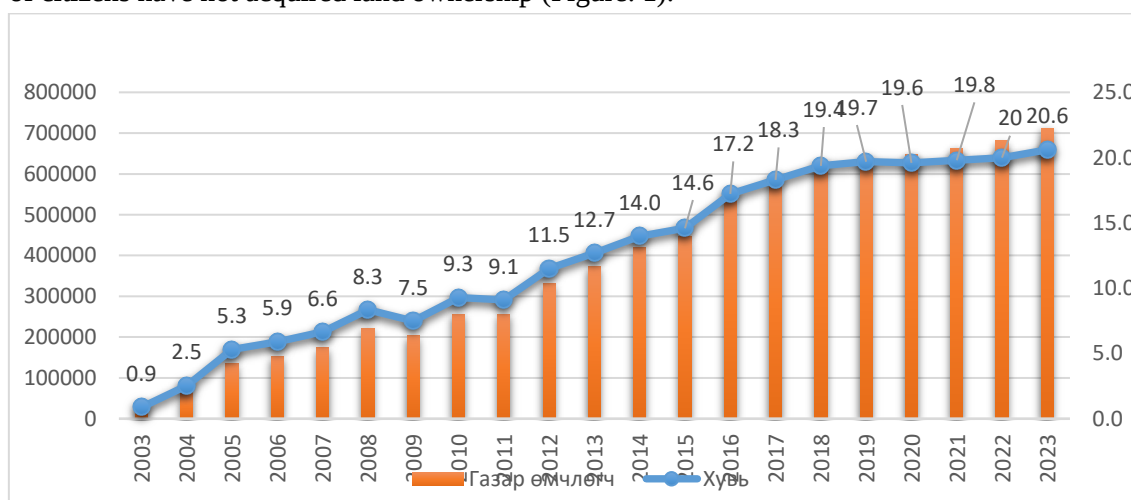


Figure.1 Comparison of Land Ownership Status with Population (2003–2023)

Source: 2023 Land Unified Fund Report (Agency for Land Administration and Management, Geodesy and Cartography - ALAMGC)

Additionally, the fact that only 0.06% of the total land area has been transferred to private ownership is relatively low. There is a need to further improve land-related legislation, accelerate the process of granting land ownership to Mongolian citizens, expand the scope of land ownership rights for family needs, and enhance legal safeguards.

3. CITIZENS' LAND OWNERSHIP RIGHTS AND THEIR LIMITATIONS

3.1. The Content of Land Ownership Rights

Land Ownership Rights: The principle of land ownership, particularly the notion that land includes its constituent parts, is believed to originate from the maxim “Solo cedit” and “quicquid solo plantatur,” meaning “whatever is attached to the soil belongs to the soil” [15]. In all countries, the concept of immovable property is primarily understood as “land.” Ownership rights are often perceived as extending “from the center of the earth to the infinite heights of the sky,” encompassing all things permanently connected to the land, such as buildings, minerals, and vegetation. However, in some countries, land does not include buildings or other man-made features [16]. This implies that when land is sold, everything attached to it transfers to the new owner.

Unlike movable property, whose ownership is determined by actual possession, land ownership is established through registration [17]. For land and immovable property, ownership is considered transferred only after the transaction is recorded in the land registry. The registration of immovable property and the determination of ownership based on this registration enhance the utility of land, expanding the owner’s ability to derive economic benefits without requiring physical possession.

Defining ownership based on land registry records aligns with the legal principle that “ownership must be transparent and certain” [18]. The dominant perspective is that immovable property refers only to the land itself, while structures, buildings, and other man-made objects are considered integral parts of the land.

According to *Black’s Law Dictionary*, the content of land ownership rights is defined as “the legal right to possess, use, and control a specific plot of land, including the right to transfer ownership to others” [19]. In a practical sense, since land itself cannot be transferred, only the ownership rights can be conveyed. The European Union’s policy guidelines on land state that “The system of rights to manage land is a highly complex issue, involving political, economic, technical, legal, and institutional factors. It inherently links wealth, power, and resources” [20], highlighting the intricate relationship between the state and its citizens.

Mongolian law, including the Civil Code and the Land Law, regulates three types of rights related to land: ownership, possession, and use.

Article 3.1.2 of the Land Law defines “to own land” means to be in legitimate control of land with the right to dispose of this land. Citizens can own land for two purposes: family needs and economic activities, as specified by the Law on Allocation of Land to Mongolian Citizens.

According to Article 4.1.1 of the Law on Allocation of Land to Mongolian Citizens, land for family needs is granted in the following sizes:

- Up to 0.07 hectares in the capital city;
- Up to 0.35 hectares in provincial centers;
- Up to 0.5 hectares in soum (district) centers;
- Up to 0.07 hectares along national highways connecting the capital with provincial centers (excluding soum centers) [21].

Article 3.1.3 of the Land Law defines land possession as holding land under one's control within the boundaries permitted by law and according to the purpose, conditions, and terms specified in a contract. Land possession is granted solely through certificates, issued to Mongolian citizens, businesses, and organizations. Each plot is assigned a separate certificate.

Article 30 of the Land Law allows citizens and legal entities to possess state-owned land for 15 to 60 years, with a one-time extension not exceeding 40 years. Upon expiration, the land reverts to state ownership. Although the exact nature of disputes that may arise when possession rights expire is uncertain, the implementation of property rights for immovable property after losing possession rights remains unclear. Possession rights can be transferred, mortgaged, or inherited, similar in scope to ownership rights. However, the state reserves the authority to impose land fees and to invalidate possession rights upon expiration.

Article 3.1.4 of the Land Law defines land use as utilizing one or more beneficial qualities of the land, under a contract made with the landowner or possessor and within legal limits. This form of usage resembles a lease agreement. Temporary usage is allowed for activities that leverage the specific features and advantages of the land, but the right to use cannot be transferred, mortgaged, or inherited [9].

According to Article 100.1 of the Civil Code: "Unless otherwise provided by law, the state, province, capital city, district, citizen, or legal entity can be an owner" [23]. Ownership includes the right to freely possess, use, manage, maintain, protect, and be responsible for the property within the legal limits, as well as the right to defend against any infringement.

Some Mongolian scholars define citizens' land ownership rights as limited rights, allowing citizens to control and manage land surfaces (with specific sizes depending on its intended purpose) and renewable natural resources under defined conditions, with accompanying obligations, rights, and responsibilities [24]. Additionally, land ownership rights are seen as inviolable rights to manage and control property under one's authority at one's discretion (except when fulfilling social responsibilities), and this inviolability must be respected by all other members of society without infringement [20].

From this, it can be seen that the right to own land includes the principle that anything attached to the land belongs to the land itself, extending from the earth's center to the infinitely high sky. When land is sold, anything attached to it is also transferred to the new owner. It involves the legal right to possess, use, and control a specific piece of land. In a practical sense, since the land itself cannot be transferred, only the ownership right is transferred.

An individual's right to own land is relatively limited in terms of duties, rights, and responsibilities. It is an inviolable right to manage and dispose of property under one's control at one's discretion (except when fulfilling obligations for the public interest). This right is relatively absolute in nature.

3.2. Legal restrictions on Land Ownership rights

In Mongolia, the constitutional principle that land, its subsoil, forests, water, animals, plants, and other natural resources are the property of the people and under state protection is interpreted as meaning that only the Mongolian people have authority over the land, and the state ensures its integrity [9].

Article 6.3 of the Constitution stipulates "Citizens are prohibited from transferring privately owned land to foreign citizens or stateless persons through sale, exchange, gift, or mortgage, and from allowing others to possess or use it without the approval of authorized state bodies.

This provision establishes three types of restrictions on land ownership:

- a. Landowners are not allowed to sell, gift, or mortgage their land to foreign citizens or stateless persons.
- b. Citizens cannot allow others to possess or use their land without the permission of authorized state bodies.
- c. Citizens cannot mortgage their privately owned land to foreign citizens or stateless persons.

Additionally, Article 6.1.1 of the Law on Allocation of Land to Mongolian Citizens specifies categories and locations of land that cannot be privately owned, including public land within urban, town, and settlement areas, pastures, land for special needs, forest and water resources, and land for roads and utility networks [27].

Article 102.1 of the Civil Code states that all land not privately owned by citizens is state property, and Article 102.2 specifies that landowners must not cause environmental harm or violate the rights and legitimate interests of others. These provisions impose obligations on landowners, effectively limiting their rights [28].

Although ownership rights can be restricted under certain conditions, such restrictions should not affect the essential content of the right to own and exercise property. Dr. Lundendorj argues that, theoretically, the right to own property is an inalienable natural human right and should not be restricted by permission [29]. Dr. D. Yanjinkhorloo suggests that the law on land ownership for citizens should be limited to transferring land ownership to citizens without further restrictions [30]. Dr. N. Bayarmaa believes that if citizens transfer the use of their privately owned land to others based on contractual rights, administrative approval is generally not required [31]. However, if the land is transferred as a type of property right, state approval should be mandatory. Dr. B. Ulaanbaatar considers the restrictions on the owner's right to freely manage and dispose of their property to be excessive [32]. It is advisable to review these legal restrictions on citizens' land ownership rights in Mongolia and amend the Constitution and other legal regulations to better safeguard the principle of inviolability of property rights.

4. SEPARATE REGISTRATION OF LAND AND REAL PROPERTY

4.1. Regulation under the Civil Code of Mongolia

Article 84, Section 3 of the Civil Code of Mongolia includes land and "items that cannot be used as intended once separated from the land" under real property. Furthermore, Article 85.1 states that "in cases specified by law, real property may be a separate object of civil legal relations." These provisions do not provide a clear answer to the question of whether land and buildings should be considered together as real property, or whether they can be separately classified as real property. Traditionally, buildings can be considered separate real property, and they are still registered separately in the state registry today. In other words, either land or buildings can be registered as separate real property. From the perspective of the general principles of the 2002 Civil Code, a building cannot be registered separately without the land, except in cases specified by law. In such cases, the building can be a separate object of legal relations and thus eligible for separate registration in the state registry.

The Law on the Registration of Real Property in Mongolia was adopted in 1997, initially allowing the registration of housing ownership rights by the State Registration Office. Based on this example, today, residential buildings, offices, and buildings for commercial purposes can be registered separately in the state registry, and certificates of real property ownership are issued.

As a result of this registration, a separate real property right for buildings, distinct from the land, is created for residential and other buildings. This deviates from the general principle in the Civil Code, which stipulates that immovable property should remain tied to the land. The failure to clearly regulate how to separate and register land from buildings has led to the loss of the integrity of private land registration and some legal provisions not being properly implemented. For instance, Citizen E was living on a non-real estate structure built on their 0.07-hectare land. In the loan agreement with Bank H, E had pledged the land ownership rights as collateral. However, due to failure to repay the loan on time, the bank decided to proceed with a public auction to fulfill the loan agreement's requirements by selling the land. As a result, the land was purchased by Citizen C at the auction. One year later, Citizen C filed a claim demanding that E and their family vacate the land and demolish the house, thereby clearing the property. E and their family disagreed with the claim, asserting that while the land now belonged to C, the house was their property, and therefore, C had no right to demand its demolition or removal.

For example, Article 10, Section 1 of the Law on State Registration of Property Rights states "The registration of the ownership rights of real property in the state registry for the first time shall be based on the land parcel number, and one personal file shall be created for each parcel of land.

The rights to the real property shall be registered as a single entry along with the land rights for that parcel. However, the registration of land ownership rights and the ownership rights to the buildings on that land are being recorded separately by the state registry. This creates a situation where the landowner and the building owner may be different people. This diminishes the significance of land ownership rights and creates a concept of real property rights that consists of land and buildings at separate and equal levels.

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Going forward, Mongolia must decide whether to continue registering land and buildings separately or to combine them into a single registration. To explore potential solutions to this issue, let's compare the legal frameworks of Germany and Japan.

4.2. Legal regulation of Germany and Japan

Land Registration (Title System). This registration is called the "land book" (Grundbuch in German) and serves as proof of ownership, with the state guaranteeing its validity. The registration is overseen by a specific court, with land registry judges (Grundbuchrichter) responsible for ensuring the legal and factual accuracy and completeness of the records. Private notaries and lawyers provide the necessary services to prepare documents for submission to the court, with the state and the private sector being divided [33].

In Germany, land is defined as "a section of land registered in the land register under a unique number, regardless of the nature or components of the land" [34]. The main idea behind this registration is to allow the owner of real estate to exercise their ultimate rights over the property. The ownership of land is not limited by time for the landowner. According to Section 94 of the German Civil Code, land and immovable items permanently affixed to the land are understood as part of the basic components of real estate. Buildings, for example, are considered inseparable from the land, and Section 93 further specifies that objects forming part of the land cannot be separate legal entities [35]. This principle ensures that any rights related to the land are inseparable from the land itself. However, in cases where specific legal regulations apply, separate rights may arise. For example, under the Law on Public Housing Ownership, the right to own residential property is registered separately from the land, recognizing the property as a distinct immovable asset.

The system of property registration in Germany was established by the 1897 Land Registration Act. The land register consists of three sections: 1) the previous and current owners of the land and buildings; 2) rights associated with the land (such as building rights, servitudes, usufructs, etc.); and 3) secured rights related to the land and their priorities [36]. Thus, the land register records not only ownership rights but also rights to use the land within limits, such as mortgage rights, as well as other secured rights related to the land.

In contrast, in Japan, land and the buildings on it are registered separately. Article 86 of the Civil Code of Japan stipulates that "land and things permanently attached to it are real property." Article 242 further specifies that "the owner of real property is the owner of its constituent elements," but "this does not apply to the rights of another person who legally owns those elements" [37]. This provision allows others, aside from the landowner, to possess the land and its attached buildings separately if they have legal ownership rights.

The law on real property registration in Japan elaborates on this concept. The registration follows the principle of registering each real property object separately, such as land and buildings. After recording the external appearance of each object, any changes in the rights related to the property are also registered. The national registration system consists of two parts: the surface section, where "external appearance and form" are recorded, detailing the differences between types of real property (e.g., land and buildings), boundary lines, and the structure of the buildings, as well as providing detailed information on the physical characteristics of the property.

The "rights registration" section records information related to the rights associated with the property, divided into two categories: changes related to ownership rights and other limited rights (such as servitude or trust) [38].

Japanese legal scholars ensure transparency and protect property rights by using a two-step registration process: form verification and content verification. This approach ensures that land and real property are registered separately, based on the provisions of the Civil Code, with detailed regulations and clarifications in the registration system. The Japanese system, while similar in some respects to Germany's, follows the principle of unity in registration under the Civil Code and emphasizes the need for material legal norms. Japan's real estate registration system, with its detailed procedural regulations and transparency, provides a robust foundation for protecting property rights and enhancing transaction efficiency.

Germany, Japan, and some other countries follow different principles for registering ownership rights of land and buildings. Some studies indicate that most countries favor registering land and buildings together under a unified system [39]. In such countries, land registration should be conducted alongside the registration of properties built upon it, ensuring a single, cohesive system for real property rights throughout the country [40]. This unified approach helps to ensure consistent development of the real estate sector under a single concept, preventing conflicts of interest and protecting the rights of property owners.

5. CONCLUSION

As of the end of 2023, under the Law on Granting Land Ownership Rights to Citizens of Mongolia, a total of 723,515 citizens were granted ownership rights to 72,000 hectares of land, accounting for 20.6% of the total population. However, approximately 80% of citizens do not own land. From this, it can be seen that only 0.06% of the total land area is privately owned, while 99.94% remains under state ownership. The area of land granted to citizens makes up only a small percentage of the total land area of Mongolia.

This indicates that the land allocated to citizens represents a minimal proportion of Mongolia's total land area. There are several reasons why the majority of citizens have not been able to obtain land ownership: 1) Politicians and some citizens have taken a cautious or oppositional stance regarding land ownership issues, which remains a major obstacle; 2) There is no available land for allocation within the urban and suburban areas of cities; 3) Issues arise with land acquisition for urban redevelopment and construction projects, especially when private landowners need to vacate their properties.

There is a need to cultivate a supportive attitude towards land ownership rights and to implement measures that allow citizens to acquire land in areas with available land resources.

Although citizens have the right to own land, there remain legal possibilities to limit this right, such as restricting the intended use of the land, limiting the ability to transfer or dispose of it freely, or forcibly evicting landowners from their private properties. By amending Article 6.3 of the Constitution to remove the word "others" and replace it with "Citizens will be prohibited from transferring, selling, trading, gifting, mortgaging, or transferring land to foreign citizens or stateless persons," the provisions in the Land Law and the Law on Granting Land Ownership

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Rights to Citizens of Mongolia that restrict the ownership rights of Mongolian citizens will be invalidated. Alternatively, although the Civil Code includes the principle of inviolability of property rights, the interpretation and application of constitutional provisions in accordance with the Constitution would allow for the correction of relevant provisions in other sectoral laws.

In Mongolia, land registration is managed separately by the authority responsible for land matters, while the real property on the land is registered by a separate state registration agency, which has attracted significant criticism. It would be more efficient for land registration and the registration of the properties built upon it to be managed together under a unified system of real property rights registration throughout the country. This approach would promote the coherent development of the real estate sector under one unified concept, avoid legal confusion, and prevent violations of property rights.

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AUTHOR'S INTRODUCTION

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Exploring organizational culture: A comparative analysis of public and private hospitals in Mongolia

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Exploring organizational culture: A comparative analysis of public and private hospitals in Mongolia

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Abstract - Organizational culture is essential for achieving performance goals and driving success, particularly through its impact on leadership. In healthcare, it directly influences patient safety, treatment outcomes, and operational efficiency by fostering a supportive environment for person-centered care. This cross-sectional study examines the organizational cultures of 580 physicians and healthcare workers from three public and three private tertiary hospitals in Mongolia using the Organizational Culture Assessment Instrument (OCAI). Findings indicate that public hospitals predominantly follow a "hierarchy culture", characterized by rigid structures, strict regulations, and top-down management. In contrast, private hospitals lean towards a "clan culture", emphasizing teamwork, employee engagement, and patient-centered care. Notably, both public and private hospitals prefer a more collaborative model, indicating a shift away from hierarchical control towards a more dynamic, team-oriented approach. These results highlight an ongoing transformation in Mongolia's healthcare sector, with hospitals striving to create more flexible, engaging, and patient-focused work environments to improve both staff morale and patient outcomes.

Keywords - Healthcare organizational culture, Organizational culture assessment instrument (OCAI)

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1. INTRODUCTION

Denison (1996) and Scott et al. (2003) defined organizational culture as a set of shared norms and perceptions deeply rooted in history, coherently maintained, and interrelated, which do not change easily [1]. Organizational culture is a critical factor in determining both business success and failure [2], and is often considered the driving force behind organizational success [1]. In hospital settings, organizational culture significantly impacts patient safety, treatment outcomes, and overall hospital performance, often implemented through quality management strategies [4], [3].

Before 2023, citizens in Mongolia were assigned a public hospital based on jurisdiction when they required urgent healthcare. Now, a legal framework has been established that allows citizens to choose their own healthcare provider, and public hospitals are funded through a case-based payment system. Additionally, both public and private hospitals can receive funding as long as they have a contract with a health insurance organization, increasing competition in the healthcare sector. As a result, hospitals are redefining their market position, differentiating themselves not only through the quality and safety of the healthcare they provide but also through service excellence and person-centered care. These changes will present significant challenges for hospitals in the future.

Organizational culture plays a crucial role in the successful management of an organization's operations. The first step in creating cultural and organizational change is to diagnose and assess the current culture. Every organization possesses a unique organizational culture, characterized by its distinct attributes [5]. Therefore, we believe that studying the organizational culture of hospitals is essential. Assessing organizational culture in both public and private hospitals, as well as identifying present and preferred cultures, will be crucial for planning the next steps to enhance performance and improve health outcomes in Mongolia's healthcare sector.

2. LITERATURE REVIEW

Elliot Jaques introduced key aspects of organizational culture in the English manufacturing industry in his 1951 book, *The Changing Culture of Factory: A Study of Authority and Participation in an Industrial Setting*. This work is considered the first to mention the concept of organizational culture from a business perspective [1].

While many definitions of organizational culture have emerged over time, there remains no clear consensus on what precisely constitutes organizational culture [1], and the phenomena underlying it are not yet fully understood [6]. However, various scholars have proposed definitions. One of the most widely accepted is offered by Edgar Schein (1984), who defines organizational culture as "the underlying conceptual model of a group's external adjustment and internal integration problems, created, discovered, developed, and worked well enough to be considered valid during learning, and the way new employees understand, think, and experience these problems."

According to Davide Ravasi (2006), organizational culture is a collective set of perceptions that guide what happens within an organization by shaping appropriate behavior in various

situations [7]. Sokro (2012) found that a strong organizational culture enhances employee motivation [8], while Watkins (2013) famously described culture as "the immune system of the organization" [9].

Organizational culture encompasses the values, visions, and beliefs that leaders cultivate over time. It manifests both tangibly, in elements such as architecture, office layout, and appearance, and intangibly, in employee behavior, decision-making, policies, and procedures [10]. Additionally, organizational culture can be viewed as a system of shared values, beliefs, customs, and both written and unwritten rules that shape how employees behave and contribute to the organization's social environment [11].

Organizational culture can be summarized as: "the set of guiding principles that shape how employees conduct their work, expressed through the experiences, values, beliefs, and behaviors developed over time." It is led, shaped, and influenced by the organization's management. As hospitals are organizations, their culture can be understood in the same way.

Culture is one of the most challenging aspects to influence within an organization, yet it plays a pivotal role in shaping and improving organizational performance [12]. It strongly impacts performance and positively influences corporate governance and management [13]. Additionally, organizational culture significantly affects performance through leadership [12].

While organizational culture may not play a significant role in the development of certain countries [14], understanding it is crucial for success during periods of change [3]. However, a hospital's culture is a key factor in serious errors within healthcare delivery and is closely linked to employee behavior [15]. Hospital performance is shaped by employee attitudes, which, in turn, are heavily influenced by the organization's culture. This is because employee behavior and attitudes are guided by the values and norms of the organization [16]. Each employee holds deeply ingrained beliefs about various aspects of the organization, such as their colleagues, customers, competitors, and the industry as a whole [17]. According to Denison's model of organizational culture, these beliefs, assumptions, and the behaviors associated with them are what define the culture of an organization. Denison's model measures organizational culture through four key traits, each of which is further divided into specific indexes. The model identifies four essential characteristics that organizational CEOs and executives must create and implement: Mission, Adaptability, Involvement, and Consistency. These traits help assess and guide the development of the organization's culture, ensuring that it aligns with both internal goals and external challenges.

Organizational culture is a key factor in fostering person-centred care and reflects the extent to which healthcare is focused on the individual [18]. Person-centered care is grounded in values of respect, self-expression, mutual respect, and understanding, all of which are nurtured through organizational culture [19]. This approach leads to better outcomes and experiences for patients, caregivers, and families, serving as the foundation for safe, high-quality healthcare [18]. It is widely regarded as the gold standard in healthcare [20], and the entire healthcare system is gradually evolving toward more person-centered care [21]. A person-centred healthcare organization is characterized by seven key elements [18]:

1. comprehensive care delivery,
2. a clear purpose, strategy, and strong leadership
3. people, capability, and a person-centred culture
4. person-centred governance system

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5. strong external partnerships
6. person-centred technology, and built environments
7. measurements for improvement

In summary, the culture of a hospital organization significantly impacts patient safety, clinical outcomes, and organizational performance. It also fosters environments that support the implementation of person-centered care, helping to achieve desired goals and create positive experiences for patients, caregivers, and families. Organizational culture influences various factors both directly and indirectly through executive leadership. The concepts of organizational culture, leadership, and person-centered care are interconnected; they coexist and support one another, emphasizing the importance of a cohesive approach in healthcare settings.

Internationally, healthcare organizations are commonly managed by physicians, and this is also true in Mongolia. This practice is linked to hospital director selection criteria, which typically require the director to be a physician. However, physicians who transition into management roles often face challenges in balancing clinical duties with administrative responsibilities, which can reduce the effectiveness of both roles [22]. Additionally, approximately 50% of healthcare executives lack knowledge in economics and management. According to international studies, this gap in expertise can lead to reduced effectiveness in management decisions and a decline in the overall health system үр дүн байна [23]. Therefore, it is crucial for managers to have a clear understanding of organizational culture, as their management style significantly impacts it. This is because their approach influences how the organization responds to the changing demands of the business environment [24].

These factors do not negate the fact that there are obstacles and limitations in improving, developing, and changing the culture of healthcare organizations. Assessing the current state of culture in healthcare organizations can provide insights into how staff collaborate to deliver care and identify areas for improvement [25]. For a healthcare organization to successfully navigate future cultural changes, it is essential to define its existing culture and understand how employees envision its development in the future [26].

This study aims to explore the differences in organizational culture between public and private hospitals in Mongolia. Specifically, it hypothesizes that public hospitals operate within a hierarchical culture, while private hospitals exhibit a clan culture. Moreover, it is expected that public hospital staff will express a preference for transitioning toward a more flexible and collaborative organizational structure, aligning with the values of clan culture.

3. MATERIALS AND METHOD

This study utilized a cross-sectional study, examining three public hospitals and three private hospitals that offer tertiary healthcare services. A total of 580 healthcare workers participated, comprising 358 employees from public hospitals and 222 from private hospitals. Data collection took place from February to April 2024.

The Law on Health defines 14 types of organizations that provide healthcare services. This research focused on a specialized hospital that offers nationwide referral healthcare services. Currently, nine state-owned specialized hospitals operate under the Ministry of Health. Among

these, three comparable hospitals, which provide the same type of care, were selected for the study based on their willingness to participate in data collection.

As of 2023, there are 239 private hospitals operating across the country, with 69.2 percent (165 hospitals) located in Ulaanbaatar (Center for Health Development, 2024). Within Ulaanbaatar, there are 32 private hospitals with 50 or more beds, and 8 hospitals with more than 89 beds. Of these eight hospitals, five were invited to participate in the study, and three agreed to take part.

The sample consisted of all physicians and healthcare workers employed at the three public hospitals and three private hospitals that agreed to participate in the study, with a confidence interval of 95%. Respondents were selected randomly.

3.1 THE INSTRUMENT

While various survey instruments can be employed to define organizational culture [5], there is no consensus on which instruments are best suited for measuring culture in healthcare settings [25].

The Organizational Culture Assessment Instrument (OCAI) is considered an acceptable alternative to other available tools [5] and has been used effectively without adjustments to assess the culture of healthcare organizations. OCAI evaluates the dominant culture within an organization by describing its shared values, norms, and common attitudes toward work [5].

The Competing Values Framework, developed by Robert Quinn and Kim Cameron, consists of four competing values that correspond to four types of organizational culture [27]. Specifically, this questionnaire is structured around a four-factor model that contrasts internal and external focuses, as well as flexibility and stability [5].

The questionnaire comprises a total of 24 questions grouped into six dimensions: dominant characteristics of the organization, organizational leadership, employee management, organizational glue, strategic emphases, and success criteria [5].

These six dimensions are described by the researcher Aspasia Goula as follows [28].

- Hospital dominant characteristics dimension reflects the organization's core values, attitudes, and processes.
- The organization leadership dimension refers to the behavior patterns and ways in which the organization's employees exercise authority.
- Management of employees' dimension reflects how human resources are organized and managed in hospitals.
- Organization glue is considered a mechanism that connects all employees of the organization and acts as a link.
- Strategy Emphases is to ensure that the organization is well integrated with its environment to ensure survival, growth, and prosperity.
- Criteria of success consist of factors that lead to success.

Each dimension consists of 4 statements, in which participants are asked to rate their organization as a whole in 2 parts: "present" and "preferred", each of which has a total of 100 points. Participants are encouraged to reflect on both the current and future organizational culture while scoring each component [5]. The instrument classifies organizations into four cultural types, recognizing that each organization embodies a mix of these types [27].

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- Clan culture is flexible, internal, and people-oriented.
- Adhocracy culture is flexible but externally oriented, focused on innovation and creativity.
- Market culture is externally oriented, but values stability, specific results, targets and goals.
- Hierarchy culture places a high value on stability and focuses on internal efficiency, reliability, and clear structures and procedures.

3.2 STATISTICAL ANALYSIS

Descriptive and inferential statistics were employed to analyze the survey data. A statistical analysis was deemed significant when $p < 0.05$. The mean, standard deviation, median, minimum, and maximum values were calculated for each dimension of the questionnaire and observation values.

In our study, we evaluated organizational culture in 2 groups: public and private hospitals. There was a need to analyze whether the demographic and professional characteristics of the participants in these 2 groups, such as age, gender, education, position, working department, and years of work in the healthcare institution differed. Therefore, we used the Pearson Chi-Square test to analyze differences between groups.

In each of the 2 research samples, 4 types of organizational culture were evaluated. It is necessary to determine how age, gender, education and position of the participants affect how the participants evaluate the 4 types of organizational culture. Therefore, One-way ANOVA test was used to determine whether the population means of the groups differed, so it was calculated using the one-way ANOVA test. Data analysis was performed using SPSS version 25.0.

4. RESULTS

Demographic and professional characteristics of the participants are presented in Table 1. Among the total participants, those in the 26-30 and 31-35 age groups each represent 19.5 percent, contributing to combined total 39 percent. The majority of participants, 80.4 percent (465), were women, and 64.8 percent (340) held a bachelor's degree. In terms of department distribution, 74.4 percent (413) of participants work in clinical departments providing healthcare, while 73.1 percent (419) are physicians and nurses. Regarding years of service in healthcare institutions, 417 participants have been employed for less than 10 years, representing 74.8 percent of the total.

Table 1. Demographic and Professional Characteristics of the Participants

Variables	Public hospitals		Private hospitals		Total	
	n	per	n	per	n	per
Age (n=565)						
≤ 25	43	12.3%	30	14.0%	73	12.9%
26-30	57	16.2%	53	24.8%	110	19.5%
31-35	60	17.1%	50	23.4%	110	19.5%
36-40	48	13.7%	28	13.1%	76	13.5%
41-45	42	12.0%	21	9.8%	63	11.2%
46-50	60	17.1%	10	4.7%	70	12.4%
51-55	35	10.0%	14	6.5%	49	8.7%
56-60	6	1.7%	8	3.7%	14	2.5%
61 ≤	0	0.0%	0	0.0%	0	0.0%
total	351	100%	214	100%	565	100%
Gender (n=578)						
Male	65	18.2%	48	21.7%	113	19.6%
Female	292	81.8%	173	78.3%	465	80.4%
Total	357	100%	221	100%	578	100%
Education level (n=525)						
Professional Diploma	50	15.5%	28	13.9%	78	14.9%
Bachelors	204	63.2%	136	67.3%	340	64.8%
Masters	66	20.4%	29	14.4%	95	18.1%
PhD	3	0.9%	9	4.5%	12	2.3%
Total	323	100%	202	100%	525	100%
Occupation, position (n=573)						
Physician	116	32.7%	68	31.2%	184	32.1%
Nurse	157	44.2%	78	35.8%	235	41.0%
Other	82	23.1%	72	33.0%	154	26.9%
Total	355	100%	218	100%	573	100%
Department (n=555)						
Clinical	279	80.6%	134	64.1%	413	74.4%
Paraclinic	62	17.9%	33	15.8%	95	17.1%
Administrative, technical and others	5	1.4%	42	20.1%	47	8.5%
Total	346	100%	209	100%	555	100%
Years of work in the healthcare institutions (n=558)						
≤ 5	152	43.8%	124	58.8%	276	49.5%
6-10	93	26.8%	48	22.7%	141	25.3%
11-15	37	10.7%	24	11.4%	61	10.9%
16-20	31	8.9%	5	2.4%	36	6.5%
21-25	17	4.9%	5	2.4%	22	3.9%
26-30	12	3.5%	2	0.9%	14	2.5%
31 ≤	5	1.4%	3	1.4%	8	1.4%
total	347	100%	211	100%	558	100%

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The average age of participants was 36.8 years, with an average duration of employment in healthcare institutions of 7.8 years.

Table 2. Result of Chi-Square Tests

№	Variables	Pearson Chi-Square Tests	P value
1	Age	0.000	<0.05
2	Education level	0.020	<0.05
4	Years of work in the healthcare institutions	0.002	<0.05
3	Gender	0.301	>0.05

Chi-square tests were conducted to assess whether participant demographics and professional characteristics differed by hospital type. Significant differences were found in age, education, and years of employment in healthcare institutions between public and private hospitals ($p < 0.05$). However, no significant gender differences were observed in the representation of physicians and healthcare workers across public and private hospitals ($p > 0.05$).

Table 3. Present and Preferred Types of Culture in Hospitals

Type of culture	Mean value	Standard deviation	Median value	Minimum value	Maximum value
Present culture					
Clan	25.94	6.22	25.00	6.17	100.00
Adhocracy	24.34	4.01	24.60	0.00	50.00
Market	23.34	4.27	24.17	0.00	37.50
Hierarchy	26.39	5.86	25.80	0.00	72.50
Preferred culture					
Clan	28.49	6.35	25.83	0.00	70.00
Adhocracy	24.77	3.95	25.00	0.00	50.00
Market	22.63	4.72	24.17	0.00	36.67
Hierarchy	24.10	4.79	25.00	0.00	55.00

The present culture in the hospitals included in the study is characterized as a hierarchical culture, with an average score of 26.39. In contrast, employees expressed a desire to shift towards a clan culture, with an average score of 28.49, as illustrated in Table 3.

One way ANOVA test was employed to compare whether the type of hospital (public or private) and participant demographics and professional characteristics (age, gender, educational level, occupation/position) differed between the present and preferred types of organizational culture (clan, adhocracy, market, hierarchy).

In both public and private hospitals, the four types of the present and the preferred organizational culture differ significantly ($p = 0.000 < 0.05$).

Table 4. Result of One-way ANOVA Test

№	Variables	Present culture				Preferred culture			
		Clan	Adhocracy	Market	Hierarchy	Clan	Adhocracy	Market	Hierarchy
1	Type of hospital	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
2	Education level	0.941	0.835	0.721	0.970	0.678	0.981	0.840	0.967
3	Gender	0.100	0.173	0.019*	0.012*	0.592	0.934	0.887	0.032*
4	Occupation, position	0.261	0.580	0.404	0.870	0.345	0.584	0.792	0.508
5	Years of work in the healthcare institutions	0.047*	0.068	0.121	0.623	0.021*	0.183	0.102	0.118
6	Group of age	0.260	0.512	0.139	0.754	0.060	0.185	0.031*	0.074

Regarding the present culture, significant differences were found in several areas: participants' years of experience in the healthcare sector showed a significant difference in clan culture ($p=0.047 < 0.05$), gender showed a significant difference in market culture ($p=0.019 < 0.05$), and gender also differed in hierarchy culture ($p=0.012 < 0.05$). As for the preferred culture, significant differences were observed in participants' years of experience in healthcare institutions for clan culture ($p=0.021 < 0.05$), age in market culture ($p=0.031 < 0.05$), and gender in hierarchy culture ($p=0.032 < 0.05$).

In other words, participants' years of experience in the healthcare sector influence clan culture, while gender affects hierarchy culture. Additionally, present market culture is influenced by gender, whereas preferred market culture is shaped by age.

The present and preferred organizational cultures were analyzed by hospital type, and the results are displayed in Tables 5 and 7.

Table 5. Present and Preferred Types of Culture in Public Hospitals

Type of culture	Mean value	Standard deviation	Median value	Minimum value	Maximum value
Present culture					
Clan	25.99	6.88	25.00	6.17	100.00
Adhocracy	24.23	4.65	24.17	0.00	50.00
Market	23.03	4.77	23.33	0.00	37.5
Hierarchy	26.72	6.81	26.17	0.00	72.5
Preferred culture					
Clan	29.36	6.98	27.50	0.00	70.00
Adhocracy	24.69	4.71	25.00	0.00	50.00
Market	22.05	5.27	23.33	0.00	36.67
Hierarchy	23.89	5.60	25.00	0.00	55.00

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The present culture of the public hospital is characterized as a hierarchy culture, with an average score of 26.72. This suggests that these hospitals operate within a framework of officially approved standards, rules and regulations, with strong emphasis on regular supervision of employees and strict management requirements. The focus on maintaining safety, reliability, stability, and operational efficiency.

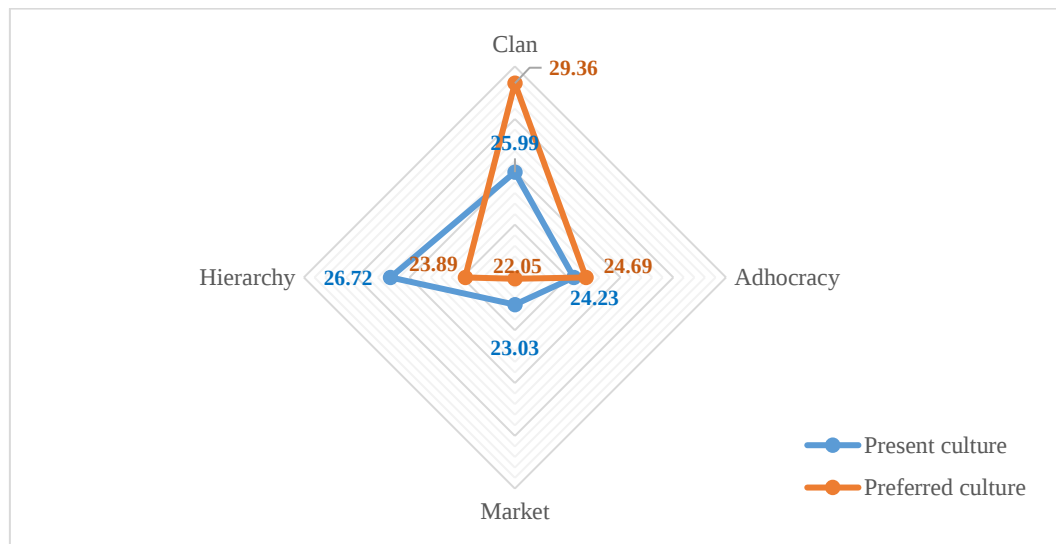


Figure 1. Present and Preferred Types of Culture in Public Hospitals

Rather than maintaining the current hierarchy culture, employees express a desire to shift towards a clan culture, with an average score of 29.36, as shown in Figure 1. This shift reflects a desire to move away from being bound by excessive rules and regulations and instead work collaboratively as a team toward the organization's vision and mission. In this preferred culture, top managers are seen as mentors and colleagues, employee participation in decision-making is increased, and there is a stronger focus on people-centeredness in organizational activities.

According to the mean value differences, the hierarchy culture is expected to decrease by 2.84 points, while the clan culture is desired to increase by 3.37 points.

Table 4 below provides a detailed analysis of the present and preferred culture in public hospitals across six dimensions.

Table 6. Public hospitals culture, by dimension

Dimension	Type of culture	Present culture, mean value	Preferred culture, mean value
1. Dominant characteristics	clan	26.55	30.35
	adhocracy	24.11	24.81
	market	22.73	22.61
	hierarchy	26.90	22.66
2. Organizational leadership	clan	26.32	31.37
	adhocracy	24.06	25.35
	market	21.45	20.64
	hierarchy	28.14	22.64
3. Management of employees	clan	27.61	30.24
	adhocracy	21.48	22.82
	market	23.47	21.18
	hierarchy	27.66	26.13
4. Organization glue	clan	26.51	29.60
	adhocracy	26.19	28.23
	market	23.79	21.64
	hierarchy	23.56	20.93
5. Strategic emphases	clan	23.54	27.91
	adhocracy	24.78	24.43
	market	23.89	21.24
	hierarchy	27.82	26.47
6. Criteria of success	clan	25.49	29.85
	adhocracy	24.75	22.71
	market	22.94	21.35
	hierarchy	26.55	25.96

When evaluating the present culture of the public hospital across the six deminsions, a hierarchy culture dominates in the following areas: dominant characteristics of the organization (26.90), organizational leadership (28.14), management employees (27.66), strategic emphases (27.82), and criteria of success (26.55). However, in the dimension of organization glue (26.51), a clan culture is present. In contrast, when evaluating the preferred culture across these six deminsions, employees expressed a desire for a shift to clan culture in all areas.

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Table 7. Present and Preferred Types of Culture in Private Hospitals

Type of culture	Mean value	Standard deviation	Median value	Minimum value	Maximum value
Present culture					
Clan	25.88	4.97	25.00	14.5	46.30
Adhocracy	24.51	2.67	24.95	15.00	33.80
Market	23.83	3.27	24.70	7.00	33.70
Hierarchy	25.85	3.81	25.30	11.00	44.20
Preffered culture					
Clan	27.08	4.88	25.00	19.17	58.33
Adhocracy	24.91	2.25	25.00	15.83	34.17
Market	23.57	3.48	25.00	8.33	34.17
Hierarchy	24.46	3.06	25.00	12.5	37.50

Figure 2 illustrates that the present culture of private hospitals is primarily a clan culture (25.88), though it closely aligns with the score for hierarchy culture, with only a 0.03-point difference. In other words, the existing clan culture shares many characteristics with hierarchy culture. This suggests that while the hospital values teamwork and people-centred approach, it also maintains a hierarchical structure with regular supervision of employees, prioritizing stable and efficient operations.

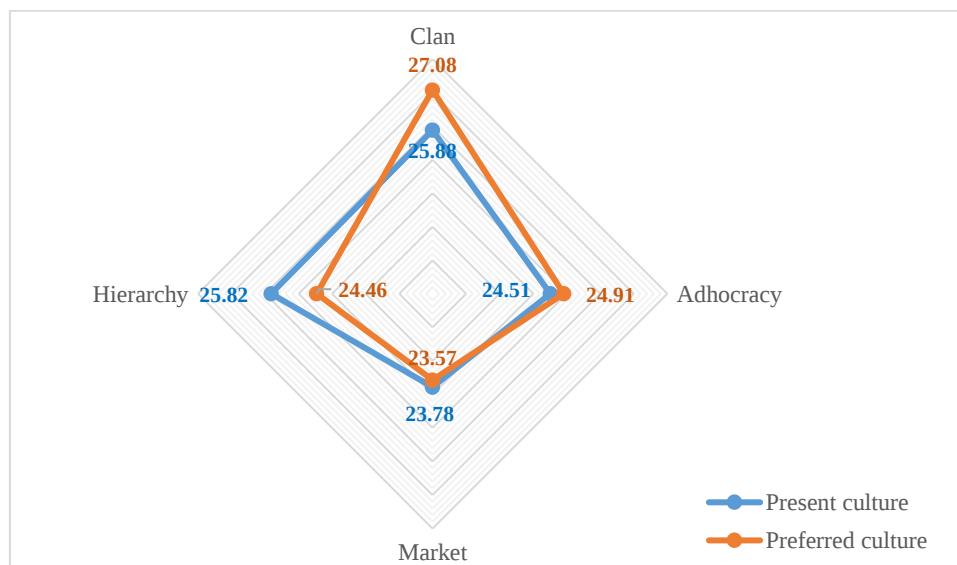


Figure 2. Present and Preferred Types of Culture in Private Hospitals

Although employees want their organization's culture to remain clan culture (27.08), they seek to enhance it, aiming for improvement of 1.20 points. They desire to further develop the clan culture while reducing the influence of hierarchy culture by 1.37 points.

Table 6 below provides a more detailed assessment of the culture in private hospitals across the six dimensions.

Table 8. Private Hospitals' Culture by Dimension

Dimension	Type of culture	Present culture, mean value	Preferred culture, mean value
1. Dominant characteristics	clan	26.27	26.68
	adhocracy	23.40	25.12
	market	22.85	24.28
	hierarchy	27.48	23.91
2. Organizational leadership	clan	26.16	27.72
	adhocracy	24.59	25.11
	market	23.15	23.11
	hierarchy	26.05	24.05
3. Management of employees	clan	26.20	26.52
	adhocracy	24.89	24.93
	market	23.91	23.58
	hierarchy	25.00	25.02
4. Organization glue	clan	26.00	27.21
	adhocracy	25.59	25.92
	market	23.69	23.50
	hierarchy	24.81	23.39
5. Strategic emphases	clan	24.89	26.65
	adhocracy	23.85	24.47
	market	24.63	23.55
	hierarchy	26.61	25.33
6. Criteria of success	clan	25.76	27.63
	adhocracy	24.71	23.93
	market	24.48	23.41
	hierarchy	25.05	25.03

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When evaluating the present culture of a private hospital by dimension, four dimensions exhibit a clan culture: organizational leadership (26.16), management of employees (26.02), organization glue (26.00), and criteria of success (25.76). However, two dimensions - dominant characteristics (27.48) and strategic emphases (26.61) – reflect a hierarchy culture. These dimensions indicate a consistent and efficient strategy, a hierarchy culture, and emphases on control.

Despite this, the desired culture across all six dimensions is shift toward clan culture, emphasizing a more collaborative and person-centred approach.

Table 9. Differences in Hospital Culture Types

Type of culture	Present culture			Preferred culture		
	Public hospitals	Private hospitals	Gap	Public hospitals	Private hospitals	Gap
Clan	25.99	25.88	0.11	29.36	27.08	2.28
Adhocracy	24.23	24.51	-0.28	24.69	24.91	-0.23
Market	23.03	23.83	-0.80	22.05	23.57	-1.52
Hierarchy	26.72	25.85	0.87	23.89	24.46	-0.57

As shown in table 9, a hierarchical organizational culture (26.72) prevails in public hospitals, while a clan culture (25.88) is predominant in private hospitals. However, despite the dominance of clan culture in private hospitals, its score is nearly equivalent to that of the hierarchical culture type. We initially hypothesized that clan culture would be more dominant in private hospitals than in public hospitals, but the scores indicate almost no significant difference.

When comparing the cultures of public and private hospitals, hierarchical culture exhibits the largest score difference difference of 0.87. This indicates that public hospitals are more structured and hierarchically managed than private hospitals, where daily operations are conducted within a framework of approved standards, rules and regulations, emphasizing the importance of control.

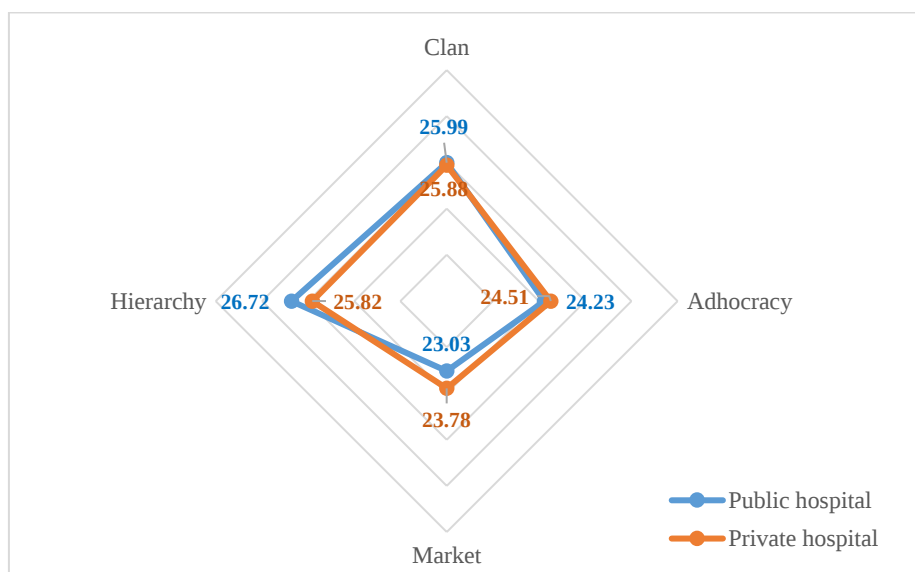


Figure 3. Present Types of Culture in Public and Private Hospitals

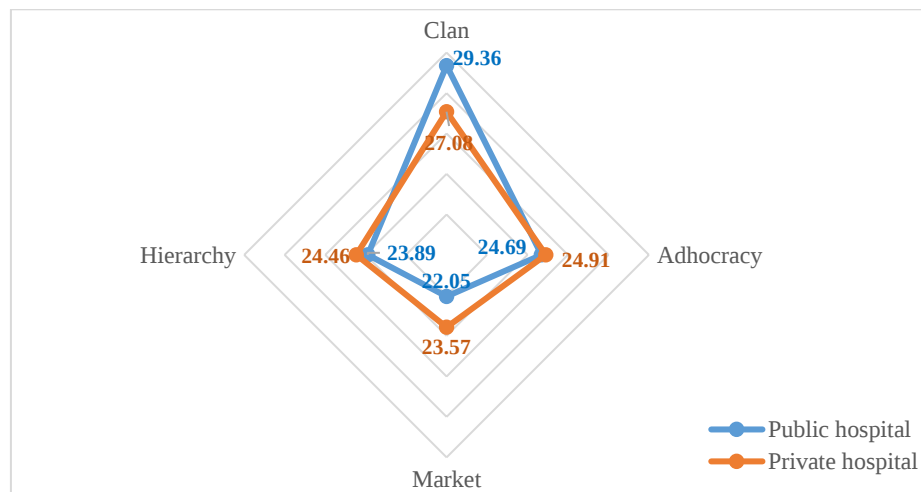


Figure 4. Preferred Types of Culture in Public and Private Hospital

The preferred organizational culture of both public and private hospitals is clan culture. However, the score for public hospitals (29.36) is higher than that of private hospitals (27.08), as shown in figure 3 and 4. This suggests that physicians and health workers in public hospitals are eager to foster a clan culture, moving away from present hierarchical and power-centred management structure. They prioritize teamwork over control, encourage employee engagement, and emphasize person-centred care rather than mere efficiency.

Conversely, while public hospitals are more inclined to reduce hierarchical culture within their organizations, private hospitals maintain that a certain level of hierarchy necessary, as reflected in the higher score for hierarchical culture in private hospitals (24.46) compared to public hospitals (23.89).

5. DISCUSSION

Every organization possesses its own unique organizational culture, characterized by distinct traits [5]. The Organizational Culture Assessment Instrument (OCIA) identifies four types of culture: clan culture, adhocracy culture, market culture, hierarchy culture. Each organization embodies a mix of these cultural types [27].

Our study found that the present culture in hospitals predominantly hierarchical (26.39), while the preferred culture is clan culture (28.49). These results align with the findings of Aspasia Goula (2020), who reported a hierarchy culture score of 27.75 and a clan culture score 34.51 (Goula, 2020), as well as those of Gavrilescu Liviu, who found a hierarchy culture score of 30.98 and a clan culture score of 40.88 [29]. In comparison to the scores from the aforementioned studies, our research indicates a decrease in hierarchy culture by 2.29 points and an increase in clan culture by 2.55 points, while is relatively modest. This demonstrates that changing the current culture is possible. However, it's important to remember that cultural change is one of the most challenging aspects of change management.

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In contrast, Aspasia Goula reported a more significant decrease in hierarchy culture by 8.72 points, with an increase clan culture of 7.84 points. Similarly, the study by Gavrilescu Liviu revealed a decrease in hierarchy culture of 12.8 points and an increase in clan culture of 15.45 points. However, these differences in scores may be too difficult to transfer between cultures.

In a study examining culture and change within a Greek public hospital organization, a hierarchy culture was found to prevail, with score of 36.86 [26]. This finding is similar to our results; however, it differs in the Greek study indicates desire to maintain the hierarchical culture while expressing a willingness to reduce its score by -3.05 points. This is because the daily operations of healthcare organization are conducted according to established rules, regulations, standards, guidelines, and instructions. In other words, operating within a hierarchical structure naturally fosters a hierarchical culture.

Additionally, the Organizational Culture Instrument Assessment Report identified a preferred clan culture (40.12) [30], and the Netherlands National Survey of Healthcare Organization Culture reported a clan culture score 38.65 [27]. These findings align with our study's results, which also favor clan culture as the desired organizational culture. However, it is important to note that the present culture types identified in these studies were market culture and clan culture, which differs from our findings that emphasize hierarchy culture. Healthcare organizations are shifting from a hierarchical culture to a clan culture in response to the evolving healthcare market. Challenges in the healthcare macro environment, such as an aging population, the rise of non-communicable diseases, frequent changes in healthcare policies, limited budgets, and the emergence of new business models like public-private partnerships, are driving this shift. These factors push managers to explore new ways to utilize resources effectively in today's competitive landscape.

The results of our study, categorized by hospital type, reveal that public hospitals predominantly exhibit a hierarchical culture, while private hospitals display a clan culture. Despite these differences, employees across both types of hospitals express a strong desire for a clan culture. Public hospital staff specifically prefer to transition from their current organizational culture, emphasizing the need for person-centred care to deliver quality and comprehensive healthcare. The desired characteristics of clan culture support and enhance the practicality of person-centred care. This approach empowers patients, their families, and caregivers to achieve their desired outcomes, ensuring they have the best possible experience while receiving safe, high-quality healthcare. Additionally, it provides service providers the opportunity to achieve better results at lower costs. Organizational culture plays a crucial role in shaping person-centered care, as effective leadership fosters an environment where this approach can thrive. In essence, strong leadership not only nurtures a robust organizational culture but also significantly contributes to the implementation of person-centred care within the organization.

Changing organizational culture is a challenging endeavor that demands significant effort from management. Implementing change requires more than just understanding [17]. Similarly, changing an organization's culture can be challenging for hospital executives, as it involves more than merely grasping the concept. Organizational culture change requires a shift in employees' thinking, values, and behaviors [24]. The most critical part of this process is transforming the cultural profile into actionable steps [24]. While there are no universal standards for cultural change, nor a single approach that can be applied [24], successfully changing an organization's culture can yield more impactful and positive results than any other type of change.

The leadership of executive staff plays a crucial role in this process, highlighting the importance of developing the competencies necessary for effective leadership. Competency encompasses a combination of knowledge, skills, behaviors, and attitudes that a manager must possess to perform their duties effectively. Thus, a competent executive is essential for successfully managing the organization's activities and driving cultural transformation.

In Mongolia today, the administrative staff of public hospitals often comprises doctors who excel in their clinical roles but may lack qualifications in management. This highlights the need for further development in the competencies of hospital administrative staff regarding healthcare management. Specifically, there is a necessity to enhance their understanding of organizational culture and the methods for effectively changing it. Additionally, training in good leadership practices is essential for successfully managing hospital operations, creating positive customer experiences, and improving overall hospital performance.

In future research, it is recommended that scholars explore the relationship between person-centred care and the leadership and management capabilities of hospital administrators when evaluating the organizational culture of hospitals.

Furthermore, we confirmed our hypothesis that the culture of a medical organization varies based on ownership type. However, it is important to note that there may not be a significant difference in scores. This is because, while ownership type influences culture, there is a common trend for physicians and health workers to begin their careers in public hospitals before transitioning to private hospitals after gaining experience. As a result, the culture of a private hospital may closely resemble that of a public hospital, as individuals carry with them the cultural traits of their previous workplaces. Researchers in this field should give due consideration to this phenomenon.

6. CONCLUSIONS

The current organizational culture across all hospitals participating in the study is hierarchical, with a mean score of 26.39. However, there is a strong desire to shift toward a clan culture, which has a mean score of 28.49. The data indicate a desired decrease in hierarchical culture by 2.84 points and an increase in clan culture by 3.37 points. This finding suggests that hospital operations are primarily conducted in accordance with standards, rules, and regulations set by the central government, with regular monitoring to ensure safe and reliable healthcare delivery while focusing on efficient hospital performance. Physicians and healthcare workers express a preference for transforming the existing organizational structure to implement people-centered activities and adopt measures that prioritize the needs of individuals.

When examining organizational culture by hospital type, public hospitals exhibit a hierarchical culture with a mean score of 26.72, whereas private hospitals demonstrate a clan culture with a score of 25.88. Physicians and healthcare workers in public hospitals express a desire to transform the current hierarchical culture into a clan culture, with a target score of 29.36. In contrast, those in private hospitals wish to preserve their existing clan culture, which has a score of 27.08. Statistical analysis confirms significant differences between the present and preferred organizational cultures across all four types of organizations in public and private hospitals ($p=0.000 < 0.05$). This shift aims to move away from being constrained by excessive rules and regulations toward a collaborative team environment that aligns with the organization's vision and

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mission. There is a strong desire for top management to act as mentors and colleagues, increase employee participation in the decision-making process, and prioritize a people-centered approach in all organizational activities.

These findings suggest that hospital administrators in Mongolia, particularly in public institutions, should prioritize efforts to shift toward a more clan-based culture to improve patient outcomes and staff engagement.

Participants' years of experience in the healthcare sector influence clan culture, while gender affects hierarchical culture. Additionally, the present market culture is influenced by gender, whereas the preferred market culture is shaped by age. Regardless of the type of organization, the key factors in reducing the existing hierarchical culture and fostering the desired group culture are years of service in the healthcare sector and gender. Therefore, it is essential to maintain a balanced representation of employees' years of service and strive for a more equal gender ratio.

A detailed examination of the present culture in hospitals reveals that hierarchy culture dominates public hospitals in terms of organizational characteristics, leadership, management, strategic emphasis, and success criteria. Similarly, in private hospitals, hierarchy culture prevails in both dominant characteristics and strategic emphasis. To transition these aspects toward a clan culture, it is advisable to implement the following common measures.

To effectively manage hospital operations in a changing environment, directors must continuously improve and evolve the organizational culture. For successful cultural management, it is essential for directors with medical degrees to develop management expertise. On the other hand, in a competitive market, it may be necessary to reconsider the requirement that hospitals must be managed by doctors.

Successful organizational culture change relies on the involvement of all employees, and today's organizations are increasingly adopting a people-centered approach. Therefore, the organization's vision and the strategic plan for achieving it should be developed with employee participation. This approach unites the workforce, fostering a shared understanding, a sense of value in their work, and increased motivation and productivity. International research has confirmed that an organization's internal environment and management attitudes influence employee engagement [31]. Additionally, it should focus on identifying the values and behaviors the organization will adopt to achieve its vision, listening to the needs of both employees and customers, and defining how executives will lead the change.

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Appendix**"The Organizational Culture Assessment Instrument" questionnaire**

No	1. Dominant Characteristics		Now	Preferred
1	A	The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.		
2	B	The organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.		
3	C	The organization is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.		
4	D	The organization is a very controlled and structured place. Formal procedures generally govern what people do.		
		Total	100	100
	2. Organizational Leadership		Now	Preferred
5	A	The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.		
6	B	The leadership in the organization is generally considered to exemplify entrepreneurship, innovation, or risk taking.		
7	C	The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.		
8	D	The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.		
		Total	100	100
	3. Management of Employees		Now	Preferred
9	A	The management style in the organization is characterized by teamwork, consensus, and participation.		
10	B	The management style in the organization is characterized by individual risk taking, innovation, freedom, and uniqueness.		
11	C	The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.		
12	D	The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.		
		Total	100	100

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	4. Organization Glue		Now	Preferred
13	A	The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.		
14	B	The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.		
15	C	The glue that holds the organization together is the emphasis on achievement and goal accomplishment.		
16	D	The glue that holds the organization together is formal rules and policies. Maintaining a smoothrunning organization is important.		
		Total	100	100
	5. Strategic Emphases		Now	Preferred
17	A	The organization emphasizes human development. High trust, openness, and participation persist.		
18	B	The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.		
19	C	The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.		
20	D	The organization emphasizes permanence and stability. Efficiency, control, and smooth operations are important.		
		Total	100	100
	6. Criteria of Success		Now	Preferred
21	A	The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.		
22	B	The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.		
23	C	The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.		
24	D	The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.		
		Total	100	100

Source: Kim S. Cameron, Robert E. Quinn "Diagnosing and Changing Organizational Culture" [32]

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An investigation into the development of career chose competence among ninth grade adolescents in Mongolia

Ariunjargal Lkhagva • Regzenbazar Tsedenjav



An investigation into the development of career choice competence among ninth grade adolescents in Mongolia

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Abstract - This study explores the development of career choice competence among ninth-grade students in Mongolia, focusing on their career aspirations, planning abilities, career knowledge, and decision-making skills. Grounded in Driesel-Lange's (2020) model, with support from Super (1957), Holland (1959), Krumboltz (1976), and Gottfredson (1981), the study emphasizes the role of self-concept, personality, and environmental factors in career decision-making. The findings reveal that while students demonstrate strengths in career concern, confidence, self-regulation, and problem-solving, they exhibit notable deficiencies in occupational knowledge, self-awareness, planning knowledge, and exploration skills. Furthermore, significant gender differences emerge in problem-solving, career exploration, and career control, highlighting the need for a comprehensive approach that integrates knowledge, skills, and motivation to enhance students' career decision-making competence. This study underscores the critical need for targeted interventions to address these gaps, ensuring a more balanced development of career competencies and equipping students with the necessary tools for making informed and effective career choices.

Keywords: Career guidance, Career Choice, Self-Awareness, Competence

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1. INTRODUCTION

Life is a choice. One of the most significant decisions individuals make in their life is their career choice. However, many individuals struggle with this decision due to differences in their ability to choose a profession. The ability to choose a profession encompasses self-awareness, knowledge of career options, decision-making skills, and attitudes toward career choices. When students select a career path, they are essentially determining their future work and lifestyle. The Constitution of Mongolia [1] explicitly states that "Mongolian citizens ... have the right to freely choose their profession." Additionally, government policy dictates that students in general education schools should be equipped with skills early on to meet the demands of the labor market, employer requirements, and individual interests [3].

Despite these provisions, students often lack the necessary education and preparation to make informed career choices. For instance, while the labor force demand is projected to be 84.6 thousand in 2023 [2], there was a labor force shortage of 42.7 thousand as of 2022 in Mongolia [2]. Furthermore, 29.0 percent of university students are majoring in business, management, and law [4], indicating a shortage of engineers and technicians in the Mongolian labor market. These statistics underscore a mismatch between supply and demand in the labor market and a deficiency in individuals' ability to choose suitable careers. This study is based on Driesel-Lange's (2020) Career Choice Competence Model and supported by theories from Super (1957), Holland (1959), Krumboltz (1976), and Gottfredson (1981), emphasizing self-concept, personality, environment, and learning in career decision-making.

The pressing issue is that despite constitutional rights and government policies, many Mongolian students lack the necessary self-awareness, career knowledge, and guidance to make informed career choices, leading to a mismatch between labor market demands and career decisions.

The primary reasons behind students' inadequate career decision-making abilities include a lack of self-awareness, limited understanding of career options and labor market demands, and insufficient career guidance and education in high schools. Consequently, students may waste time and resources, lose confidence in their future prospects, experience slow career progression, and contribute to societal issues such as unemployment and poverty.

Given the potential repercussions of students' lack of self-awareness and career guidance, it is imperative to assess Mongolian adolescents' competence in selecting careers. This research aims to investigate the career aspirations, goals, planning abilities, and career knowledge and skills of local ninth-grade students in Mongolia and evaluate their competence in career decision-making.

2. THEORETICAL BACKGROUND

The model for determining Career choice competence model developed by Driesel-Lange in 2020 is being implemented in German general education schools to assess each student's career decision-making skills online[8]. Previous studies have examined secondary school career guidance activities, career orientation training for high school seniors [6], and the development of recommendations for Mongolia's career guidance service policy [7]. However, no research has specifically evaluated the career decision-making abilities of middle and high school students.

Article 3.1.2 of the "General Law on Education" emphasizes the acquisition of knowledge, skills, and maturity by students at each level of education. Therefore, to assess the career decision-making competence of general education students, we utilized the model developed by Driesel-Lange in 2020. This model is instrumental in equipping students with the skills to make informed career choices and establish short-, medium-, and long-term career goals.

The model developed by German scientists Driesel-Lange, Ray, S., and Watson, M. (2018) is related to the "Objective 3D" [8] model, which emphasizes three interconnected dimensions of purpose: knowledge, action, and motivation. Successful learning involves analyzing acquired knowledge, skills, and attitudes to determine the level of learning, areas for improvement, and strategies for achieving desired outcomes " [11]. McCowan's "Exemplary Framework Model" focuses on equipping students with fundamental knowledge about various professions within the educational curriculum. It aims to develop their ability to acquire, understand, and apply this information. While the model effectively provides general knowledge, it has notable limitations in cultivating personal attributes, decision-making skills, and intrinsic motivation (McCowan, 2013). In contrast, the "Career Choice Competency Model" by Driesel and Lange presents a more comprehensive approach, utilizing methodologies tailored to students' individual characteristics. This model emphasizes the development of essential competencies, including motivation, stress management, and decision-making skills, ensuring a more personalized and skill-oriented learning experience [12].

The model developed by Driesel-Lange et al.[12] comprises three dimensions and four stages of development. These dimensions are categorized based on their primary characteristics: knowledge, action, and motivation, with each dimension encompassing four factors. Figure-1 illustrates:



Source: Das Berufswahlkompetenzmodell von Driesel-Lange et al. (2020)

Figure-1: Career choice competence model

According to Driesel-Lange et. al[12], knowledge consists of 4 categories: self-knowledge, occupational knowledge, knowledge of prerequisites, and planning knowledge. Self-knowledge: This category refers to an individual's understanding of their skills, talents, interests, strengths, weaknesses, behaviors, characteristics, life goals, and values. Occupational knowledge enhances understanding the world of work, including various professions, industries, job roles, and career paths. Knowledge of prerequisites: This category includes prior knowledge required for vocational training and employment in specific professions. It also enhances understanding of educational requirements, payment conditions, admission processes, and other relevant factors. Planning knowledge includes understanding how to plan and achieve career goals. It is also referred to as career foresight, encompassing the ability to strategize and navigate one's career path effectively.

Driesel-Lange et. al [12] states that motivation is classified into 4 categories: career concern, career control, curiosity, and career confidence. To begin with the career concern: This aspect delves into individuals' apprehensions, hopes, and uncertainties regarding their future career paths. In accordance with them, it encapsulates the dreams they harbor, the expectations they hold, and the anxieties they face as they contemplate their professional journey. Next very important category is career control. At its core, motivation entails a sense of agency and autonomy over one's career trajectory. It involves cultivating traits such as perseverance, independence, and accountability, empowering individuals to steer their professional lives with purpose and determination. Curiosity: Motivation is based on curiosity which is the innate desire to explore and uncover the myriad possibilities within the realm of work and profession. Studies show that it drives individuals to seek out knowledge, delve into different industries, and broaden their horizons in pursuit of fulfilling career paths. Career Confidence: Lastly, motivation is fueled by confidence—the unwavering belief in one's abilities, aspirations, and capacity to succeed in their chosen endeavors. It enhances a sense of self-assurance, clarity of goals, and a steadfast commitment to realizing one's professional aspirations.

In Driesel-Lange's view, action comprises of 4 categories: exploration, self-regulation, problem solving, and stress management. To begin with **exploration**: The ability to delve into various aspects of oneself and the world of work is encompassed by exploration. It involves activities such as actively seeking out information, experimenting with different career options, and formulating plans to achieve career goals. Next very important category is **self-regulation**: The capacity to monitor, evaluate, and adjust one's actions and behaviors is entailed by self-regulation. As they said, it encompasses self-observation, self-awareness, and the adept management of emotions and behaviors in the context of career development. **Problem solving**: Researches consider this skill as a critical skill in career development and the problem solving involves the application of critical thinking, decision-making, creativity, and information processing to address complex challenges. It entails breaking down difficult problems into manageable parts and employing systematic approaches to find viable solutions. **Stress management**: Stress management is essential to navigating the ups and downs of career development. It involves recognizing and understanding stress reactions, effectively managing stressors, and cultivating resilience to mitigate the adverse effects of stress on physical and mental well-being. The model developed by Driesel-Lange et al. (2020) aligns with Donald Super's

Career Development Theory (1950) and emphasizes the progressive development of students' career knowledge, skills, and attitudes across four stages. These researchers explained the four stages elaborately. Namely, the first stage involves aligning one's chosen profession with personal interests, values, goals, skills, and strengths. Subsequently, the second stage entails purposeful and systematic exploration to gain practical career experience, providing a realistic understanding of the professional landscape. In the third stage, individuals engage in a more detailed evaluation of career options, carefully considering their interests, skills, values, and lifestyle before making a final decision. Finally, the fourth stage culminates in the decision to pursue vocational training or higher education to achieve career aspirations.

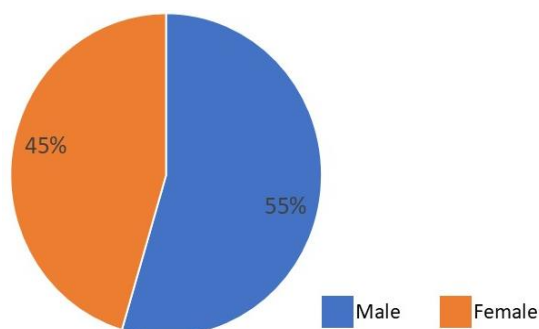
3. RESEARCH METHODOLOGY

The study employed the Model for determining career choice competence developed by German scientist Driesel-Langi (2020), building upon the work of Kaak (2013) and Lipowski (2015). This model comprises 93 questions, categorized into 12 factors and 3 dimensions of "motivation". Responses were evaluated using a Likert scale with four levels: very low, medium, good, and very good.

Prior to the commencement of the research, a pilot test was conducted with 32 students from the 9b group of the 1st school of Orkhon province. Based on the results, necessary adjustments were made to the 93-question questionnaire.

The main survey was carried out in October 2023, involving a total of 196 students from five groups in the 9th grade of No. 5, 10th year of Bayan-Ondur Sum, Orkhon Province, Mongolia. Among the participants, 55% were male and 45% were female.

Table-1. Male-to-female ratio



Group	Number of Students	Occupancy rate
A	41	20.9%
B	41	20.9%
C	39	19.9%
D	44	22.4%
E	31	15.8%
Total	196	100%

4. RESULT

A factor analysis was conducted on the questions pertaining to the dimensions of students' knowledge, motivation, and action. Subsequently, a reliability analysis was performed to assess whether the questionnaire accurately represented the factors. Cronbach's alpha was calculated for 87 questions, as six questions out of the original 93 exhibited low Cronbach's alpha values (<0.7) and were excluded from the analysis. Please refer to Table 1 for factor statistics. Based on Table 1, it is evident that students exhibit higher levels of development in factors such as career concern, career confidence, self-regulation, and problem-solving skills. However, there appears to be a lack of development in factors such as occupational knowledge, self-knowledge, planning knowledge, and exploration skills.

Table-1: Reliability scale and Cronbach's alpha analysis

Dimension	Factors	No	Cronbach's Alpha	N of Items	Mean
Knowledge	Self-knowledge	1.1	0.840	7	2.390
	Occupational knowledge	1.2	0.772	5	2.145
	Knowledge of prerequisites	1.3	0.825	6	2.667
	Planning knowledge	1.4	0.778	5	2.496
Motivation	Career-confidence-1 (vocational choice)	2.1	0.906	12	2.726
	Career control	2.2	0.852	7	2.813
	Career concern-1 (for future career)	2.3	0.782	4	3.216
	Career Confidence-2 (further study)	2.4	0.734	4	2.932
	Career concern-2 (career choice)	2.5	0.777	4	3.091
	Curiosity	2.6	0.673	4	2.568
Action	Exploration	3.1	0.870	8	2.324
	Self-regulation	3.2	0.830	8	2.983
	Problem Solving-1 (Reflecting)	3.3	0.793	6	2.555
	Stress management	3.4	0.794	4	2.732
	Problem solving -2 (when faced with a problem)	3.5	0.716	3	2.820

Chart 1: Indicators for students' career choice

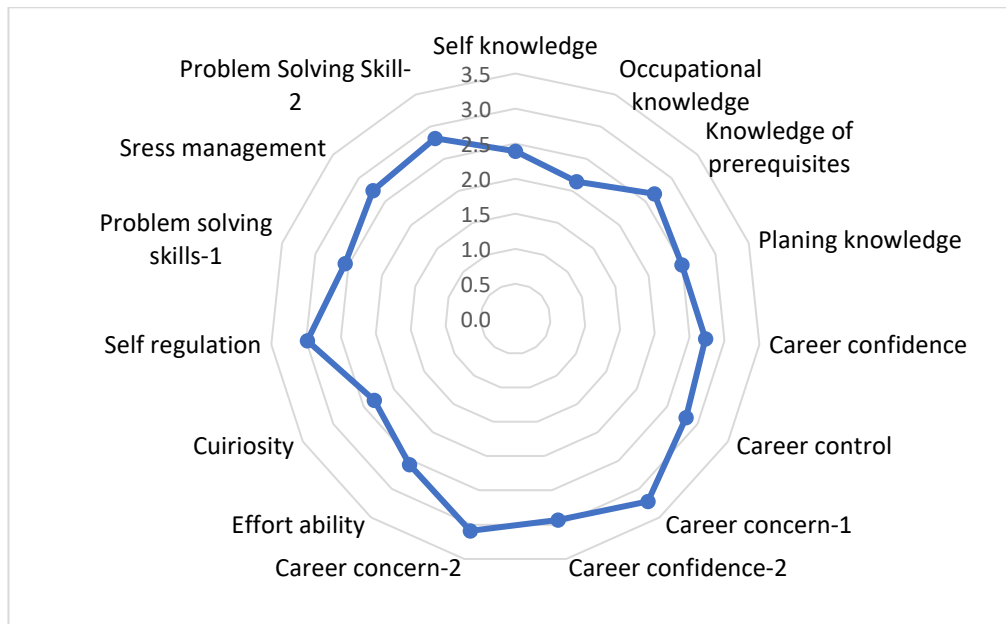


Table 2 illustrates the average values of knowledge and ability indicators for male and female students. While most indicators show similar average values between male and female students, there are notable differences in certain areas. Female students demonstrate higher average values in "career control," "career concern," "curiosity," and "problem-solving" compared to male students.

Upon further analysis to determine if there is a significant difference in knowledge and abilities between male and female students, it was observed that the significance (sig) values for problem-solving (0.028), exploration (0.028), and career control (0.017) were less than 0.005. This indicates that there is indeed a significant difference in these abilities between male and female students.

During the research, 12 main factors were considered. However, certain factors required clarification due to differing interpretations. For instance, "career-confidence-1" refers to "career choice," while "career-confidence-2" denotes "further learning." Similarly, "career concern-1" pertains to "future career," while "career concern-2" relates to "choosing a career." Additionally, "problem-solving -1" signifies "thinking," whereas "problem-solving -2" signifies "when faced with a problem," thus being labeled as 1 and 2 for clarity.

Table-2: Comparative analysis of mean values to determine whether there is a difference in students' knowledge and ability.

Knowledge and Ability		N	Mean	Std. Deviation	Std. Error Mean
Self-knowledge	Male	107	2.4312	0.62331	0.06026
	Female	89	2.3403	0.66537	0.07053
Occupational knowledge	Male	107	2.1589	0.61720	0.05967
	Female	89	2.1281	0.64965	0.06886
Knowledge of prerequisites	Male	107	2.6526	0.64555	0.06241
	Female	89	2.6835	0.70355	0.07458
Planning knowledge	Male	107	2.4822	0.67793	0.06554
	Female	89	2.5124	0.68950	0.07309
Career confidence	Male	107	2.6690	0.59726	0.05774
	Female	89	2.7815	0.73495	0.07790
Career control	Male	107	2.7130	0.62624	0.06054
	Female	89	2.9326	0.65787	0.06973
Career concern-1 (for future careers)	Male	107	3.1355	0.65362	0.06319
	Female	89	3.3118	0.70134	0.07434
Career confidence 2	Male	107	2.9439	0.62317	0.06024
	Female	89	2.9185	0.73737	0.07816
Career concern 2	Male	107	3.0374	0.62646	0.06056
	Female	89	3.1545	0.67788	0.07186
Effort ability	Male	107	2.5070	0.63363	0.06126
	Female	89	2.6404	0.67310	0.07135
Curiosity	Male	107	2.2231	0.68444	0.06617
	Female	89	2.4452	0.71880	0.07619
Self-regulation	Male	107	2.9194	0.49474	0.04783
	Female	89	3.0604	0.66227	0.07020
Problem solving skills 1	Male	107	2.5405	0.58405	0.05646
	Female	89	2.5730	0.65035	0.06894
Stress management	Male	107	2.7921	0.72724	0.07030
	Female	89	2.6601	0.89843	0.09523
Problem Solving Skills-2 (when faced with problems)	Male	107	2.7196	0.69462	0.06715
	Female	89	2.9401	0.69914	0.07411

In Table 3, it can be observed that "career-confidence-1" is strongly positively correlated with indicators such as self-knowledge, knowledge of prerequisites, planning knowledge, and career control. Furthermore, "career control" exhibits a positive correlation with planning knowledge. Additionally, both "career-confidence-1" and "career control" show positive correlations with exploration.

These findings suggest a significant interrelationship between the dimensions of knowledge, action, and motivation. Specifically, the strong positive correlations between "career-confidence-1" and various knowledge indicators, as well as its positive correlation with "career control" and

"exploration," underscore the interconnected nature of these dimensions. In other words, this research proves that the three dimensions of "knowledge", "action" and "motivation" are interrelated

Table 3: Correlation analysis of knowledge and skills

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Self knowledge	1														
Occupational knowledge	.531**	1													
Knowledge of prerequisites	.695**	.610**	1												
Planning knowledge	.682**	.520**	.648**	1											
Career confidence	.706**	.625**	.714**	.750**	1										
Career confidence	.609**	.507**	.616**	.736**	.773**	1									
Career concern-1	.288**	.264**	.370**	.442**	.525**	.494**	1								
Career confidence	.497**	.386**	.514**	.520**	.676**	.574**	.397**	1							
Career concern 2	.420**	.336**	.490**	.457**	.538**	.478**	.635**	.466**	1						
Effort	.315**	.420**	.371**	.479**	.554**	.531**	.338**	.407**	.392**	1					
Exploration	.560**	.575**	.565**	.618**	.712**	.659**	.381**	.490**	.414**	.461**	1				
Self-regulation	.386**	.365**	.454**	.504**	.624**	.546**	.526**	.561**	.522**	.397**	.481**	1			
Problem solving -1	.459**	.492**	.509**	.493**	.641**	.567**	.434**	.560**	.474**	.465**	.551**	.665**	1		
Stress management	.332**	.199**	.321**	.244**	.332**	.161*	.203**	.281**	.252**	-.032	.142*	0.098	0.126	1	
Problem solving -2	.439**	.291**	.389**	.488**	.556**	.518**	.376**	.458**	.434**	.445**	.466**	.601**	.625**	0.096	1

5. CONCLUSION

The present study unveils a profound misalignment between Mongolian ninth-grade students' self-perceived confidence in career-related matters and their actual occupational knowledge. The 38.7% gap between career confidence and occupational understanding highlights a critical challenge: students believe they are well-prepared for career decision-making despite evident deficiencies in practical knowledge. This cognitive distortion has far-reaching implications, as overestimation of career readiness can lead to misjudgments in professional pathways, ultimately affecting long-term workforce participation and economic productivity.

A nuanced analysis of gender-based disparities reveals the influence of socio-cultural constructs on students' career preparedness. Female students consistently outperform their male counterparts in career control, curiosity, and problem-solving, suggesting systemic differences in motivation and developmental opportunities. This imbalance is not a mere statistical deviation but an indicator of deeply ingrained societal and educational structures that may unconsciously privilege or hinder specific competencies. If left unaddressed, these disparities could reinforce long-term inequities in career progression, professional fulfillment, and workforce representation.

Furthermore, this study reinforces the notion that career development is not a linear trajectory but rather an intricate interplay of knowledge, motivation, and active engagement. Despite students demonstrating high confidence and a strong theoretical grasp of career planning ($r > 0.7$), only 38.2% engage in active career exploration. This disconnect suggests a critical bottleneck: while students understand the theoretical importance of career preparedness, they lack structured pathways to translate awareness into meaningful action. The absence of practical application mechanisms—such as guided career exploration, mentorship, and industry exposure—perpetuates a cycle of passive career readiness, where aspirations remain abstract rather than operationalized into strategic career steps.

Traditional career education methodologies, often relying on generic, lecture-based instruction, fail to accommodate the diverse cognitive, social, and emotional needs of students. The findings emphasize that a uniform approach is insufficient; rather, a differentiated, competency-based career education framework is necessary to cater to students' individual strengths, weaknesses, and aspirations. Without such an adaptive model, career planning remains a theoretical construct rather than a transformative, action-oriented process, limiting students' ability to make informed, realistic career decisions.

A key revelation from this study is the undeniable necessity of experiential learning in bridging the gap between career knowledge and action. With career planning knowledge scoring low (Mean = 2.496), students struggle to convert theoretical insights into concrete career steps. This deficiency cannot be rectified through information dissemination alone. Instead, students must engage in authentic career experiences—including internships, job shadowing, mentorship programs, and project-based learning—that provide them with real-world exposure and decision-making opportunities. Without these hands-on experiences, students remain confined to hypothetical career choices, lacking the situational awareness and problem-solving skills necessary for effective career navigation.

Ultimately, this study underscores the urgent need for a paradigm shift in career education. A structured, competency-based framework—grounded in self-awareness, experiential learning, and individualized career development pathways—is essential to transform students from passive knowledge recipients to proactive career decision-makers. This transformation requires a multi-stakeholder approach, involving educational institutions, policymakers, and industry leaders, to construct an ecosystem where students are not merely informed about career possibilities but are equipped with the skills, experiences, and mindset necessary to navigate their professional futures confidently.

This is not merely a call for curriculum enhancement but a fundamental rethinking of how career readiness is cultivated. Without bold, systemic interventions, students will continue to face an uncertain future where confidence is mistaken for competence, and potential remains unfulfilled due to a lack of structured guidance and real-world engagement. Educational reforms must prioritize not only knowledge acquisition but also the cultivation of self-efficacy, adaptability, and active career engagement, ensuring that Mongolian students are empowered to make informed, strategic, and sustainable career choices in an ever-evolving labor market.

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Strategic approaches effective social CRM implementation in service organizations

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Strategic approaches effective social CRM implementation in service organizations

(On the case study of Air Market LLC)

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Abstract- This study aimed to define strategic approaches for the successful implementation of social CRM within organizations. Based on the Social CRM House Model, a hypothesis was proposed that the use of social CRM positively influences an organization's financial performance. Survey results support the hypothesis: 70% of companies use social media to engage with customers, while 80% of customers expect companies to communicate via social platforms. These findings highlight the crucial role of social media in enhancing customer engagement. By applying the strategies proposed in this study, organizations can retain customers and improve market competitiveness.

Keywords: Relationship management; CRM strategy; CRM house model; Engagement, Brand loyalty, Employee skills, Financial performance

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Strategic approaches effective social CRM implementation in service organizations

1. INTRODUCTION

We are living in a world where everything is digitized. The internet has revolutionized the way we work and communicate, making a drastic change in our daily lives. Social media and the internet have become the main platforms for information, resulting in a decline in the number of people using traditional media. A recent study shows that 59% of internet users worldwide use social media platforms on a daily basis, spending an average of 2-3 hours on social media. Likewise, Mongolia's internet usage has been growing rapidly in recent years, increasing the use of social media users.

As of February, 2024, over 90% of the Mongolian population was reported using the internet on a regular basis. Compared to the same period of the previous year, the number of people using the internet has increased by 9%. This growth is closely attributed to mobile phone usage and mobile internet development. A mobile network is available in every corner of Mongolia, yet the accessibility and optimal use of the internet service are still relatively low compared with its regional countries. With the advancement in technology, many companies opt to use social media platforms to interact with customers and provide service. It can be proven by the latest study that shows approximately 80% of the world's top brands actively use social media platforms for marketing and improved customer satisfaction.

In recent years, Mongolian companies have been attaching great importance on the use of social media platforms to interact with their customers and to gain clear insights into customer behavior, preferences and feedback regarding the services and products they offer with the purpose of improving service quality. Yet, in terms of the use of social CRM, the Mongolian companies are still in the developmental stage as they are lacking experience in integrating social media marketing with social CRM and implementing a marketing strategy based on customer engagement. It is related to the fact that they are not pursuing marketing strategies designed to receive customer feedback via social media and to use the gathered customer data effectively. Unlike the traditional CRM, social CRM allows businesses to process and analyze the customer data and feedback on social media. But it would be wrong to assume that social CRM is just data collection. It enables businesses to take measures tailored to individual customer inquiries and requests. Thanks to successful implementation of social CRM, the world's top companies are increasing customer satisfaction and brand loyalty and enhancing business competitiveness.

In the Mongolian business environment, there have been attempts to use social CRM, yet no visible progress is made in terms of effective use and successful strategies of social CRM. Instead of fully leveraging customer data, many businesses are only focusing on marketing advertisements. It should be noted that social CRM is not only a marketing tool, but also a comprehensive marketing system to improve customer engagement and to increase business value.

Social CRM provides more opportunities for businesses to automate tasks such as gathering customer data, improving collaboration, and making sales and marketing strategies more effective. Thus, it is key to increased customer satisfaction and retention and overall business success. With the advancement in technology, customers are having quick access to information, thus requesting companies and businesses to provide prompt and smart services. Hence, it is required to conduct in-

depth studies into development and use of social CRM systems in the Mongolian business environment. Customers are essential for any business as they bring in revenue and drive long-term business success. No company can survive or thrive without them. Hence, more and more businesses and companies have been turning to a customer-centric business in order to attract customers, and to increase customer engagement and retention. Social CRM helps companies directly interact and engage with their customers via social media and other social media platforms. Accordingly, there has been a growing need to carry out in-depth studies into social CRM models. Some SCRM studies conducted at an international level are given below.

Table 1. Studies on SCRM conducted by foreign researchers

№	Title	Author(s)	Journals
1	From social media to Social CRM: Reinventing the customer relationship. Strategy & Leadership,	Baird, C. H., & Parasnis, G.	Emerald Group Publishing Limited 39(6), (2011) 27-34.
2	Managing Customer Relationships in the Social Media Era: Introducing the Social CRM House.	Edward C. Malthouse, Michael Haenlein, Bernd Skiera, Egbert Wege and Michael Zhang	Journal of Interactive Marketing 27 (2013) 270–280
3	Social CRM: A Review of the Literature and the Identification of New Research Directions	Kritcha Yawised, Peter Marshall University of Tasmania, Hobart, Australia	International Journal of Virtual Communities and Social Networking (2013)
4	Impact of Social CRM Technology Use on Social CRM Performance: An Organizational Perspective	Tobias Lehmkuhl and Jung	Thirty Sixth International Conference on Information Systems, Fort Worth, Texas, (2013)
5	Social media technology usage and customer relationship performance: A capabilities-based examination of social CRM.	Trainor, K. J., Andzulis, J. M., Rapp, A., & Agnihotri, R.	Journal of Business Research, 67(6), (2014) 1201-1208
6	Social media technology usage and customer relationship performance: A capabilities-based examination of social CRM	Kevin J. Trainor, James (Mick) Andzulis, Adam Rapp, Raj Agnihotri	Journal of Business Research 67 (2014)
7	Social Media and Social CRM	Antonín Pavlíček and Petr Doucek	IFIP International Federation for Information Processing (2016)
8	The Impact of Social CRM Capabilities and Customer Engagement on the Firm Performance: Mediating Role of Social Media Usage	Muhammad Azhar Bhatti, Muhammad Farhan, Munawar Javed Ahmad	Pakistan Journal of Humanities and Social Sciences (2019)
9	Social Impact of CRM on Customer Engagement and User Loyalty to Services by.U	Ali Ibrahim, Lukmanul Hakim, Alif Mustaqim, Naberi Oktaria, Tasya Permata Listi, Yunita Faujiyah	JITE (Journal of Informatics and Telecommunication Engineering) (2022)

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In the above-mentioned research papers, the authors have presented the existing theories and key concepts associated with CRM and investigated the ways how to successfully implement CRM in the service organizations such as software service providers, mobile operators, and internet service providers operating in the banking and IT sectors. It should be noted that studies on social CRM, an upgraded version of traditional CRM, are widely available in English. Yet, in Mongolia, no in-depth studies have been conducted on social CRM, showing that there is a growing need to study this emerging field.

2. THEORETICAL FRAMEWORK

2.1 SOCIAL CRM AND SOCIAL MEDIA INTERACTION MANAGEMENT, STRATEGY AND TOOLS

The term social CRM has emerged to describe the use and integration of social media in CRM. Due to the growing importance and use of social media platforms, there has been a big change in CRM. With the emergence of social CRM, many scholars and researchers have a different understanding of what it is and introduced the definitions regarding social CRM. Some of the most-cited and generally accepted definitions are given below.

CRM 2.0 is a business strategy designed to develop mutually beneficial collaboration between product-service providers and customers and to open up a possibility for a partnership [20]. Greenberg. P first introduced the term "Social CRM" in his CRM 2.0 concept [9]. According to him, the traditional CRM creates and gathers transactional data while the social CRM focuses more on a customer. He also defined social CRM as a comprehensive business strategy designed to engage customers via technologies, infrastructure, and social media platforms in order to build mutually beneficial trust and brand loyalty [12].

According to the definition by N. Woodcock, social CRM allows an organization to have more customer data and to build an effective interaction between an organization and its customers [16]. In the earlier CRM model, the organization was the one that formed the customer's opinion, but in the social CRM model, the customer is regarded as an individual or a partner who contributes to forming the opinion about products and services. (Greenberg, 2009) [9].

As a result of social media marketing and promotions, there has been a significant increase in a customer base. Thus, it is required to conduct a statistical analysis into the needs and demands of customers. Sarner (2012) stated that in order to boost business revenue, the business organizations must use social CRM applications that give the opportunities such as building customer trust, getting insights, improving selling, up-selling or cross-selling, gaining word of mouth, differentiating products and services, lowering service cost and improving the experience of customers [19]. In addition to its main business operations, companies need to focus on customer feedback and comments posted on social media. (Milan Kubina, Viliam Lendal, 2014) [26].

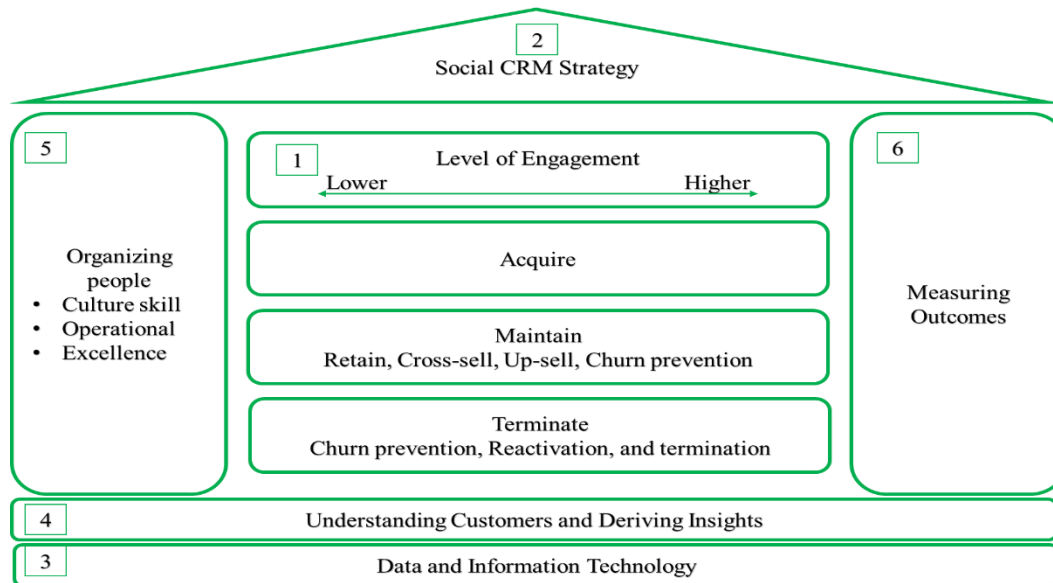
Social CRM development has been greatly influenced by social media and rapid technological advancement, thus the social CRM House Model has been developed on the basis of the traditional CRM. Trainor. K, Andzulis. J, Rapp. A and Agnihotri. R. (2016) studied the difference between social CRM and the traditional CRM and the effects of social CRM on customer engagement and business competitiveness [25]. According to the study by Baird. C, and Parasnis. G. (2011), a successful social CRM implementation in an organization plays a crucial role in understanding customer behavior through social media [15]. Researchers Lehmkuhl. T and Jung. R developed a model designed to process and analyze customer data by integrating social CRM with the traditional CRM [22].

Upon reviewing and studying the previous studies on the traditional CRM and social CRM, Buttle. B and Maklan. S (2019) developed a framework, known as the Social CRM House Model. The proposed framework, which can be applied at a strategic level within an organization, enables an organization to manage customer relationships with the help of social media platforms [32]. The social CRM house model illustrates how social media engagement influences customer acquisition, retention, and termination processes and supports the key functional areas of a business such as employees, IT, performance evaluation, metrics and overall marketing strategy [23].

The social CRM house model is composed of the following components.

1. *Level of Engagement* – Identification of a level of customer engagement from lower to higher
2. *Social CRM Strategy* – A comprehensive plan on managing customer relationships and analyzing customer interactions
3. *Data and Information Technology* – Technologies and social media platforms used in customer data collection, analysis, and application
4. *Understanding Customers and Deriving Insights* – Understanding of customer behavior to collect data to be used in social CRM
5. *Organizing People* – Organizational culture, employee skills, and operational excellence
6. *Measuring Outcomes* – Key performance indicators (KPIs) to measure the performance of CRM strategy

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Source: E.C. Malthouse et al. / Journal of Interactive Marketing 27 (2013) 270–280

Figure.1 Social CRM house Model.

Social CRM house model presents a conceptualization of the approaches for interacting a CRM strategy of an organization with social media. This model defines IT, data, customer insights, employees, KPIs as the key pillars of a social CRM strategy. Organizations can employ this model for retaining loyal customers and increasing business competitiveness.

Judging from the comparison between the main process phases of both CRM and social CRM, social CRM has a direct impact on marketing and sales and focuses more on customer engagement and interaction via social channels.

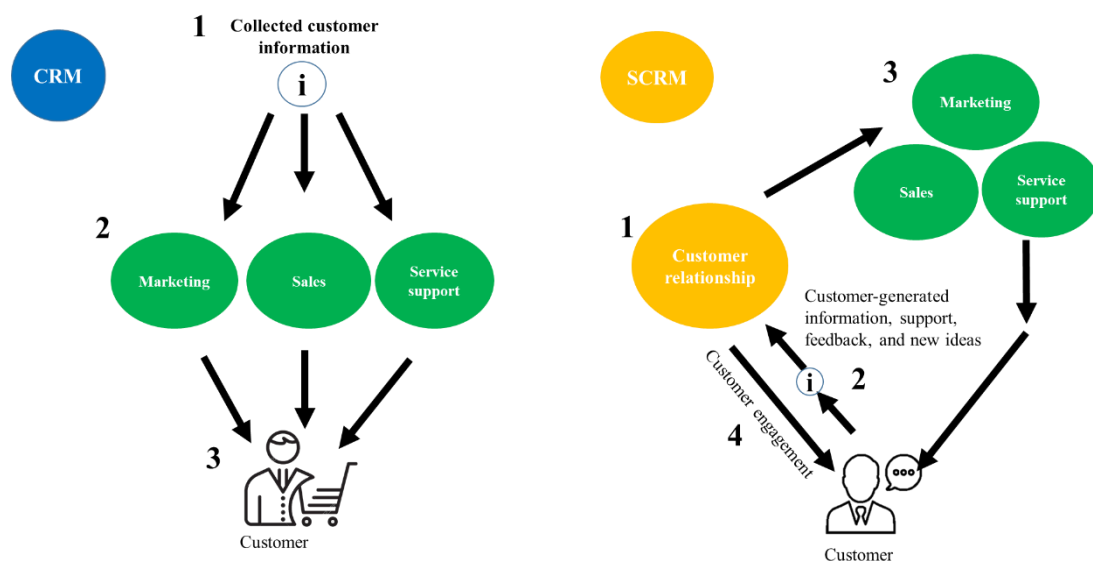
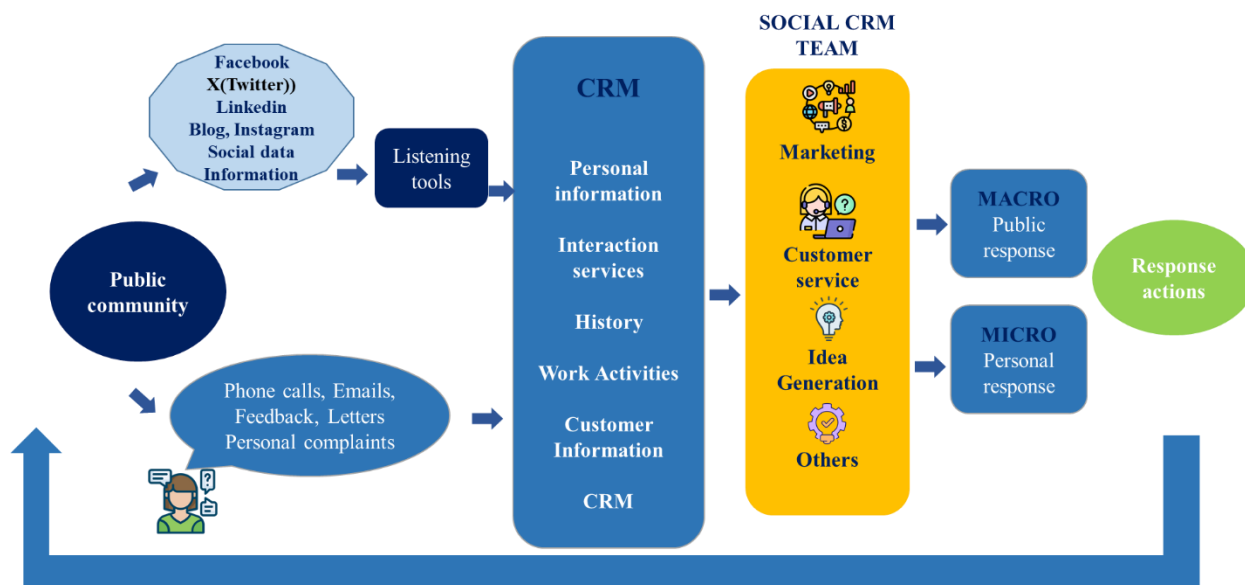


Figure 2. Social CRM process 1

Unlike a traditional CRM which does not analyze the collected customer data, social CRM uses the customer data to respond to customer needs by taking marketing strategies and customer service into consideration, and implementing appropriate policies and planning tailored to the customers' needs.



Source: Chess media group

Figure 3. Social CRM process 2

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Figure 3 given above illustrates how the social CRM process works. Customer data is collected through social media platforms and communication channels such as phones, emails, letters and complaints and then stored and processed in a CRM system. A social CRM team is responsible for taking measures tailored to individual customer inquiries and requests. It can be either automated macro responses or private responses. This process is aimed at improving customer service, marketing strategies, product development and business decision-making.

3. RESEARCH DESIGN

Research participants: Mid and top-level managers working in the service sector, and customers of the AirMarket LLC

Research objective: The purpose of the study is to define the strategic approaches for effective social CRM implementation in organizations.

The following objectives are set under the above-mentioned purpose:

- Study and compare theories on CRM and social CRM;
- Define the implementation level of social CRM in business organizations;
- Identify the key challenges facing social CRM implementation;
- Investigate and determine the current state of social CRM and social media in service organizations; and
- Develop effective approaches to successful implementation of social CRM

Research method: In this study, we have employed both quantitative and qualitative research methods.

Research methodology: Pursuant to the proposed hypotheses, we have used the social CRM house model developed by Edward C. Malthouse, Michael Haenlein, Bernd Skiera, Egbert Wege and Michael Zhang (2013).

Research hypothesis: Successful social CRM implementation will result in the following.

- **Hypothesis 1:** Increased customer engagement in social media has a positive effect on customer and brand loyalty.
- **Hypothesis 2:** The use of social CRM has a positive effect on the improvement of an organizational internal process and employee skills.
- **Hypothesis 3:** The use of social CRM has a positive effect on cutting marketing costs and increasing the financial performance of a company.

The survey participants were asked to state their levels of frequency, satisfaction, and importance of the use of social CRM, using a five-point Likert scale.

Table 2. Assessment description

Point	Level of the social CRM use by the companies	Satisfaction scales	Importance scales
1	Never	No effect at all	Not at all important
2	Rarely	No effect	Of little importance
3	Sometimes	Neutral	Of average importance
4	Often	Moderate effect	Very important
5	Always	High effect	Essential

4. RESEARCH RESULTS

An infographic given in Table 3 shows the demographic information on the survey respondents. The respondents working in 7 sectors were surveyed, of which 31 (35.2%) respondents represented the trade and sales sector; 13 (14.8%) from the banking sector; 18 (20.5%) from the information and technology sector; 13 (14.8%) from the manufacturing and construction sector; 7 (8%) from the health sector; 4 (4.5%) from the telecommunications sector; and 2.3% from other sectors respectively. To put it simply, trade and sales organizations as well as IT companies are more likely to use social CRM in their operations in comparison with the other organizations.

Table 3. Organizations, by sectors and types

Nº	Sector	Frequency	Percentage
1	Trade and sales	31	35.2%
2	Information technology	18	20.5%
3	Banking and financing	13	14.8%
4	Manufacturing and construction	13	14.8%
5	Health	7	8.0%
6	Telecommunications	4	4.5%
7	Others	2	2.3%

Organizational size is determined by the number of people employed by an organization. Table 4 shows the number of people employed by the organizations surveyed.

Table 4. Organizational size

Nº	Organizational size	Frequency	Percentage
1	Above 200 employees	41	46.6
2	Up to 50 employees	32	36.4
3	101–150 employees	8	9.1
4	51–100 employees	7	8.0
5	Total	88	100.0

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It can be seen from the table above that the majority of the surveyed organizations employ more than 200 people (47%), showing that organizational size is vital to the effective implementation of social CRM.

Since social CRM is of vital importance in honing employee skills, improving organizational internal processes, and assessing work performance, we have mainly surveyed the people holding the managerial positions. Table 5 given below illustrates the seniority level of the employees.

Table 5. Seniority level of employees

Nº	Position	Frequency	Percentage
2	Senior managers	22	25.0%
3	Managers	21	23.9%
4	Top-level managers /CEO, vice president, executive directors/	18	20.5%
5	Heads of departments, divisions, and units	17	19.3%
6	Others	10	11.3%
	Total	88	100.0%

In terms of the seniority levels, we have involved up to 88 people holding the positions of the middle-level managers and senior managers in the organizations, of which 25% are the front-line managers, 24% are the executive managers, 20% are the top-level managers, i.e., CEO and executive directors, vice-presidents and 19% are the heads of the departments, divisions and units, and 11% are the people holding the positions other than the management levels. Cross tabulation of social CRM use and duration of social CRM usage is given in Table 6.

Table 6. Cross tabulation of social CRM use and duration of social CRM usage

Social CRM use	Duration of social CRM usage					
	13 to 18 months	19 to 24 months	Over 25 months	Up to 6 months	7 to 12 months	Total
Never	0	0	5	1	3	9
Rarely	2	0	0	0	4	6
Sometimes	9	0	9	14	4	36
Often	4	6	5	8	4	27
Always	0	0	6	0	4	10
Total	15	6	25	23	19	88

The results reveal that 42% of the organizations partook in the study use the social CRM on a regular basis while 40% responded that they occasionally use the social CRM in their business operations. According to the desk study conducted in 2023, the number of Facebook users in Mongolia amounted to 2.905.700, which accounted for 86.8% of its entire population. It can be also proven by the surveys

conducted among the organizations involved in our study. We have also studied how much money has been allocated by the organizations to the social media platforms in order to gain more customer insights. The results revealed that 71.6% of the survey respondents spent most of their marketing budgets on Facebook. Table 7 provided below illustrates the types of social media platforms used by the organizations and the social media platforms receiving the most of the social media marketing budgets allocated by the companies.

Table 7. Cross tabulation analysis of the organizational social media marketing budget and social media types

Social media types	Which of the following social media platforms does your organization allocate most of your social media marketing budget to?				
	Facebook	Instagram	Website	YouTube channels	Total
Facebook	23	1	3	3	30
Instagram	10	1	2	2	15
X/Twitter/	4	1	0	0	5
LinkedIn	1	0	0	1	2
YouTube channel	7	0	1	1	9
Tiktok	1	1	0	0	2
Viber	1	0	2	1	4
Website	18	0	2	1	21
Total	63	4	10	9	88

Information regarding a market type is vital to getting a clear understanding of the organization. 66% of the organizations using social CRM in their operations both engage in B2B and B2C businesses while 22% are B2B companies, and 12% are B2C companies. The most-widely used social media platforms by these companies are as follows: Facebook-34%, Instagram-17%, YouTube channel-(vlogger) 10%, X-6%, Viber-5%, LinkedIn-2%, Tiktok-2%, and Website-24%.

The survey results reveal that the majority of the organizations surveyed allocate most of their social media marketing budgets to Facebook and Instagram ads. Social media platforms can be powerful tools for organizations to reach their target market and listen to what their target audiences want and expect from them. In addition to this, social media is the quickest and easiest way to promote your goods and services. Should the organizations implement an effective and systematic social CRM, they will be able to receive positive feedback on the proposed hypotheses from customers.

Hypothesis 1: Increased customer engagement in social media has a positive effect on customer and brand loyalty.

We have conducted a statistical analysis to investigate customer engagement in social media. The set of data values measuring the use of social media is illustrated in the table given below.

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Table 8. Use of social media

Central tendency	Values	
Mean	4.4886	
Median	4.5000	
Mode	4.00	
Std. deviation	1.12438	

As it can be inferred from Table 8, the mean, median, and mode values of a given dataset are calculated as 4, indicating that the use of social media has a positive effect on increasing customer engagement. In terms of the use of social media for increased customer engagement, 50% fall into a category of active users, 30% fall into the average user category, and 17% are categorized as low users.

Increased customer engagement significantly affects brand loyalty. The set of data values measuring the effect of increased customer engagement on improving brand loyalty is given in Table 9.

Table 9. Customer engagement effect on brand loyalty

Central tendency	Values	
Mean	3.6932	
Median	4.0000	
Mode	3.00	
Std. deviation	.73278	

According to the survey results, 53% of the respondents said that increased customer engagement has a high impact on improving brand loyalty whereas 47% responded that it has a moderate impact. As can be inferred from Table 9, the mean and mode values are calculated as 3 while the median value is 4, indicating that increased customer engagement positively affects brand loyalty. We have employed Pearson's correlation method to examine whether the increased customer engagement in social media is correlated with customer and brand loyalty. The linear dependency between these two variables is tested to determine the strength of dependency between them. The correlation analysis results are given in Table 10.

Table 10. Correlation analysis 1. Customer engagement and brand loyalty

Correlations			
		4.2 How actively does your organization use social media to improve customer engagement?	4.3 Does increased customer engagement improve brand loyalty?
4.2 How actively does your organization use social media to improve customer engagement?	Pearson Correlation	1	.728**
	Sig. (2-tailed)		.000
	N	88	88
4.3 Does increased customer engagement improve brand loyalty?	Pearson Correlation	.728**	1
	Sig. (2-tailed)	.000	
	N	88	88
**. Correlation is significant at the 0.01 level (2-tailed).			

It can be seen from the correlation analysis shown in Table 10 that the Pearson correlation coefficient (r) is 0.728 indicating a strong positive correlation between the two variables. Thus, in the given values ranging from 0.7-0.79, there is a high degree of association between the studied variables. To put it simply, the Pearson correlation coefficient value of 0.728 confirms the proposed hypothesis H1: Increasing customer engagement in social media has a positive effect on customer and brand loyalty. In addition to this, the p-value (Sig. 2-tailed) of 0.000 ($p < 0.01$) is considered statistically significant.

Hypothesis 2: The use of social CRM has a positive effect on the improvement of an organizational internal process and employee skills.

We have conducted a statistical analysis to investigate the effect of the social CRM use on the improvement of an organizational internal process. 50% of the survey respondents said that the use of social CRM had moderately improved the organizational internal process, 22% responded that the internal process improved as a result of the use of the social CRM, and 22% said that it had a great effect on the internal process. While, the remaining 6% said that it had no effect at all.

Table 11. Effect of the social CRM use on the improvement of an organizational internal process

Central tendency	Values	
Mean	3.5341	
Median	3.0000	
Mode	3.00	
Std. deviation	1.00515	

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As revealed by the results shown in Table 11, the mean, median, and mode values of a given dataset are calculated as 3, indicating that the use of social CRM has a moderate effect on an organizational internal process. 42% of the survey respondents said that the training on social CRM had moderately improved the employee skills, 25% responded that the training improved the employee skills, and 31% said that it had a great effect on the employee skills. Table 12 shows the results of the statistical analysis which was carried out to examine whether social CRM training improves employee skills. It can be seen from the table that both mean and mode values are calculated as 3 while the median value is 4, indicating that the social CRM training improves employee skills.

Table 12. Effect of social CRM training on employee skill improvement

Central tendency	Values	
Mean	3.6932	
Median	4.0000	
Mode	3.00	
Std. deviation	.73278	

Pearson correlation method is used to examine a correlation between the use of social CRM and an improvement of an organizational internal process and employee skills. The linear dependency between these two variables is tested to determine the strength of dependency between them. The detailed results are given in Table 13.

Table 13. Correlation analysis 2. Organizational internal process and employee skills

		4.1 Does your organization use social CRM?	3.1. Does the use of social CRM improve your internal process? (1-Not improved yet, 5-Significantly improved)	3.3. Does training on social CRM have an impact on employee skills? (1-No impact all, 5-Very high impact)
4.1 Does your organization use social CRM?	Pearson Correlation	1	.743**	.432**
	Sig. (2-tailed)		.000	.000
	N	88	88	88
3.1. Does the use of social CRM improve your internal process? (1-Not improved yet, 5-Significantly improved)	Pearson Correlation	.743**	1	.593**
	Sig. (2-tailed)	.000		.000
	N	88	88	88
3.3. Does training on social CRM have an impact on employee skills? (1-No impact all, 5-Very high impact)	Pearson Correlation	.432**	.593**	1
	Sig. (2-tailed)	.000	.000	
	N	88	88	88

The Pearson correlation coefficient of 0.743 confirms what is apparent from Table 13 that there is a very strong positive correlation between the use of social CRM and an internal process of an organization. Simply put, the more an organization uses the social CRM, the more an organizational internal process improves. Sig. (2-tailed) value of 0.000 or $p < 0.01$ signifies statistical significance. In terms of the correlation between a training program on social CRM and employee skills, we find the Pearson correlation coefficient to be 0.432. It can be interpreted as there is a moderate positive relationship between the training on social CRM and employee skills. Training on the use of social CRM has a moderate effect on improving employee productivity and effectiveness. Sig. (2-tailed) value of 0.000 or $p < 0.01$ implies statistical significance. With regard to the correlation between an improvement of an organizational internal process and training on social CRM, the Pearson correlation coefficient is 0.593, indicating there is a moderately positive correlation. In other words,

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if the social CRM is used, there will be an improvement in the internal process resulting in improved employee performance skills. Sig. (2-tailed) value of 0.000 or $p < 0.01$ shows statistical significance.

It can be concluded from the correlation analysis that the use of social CRM has a very positive effect on the internal process and workflow as well as the improvement of employee skills and overall profitability of the organization.

Hypothesis 3: The use of social CRM has a positive effect on cutting marketing costs and increasing the financial performance of a company.

Table 14 shows the results of the statistical analysis of the impact of the use of social CRM on marketing cost reduction. The mean value is calculated as 3, while the median and mode values are calculated as 4, indicating that the use of social CRM positively affects marketing cost reduction in the organization. 44% of the respondents surveyed said that the use of social CRM reduces marketing costs whereas 44% responded that it significantly reduces marketing costs. 16% of the survey respondents said that it moderately reduces marketing costs.

Table 14. Effect of social CRM on financial performance

Central tendency	Values	
Mean	3.7955	
Median	4.0000	
Mode	4.00	
Std. deviation	.98447	

As shown in the statistical results testing the effect of the social CRM on financial performance illustrated in Table 15 that both mean, median and mode values have the same values of 4, indicating that the social CRM positively affects the financial performance. 52% of the respondents surveyed have reported that the social CRM is effective in increasing the organizational financial performance while 47% of the respondents have said that it has a very high effect on the financial performance.

Table 15. Analysis of the effect of social CRM on financial performance

Central tendency	Values	
Mean	4.4432	
Median	4.0000	
Mode	4.00	
Std. deviation	.56442	

Table 16. Effect of the use of social CRM on ROI

Central tendency	Values	
Mean	3.3409	
Median	3.0000	
Mode	4.00	
Std. deviation	.89554	

We have conducted statistical analysis to investigate how the use of social CRM affects the Return on Investment /ROI/ increase. It can be seen from the results given in Table 16 that the mean, median, and mode have the same values of 4, indicating the use of social CRM positively affects the ROI increase. 41% of the survey respondents said that the use of social CRM in marketing increased the ROI, 41% responded that the ROI moderately increased as a result of social CRM use whereas 18% said it slightly increased.

Table 17. Regression analysis 1. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.823a	.678	.666	.62856

The results of the regression analysis to estimate whether the social CRM use has a positive effect on the marketing cost reduction and financial performance improvement of the organization are given above. It can be seen from the regression analysis illustrated in Table 17 that the correlation coefficient r of 0.823 presented in the Model Summary indicates that there is a very strong correlation between the response variable representing the use of social CRM and the explanatory variables representing ROI, marketing costs, value and profitability.

A R-squared measures the explanatory power of a regression model, showing how well an independent variable predicts a variation in a dependent variable. Hence, the R-squared value of 0.678 indicates that 67.8% of the variance in the dependent variable is explained by the independent variable in the regression model. In other words, the variables in the given regression model are effective in predicting the effectiveness of the social CRM with 67.8% accuracy. The adjusted R-squared value of 66.6% shows the high reliability of the regression model.

Table 18. Regression analysis 1. Continuation

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.801	3	23.267	58.891	.000b
	Residual	33.187	84	.395		
	Total	102.989	87			

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The results of an analysis of variance (ANOVA) given in Table 18 show that F-statistic is 58.891, indicating that the given regression model as a whole is statistically significant and provides a better fit. To put simply, the combined explanatory variables employed in the regression analysis are well predicting the dependent variables. Sig. = 0.000 or $p < 0.01$ signifies that the given model is statistically significant, meaning the observed results are not due to random chance and likely represent a real relationship between the variables in the model.

Thus, it can be interpreted as the use of social CRM has a positive effect on ROI, marketing cost reduction, improvement in a financial operation, supporting Hypothesis 3: The use of social CRM has a positive effect on cutting marketing costs and increasing the financial performance of a company.

Table 19. Statement of the conclusion

Nº	Proposed hypotheses	Conditionality	Results
H1	Hypothesis 1: Increased customer engagement in social media has a positive effect on customer and brand loyalty.	0.728 (significant)	Supported
H2	Hypothesis 2: The use of social CRM has a positive effect on the improvement of an organizational internal process and employee skills.	0.743 (high positive correlation) 0.432 (moderate positive correlation)	Supported
H3	Hypothesis 3: The use of social CRM has a positive effect on cutting marketing costs and increasing the financial performance of a company.	0.823 (significant)	Supported

In accordance with the social CRM house model, the use of social CRM is crucial for the organizations as it positively affects the financial performance of the organization. The importance of the social CRM usage has been proved by the hypotheses proposed as part of the study into the organizations using the social CRM.

On the basis of the hypotheses supported by the study, the following recommendations for the effective social CRM implementation are made:

1. With regard to increasing customer engagement in social media, it is recommended to take the following measures:

- **Custom content:** Create contents tailored to preferences, interests and needs of customers in order to improve customer loyalty
- **Prompt response:** Provide prompt and polite response to feedback and questions by customers

- **Tracking consumer attitude:** Track and analyze consumer attitudes via Social Listening tools and strategy
- **Customer incentive:** Organize incentive programs designed to increase customer engagement

2. With regard to increasing an organizational internal process and improving employee skills, it is recommended to take the following measures:

- **Training program and workshop on CRM:** Hold in-service training program and workshop on CRM involving all staff
- **CRM system with a user-friendly interface:** Develop simple and easy-to-use CRM interface
- **Employee performance track:** Track whether employees are using CRM and provide assistance if required
- **Improvement of internal communication:** Simplify and automate information exchange between the staff

3. With regard to reducing marketing costs and increasing financial performance, it is recommended to take the following measures:

- **Customer-centric marketing:** Formulate a customer-centric marketing strategy using the CRM data
- **AI-based automatic response system:** Deliver automatic responses and contents to customers by using AI
- **Marketing ROI tracking:** Track and monitor the effectiveness of a marketing campaign on the basis of CRM data analysis
- **Cost tracking:** Monitor and track expenses via a CRM system and allocate efficiently

4. With regard to improving brand loyalty, it is recommended to take the following measures:

- **Personalized discounts and promotions:** Offer personalized discounts and promotions based on customer preferences and interests using the CRM data
- **Loyalty program:** Automate a CRM-based loyalty program
- **Listening to customer feedback:** Receive customer feedback and complaints via Social Listening and identify areas for improvement to offer high quality service
- **Customer experience improvement:** Create a positive customer experience using the CRM data and analytics

5. With regard to optimizing a CRM system to enhance its efficiency and effectiveness, it is recommended to take the following measures:

- **Identification of key KPIs:** Determine key KPIs for measuring CRM effectiveness and performance
- **Survey on the CRM use:** Conduct a survey on the use of CRM involving all employees to track the usage rate

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- **Refining a business strategy:** Optimize and refine a business strategy on the basis of CRM data and analytics
- **CRM system improvement:** Upgrade and improve a CRM system on a regular basis

Under the social CRM model house, we have made the above-mentioned recommendations with regard to effective use of social CRM that will help the organizations improve their financial performance and organizational internal processes and increase customer loyalty.

5. CONCLUSION

In this study, we have used the social CRM house model developed by Edward C. Malthouse, Michael Haenlein, Bernd Skiera, Egbert Wege and Michael Zhang in 2013 in order to investigate the current state of the use of social CRM in the organizations.

Having conducted this study, we aim to delve into the social CRM process that involves interactions with customers via social media platforms and customer data analysis based on their behavior, preferences and feedback that an organization implements with the purpose of retaining customers and keeping brand loyalty from the perspective of both customers and organizations.

As part of the study, we have conducted a survey on the social CRM implementation in the organizations by asking the respondents questions regarding the use and duration of social CRM and the social media platforms used by them to keep customer loyalty and retention. The survey involved 88 mid and top-level managers representing a total of 7 sectors.

The target population of the study was the “Air Market” LLC, an international flight, travel service and ticket booking company founded in 2000. The company is an official authorized distributor for the well-known world airlines such as MIAT, Korean Air, Air China, Turkish Airlines, Asiana Airlines, Aeroflot, Singapore Airlines, Delta Airlines, Malaysia Airlines, United Airlines, and AeroMongolia. In total, it sells tickets for approximately 290 airlines across more than 120 countries. In 2023, the company introduced the Nisleg v2.0 mobile application that offers more affordable, accessible, and diverse flight ticket options for its customers.

Of 88 respondents, 31 (35.2%) respondents represented the trade and sales sector, 13 (14.8%) from the banking sector, 18 (20.5%) from the information and technology sector, 13 (14.8%) from the manufacturing and construction sector, 7 (8%) from the health sector; 4 (4.5%) from the telecommunications sector; and 2.3% from other sectors respectively.

Majority of the organizations involved in the study have employed more than 200 people (47%). In terms of the seniority levels, 88 people holding the positions of the middle-level managers and senior managers in the organizations were surveyed, of whom 25% were the front-line managers, 24% were the executory managers, 20% are the top-level managers, i.e., CEO and executive directors, while 19% were the heads of the departments, divisions and units, and 12% were the people holding the positions other than the management levels.

The study findings reveal that 42% of the surveyed organizations use the social CRM on a regular basis while 40% responded that they occasionally use the social CRM in their business operations.

66% of the organizations using social CRM in their operations both engage in B2B and B2C businesses while 22% are B2B companies, and 12% are B2C companies.

The most-widely used social media platforms by these companies are as follows: Facebook-34%, Instagram-17%, YouTube channel-(vlogger) 10%, X-6%, Viber-5%, LinkedIn-2%, Tiktok-2%, and Website-24%.

Under the social CRM house model, the use of social CRM is vital for the organizations as it positively affects the financial performance of the organization. The importance of the social CRM usage has been proved by the hypotheses proposed as part of the study into the organizations using the social CRM. The proposed hypotheses are as follows.

- Hypothesis 1: Increasing customer engagement in social media has a positive effect on customer and brand loyalty.
- Hypothesis 2: The use of social CRM has a positive effect on the improvement of an organizational internal process and employee skills.
- Hypothesis 3: The use of social CRM has a positive effect on cutting marketing costs and increasing the financial performance of a company.

The study reveals that 70% of the survey respondents use social media when interacting with customers while 80% of the customers think that the companies should interact with customers via social media. This data proves social media plays a major role in improving customer interaction.

We are living in a world where everything is digitized. Thus, by implementing the recommendations based on the above-mentioned hypotheses, the organizations will be able to retain customers and increase their market competitiveness.

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Deviant workplace behavior in Mongolia's banking industry: An empirical analysis

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Deviant workplace behavior in Mongolia's banking industry: An empirical analysis

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Abstract - This study investigates deviant workplace behavior among Mongolian banking employees, focusing on how age, gender, education, and work experience influence such behavior. Using the Banker's Deviant Behavior Scale, data from 434 employees showed minor deviance was more common than major deviance. Education and experience had significant effects, while age and gender did not. A strong positive correlation between minor and major deviance supports the slippery slope effect. The findings underscore the need for proactive management of employee behavior considering demographic factors.

Keywords - Workplace deviance, Banking industry, Minor deviance, Major deviance, Demographic factors, Empirical study

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Deviant workplace behavior in Mongolia's banking industry: An empirical analysis

1. INTRODUCTION

Employee deviance is defined as voluntary behavior that violates significant organizational norms and threatens the well-being of the organization or its members [1]. Numerous studies have shown that such behaviors remain prevalent across various sectors and continue to negatively impact productivity, interpersonal relationships, financial stability, and employee well-being.

In the banking sector, where high accountability, regulatory oversight, and sensitive financial information are central, deviant behaviors carry greater consequences [2]. Even minor violations-such as taking extended breaks or violating dress codes - can erode customer trust, lead to legal risks, and damage organizational reputation.

Ethical behavior in this context is not limited to formal codes of conduct but also depends on the internalization of ethical values by employees. When employees uphold ethical principles as personal values, it strengthens organizational culture, enhances motivation, and supports long-term stability [3]. Therefore, identifying, measuring, and managing deviant behavior in banking institutions is not merely a disciplinary concern but a strategic imperative.

While employee deviance has been widely studied in international contexts, there is a lack of empirical research in the Mongolian banking sector. Specifically, there are no studies that examine the frequency of deviant behavior or the influence of demographic factors such as age, gender, education, and tenure on such behavior.

This study adopts the typology of deviant workplace behavior proposed by Robinson and Bennett [1] and applies the Banker's Deviant Behavior Scale (BDBS) developed by Eze et al [4]. The model categorizes deviant behavior into minor and major forms. Minor deviance includes low impact but frequent violations (e.g., extended breaks), while major deviance involves rare but high-risk actions (e.g., misusing customer funds). This framework provides a robust tool for distinguishing the severity of behaviors and assessing behavioral risk in organizational contexts.

Research objectives: The study's objective is to examine the frequency across the types of deviant workplace behavior among employees in Mongolia's banking sector and assess the influence of demographic factors such as age, gender, education, and years of work experience in the banking sector.

- To measure the frequency of deviant workplace behaviors among Mongolian banking sector employees.
- To examine the influence of demographic factors (age, gender, education level, years of work experience in the banking sector) on deviant workplace behavior.

2. THEORETICAL BACKGROUND

In 1995, Robinson and Bennett developed the first comprehensive measurement of Deviant workplace behavior. This study was published in the Journal of Applied Psychology under the title "A Typology of Deviant workplace behaviors: A Multidimensional Scaling study." They categorized Deviant workplace behaviors into two key dimensions [1].

1. Whether the victim is the organization or an individual (employees).
2. Whether the harmfulness of the act is minor or serious

Based on these two dimensions, four types of deviant workplace behavior were identified. This includes Production deviance, property deviance, political deviance, personal aggression. (see Figure1)

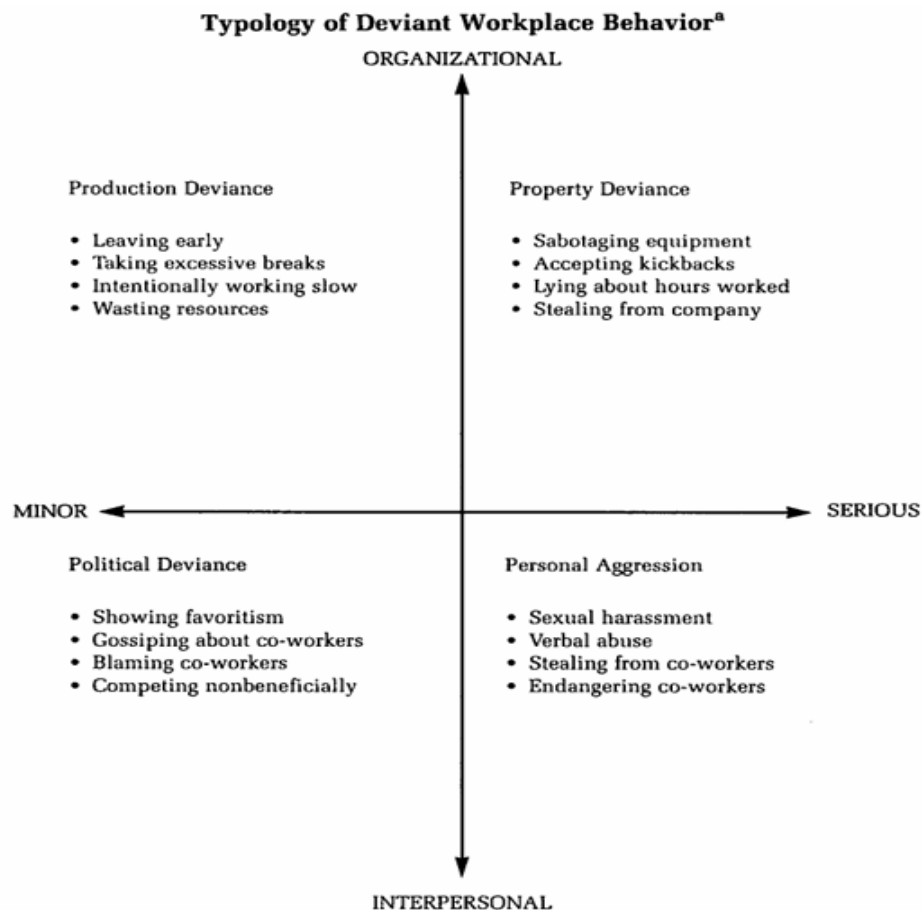


Figure 1 Typology of Deviant workplace Behavior

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- Production deviance

Production deviance includes behaviors where employees fail to adhere to established standards and organizational norms related to the quality and quantity of organizational performance. These behaviors are organization-directed and are generally considered to cause relatively minor harm. However, despite being classified as low-impact, such actions - including leaving work early, taking excessive breaks, intentionally working slowly, and wasting resources - significantly affect organizational productivity and profitability.

- Property deviance

This refers to actions involving the misuse, mismanagement, or destruction of organizational property without managerial authority. It is classified as an organization-directed deviance with serious harm, posing a direct financial risk to property owners and investors. Examples include sabotaging equipment, accepting kickbacks, lying about hours worked, stealing from company. [1], [5]

- Political deviance

Political deviance encompasses actions where employees cause harm to others by engaging in corruption, favoritism, or discriminatory treatment toward certain clients, customers, colleagues, or managers. For example, showing favoritism, gossiping about co-workers, blaming co-workers, competing non-beneficially. These actions are generally considered to cause relatively minor harm, however, serious acts such as disclosing confidential information or leaking data to competitors can result in irreparable damage to the organization. [1]

- Personal aggression

Personal aggression is the most serious form of deviance and is characterized by being directed toward individuals rather than the organization that includes sexual harassment in the workplace, verbal abuse, stealing from co-workers, and endangering co-workers. Such behaviors not only create serious issues in the work environment but also have a significant negative impact on the organization's reputation. (Robinson & Bennett, 1995).

In the next phase, in 2000, they validated this scale by testing internal reliability (Cronbach's Alpha), construct validity, and factor analysis. The resulting Workplace Deviance Scale became one of the most widely measures in Organizational behavior research. [6]

Since financial security, ethics, and corporate reputation are the most critical factors in the banking sector, evaluating deviant workplace behavior is essential for ensuring workplace stability and enhancing the organization's ethical culture. Recognizing this significance, in 2020, Robinson and Bennett's (1995, 2000) measurement framework were adapted and developed specifically for the banking sector. [4] Banker's deviant behavior scale is an instrument that measures deviant workplace behavior, categorized into two factors: Major deviance and Minor deviance. Banker's deviant behavior scale is an instrument that measures deviant workplace behavior, categorized into two factors: Major deviance and Minor deviance.

Over the past 10 years, research on Deviant workplace behavior has developed rapidly, with numerous studies conducted in this field. Given this growth, understanding the measurement,

magnitude, and direction of relationships of this phenomenon has become increasingly important. Recognizing this need, researchers have concluded meta-analyses to highlight key trends and insights in workplace deviance research. [7]

They conducted their study by sampling 235 empirical studies based on Robinson and Bennett's (1995, 2000) typology of deviant workplace behavior, utilizing data from 66990 participants. The findings reveal a strong correlation between interpersonal deviance and organizational deviance. This suggests that negative workplace behaviors among employees within the same organization are closely interconnected. Additionally, demographic factors were identified as weak predictors, with results closely aligning with findings from previous studies.

3. RESEARCH DESIGN

This study utilized Banker's deviant behavior scale, a standardized and validated instrument for quantitatively measuring deviant workplace behavior among banking sector employees. In addition to assessing deviant workplace behavior, demographic information in the participants was also collected. The scale comprises 19 items, categorized into two key dimensions for deviant workplace behavior: minor deviance (causing less harm), and major deviance (causing severe harm to the organization or individuals).

3.1 RESEARCH VARIABLES

Dependent variable: Minor deviance and major deviance

Independent variable: Demographic factors (age, gender, education level and years of work experience in the banking sector)

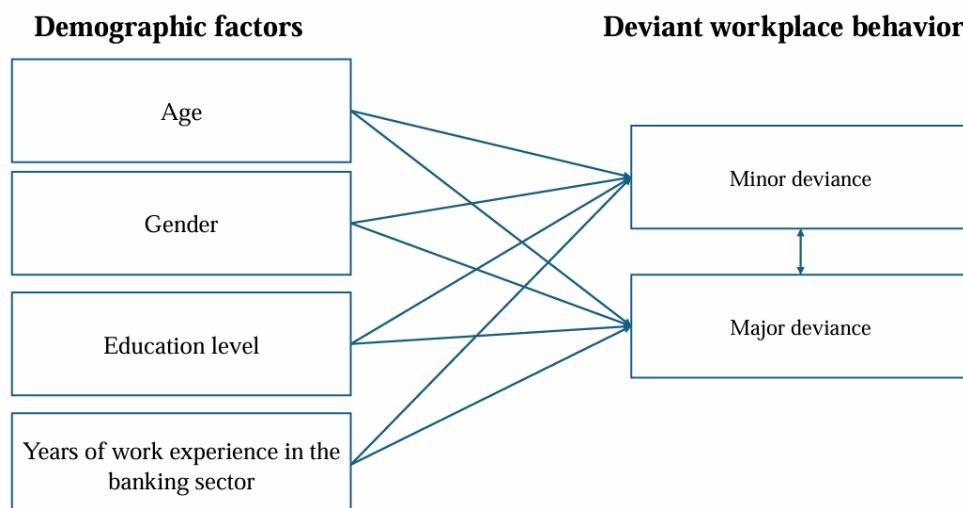


Figure 2 Research design

Deviant workplace behavior in Mongolia's banking industry: An empirical analysis

3.2 HYPOTHESIS

H1: Major and minor deviant workplace behaviors are strongly correlated.

- The meta-analysis results indicate a strong correlation, with a reported effect size of $\rho = 0.67$. [7]

H2: Age is negatively associated with deviant workplace behavior; such that older employees engage in lower levels of deviant workplace behavior compared to younger employees.

- The meta-analysis results indicate a weak negative correlation $\rho = -0.12$. [7]
- As individuals age, their moral reasoning and workplace ethics tend to improve, leading to a decreased likelihood of engaging in deviant workplace behavior. [7] This is likely because they develop a greater understanding of the consequences of their actions. This is likely because they develop a greater understanding of the consequences of their actions. [8]

H3: Male employees are more likely to engage in deviant workplace behavior compared to female employees.

- The meta-analysis results indicate a weak correlation between gender and deviant workplace behavior. (interpersonal deviance $\rho = -0.11$, organizational deviance $\rho = -0.09$) [7]
- Men are more likely to engage in deviant workplace behavior due to their higher propensity for risk-taking and competitiveness. [9]

H4: Years of work experience in the banking sector is negatively associated with deviant workplace behavior, such that employees with more experience exhibit lower levels of deviant workplace behavior.

- The meta-analysis results indicate a weak negative correlation between organizational tenure and deviant workplace behavior ($\rho = -0.08$). [7]
- According to Social exchange theory, employees who have worked in an organization for a long time tend to respect the organization's values and take ethical concerns more seriously. [5]
- Long-tenured employees are generally more committed to their organizations and exhibit lower levels of deviant workplace behavior.
- However, excessively long-tenured employees may become disengaged from organizational ethical standards and are more likely to abuse their authority. [10]

H5: Higher levels of education are negatively associated with deviant workplace behavior, such that employees with higher education are less likely to engage in deviant workplace behavior.

- According to Kohlberg's Moral development theory, individuals with higher education levels tend to have more advanced moral reasoning, [11] making them less likely to engage in deviant workplace behavior.
- The meta-analysis results indicate a weak negative correlation between education level and deviant workplace behavior. (individual deviance $\rho = 0.02$, organizational deviance $\rho = 0.06$) [7]

3.3 DATA COLLECTION METHOD

A structured questionnaire was used as the research instrument, incorporating a frequency-based 7-point Likert scale. (Figure 3) Participants were asked how often they had observed specific deviant workplace behaviors, selecting a response from 1 (Never) to 7 (Daily).

1 Never	2 Once a year	3 Twice a year	4 Several times a year	5 Monthly	6 Weekly	7 Daily
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Figure 3 Likert scale

The survey questions were formulated using an observer-based rating scale rather than a self-report approach. In other words, participants were asked to evaluate deviant workplace behaviors based on their observations of others' actions, rather than reporting their own behaviors.

General question: Based on your observations, how frequently do these behaviors occur in your bank?

Reasons for using observer-based rating scale

- Avoiding social desirability bias [12]:

Since participants evaluate behaviors separately from their own actions, this approach helps to reduce social desirability bias. Additionally, meta-analysis findings on deviant workplace behavior suggest that self-reported measures may lead to underreporting of such behaviors. [7]

- The need to study at the sector level:

The study aims to measure and manage the frequency of deviant workplace behavior at a social group level rather than at an individual level. Therefore, an observer-based approach is considered more appropriate than self-reporting. According to Social Learning Theory [13], individuals learn behaviors through social interactions, and behavior is shaped because of these interactions. Hence, evaluating observed behaviors rather than self-reported actions provides a more accurate representation of an organization's behavioral tendencies.

3.4 SAMPLE

This study included 434 full-time employees who have been working in the Mongolian commercial banking for more than one year. Convenience sampling methods were employed to recruit participants, ensuring a diverse representation of employees across different job roles and experience levels.

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The demographic characteristics of the participants are presented in Table 1.

Table 1. Distribution of demographic factors

Age				
21-30	150	34.60%	434	100.00%
31-40	198	45.60%		
41-50	75	17.30%		
51 and above	11	2.50%		
Gender				
Male	162	37.30%	434	100.00%
Female	272	62.70%		
Years of work experience in the banking sector				
Up to 3 years	86	19.80%	434	100.00%
4–7 years	110	25.30%		
8–11 years	48	11.10%		
12 years and above	190	43.80%		
Education level				
High school diploma or vocational education	3	0.69%	434	100.00%
Bachelor's degree	297	68.43%		
Master's degree	133	30.65%		
Doctoral degree (Ph.D. or equivalent)	1	0.23%		

The data for this study were collected between October 1, 2024, and February 27, 2025. Data was gathered from employees working in the banking sector through both in-person surveys and the Qualtrics online survey platform.

The online responses were extracted from the Qualtrics platform, while paper-based responses were manually coded and integrated into SPSS 26. The final dataset was analyzed using SPSS 26 statistical software to conduct the necessary statistical analysis.

3.5 RESEARCH ETHICS

The study adhered to the following ethical principles:

- Confidentiality and data protection: Participants' names and personal information were kept anonymous and securely protected.
- Voluntary participation: All participants took part in the study on a voluntary basis.
- Informed consent: The study's objectives were clearly communicated to participants in written form before their participation.

- Protection of personal and organizational identity: To prevent any risk to individuals or institutions, no identifying information, including participant names or organizational affiliations, was collected.

Descriptive statistics (mean, standard deviation, frequency percentage), Exploratory Factor Analysis (KMO and Bartlett's test, factor loadings), Reliability Analysis (Cronbach's Alpha), ANOVA, Independent Samples test, Correlations and Regression were conducted to analyze the research data.

4. RESULTS

4.1 RELIABILITY ANALYSIS

The reliability analysis of the Banker's Deviant Behavior Scale (BDB) in this study revealed Cronbach's alpha of 0.936 for the overall scale, indicating excellent internal consistency. The major and minor deviance subscales yielded alpha values of 0.895 and 0.919, respectively, demonstrating a high level of reliability for both dimensions. These results closely correspond with the findings of Eze et al., who reported a Cronbach's alpha of 0.90 for the overall scale, with 0.81 for major deviance and 0.89 for minor deviance in a Nigerian sample [4]. The similarity in findings supports the cross-cultural applicability of the BDB, confirming its structural soundness and psychometric strength in the Mongolian banking context. Thus, the BDB proves to be a valid and reliable tool for assessing workplace deviant behavior among banking employees and offers considerable utility for organizational evaluation and behavioral management.

Table 2. Case Processing Summary

Case Processing Summary			
		N	%
Cases	Valid	434	100.0
	Excluded ^a	0	0.0
	Total	434	100.0
a. Listwise deletion based on all variables in the procedure.			

Table 3 presents the observation frequency, means, and standard deviation of deviant workplace behaviors categorized as minor deviance.

Table 3. Reliability Statistics

	Reliability Statistics	
	Cronbach's Alpha	N of Items
	0.936	19
Major_Deviance	0.895	10
Minor_Deviance	0.919	9

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Table 4. Scale Statistics

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
36.98	343.824	18.542	19

4.2 DESCRIPTIVE STATISTICS ANALYSIS

The comparative analysis of minor and major deviant behaviors revealed distinct patterns in both frequency and perceived severity among banking employees. Minor deviance behaviors, such as taking excessive breaks ($M = 2.87$) and overstaying during breaks ($M = 2.77$), demonstrated higher mean scores and lower rates of “never” responses (31.9% and 40.6%, respectively), indicating that these behaviors occur more frequently in the workplace. Other frequent minor behaviors included non-compliance with the dress code and showing favoritism, with mean scores above 2.5.

In contrast, major deviant behaviors such as using customers' funds for personal use ($M = 1.32$) and sexually harassing colleagues ($M = 1.32$) received extremely low frequency ratings and high “never” responses (82.3% and 84.3%, respectively), suggesting that these behaviors are rare but highly serious in nature. Even relatively less severe major deviance, such as talking impolitely to customers ($M = 2.05$), was reported significantly less often than most minor behaviors.

Table 5. Descriptive Statistics-Minor deviance

Minor deviance	Daily	Weekly	Monthly	Several times a year	Twice a year	Once a year	Never	Mean	SD
Take excessive breaks.	6.0%	6.2%	5.8%	22.1%	7.6%	15.2%	37.1%	2.87	1.897
Overstay during break.	6.5%	3.5%	8.1%	20.7%	7.4%	12.0%	41.9%	2.77	1.904
Don't adhere to the bank's dress code.	4.1%	5.3%	6.7%	22.8%	8.1%	10.4%	42.6%	2.73	1.838
Show favoritism in the workplace.	3.7%	2.1%	6.9%	17.7%	7.8%	10.6%	51.2%	2.40	1.739
Give some customers more attention than the others.	2.5%	2.5%	6.0%	19.8%	7.4%	13.1%	48.6%	2.39	1.668
Blame colleagues for non-performance.	3.5%	1.4%	4.8%	16.1%	8.8%	15.0%	50.5%	2.28	1.639
Deliberately come to work late.	3.2%	2.5%	5.1%	12.4%	4.6%	8.3%	63.8%	2.07	1.689
Intentionally work slowly.	1.8%	1.6%	4.4%	14.7%	5.3%	8.8%	63.4%	2.00	1.548
Deliberately spend more time with a customer.	1.8%	1.8%	3.5%	13.1%	5.8%	9.2%	64.7%	1.94	1.516

Table 6. Descriptive Statistics-Major deviance

Major deviance	Daily	Weekly	Monthly	Several times a year	Twice a year	Once a year	Never	Mean	SD
Talk impolitely to customers.	0.9%	0.2%	5.1%	15.9%	7.4%	15.2%	55.3%	2.05	1.410
Publicly embarrassed colleagues at work.	0.7%	1.4%	3.9%	13.6%	4.8%	12.2%	63.4%	1.89	1.402
Taken colleagues' properties without their consent.	0.7%	0.7%	2.5%	8.3%	4.6%	10.4%	72.8%	1.62	1.216
Intentionally waste resources during work.	0.7%	0.2%	0.9%	6.9%	4.8%	11.8%	74.7%	1.51	1.062
Use the bank's property for personal gain.	0.7%	0.7%	0.9%	7.4%	3.5%	9.9%	77.0%	1.50	1.105
Divulge the bank's confidential information to an outsider.	0.5%	0.2%	0.5%	8.3%	3.9%	9.0%	77.6%	1.47	1.033
Have used colleague's password without his/her consent.	0.5%	0.5%	1.2%	6.5%	3.5%	7.6%	80.4%	1.44	1.036
Take the bank's property without permission.	0.5%	0.5%	0.9%	4.6%	3.0%	9.7%	80.9%	1.38	0.957
Use customers' funds for personal use.	0.0%	0.0%	0.0%	5.3%	4.6%	8.8%	81.3%	1.34	0.797
Sexually harass colleagues.	0.0%	0.5%	0.2%	4.6%	2.8%	9.4%	82.5%	1.32	0.819

4.3 FACTOR ANALYSIS

This table presents the results of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. With a high KMO value (0.939) and a statistically significant Bartlett's test ($p < 0.001$), the dataset is well-suited for conducting Exploratory Factor Analysis (EFA).

The exploratory factor analysis identified two distinct factors: Minor Deviance and Major Deviance, explaining 52.974% of the total variance. Minor Deviance, which includes behaviors such as excessive breaks, intentional work slowdowns, and lateness, primarily reflects issues related to time management and workplace discipline. In contrast, Major Deviance, encompassing unauthorized use of company property, disclosure of confidential information, and financial misconduct, is strongly associated with ethical violations and organizational harm.

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Table 7. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.939
Bartlett's Test of Sphericity	Approx. Chi-Square	5293.324
	df	171
	Sig.	0.000
Communalities		
	Initial	Extraction
Have used colleague's password without his/her consent.	0.283	0.246
Sexually harass colleagues.	0.368	0.260
Use customers' funds for personal use.	0.442	0.423
Publicly embarrassed colleagues at work.	0.559	0.462
Taken colleagues' properties without their consent.	0.485	0.399
Divulge the bank's confidential information to an outsider.	0.642	0.669
Talk impolitely to customers.	0.487	0.463
Intentionally waste resources during work.	0.685	0.688
Use the bank's property for personal gain.	0.751	0.650
Take the bank's property without permission.	0.757	0.687
Overstay during break.	0.625	0.528
Take excessive breaks.	0.685	0.654
Deliberately spend more time with a customer.	0.517	0.452
Deliberately come to work late.	0.525	0.484
Intentionally work slowly.	0.648	0.630
Blame colleagues for non-performance.	0.633	0.626
Don't adhere to the bank's dress code.	0.554	0.548
Show favoritism in the workplace.	0.674	0.615
Give some customers more attention than the others.	0.628	0.581
Extraction Method: Principal Axis Factoring.		

Table 8. Total Variance Explained

Total Variance Explained							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.266	48.768	48.768	8.825	46.445	46.445	7.819
2	1.684	8.861	57.629	1.241	6.529	52.974	7.602
3	1.159	6.099	63.728				
4	0.791	4.164	67.892				
5	0.715	3.762	71.654				
6	0.710	3.739	75.393				
7	0.630	3.318	78.711				
8	0.612	3.222	81.933				
9	0.519	2.729	84.662				
10	0.453	2.383	87.046				
11	0.411	2.161	89.206				
12	0.356	1.874	91.080				
13	0.310	1.630	92.711				
14	0.295	1.553	94.264				
15	0.255	1.344	95.607				
16	0.242	1.275	96.883				
17	0.228	1.203	98.085				
18	0.213	1.119	99.204				
19	0.151	0.796	100.000				
Extraction Method: Principal Axis Factoring.							
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.							

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Table 8. Pattern Matrix^a

Pattern Matrix ^a		
	Factor	
	Minor deviance	Major deviance
Take excessive breaks.	0.824	
Intentionally work slowly.	0.789	
Deliberately come to work late.	0.782	
Blame colleagues for non-performance.	0.760	
Don't adhere to the bank's dress code.	0.758	
Show favoritism in the workplace.	0.733	
Overstay during break.	0.700	
Give some customers more attention than the others.	0.636	
Deliberately spend more time with a customer.	0.480	
Take the bank's property without permission.		0.863
Divulge the bank's confidential information to an outsider.		0.860
Use the bank's property for personal gain.		0.798
Intentionally waste resources during work.		0.774
Use customers' funds for personal use.		0.709
Publicly embarrassed colleagues at work.		0.510
Have used colleague's password without his/her consent.		0.505
Taken colleagues' properties without their consent.		0.483
Sexually harass colleagues.		0.459
Talk impolitely to customers.		0.440
Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Table 9. Factor Correlation Matrix

Factor Correlation Matrix		
Factor	1	2
1	1.000	0.707
2	0.707	1.000
Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.		

4.4 CORRELATIONS

The factors' correlation coefficient of 0.707 indicates a strong positive association between major deviant workplace behaviors and minor deviant workplace behaviors. The Pearson correlation analysis indicates a strong positive relationship ($r = 0.761$, $p < 0.01$) between Minor Deviance and Major Deviance. This suggests that as Minor Deviance increases, Major Deviance is also likely to increase. Given that $p\text{-value} = 0.000$, this correlation is highly statistically significant.

Table 10. Correlations

Correlations		
		Major_Deviance
Minor_Deviance	Pearson Correlation	.761**
	Sig. (2-tailed)	0.000
	N	434
**. Correlation is significant at the 0.01 level (2-tailed).		

4.5 REGRESSION

The results of the regression analysis indicate that Minor Deviance explains 57.9% of the variance in Major Deviance ($R^2 = 0.579$), suggesting that an increase in Minor Deviance is likely to be associated with a proportional increase in Major Deviance.

The ANOVA test results ($F = 593.184$, $p < 0.001$) confirm that the model is statistically significant.

The regression coefficients further show that for every one-unit increase in Minor Deviance, Major Deviance increases by 0.76 ($B = 0.758$, $p < 0.001$).

Additionally, the Collinearity Statistics values (Tolerance = 1.000, VIF = 1.000) confirm the absence of multicollinearity between Minor Deviance and Major Deviance.

These findings empirically support the deviant workplace behavior typology proposed by Robinson and Bennett (1995), which distinguishes between minor and major deviance based on both behavioral intensity and impact. The frequent occurrence of minor deviance, combined with its potential to escalate—as suggested by the slippery slope effect [14]—underscores the importance of early detection and preventive strategies. Moreover, the data confirm that while major deviance is less prevalent, its consequences, particularly in sensitive sectors like banking, warrant strict organizational control and ethical reinforcement measures.

According to Social learning theory [15], if an organization's culture and climate fail to address minor deviant behaviors, it may lead to the normalization of such misconduct. Over time, this normalization process can contribute to the escalation of more severe deviant

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behaviors, as employees observe and internalize these actions through social learning mechanisms within the workplace environment.

Therefore, the findings support Hypothesis 1.

Table 11. Regression

Model Summary								
Model		R		R Square		Adjusted R Square		Std. Error of the Estimate
1		.761 ^a		0.579		0.578		0.62419918
a. Predictors: (Constant), Minor_Deviance								
ANOVA ^a								
Model		Sum of Squares		df	Mean Square	F	Sig.	
1	Regression	231.119		1	231.119	593.184	<.001 ^b	
	Residual	168.318		432	0.390			
	Total	399.437		433				
a. Dependent Variable: Major_Deviance								
b. Predictors: (Constant), Minor_Deviance								
Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	6.083E-17	0.030		0.000	1.000		
	Minor_Deviance	0.758	0.031	0.761	24.355	0.000	1.000	1.000
a. Dependent Variable: Major_Deviance								

4.6 ANOVA ANALYSIS FOR AGE GROUP

This ANOVA table presents the statistical comparison of deviant workplace behavior (minor deviance and major deviance) across different age groups.

For Minor Deviance, the ANOVA results indicate $F = 0.604$, $p = 0.613$, suggesting that the differences in minor deviant workplace behaviors across age groups are not statistically significant ($p > 0.05$). The substantial discrepancy between Between Groups (3.267) and Within Groups (775.271) implies that the majority of variance is explained by within-group differences rather than between-group differences, further supporting the lack of meaningful variation among age categories.

For Major Deviance, the results show $F = 1.660$, $p = 0.175$, which also exceeds the conventional significance threshold ($p > 0.05$). This finding indicates that age does not significantly differentiate major deviant workplace behaviors. Moreover, the large difference between Between Groups (3.158) and Within Groups (272.765) further suggests that most variations occur within individual groups rather than between them. Therefore, Hypothesis 2 is not supported.

Table 12. ANOVA analysis for age group

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Minor_Mean	Between Groups	3.267	3	1.089	0.604	0.613
	Within Groups	775.271	430	1.803		
	Total	778.538	433			
Major_Mean	Between Groups	3.158	3	1.053	1.660	0.175
	Within Groups	272.765	430	0.634		
	Total	275.923	433			

This test was conducted to examine gender differences in deviant workplace behavior among male and female employees. Levene's Test for Equality of Variances results indicate that the variance between gender groups is equal for both Minor Deviance ($F = 2.807$, $p = 0.095$) and Major Deviance ($F = 1.912$, $p = 0.167$), as $p > 0.05$ in both cases. The T-test for Equality of Means further shows that gender differences in Minor Deviance ($t(432) = -0.475$, $p = 0.635$) and Major Deviance ($t(432) = -0.378$, $p = 0.706$) are not statistically significant ($p > 0.05$). Additionally, the Mean Differences (-0.0454 for Minor Deviance and -0.0360 for Major Deviance) and the 95% Confidence Interval, which includes zero, confirm that gender does not have a statistically significant effect on deviant workplace behaviors. Therefore, the findings reject Hypothesis 3.

Independent Samples Test – Gender Differences in deviant workplace behavior

Table 13. Independent Samples Test – Gender Differences in deviant workplace behavior

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Minor Deviance	Equal variances assumed	2.807	0.095	-0.475	432	0.318	0.635	-0.045	0.095	-0.233	0.142
	Equal variances not assumed			-0.492	375.8	0.312	0.623	-0.045	0.092	-0.227	0.136
Major Deviance	Equal variances assumed	1.912	0.167	-0.378	432	0.353	0.706	-0.036	0.095	-0.223	0.151
	Equal variances not assumed			-0.393	379.6	0.347	0.695	-0.036	0.091	-0.216	0.144

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Independent Samples Test – Education level differences in deviant workplace behavior

Table 14. Independent Samples Test – Education level differences in deviant workplace behavior

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Minor deviance	Equal variances assumed	2.336	0.127	-2.513	428	0.006	0.012	-0.251	0.100	-0.448	-0.054
	Equal variances not assumed			-2.456	240.7	0.007	0.015	-0.251	0.102	-0.453	-0.049
Major deviance	Equal variances assumed	16.931	0.000	-3.525	428	0.000	0.000	-0.349	0.099	-0.544	-0.154
	Equal variances not assumed			-3.179	202.8	0.001	0.002	-0.349	0.109	-0.566	-0.132

	F	Sig.	
Minor_Deviance	2.336	0.127	Since $p > 0.05$, equal variances are assumed.
Major_Deviance	16.931	< 0.001	Since $p < 0.05$, the variances are assumed to be unequal.

Variables	Variance	t-value	df	p-value (Sig. 2-tailed)	Mean Difference
Minor_Deviance	Equal variances assumed	-2.513	428	0.012	-0.2515
Major_Deviance	Equal variances not assumed	-3.179	202.8	0.002	-0.3496

This Independent Samples t-Test examines the differences in workplace deviant behaviors (Minor & Major Deviance) between employees with a bachelor's degree and those with a master's degree.

The findings reveal a statistically significant difference ($P\text{-value} < 0.05$) in both minor and major deviance between employees with a bachelor's and a master's degree. Specifically, employees with a master's degree exhibited a 0.25-point higher mean in minor deviance compared to those with a bachelor's degree. Similarly, for major deviance, employees holding a master's degree demonstrated a 0.34-point higher mean than their counterparts with a bachelor's degree. While the difference in minor deviance is relatively small, the larger

difference in major deviance suggests that higher educational attainment may be linked to a greater likelihood of engaging in more severe forms of deviant workplace behavior.

Table 15. Group Statistics

Group Statistics					
Education level		N	Mean	Std. Deviation	Std. Error Mean
Minor Deviance	Bachelor's degree	297	-0.0719253	0.94093612	0.05459865
	Master's degree	133	0.1795819	0.99923667	0.08664481
Major Deviance	Bachelor's degree	297	-0.1029005	0.85818800	0.04979712
	Master's degree	133	0.2467297	1.13094252	0.09806515

ANOVA analysis for years of work experience in the banking sector

ANOVA results indicate that years of work experience in the banking sector have a statistically significant effect on Minor Deviance ($F = 3.344$, $p = 0.019$). However, the effect on Major Deviance is not statistically significant ($F = 1.584$, $p = 0.192$).

Levene's test shows that variance is homogeneous for Minor Deviance ($p = 0.133$), meaning the assumption of equal variances is not violated.

Tukey's post hoc test reveals those employees with 4–7 years of experience show significantly higher Minor Deviance compared to those with up to 3 years of experience ($p = 0.014$), but no other significant differences are observed among other experience groups.

For minor deviance, a correlation with years of work experience in the banking sector was observed; however, Hypothesis 4 was fully supported. In contrast, for major deviance, no significant difference was found based on years of work experience, leading to the rejection of Hypothesis 4.

Table 16. ANOVA

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Minor_Deviance	Between Groups	9.162	3	3.054	3.344	0.019
	Within Groups	392.693	430	0.913		
	Total	401.855	433			
Major_Deviance	Between Groups	4.367	3	1.456	1.584	0.192
	Within Groups	395.070	430	0.919		
	Total	399.437	433			

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Table 17. Tests of Homogeneity of Variances

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Minor_Deviance	Based on Mean	1.876	3	430	0.133
	Based on Median	1.378	3	430	0.249
	Based on Median and with adjusted df	1.378	3	402.566	0.249
	Based on trimmed mean	1.721	3	430	0.162

Table 20 Tests of Homogeneity of Variances

Multiple Comparisons						
Dependent Variable:						
Tukey HSD						
(I) Years of experience in the banking sector		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Up to 3 years	4-7 years	-.41748232*	0.13755452	0.014	-0.7722499	-0.0627148
	8-11 years	-0.22314793	0.17217692	0.566	-0.6672103	0.2209144
	12 years and above	-0.31562374	0.12419980	0.055	-0.6359481	0.0047006
4-7 years	Up to 3 years	.41748232*	0.13755452	0.014	0.0627148	0.7722499
	8-11 years	0.19433439	0.16531184	0.643	-0.2320222	0.6206910
	12 years and above	0.10185858	0.11449325	0.810	-0.1934315	0.3971487
8-11 years	Up to 3 years	0.22314793	0.17217692	0.566	-0.2209144	0.6672103
	4-7 years	-0.19433439	0.16531184	0.643	-0.6206910	0.2320222
	12 years and above	-0.09247581	0.15437730	0.932	-0.4906311	0.3056795
12 years and above	Up to 3 years	0.31562374	0.12419980	0.055	-0.0047006	0.6359481
	4-7 years	-0.10185858	0.11449325	0.810	-0.3971487	0.1934315
	8-11 years	0.09247581	0.15437730	0.932	-0.3056795	0.4906311
*. The mean difference is significant at the 0.05 level.						

5. DISCUSSION

This study examined workplace deviant behavior among employees in Mongolia's banking sector using the Banker's Deviant Behavior Scale methodology. The following key findings are highlighted:

First, The findings indicate that both minor and major deviant workplace behaviors have been observed to some extent, highlighting their presence across various levels. Therefore, the banking sector must recognize this issue, implement preventive measures, and establish effective management strategies to mitigate its potential impact.

Second, Minor deviant workplace behaviors occur at a relatively higher frequency compared to major deviant workplace behaviors. According to observer reports, time misuse, such as excessive breaks and lateness, was commonly noted. Among major deviant workplace behaviors, issues related to negative interactions with clients and colleagues appear to be more prevalent.

Third, There is a strong correlation between major and minor deviant workplace behaviors, with regression analysis confirming that an increase in minor deviant workplace behaviors significantly predicts an increase in major deviant workplace behaviors. This finding supports the slippery slope effect, suggesting that engagement in minor deviant acts can escalate into more severe workplace misconduct over time.

Fourth, The frequency of deviant workplace behavior shows no significant association with age or gender. However, differences based on education level and years of work experience in the banking sector were found to be statistically significant. Notably, employees with 4-7 years of experience exhibited higher levels of deviant workplace behavior compared to other groups, indicating the need for further attention to this category. Regarding education level, a significant difference was observed between employees with bachelor's and master's degrees, with the latter group displaying a higher mean level of deviant workplace behavior.

Table 18. Hypothesis

Hypothesis	Result
H1: Major and minor deviant workplace behaviors are strongly correlated.	Supported
H2: Age is negatively associated with deviant workplace behavior; such that older employees engage in lower levels of deviant workplace behavior compared to younger employees.	Rejected
H3: Male employees are more likely to engage in deviant workplace behavior compared to female employees.	Rejected
H4: Years of work experience in the banking sector is negatively associated with deviant workplace behavior, such that employees with more experience exhibit lower levels of deviant workplace behavior.	Rejected
H5: Higher levels of education are negatively associated with deviant workplace behavior, such that employees with higher education are less likely to engage in deviant workplace behavior.	Rejected

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The study confirmed a statistically significant correlation between minor and major deviant workplace behaviors, providing empirical support for the slippery slope hypothesis—the notion that frequent engagement in minor deviant acts may increase the likelihood of more serious deviant behavior over time. This finding aligns with the two-dimensional typology of workplace deviance proposed by Robinson and Bennett (1995), which emphasizes both severity and frequency in understanding behavioral risks.

However, no statistically significant associations were found between deviant behavior and demographic factors such as age, gender, education level, or years of work experience. The absence of meaningful differences by age and gender may be attributed to the highly regulated and standardized nature of the banking sector, where organizational culture, ethical codes, and supervisory mechanisms apply uniformly across employees regardless of individual characteristics.

Interestingly, employees with 4–7 years of experience reported slightly higher levels of minor deviant behavior. This pattern may indicate an occupational plateau or a phase during which employees become more familiar with institutional norms, thereby gaining knowledge of how to engage in subtle rule violations without overt consequences.

Contrary to the original hypothesis, employees holding a master's degree exhibited higher levels of deviant behavior compared to those with a bachelor's degree. Given that the data were collected through observer-report rather than self-report measures, this discrepancy may be influenced by greater visibility, responsibility, or expectations associated with higher education levels. Alternatively, employees in more senior roles - often held by those with advanced degrees - may have greater autonomy and access, which could present more opportunities for minor forms of deviance to occur.

6. CONCLUSION

Measuring and preventing deviant workplace behavior in the banking sector is crucial. Since the reliability of the Bankers' Deviant Behavior Scale has been established, continuous monitoring and assessment are essential to identify emerging patterns and address them effectively. Organizations should implement programs aimed at enhancing an ethical organization culture. Additionally, fostering ethical leadership among managerial staff is vital, as it plays a significant role in preventing deviant workplace behaviors.

A zero tolerance policy should be implemented to address deviant workplace behaviors effectively. A zero-tolerance environment refers to a workplace where clear and specific rules are strictly applied, with no room for flexibility or exceptions [16]. This policy should include regular training programs for employees at all levels to ensure a clear understanding of ethical standards and organizational explicit and implicit norms. Additionally, establishing a whistleblowing system that enables employees to report misconduct without fear of retaliation is fundamental to prevention. Strengthening accountability mechanisms to ensure that all forms of workplace misconduct are appropriately addressed and sanctioned is also essential.

Furthermore, organizations should develop behavioral monitoring and auditing systems to detect and intervene in minor deviant workplace behaviors at an early stage, preventing them from escalating into more severe violations.

6.1 LIMITATIONS

This study provides valuable insights into workplace deviance among employees in Mongolia's banking sector. However, certain methodological, design, and measurement limitations should be considered when interpreting the findings:

The study was conducted exclusively among employees in Mongolia's banking sector. As a result, the findings may not be generalizable to other industries or international contexts. While the convenience sampling method may limit the sample's representativeness, it ensures reliability within the sector. Using an observer-based rating scale reduces social desirability bias but introduces potential subjectivity from observers.

As a cross-sectional study, the research captures workplace deviance at a single point in time, making it impossible to assess long-term behavioral changes. Although correlation and regression analyses have been conducted to determine associations, further experimental studies are needed to establish causal relationships.

The study employed a Likert scale, which may lead to subjective interpretations and response biases, such as overestimation or underestimation of workplace deviance.

The study primarily focused on workplace deviant behavior and demographic factors. However, it did not account for organizational factors such as corporate culture, work climate, or leadership styles, which could provide a more comprehensive understanding of workplace deviance.

6.2 RECOMMENDATIONS AND FUTURE RESEARCH

Future research should adopt a longitudinal study design to examine how workplace deviant behaviors evolve over time. Instead of relying solely on observer-based evaluations, future studies should incorporate self-reported assessments to allow for comparative analysis. Additionally, employing qualitative research methods alongside quantitative approaches can enhance measurement reliability and provide deeper insights into workplace deviance.

Moreover, it is crucial to investigate the organizational factors that influence workplace deviant behaviors. Analyzing their relationships with workplace deviance will help better explain causal mechanisms and enable organizations to implement more effective preventive and managerial strategies to mitigate deviant behaviors in the workplace.

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Archaeological perspectives on early 17th century Mongolian buddhist temples: a study of Olon baishin and Kheseg baishin

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Archaeological perspectives on early 17th century Mongolian buddhist temples: a study of Olon baishin and Kheseg baishin

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Abstract - In the territory of Ikhet sum, Dornogovi province of Mongolia, there are the remains of buildings known as "Olon baishin" and "Kheseg baishin". Excavation research was conducted in 2018 and 2019 as part of the "Cities of 17th-century Mongolia" project by the Institute of History and Ethnology of the Academy of Sciences. The inscription on a light monument in front of Kheseg baishin mentions the people who founded the temple. However, there was no specific information available about Olon baishin. Through our excavation research at these two sites, we were able to establish a more precise timeline for the construction of these monuments. Additionally, during the excavation of Olon baishin, a manuscript page was discovered, which is an important find reflecting the writing culture of the Mongols in the 16th-17th centuries. Based on previous research on Kheseg baishin and Olon baishin, as well as our own excavation findings, we conclude that these monuments were Buddhist temples built in the early 17th century, following the Tibetan-Chinese style and belonging to the Gelug (Yellow Hat) sect.

Keywords— 17th century, Buddhism, Archaeology, Gelug sect, Tibetan-Chinese style

1. INTRODUCTION

Scholars believe that Buddhism spread three times among the nomadic people. The first spread occurred during the Hunnu period (3rd century BC – 1st century AD), the second during the Mongol Empire period (13th-14th century), and the third spread took place during the 16th-17th centuries. While archaeological research on ancient nomadic peoples in Mongolia has been well

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conducted, there has been little research on archaeological sites from the 16th-17th centuries until today. Initiated by the Institute of History and Ethnology of the Academy of Sciences, the "Cities of 17th Century Mongolia" project conducted archaeological excavations on eight monastery sites between 2013 and 2020[†]. One of the monuments excavated as part of this project is the site known as Olon baishin and Kheseg baishin

The historical monuments Olon baishin "many buildings"[‡] and Kheseg baishin "A group of buildings"[§] are located in the territory of Ikhhet soum, Dornogovi province, Mongolia, in an area known as Büsiin chuluu^{**}, situated approximately 5 km apart (Fig. 1).

Olon baishin is positioned in the northern section of Büsiin Chuluu and, unlike Kheseg baishin, lacks an external fortification wall. The site consists of over 80 structures, varying in size and form, most of which are stupa-like constructions. At the center, the ruins of four large buildings can be found. Additionally, a massive eight-sided stupa, approximately 20 meters in diameter and 7 meters in height, is preserved in the central part of the site.

To the west of the main stupa, at a distance of 100 meters, remnants of another building foundation have been identified, encircled by the remains of eight smaller stupas. The architecture of Olon baishin is characterized by the use of both stone and brick, demonstrating its unique construction technique and artistic features (Fig. 2).

Kheseg baishin, on the other hand, is located 5 km southwest of Olon baishin, in the southern part of Büsiin chuluu. This site is a fortified temple complex, where the remnants of several stupas are still visible within the walled area (Fig. 3). At the entrance of the stone fortress, a stone turtle base, which once supported a commemorative stele, remains intact (Fig. 4). Additionally, a small ritual temple was located within the fortress walls. However, in recent years, local herders have begun using the walled area as an enclosure for livestock, resulting in significant damage to the monument, with some sections even disappearing.

[†] The leader of the "Cities of 17th Century Mongolia" project is Academician S. Chuluun. The field research was led by E. Urtnasan and Ch. Enhtul.

[‡] The name "**Olon Baishin**" was given by local residents due to the presence of multiple building ruins in one place.

[§] The term "**Kheseg Baishin**" was given by local residents to describe a place where a small number of buildings are located together.

^{**} The name of a natural formation with continuous rocky terrain



Fig. 1. Location of Olon Baishin and Kheseg Baishin

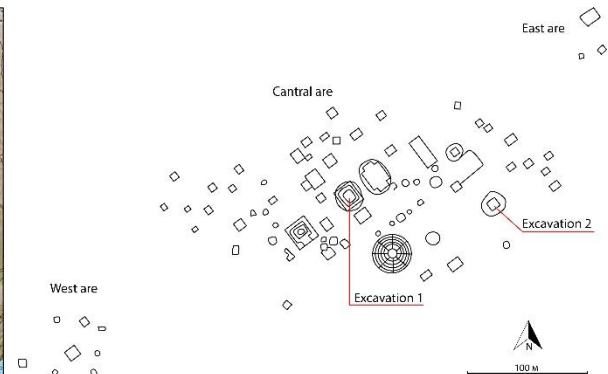


Fig. 2. Topographic Plan of Olon Baishin

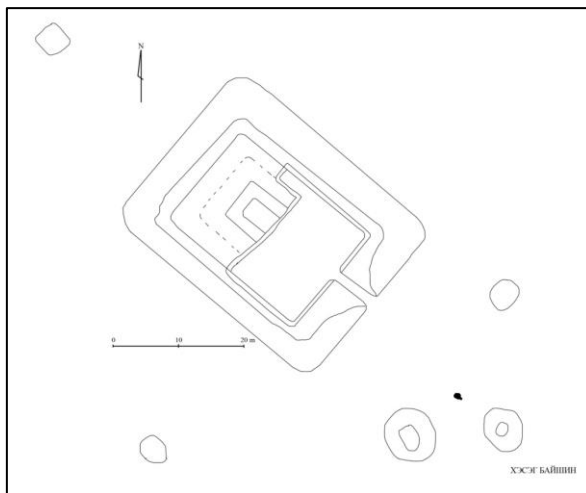


Fig. 3. Topographic Plan of Kheseg Baishin



Fig. 4. Stone Turtle Stele Base in Front of Kheseg Baishin

2. RESEARCH OVERVIEW

The historical sites of Olon baishin and Kheseg baishin were first introduced into academic research by Timkovsky. During his stay near Olon baishin in 1822, he recorded information from Ipam, an assistant of Khardal Zasag's hoshun, who claimed that "300 years ago, the Mongolian noble Sain khuntaij resided in Olon baishin" [1].

In 1859, Pallady Kafarov, while traveling northward from China along a postal route, stayed overnight at Büsiin chölöö station and examined the ruins of Olon baishin and kheseg

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Baishin. At the time, Kheseg baishin was referred to as “Khetsiin baishin”, and Kafarov noted that its main gate was arched [2].

In 1923, researchers V. A. Kazakevich and D. Natsagdorj visited Olon baishin and Kheseg baishin under the assignment of the Institute of Sutra and Historical Writings. They documented the sites and collected oral traditions and legends from local residents. Additionally, they created two copies of the inscription on the stele at Kheseg baishin [3].

During the 1950s, scholar Kh. Perlee deciphered the Mongolian script inscriptions of Kheseg baishin and cross-referenced them with Mongolian historical sources. Based on his findings, he concluded that Kheseg baishin was established between 1616 and 1659 by various Mongol tribes, including Avga, Avganar, Khuuchid, Sönöd, Üzemchin, and Tavnan, who had settled in the middle reaches of the Kherlen river [4].

In 2019, Ch. Gansukh, the curator of the Mongolian manuscript and block-print collection at the National Library of Mongolia, discovered a copy of Kheseg baishin’s stele inscription in the library’s archives. He transcribed and transliterated the inscription into modern Mongolian script, confirming Kh. Perlee’s research findings [5].

However, further research by B. Natsagdorj of the Institute of History and Ethnology, Mongolian Academy of Sciences, reassessed the inscription and concluded that Kheseg baishin was not built in 1659, but in 1599 [6].

3. ARCHAEOLOGICAL EXCAVATION

The Field Research Team of the Institute of History and Ethnology, Mongolian Academy of Sciences (MAS) conducted archaeological excavations at Kheseg baishin in 2018 [7] and at Olon baishin in 2019 [8]. During these investigations, the team documented detailed descriptions of both sites, created topographic maps to illustrate the layout of the structures, and analyzed architectural features to understand the construction techniques used. They also discovered significant artifacts that provided insights into the historical context of the monuments. These findings have contributed to a deeper understanding of the structural characteristics and historical significance of Olon baishin and Kheseg baishin.

3.1 EXCAVATION AT KHESEG BAISHIN

The main structure of Kheseg baishin is rectangular in shape and enclosed by a stone fortress wall. The wall measures 33 meters in length, 28 meters in width, and 4 meters in thickness, with a single entrance on the southern side. Inside the stone enclosure, there was a small building measuring 6.10 × 4.80 meters. Additionally, the remains of three stupas were found on the southern side of the fortress, while one low stupa base was identified on both the western and northern sides. In front of the fortress, a stone turtle stele base, traditionally used to support an inscription stele, was found facing south.

During the excavation of the small building foundation inside the fortress, a compacted earth floor was uncovered at a depth of two meters beneath the surface. In the central part of the room, a brick structure measuring 2 × 1.5 meters, built from red and blue bricks, was discovered (Fig. 5). Several artifacts were unearthed near this brick foundation, including carved bone ornaments, fragments of blue and white porcelain, bone chess pieces, a stone incense burner base,

roof tile fragments, and remains of small livestock bones. These artifacts suggest that the building was used for religious purposes.

One of the most significant discoveries was a solid silver cup wrapped in silk, found beneath the brick floor, which appears to have been a consecration deposit (shünshig). Inside the cup, various ritual and decorative objects were carefully placed, including thin gold leaf, silver earrings, crescent-shaped silver ornaments, silver wire, pearls, copper, brass, and iron objects. Additionally, seashells, coral beads, agate stones, crystal figurines shaped like animals, and grains were discovered within the deposit. The presence of these sacred offerings strongly suggests that this structure was an integral part of a buddhist temple or monastery (Fig. 6).

This excavation provided valuable insights into the architectural structure and religious significance of Kheseg baishin, confirming that it was a significant spiritual and cultural center in the past.



Fig. 5. Excavation Process and Post-Excavation Condition of Kheseg baishin



Fig. 6. Artifacts Discovered During the Excavation of Kheseg baishin

3.2 EXCAVATION AT OLON BAISHIN

The archaeological excavation conducted at Olon baishin in 2019 focused on two primary areas: building No. 1, located at the center of the site, and a stupa situated on the southeastern side of the complex.

The excavation of building No. 1 revealed a three-tiered buddhist altar, 90 cm in height, positioned at the central part of the structure. Along the eastern and western walls, four smaller Buddha pedestals were discovered on each side, totaling eight pedestals. Additionally, in front of these pedestals, two 100×100 cm platforms, standing 40 cm high, were found (Fig. 7).

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Further analysis of the building's interior structure and decorative elements uncovered significant architectural and cultural artifacts, including roof tiles, blue bricks, phoenix and dragon-themed building decorations, fragments of ceramic household items, wooden embellishments, and fragments of buddhist texts written in Mongolian script on birch bark.

Several wall paintings depicting multicolored plant motifs, along with clay and metal sculptures, were also discovered. Among them were small clay Buddha fragments, a human face-shaped clay sculpture, a monkey head figurine, and a bronze Buddha statue of Chinese craftsmanship, all of which reflect the artistic, architectural, and religious characteristics of the period.

The excavation of the stupa revealed that its foundation measured 15×15 meters and was constructed using a stepped architectural design. At the central part of the stupa, at a depth of three meters, a black-glazed pottery vessel (20 cm high with a narrow opening) was found. Inside the vessel were two types of silk, fruit pits, and nine types of precious materials, providing strong evidence that ritual consecration practices (shünshig) were performed when the stupa was constructed (Fig. 8).

The building materials excavated from building No. 1 included various types of roof tiles, such as green-glazed ridge tiles, face tiles featuring dragon motifs, and phoenix-shaped drip tiles, which serve as crucial references for studying the architectural style of the site. Green-glazed ornaments placed along the main ridge and eaves, along with clay decorations depicting animals and a water buffalo head ornament, further highlight the sophistication of architectural craftsmanship during that period (Fig. 9).

Regarding the interior decoration, painted wooden embellishments featuring floral patterns in red, green, and white pigments were discovered, while Buddha pedestals were painted in red, blue, black, and white, with fine artistic detailing. Notably, human head-shaped clay sculptures made from sandy red clay were painted white and red, with oval-shaped black glass inlays used for the eyes. A thin iron wire ran through the top of these sculptures, forming a loop, suggesting that they were once attached to something. These human head sculptures were likely representations of skull beads associated with wrathful deities [9].

The discoveries at Olon baishin provide valuable insights into religious practices, architectural design, ornamental artistry, and literary traditions of the period. These artifacts serve as a crucial source for the study of Mongolia's cultural heritage, shedding light on historical Buddhist rituals and monastic architecture.



Fig. 7. Excavation Process of Building No. 1 at Olon baishin



Fig. 8. Excavation Process of the Stupa



Fig. 9. Selected Artifacts Discovered During the Excavation of Building No. 1

4. ARCHITECTURAL STRUCTURE AND LAYOUT

In the early 17th century, Buddhism spread across Khalkh Mongolia, and major nobles and aristocrats began to invite Tibetan monks as religious teachers. Around this time, approximately 50 monasteries [10]. Were established in Khalkh Mongolia, while over 30 monasteries were built in Inner Mongolia. The monasteries in Inner Mongolia were built in the Tibetan-Chinese style, but gradually Mongolian designs started to be incorporated [11].

Historical records indicate that Tibet played a significant role in the establishment of monasteries in Khalkh Mongolia in the early 17th century. The biography of the Great Fifth Dalai Lama, written by Zaya Bandida, includes several interesting details related to the history of the Saridag Monastery. These details include:

"After him, from Golok (the Dalai Lama's main palace), a teacher from Namjal Datsan was appointed as a monastery lama, and Jayiul's Abbot Nambei Sharqan was consecrated. The treasurer of the Breybum Jasan was in charge of managing funds, and the religious scholar, Jamabalin Bayenbag, a monk, healer, and foreign missionary, Dagvadrung Tsoba, was also designated as a prominent religious figure. The teachings of the head lama, Zonkhova's disciple Donduv Rinchen, were imparted on the Jajun Bragin seat. The winter of the Year of the Rabbit (1651) saw him arrive at the monastery"[12].

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This passage indicates that the Dalai Lama specially sent Tibetan monks to build the Ribogejagandanshadublin Monastery in Khalkh Mongolia. Other biographies of the Great Fifth Dalai Lama mention his discussions about establishing a religious monastery in Mongolia, which was highly praised and supported by the Dalai Lama, although there are no records about the exact establishment of the monastery. From these sources, it is clear that Tibetan monks were sent to Khalkh Mongolia to build monasteries.

The architectural structure and layout of Olon baishin and Kheseg baishin reflect the distinctive characteristics of 16th-17th century Mongolian religious architecture. Excavations have provided critical insights into the design, structure, and function of these historical sites. Findings from the excavation confirm that Olon baishin was a large-scale religious complex with multiple structures. The overall layout consists of a central sanctuary, surrounded by smaller temples, stupas, and auxiliary buildings. The main structure is rectangular in design, aligned 148° southeast, and measures 10.5 × 13 meters.

The walls were built using a combination of stone and brick, with a thickness of 0.8 meters at the northern section and 0.5 meters at the southern section. However, the original height of the structure remains undetermined due to the level of deterioration. The building was constructed on a stone foundation measuring 16.7 × 14.6 meters, elevated one meter above the ground, with parts of the staircase reinforced with clay (Fig. 10). These findings contribute significantly to the understanding of Mongolian buddhist architectural traditions during the late medieval period, shedding light on the construction techniques and spatial organization of monastic complexes in the region.

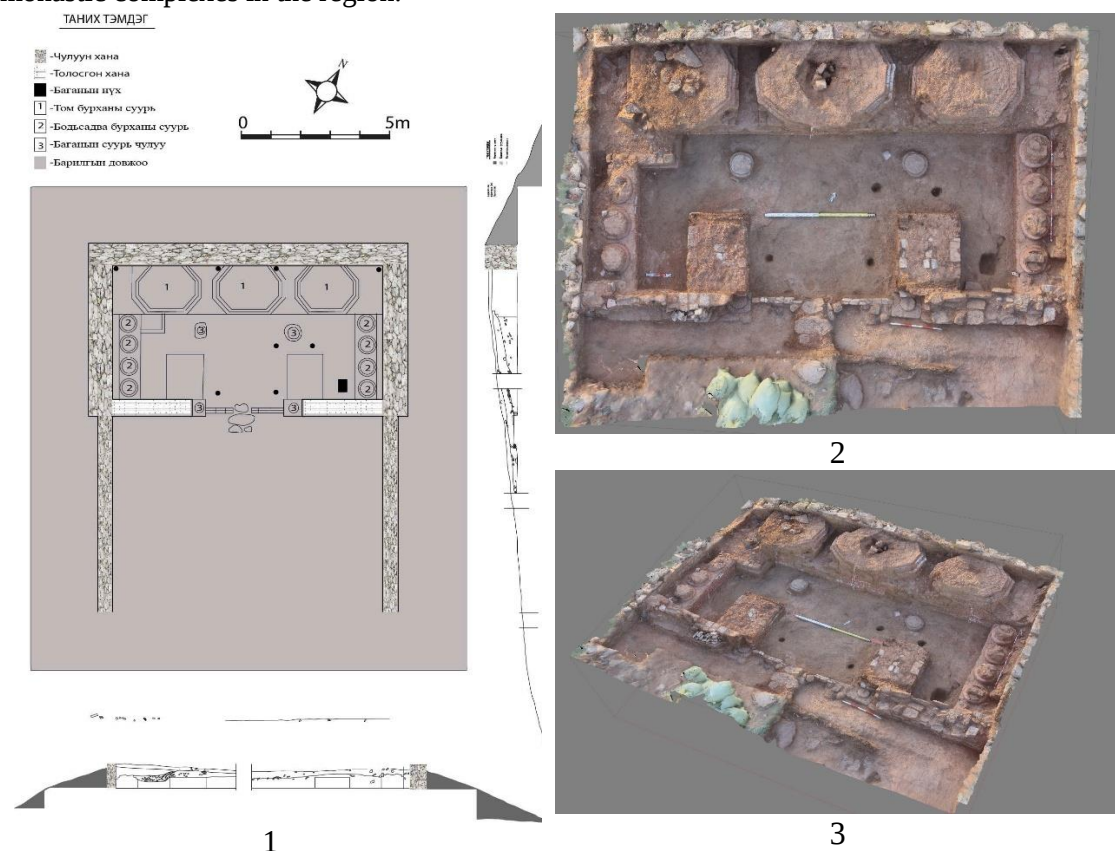


Fig. 10. 1 - Schematic Drawing of the Structure of Building No. 1 at Olon baishin; 2, 3 - Interior Structure and Buddha Pedestal



Fig. 11. Roof Tiles Discovered from Building No. 1 at Olon baishin

The excavation of the building revealed green-glazed roof tiles, blue bricks, animal-shaped ornaments, wooden carvings, and ritual objects used as consecration (shünshig) deposits, confirming that the structure was a high-status temple or monastery. The relief carvings of dragons and phoenixes on the roof tiles align with the traditional architectural style of large monastic complexes (Fig. 11). The excavation also confirmed that the stupas within Olon baishin were large, stepped structures with intricate craftsmanship. The foundation of the stupa measured 15×15 meters, and at its central part, at a depth of three meters, a black-glazed pottery vessel (20 cm high with a narrow opening) was unearthed. Inside the vessel, two types of silk, fruit pits, and nine types of precious materials were found, indicating that ritual consecration and offerings were practiced during the stupa's construction (Fig. 12).

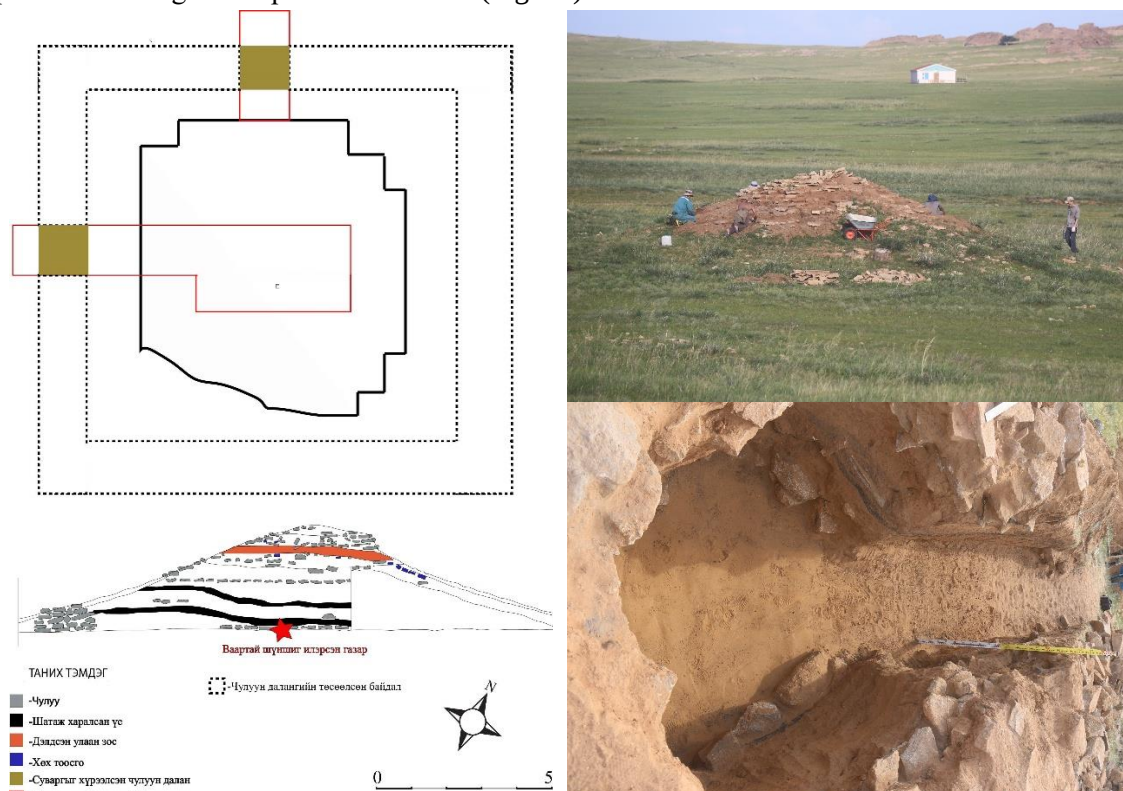


Fig. 12. Excavation process of the stupa at Olon baishin and schematic drawing of its structure

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Kheseg baishin was enclosed by a stone fortress wall with an arched entrance on the southern side and contained a ritual temple inside. The total length of the fortress wall measured 33 meters, with a width of 28 meters and a thickness of 4 meters. The architectural layout suggests that this temple served as a place of worship and a center for religious ceremonies. Excavations within the fortress revealed the remains of a small temple, along with green-glazed roof tiles, finely crafted decorative fragments, multicolored blue tiles, intricately carved bone ornaments, bone chess pieces, and ritual consecration (shünshig) objects, all of which indicate that the site was a high-status religious structure.

Outside the fortress walls, there were four stupas—two on the southern side, one on the western side, and one on the northern side. The stone turtle stele base, located at the entrance of the fortress, along with the fragment of an inscribed stele, provides concrete evidence that the structure was built in 1599.

The architectural structure and layout of Olon baishin and Kheseg baishin suggest that these sites were among the major religious centers of 16th-17th century Mongolia. Their design and construction closely resemble elite buddhist monasteries built under the patronage of Mongol rulers and nobles. The findings indicate that the layout of Olon baishin shares similarities with Erdene zuu monastery's main temple (Gol zuu), Tsogt prince's White Palace (Tsogtiin tsagaan baishin), and Chojin lama temple, demonstrating strong ties to Mongolia's significant buddhist architectural traditions (Fig. 13).

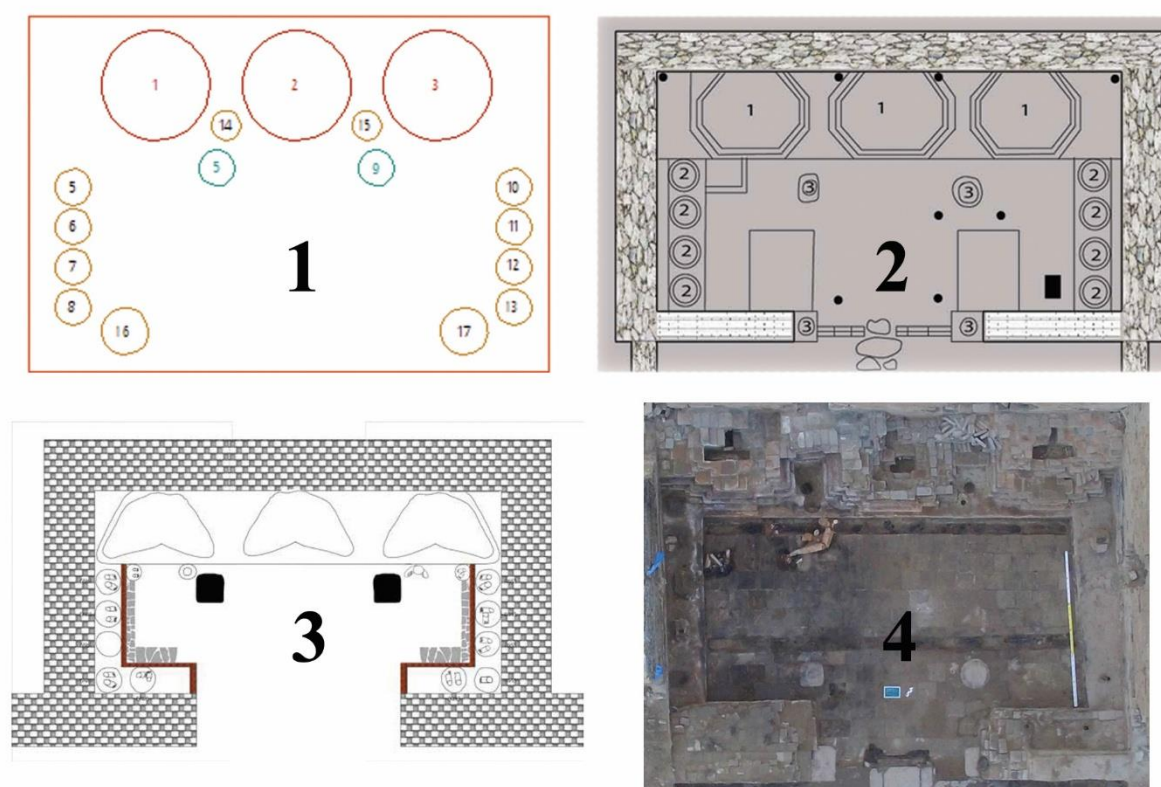


Fig. 13. 1 – Erdene zuu monastery, 2 – Olon baishin, 3 – Sáridag monastery, 4 – Interior layout of the main temple of Tsogt's White Palace (Tsogtiin tsagaan baishin)

5. ARTIFACTS AND THEIR SIGNIFICANCE

The archaeological excavations at Olon baishin and Kheseg baishin uncovered numerous significant artifacts related to religious rituals, architecture, script culture, and daily life of the period. These discoveries serve as crucial sources for understanding the development of buddhism in Mongolia, cultural influences, and architectural craftsmanship.

Among the excavated architectural materials, the various types of roof tiles hold particular significance. The roof of Olon baishin's buildings featured green-glazed tiles, face tiles, and ridge tiles, which were characteristic of high-status Buddhist temples and monasteries. The green-glazed tiles, originating from the Mongol Empire period, closely resemble those found at Tsogt Ikh Temple in Karakorum [13] and Nogoon balgas in the Orkhon valley [14]. The dragon and phoenix motif decorations on the tiles further highlight the symbolic representations and religious architectural elements of the time.

One of the most notable artifacts discovered during the excavation is a bronze Buddha statue of Chinese craftsmanship. Found in the central part of building No. 1, this 10.5 cm-tall figure is depicted in a seated posture on a three-layered lotus pedestal. The left hand rests palm-up on the lap, while the right hand is slightly clenched and positioned near the chest with a bent elbow, aligning with traditional Buddhist iconography. The hair is arranged in a raised bun, secured by a long ornamental pin that extends outward on both sides, with a ribbon-like element cascading down the back.

The facial features of the statue—a prominent aquiline nose, large ears, and slightly narrowed eyes—suggest Chinese artistic influence. This bronze Buddha statue serves as an essential artifact for studying the buddhist art of the period, bronze casting techniques, and the influence of Chinese culture on Mongolian religious art (Fig. 14).



Fig. 14. Bronze Buddha statue discovered from building No. 1 at Olon baishin

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One of the most remarkable discoveries among the interior decorative artifacts is the wooden carvings. These carvings feature floral motifs painted in red, green, and white pigments, while Buddha pedestals were ornately decorated with intricate paintings in red, blue, black, and white. Additionally, clay sculptures depicting human heads were found, crafted from sandy red clay and painted in white and red, with eyes made from black oval-shaped glass inlays. These artifacts not only reflect the fine craftsmanship of buddhist architecture but also provide essential insights into the decorative styles of monastic complexes during the period.

Among the script-related artifacts, the most valuable finds are birch bark manuscript fragments. Discovered at Olon baishin, these manuscripts measure 9×7 cm, containing 12-14 lines of Mongolian script written in black ink on a single side. The content is divided into two main sections: the first section pertains to divination, medical symptoms, and prognostic texts, while the second section consists of sutras related to Amitābha buddha [15]. These manuscripts serve as a crucial source for understanding buddhist ritual practices, the use of sacred texts in monastic settings, and the state of religious education at the time (Figure 15).

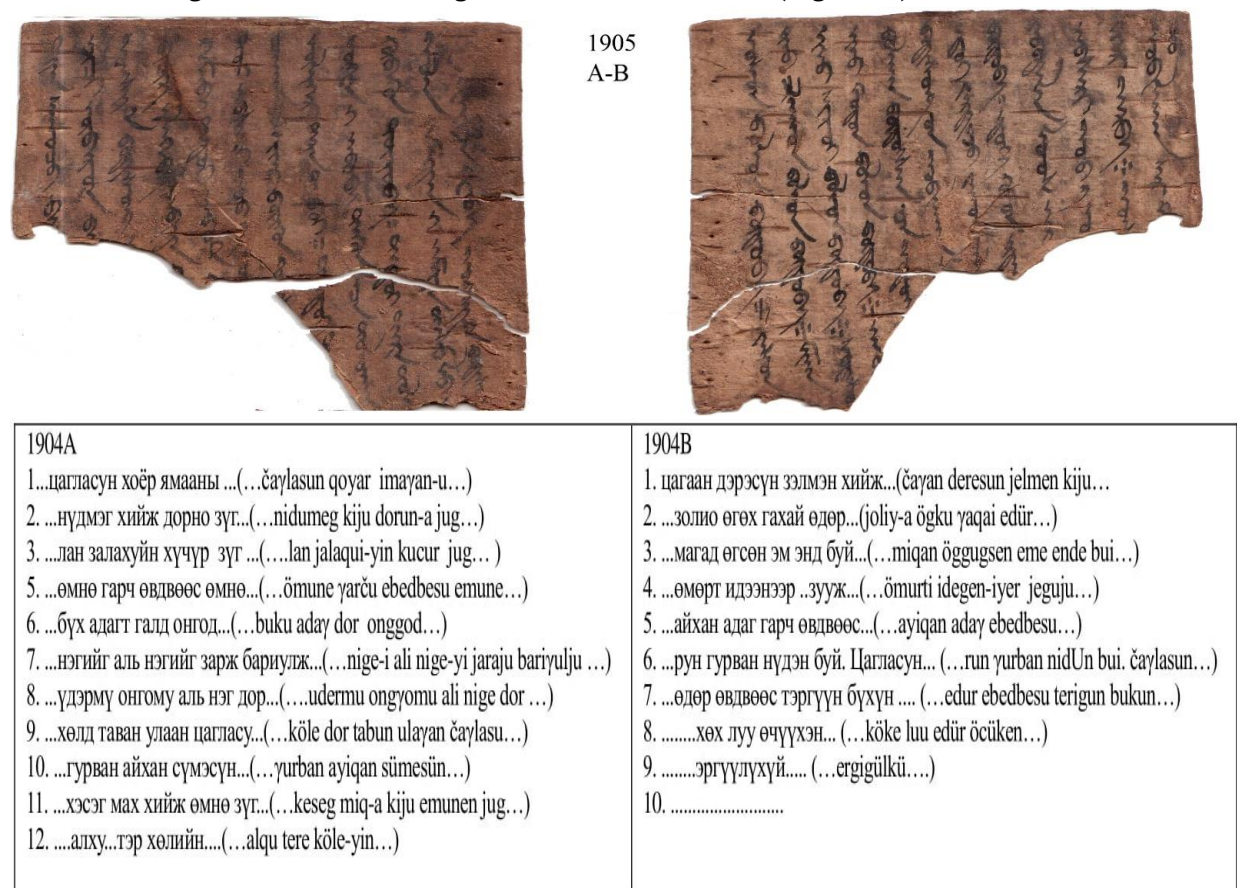


Fig. 15. Birch bark manuscript pages discovered from building No. 1 at Olon baishin

Among the ceramic artifacts discovered at Olon baishin, one of the most intriguing finds is a heavily fragmented vessel, consisting of 23 broken pieces, recovered from the central shrine area. This decorated ceramic features raised relief depictions of clouds, trees, and other natural elements. The background is painted in deep blue, while the clouds are rendered in black, gray, and ochre tones, and the tree leaves are embossed in a circular pattern.

Along the rim of the vessel, a raised cloud motif encloses Eight Auspicious Symbols (Ashtamangala), indicating that this artifact belongs to the Chinese FaHua (法华) ceramic tradition [16]. FaHua ceramics, known for their vibrant blue, turquoise, purple, green, yellow, and white alkaline glazes, were originally produced in China during the 12th century and became widely used in religious and decorative contexts (Fig. 16).

These artifacts provide invaluable insights into buddhist rituals, architectural organization, decorative arts, and script culture of the period. The findings further confirm that Olon baishin and Kheseg baishin were not merely religious temples, but also served as centers of high-level buddhist art and architecture in Mongolia, representing the peak of monastic craftsmanship and cultural synthesis of the era.



Fig. 16. 1 – FaHua style vase discovered at Olon baishin; 2 – FaHua vase found in China ^{††}



Fig. 17. Bone chess pieces discovered at Kheseg baishin

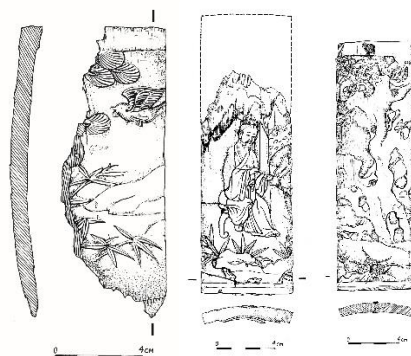


Fig. 18. Carved bone artifacts discovered at Kheseg baishin

^{††} <https://www.bonhams.com/auction/25357/lot/35/a-rare-and-large-fahua-bajixiang-and-dignitaries-jar-and-cover-guan-first-half-of-the-16th-century-2/>

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Fig. 20. Architectural clay decorations discovered at Olon baishin



Fig. 21. Clay sculptures of human and Monkey heads discovered at Olon baishin

6. CHRONOLOGICAL ISSUES OF OLON BAISHIN AND KHESEG BAISHIN

Olon baishin and Kheseg baishin are unique monuments of 16th-17th century Mongolian religious architecture, and determining their construction dates is one of the key issues in archaeological and historical research. The most important evidence for establishing the construction date of these monuments is the inscription on the stele at Kheseg Baishin, which indicates that it was built in 1599.

In 1923, V.A. Kazakevich and D. Natsagdorj visited Olon Baishin and Kheseg Baishin on a mission from the Institute of Sutra and Historical Writings, documenting their findings and collecting historical and legendary information from local people. They also made two copies of the inscription on Kheseg Baishin's stele, which became the foundational document for further research on these monuments. In the 1950s, Kh. Perlee deciphered the Mongolian inscription on the stele, and hypothesized that the monument was built by various Mongol tribes, including Avgga, Avganar, Khuuchid, Sönöd, Üzemchin, and Tavnan, between 1616 and 1659 in the middle reaches of the Kherlen river.

In 2019, Ch. Gansukh, the head of the Mongolian Manuscript and Block Print Department at the National Library of Mongolia, discovered a copy of the Kheseg baishin stele in the library's collection, and after reading and transcribing it, he found that it aligned with Kh. Perlee's conclusions. However, B. Natsagdorj, a researcher at the Institute of History and Ethnology, Mongolian Academy of Sciences, re-examined the inscription and concluded that Kheseg baishin was built in 1599, not 1659.

The archaeological excavation at Olon baishin revealed Chinese-style bronze Buddha statues, water buffalo (Figure 20-4), and monkey head figurines (Figure 21-6), which demonstrate that the builders of the temple had close cultural and trade relations with the Ming Dynasty, reflecting the cultural influence of China. This supports the information in the Kheseg baishin stele, which mentions the involvement of various nomadic Mongol tribes in the construction.

The architectural structure, roof tiles, decorations, and internal layout of the temples also play an important role in determining their construction date. For instance, green-glazed roof tiles, dragon-faced ridge tiles, and phoenix-shaped drop tiles were commonly used in Mongolian Buddhist architecture during the medieval period. Comparing these artifacts with similar findings from other archaeological sites, such as the ruins of Karakorum (Övörkhangaï) [17], Tsogt's White Palace (Bulgan) [18], and Sâridag Monastery (Töv) [19], reveals that Olon baishin and Kheseg baishin were likely constructed in the early 16th-17th centuries. Furthermore, the Mongolian manuscript found at Olon baishin, written in Mongolian script, has been dated to the 16th-17th century based on the writing style and word choices [20].

From the above evidence, it is clear that Olon baishin and Kheseg baishin were established in the 16th-17th centuries, with the involvement of nomadic Mongol tribes and became significant religious centers of the period. The construction dates of these monuments can be determined through inscriptions, archaeological findings, and architectural features, underscoring their importance in the development of Mongolian religious culture.

7. CONCLUSION

Within the framework of the "17th-Century Mongolian Cities" project, initiated by Academician S. Chuluun, Director of the Institute of History and Ethnology of the Mongolian Academy of Sciences, archaeological and historical research is being conducted on eight heritage sites, including Saridag Monastery, Sum Tolgoi Ruins, Tsogt's White Palace, Kharbukha Ruins, Khögnö Tarnyn Övgun Monastery, Sum Khukh Burd, Olong Baishin, and Kheseg Baishin.

During the 16th-17th centuries, Mongolian rulers and nobles established significant religious structures, as confirmed by ongoing research. Archaeological findings, including ceramics and Buddhist sculptures, indicate that these monasteries served not only as religious centers but also as political and cultural hubs.

Inscriptions on the stele of Kheseg Baishin confirm that it was founded by nobles of the Inner Mongolian tribes of Avga, Avganar, Khuchid, Sönöd, Üzemchin, and Tavnar. Artifacts such as bronze Buddhas, Chinese Fahua ceramics, and clay sculptures suggest Ming cultural influences on Mongolian Buddhism during that period.

Although Buddhism was introduced to Mongolia from India and Tibet, Mongolian monastery architecture incorporated Chinese elements and the yurt-like structures of the nomadic lifestyle. This is evident in sites such as Olong Baishin and Kheseg Baishin, which exhibit a Tibetan-Chinese architectural style with a central temple surrounded by stupas and auxiliary temples, similar to Erdene Zuu and Saridag Monastery.

Excavations have uncovered ceramics and roof ornaments that reflect the architectural traditions of Mongolian Buddhist monasteries. Ritual items such as silver cups, gold, and precious stones placed in the foundation of religious structures indicate that these sites were not merely buildings but centers of deep spiritual significance.

Unfortunately, these historical monuments are deteriorating due to natural and human factors, with some at risk of complete destruction. Therefore, further preservation, restoration, and detailed research are necessary.

Archaeological perspectives on early 17th century Mongolian buddhist temples: a study of Olon baishin and Kheseg baishin

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AUTHOR’S INTRODUCTION

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Analyzing the drivers of child labor and human development: a panel data study of Central Asia and Mongolia

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Analyzing the drivers of child labor and human development: a panel data study of Central Asia and Mongolia

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Abstract- Various studies have been conducted on child labor. These studies tend to rely on or interpret child labor statistics from an economic perspective. This study investigates why children accept the role of child laborer and identifies the factors that influence them. To analyze the factors affecting child labor in this context, we conducted a dynamic panel data analysis using data from five Central Asian countries and Mongolia from 1990 to 2022 to identify the causes of child labor. A country's level of development and poverty are closely related to child labor; therefore, the Human Development Index was added to the model as a dependent variable. Based on the research literature, the following variables were added to the model as independent variables: population growth, primary education penetration rate, years of primary education, and labor market participation rate. The analysis showed that all variables were statistically significant. Population growth was found to hurt child labor, but labor force participation rate, primary school enrollment, economic growth, and years of primary education had a positive impact. Economic growth and social protection hurt the Human Development Index (HDI), while a country's life expectancy does not affect the HDI. These findings show that the problem of child labor depends on many social factors, not just economic ones.

Keywords: Child labor, human development, primary education, labor force participation, poverty, Central Asia and Mongolia, panel dynamic data analysis

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1. INTRODUCTION

Child labor is a global problem that raises concerns about the health and well-being of children as well as the economic development and growth of a country. According to the International Labor Organization (ILO), child labor is defined as the employment of children in occupations that are detrimental to their education and psychological well-being. Employment and education are often considered incompatible and even in official terms[1]. Some researchers argue that providing children with work opportunities is problematic in itself, suggesting that child labor leads to negative outcomes for adult workers such as lower wages and job losses, ultimately contributing to poverty[2]. On the other hand, researchers who disagree believe that child labor helps children acquire life skills, integrate into society, and receive education. However, the downside is that many children are exposed to hazardous, unhealthy, and exploitative work[3].

Fernandez, Russell Christian E.[4] found that the main causes of child labor are due to several social and economic factors. For example, in low-income families, children are forced to work to supplement their family income. Insufficient access to education and poor quality of education are also major reasons why children drop out of school and enter the labor market. In addition, traditional attitudes in some societies that normalize child labor further exacerbate the problem. Bilal Ahmad Ba[5] found that educational institutions and local governments allow children to miss school and create conditions for children to live and work. Recently, Central Asian countries have implemented policies to reduce child labor, improve educational programs, improve the legal environment, and expand international cooperation, but the actual results are insufficient. Child labor negatively affects the economy and education, health, and sustainable social development, so there is a need to study this issue in depth and implement policy reforms. Although the HDI levels of Central Asian countries vary, the impact of child labor is a common problem in all countries. Therefore, this study aimed to identify the determinants of child labor in five Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) and Mongolia. Child labor is a serious socioeconomic problem facing many countries around the world, especially developing countries. Child labor rates remain high in Central Asia, including Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, and Mongolia. Poverty, lack of access to education, traditional social attitudes, and labor market characteristics are contributing factors to child labor in the region.

Therefore, the objectives of this study are as follows:

- Identify the factors affecting child labor through the Human Development Index of Central Asian countries and Mongolia.
- Include population growth, primary school enrollment, years of primary education, and labor force participation as independent variables in the model to determine how the Human Development Index changes.

In this regard, Tamar Khitarishvili[6] concludes that Kazakhstan and Kyrgyzstan have high HDIs (0.811 and 0.692, respectively, in 2021) and low child labor rates, but high participation in the informal labor market (domestic help, agriculture). According to Rachel Strickman and Myina Pokhka[7], the HDI in Tajikistan in 2021 is 0.668 on average, and in Uzbekistan 0.727, suggesting that forced child labor in the cotton sector has been prevalent for many years, and that long-term mismanagement and social consequences of water in Central Asia have had direct and indirect negative impacts on society. Improved governance can reduce child labor and increase economic growth.

A study by Jang Ya-ju and Laura Schneider[8] developed a new index (SCDI) to more accurately measure child development in countries with low levels of child labor, high access to education, and high child development indices. The study was divided into seven categories: health (nutrition, child mortality, immunization, etc.), education, safety, economic status, communication, social integration, participation and power, and environmental issues (a newly proposed category). The results showed that improving the quality of the education system is one of the key ways to reduce child labor.

Using data from 15 developing countries, Hartgen, Kenneth, Klassen, and Stefan[9] calculated the HDI at the household level and analyzed it by population subgroups. The Human Development Index (HDI) is one of the main indicators to measure a country's level of development. Still, the research was based on the premise that the index is based only on average indicators and does not reflect development inequalities within a country. The results of the study showed that the HDI is not just an average measure but a methodology that can assess inequality at the household level. It was also noted that it is necessary to consider inequality within society, not just the average HDI measure, when formulating a country's development policies. Subsequent research has confirmed that differences in education, income, and place of residence are factors that have a significant impact on the HDI.

Kausik Basu and Zafiris Tsanatos[10] examined the global child labor problem in a broader context and concluded that countries with higher HDIs have less child labor and greater access to education. Research has shown that child labor is often associated with poverty and a lack of educational opportunities. The higher the HDI, the lower the level of child labor. Improving access to education is a key factor in reducing child labor. Reducing income inequality and improving social welfare systems are necessary to eliminate child labor.

Ingrid Maherova[11] conducted an empirical study on the development, theoretical underpinnings, and empirical results of human development and poverty indices for the poorest regions of the world, the Least Developed Countries (LDCs). The results of this study compared the old and new methods and showed that there are significant differences between the old and new methods. The new methodology resulted in a decrease in the Human Development Index (HDI) in some countries. While only three countries showed improvement, the results of the new Headline Poverty Index (HPI) methodology appear to have had a relatively more positive impact, but the results are less clear. The study found that as a result of the revised methodology, the HDI and HPI showed that some economies declined but now reflect a more realistic picture of social conditions. While the revised poverty methodology tends to provide more realistic results, it also

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shows that the development gap between countries is still very large.

This study aims to use the Human Development Index to identify the determinants of child labor in five Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) and Mongolia from 1990 to 2022. The empirical analysis of Model 1, Model 2, Model 3, and Model 4 was conducted using Stata17 based on data from five Central Asian countries and Mongolia. This study is organized into four parts. The first part is an introduction, and the second part discusses the state of the theoretical research. The third section presents the data, methodology, and quantitative results. Finally, the fourth section contains conclusions and references used.

2. THEORETICAL BACKGROUND

Understanding the root causes of child labor takes into account many factors, including economic structure, household income, and access to education. F. Gassman, D. François, L.Z. Trindade[12] according to a World Bank study by the main causes of child labor in Mongolia are as follows, with a total of 2,636,370 children included in the study. Study findings:

- Low household income is a major factor in child labor, which leads children to work to escape the financial pressures of their families.
- Educational constraints - High school dropout rates increase the likelihood of child labor.
- Gender differences - Studies show that boy labor is more common in agriculture, construction, and trade, while girl labor is more common in household chores and small-scale services.

Using dynamic panel data analysis is an effective way to identify factors associated with child labor. I. Yasin[13] used the Generalized Method of Moments (GMM) method to analyze the relationship between socioeconomic factors and child labor. The study examined social factors (explanatory variables) based on data from 23 developing countries from 1997 to 2016. A poverty index was constructed using principal component analysis (PCA). Friedman and Pesaran used the cross-correlation (CD) test to see if cross-correlation is detected in panel data, and the second-generation panel unit root (CIPS) test was used to test the normality of the variables. In this study:

- As poverty levels increase, so does the amount of child labor.
- There is a large disparity between urban and rural areas. The incidence of child labor is higher in rural areas.
- Economic instability and changes in the labor market have been pointed out as factors influencing the increase in child labor.

Building on the theories developed by MUNDLAK (1978) and BARKLEY (1990), research conducted by Thomas Herzfeld, Thomas Glauben, Liesbeth Dries, and Ramona Teuber[14] suggests that sectoral labor regulation can be analyzed in the context of occupational choice. This study examines the impact of labor regulation and the legal environment in the agricultural sector in Central Asia and finds the following results. The article found that in the cotton farming sector, child labor is widespread in some countries (Uzbekistan, Turkmenistan), while in others, such as

Tajikistan and Kyrgyzstan, economic changes have led to a high percentage of children participating in the informal labor market. This shows that child labor is frequent in Central Asia, and specific measures are needed in the agricultural sector.

A. Amgutuwshin, J. Chen, R. John, and Y. Zhang[15] As Mongolia's mining sector has grown and developed since the 1990s, the government has intensively implemented policies to convert pastureland to mines. To explore how these changes affect urban-rural population migration, we conduct an empirical analysis of migration between mining areas, non-mining soils, and urban areas based on data from the 2010 Labor Force Survey. The study used a DPROBIT model to further examine the impact of mining development on local economies and labor markets. This led to a study of child labor in Mongolia's agricultural sector, which concluded that

The prevalence of child labor in the livestock and construction sectors is related to income levels. The study found that children who have dropped out of school are more likely to be employed due to differences in education between urban and rural areas. Therefore, we can see that it is possible to fully realize the potential outcomes by looking at school dropout rates and differences between rural and urban areas.

The study by Karin Schelzig, Ludovico Carraro, and Enkhsetseg Byambaa[16] builds on four policy briefs developed under an Asian Development Bank (ADB) 2019-2023 technical assistance to support social protection policy reform in Mongolia. The study found that social protection policies are an important tool in reducing child labor, and that low household income and weak welfare systems force children to work. It also found that lower access to welfare services is associated with higher levels of child labor.

Most international studies that have examined the relationship between child labor and the Human Development Index (HDI) have adopted static analysis or macro-level approaches, and few have fully considered the dynamic impact of the variables. However, this study fills a gap in the literature by using a dynamic panel data model and Arellano-Bond GMM estimation to fully demonstrate the characteristics of child labor in developing countries (Central Asia and Mongolia) and its time dependence on the HDI.

3. RESEARCH METHODOLOGY AND ANALYSIS RESULTS

When studying economic relationships and behavior, it is important to carefully consider the relationships between data over time. This is because economic indicators depend heavily on past changes and behavior patterns. Therefore, in economic modeling, it is important to use previous values (lag values) of variables as explanatory factors. Dynamic structural models are widely used in panel data analysis and are generally divided into two main categories: Autoregressive panel models (AR panel models) - In this model, previous values of the dependent variable (lag variables) act as explanatory variables. That is, past values of the variable affect both the current and future states. Distributed lag panel models - This model uses previous values of the explanatory variables to determine their effect on the dependent variable. That is, changes in the variable are affected not only by current values but also by past values. These dynamic panel data

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models are important for understanding long-term economic trends and enable policymakers and researchers to make useful assessments for decision making.

The AR Panel Model panel data model is shown below.

$$\begin{aligned} Y_{it} &= aY_{it-1} + \beta X_{it} + b_{it} \\ Y_{it} &= \mu_{it} + \pi_{it} \end{aligned} \tag{1}$$

Two key factors to consider when evaluating a dynamic panel data model are whether the error term is autocorrelated and whether the dependent variable is completely exogenous [17]. Despite these conditions, there are some problems that can arise when traditional model estimation methods are used directly. For example, studies have shown that Y_{it-1} (the lagged value) of a dynamic model is likely to be correlated with the previous shock (π_{it-1}). In addition, since Y_{it} is a function of μ_i in a panel data model, Y_{it-1} also depends on μ_i . In this case, Y_{it-1} is correlated with the error term, including the error term μ_i , which risks violating the key condition of strict exogeneity. These problems increase the bias and inconsistency of the estimates, so specialized methods such as the generalized method of moments (GMM) are a more appropriate solution.

In order to test the relationship between the lagged dependent variable and the error dummy variable in the dynamic panel data model, first, the first difference transformation is performed. Then, the instrumental variable is used to determine whether there is a relationship.

To solve this problem, the generalized method of moments (GMM) is proposed for the dynamic panel data model. This method has the following advantages: it simplifies the estimation, it can use the necessary instrumental variables, and it does not generate a relationship with the error dummy variable. Among the estimation methods based on the GMM method, the GMM estimator of Arellano & Bond (1991) is more suitable. This estimation method generates the moment condition using the condition that the future value of the error is unrelated to the current explanatory variable [18].

This estimation method first performs a first-order transformation on the model, and then estimates it using the measurement variables matrix. This allows the model to be estimated using the generalized least squares (GLS) method. For this reason, the GMM (generalized moments estimation) estimator is also called a 'two-step measurement variables estimator'.

Consider the following equation.

$$\begin{aligned} Y_{it} &= aY_{it-1} + \beta X_{it} \\ Y_{it} - Y_{it-1} &= \Delta Y_{it} = \Delta aY_{it-1} + \Delta \beta X_{it} + \Delta \varepsilon_{it} \end{aligned} \tag{2}$$

This study empirically analyzes the impact of child labor determinants in developing countries of Central Asia and Mongolia on the human development index using these equations. The analysis period is 1990-2022, and the study countries are five developing countries of Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan) and Mongolia. The data used in this study are from the World Data Indicators Database and UNCTADstate. All data units are expressed as percentages and indices. The following sections summarize the above, discuss the analysis results, and collect quantitative data on the above variables for each country during the period 1990-2022. There are 6 groups, 6 countries, and a total of 198 observations. To examine the causes, prevalence, and socioeconomic consequences of child labor in Central Asian countries and to evaluate the effectiveness of policy interventions to address the problem, we used panel data analysis (STATA17) to analyze Model 1, Model 2, and Dynamic Panel Data Analysis Model 3 and Model 4, respectively, with random effects and fixed effects based on the Hausman test.

Table 1. Explanation of variables

Dependent variable	Independent variable
Human Development Index (HDI): A composite index that measures average achievement across three main dimensions of human development: long and healthy lives, knowledge, and a decent standard of living.	1. Population growth rate The annual population growth rate in year t is the percentage of the exponential growth rate of the population over the period from t-1 to t. The population is based on a de facto definition of population that includes all residents regardless of legal status or citizenship.
	2. Primary education and period The period of elementary school attendance refers to the number of years of elementary school.
	3. School Enrolment, Primary GPR is the ratio of total enrollment to the population of a given age group, regardless of age, equivalent to the level of education officially provided. Primary education provides children with basic literacy, reading, writing, and mathematics, as well as a basic understanding of subjects such as history, geography, natural science, social science, art, and music.
	4. Labor Force Participation Rate The labor force participation rate is the percentage of the economically active population aged 15 to 64 who provide labor, or the percentage of the total population who provide labor to produce goods and services during a specific period.
	5. GDP growth The annual growth rate of GDP at market prices based on constant domestic currency.
	6. Life expectancy at birth Life expectancy at birth indicates how many years a newborn would live if the prevailing pattern of infant mortality remained the same throughout life.
	7. The CPIA Social Protection Assessment Social protection and work assesses government policies on social protection and labor market regulation that reduce the risk of poverty, help poor people better manage future risks, and ensure a minimum level of social protection for all.

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Model 1 – The above variables are as follows:

Model for analyzing the variables that influence the determinants of child labor

$$\ln HDI_{it} = \beta_0 + \beta_1 \ln POPG_{it} + \beta_2 \ln PED_{it} + \beta_3 \ln SER_{it} + \beta_4 \ln LFP_{it} + \beta_5 \ln GDP_{it} + \mu_i + \varepsilon_{it} \quad (3)$$

In the above equation, Model 1 i represents the five Central Asian countries and Mongolia ($i = 1, 2, 3, \dots, 6$), and t represents the year ($t = 1990, 1991, \dots, 2022$). μ_i is the individual effect and ε_i is the error term.

The fixed effects (FE) model controls for the internal variability of the panel data (country and time-based fixed effects). The results are more reliable and realistic, and the Hausman test confirms that the FE model is a better fit than the random effects (RE) model.

Population growth (lnPOPG)

A 10% increase in population growth is associated with an increase in HDI of only 0.03%, a very small and statistically insignificant result. Population growth can create additional economic burdens and shortages of education and healthcare in many countries. However, in some countries, population growth can have a modest positive impact on HDI when combined with government policies to increase access to public services. However, unless this is offset by quality and efficient access, child labor is unlikely to decrease.

Education spending (lnPED)

A 10% increase in education spending is associated with a 3.91% increase in HDI. Spending on education has a positive impact on the supply and quality of schools, teachers, and students, improving children's learning conditions and, in turn, supporting the growth of human capital. It is the variable with the strongest positive impact on the HDI, and the policy instrument with the most direct impact on sustainable growth and human development.

School enrollment (lnSER)

This has an impact on child labor, and while child labor tends to decline as school enrollment increases, the magnitude of the impact is small: research shows that a 10% increase in school enrollment is associated with a 2.7% increase in HDI. School enrollment helps children stay stable in a learning environment but limits their employment opportunities. However, this modest effect appears to be related to issues of quality and access to education, and the situation of children who are dual employed while attending school.

Labor force participation (lnLPG)

The variable with the strongest negative correlation is the 6.73% decrease in HDI for a 10% increase in labor force participation. While a high labor force participation rate can be a positive indicator on its own, it has a negative impact on HDI when low-quality informal jobs dominate the labor market. This is because the employment of children and women is hindered by their access to schooling and healthcare.

Economic growth (lnGDPg)

The impact on HDI is not statistically significant, but economic growth may not directly affect the quality of life for the entire population. The HDI is not particularly effective when income distribution is unequal, wealth is concentrated in a few groups, and economic growth is limited to certain sectors. This shows that the simple formula of economic growth = development does not directly apply to developing countries.

Table 2. Results of variables influencing determinants of child labor

VARIABLES	(3) Fixed Effects
lnPOPG	0.03*** (4.14)
lnPED	0.391*** (9.78)
lnSER	0.270*** (3.70)
lnLPG	-0.673*** (0.0484)
lnGDPg	0.001 0.30
Constant	0.575 (0.87)
Observations	146
R-squared	0.636
Number of countries1	6
Country FE	YES

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Model 2 - The above variables are

GDP growth, life expectancy, and CPIA social protection ratings are the main variables that can statistically affect the HDI, and the model analyzed is as follows

$$\ln HDI_{it} = \beta_0 + \beta_1 \ln GDPg_{it} + \beta_2 \ln LE_{it} + \beta_3 \ln CPIA_{it} + \mu_i + \varepsilon_{it} \quad (4)$$

In the above equation, Model 1 i represents the five Central Asian countries and Mongolia (i = 1, 2, 3..... 6), and t represents the year (t = 1990, 1991, ..., 2022). μ_i is the individual effect and ε_{it} is the error term.

The fixed effects (FE) model controls for the internal variability of the panel data (country and time-based fixed effects). The results are more reliable and realistic, and the Hausman test confirms that the FE model is a better fit than the random effects (RE) model.

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In the above equation, model 1 i represents five Central Asian countries and Mongolia ($i = 1, 2, 3, \dots, 6$), and t represents the year ($t = 1990, 1991, \dots, 2022$). μ_i is the individual effect and ϵ_i is the error term.

Fixed effects:

Life expectancy (lnLE)

A 10% increase in life expectancy is expected to increase HDI by 2.0%. Previous studies have shown that an increase in life expectancy has a positive effect on HDI [19, 20]. Average life expectancy is a fundamental component of human development and is a composite expression of several factors, including access to health care, living conditions, and environmental safety in a country. Increasing life expectancy has a positive effect on HDI through indirect effects such as human capital maintenance and increased labor productivity. Aging is also a qualitative indicator of sustained growth in HDI.

Social Protection Assessment (lnCPIA)

Social Protection Assessment is the most positive dependent variable, with a 10% increase in lnCPIA expected to increase HDI by 11%. This is because the CPIA index reflects the stability of governance, policies, and effectiveness of social protection systems. Improved transparency in public services and the implementation of poverty reduction policies have been shown to improve citizens' education, health, and livelihood security, leading to significant increases in HDI. CPIA confirms that it is a fundamental institutional driver of human development.

Economic Growth (lnGDPg)

The impact on HDI was statistically insignificant. This suggests that economic growth itself has not had a meaningful impact on the lives of the entire population. In particular, inequality in income distribution, concentration of wealth in some groups, and over-reliance on sectors (e.g. mining) may hinder the absorption of economic growth effects in HDI.

Table 3. Results of the variables contributing to the HDI

VARIABLES	(3) Fixed Effects
lnGDPg	-0.003 (-0.87)
lnLE	0.200*** (5.25)
lnCPIA	1.126*** (15.52)
Constant	-4.87*** (14.86)
Observations	146
R-squared	0.822
Number of countries	6
Country FE	YES

Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Model 3 The following dynamic analysis model is developed based on the above variables:

$$\ln HDI_{it} = \alpha \ln HDI_{t-1} + \alpha \ln HDI_{t-2} + \beta_1 \ln POPG_{it} + \beta_2 \ln PED_{it} + \beta_3 \ln SER_{it} + \beta_4 \ln LFP_{it} + \beta_5 \ln GDP_{it} + \mu_i + \varepsilon_{it} \quad (5)$$

Dynamic nature of the HDI (lagged variable)

In this study, we analyzed the lagged variable to reflect the dynamic nature of the HDI. The result is L1.HDI = 0.917, which means that the previous year's HDI (t-1) has a highly significant positive impact on the current year's HDI. This shows that the HDI has a high inertia and the correlation between earlier and later values is strong, which is consistent with previous research[21]. L2.HDI = 0.039, or the value in the previous two years (t-2), is not statistically significant for HDI, suggesting that HDI may be a short-term dependent indicator without a large lag in the long run. This is because the HDI remains strong in the short term, but becomes statistically insignificant when it differs by more than two years.

Population growth (lnPOPG)

A 10% increase in population growth tends to decrease the HDI by 0.03%. This is a negative correlation that is not statistically significant but indicates that excessive population growth is causing problems in developing countries, such as a lack of public resources and poor access to education and healthcare. In some settings, this can have some positive impact when combined with policies to expand public services, but in poor and inaccessible settings, this growth increases the causes of child labor.

Years of education (lnPED)

A 10% increase in years of education is expected to increase HDI by 0.08%. Studies have shown that greater access to education and longer years of education tend to lead to greater human capital accumulation and higher living standards.

In addition, longer years of schooling keeps children out of the labor market for longer, making it a powerful mechanism for reducing child labor. Research has shown that participation in quality and sustained education has a positive impact on both HDI and child labor. This finding is consistent with the UNDP (2022) Human Development Report, which states that education is the most stable component of HDI, and that improving access to education delays labor market entry and reduces child labor.

School enrollment (lnSER)

A 10% increase in school enrollment is estimated to increase HDI by 0.3%, suggesting that access to education is an important factor underpinning the Human Development Index. In terms of child employment, increasing school enrollment has the effect of keeping children in school and out of the labor market, but this effect is relatively weak compared to other variables. This weak effect may be related to the quality of education, the reality of children working while attending school, and the availability of infrastructure. These results are consistent with the fact that a higher school

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enrollment rate relative to the level of child labor creates favorable conditions for keeping children out of the labor force and in school[22].

Labor force participation (lnLPG)

Labor force participation did not have a statistically significant impact on the HDI. However, higher participation rates do not rule out the possibility that informal and precarious work structures are prevalent in developing countries, which can have a negative impact on the HDI. Labor participation by women and children is likely to increase, especially in contexts where household income concentration is weak and unprotected work is prevalent. It is not the size of the labor force that has a greater impact on HDI and child labor, but the quality, protection, and structure of the labor force.

Economic growth (lnGDPg)

A 10% increase in economic growth tends to increase the HDI by 0.04%. This is consistent with the theoretical assumption that economic growth supports human development, but the magnitude of the effect is noteworthy. It is unlikely that economic growth will affect HDI, especially in situations where income distribution is unequal, wealth is highly concentrated, and the benefits of development are concentrated in a few groups. In the case of child labor, increasing potential income can reduce economic growth, but only if growth is inclusive.

Table 4. Dynamic results of variables influencing determinants of child labor

VARIABLES	GMM
t-1	0.917*** (8.43)
t-2	0.039 (0.39)
lnPOPG	-0.003** (-2.46)
lnPED	0.008*** (2.94)
lnSER	0.03*** (4.81)
lnLPG	0.005 (1.01)
lnGDPg	0.004*** 3.32
Constant	-1.88*** (-3.72)
Observations	120
Prob > chi2	0.000
Number of countries1	6
Hansen test	0.9

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Model 4 The following dynamic analysis model is developed based on the above variables:

$$\ln HDI_{it} = \alpha \ln HDI_{t-1} + \alpha \ln HDI_{t-2} + \beta_1 \ln GDP_{it} + \beta_2 \ln LE_{it} + \beta_3 \ln CPIA_{it} + \mu_i + \varepsilon_{it} \quad (6)$$

Dynamic nature of the HDI (lagged variables)

The listed variables are important indicators of how HDI changes relate to a country's previous level of development. Research shows that $L.HDI = 0.894$, i.e., the previous year's HDI ($t-1$) has a very high positive impact on the current year's HDI. Such a high coefficient indicates that the HDI is a short-term inertial indicator. In other words, it is consistent with the rationale that a country's level of development remains stable in subsequent years, with change occurring gradually. However, $L2.HDI = 0.09$, i.e., HDI two years ago ($t-2$), was not statistically significant, suggesting that HDI can be highly correlated in the short term, but less so with longer-term (more than two years) lags. This suggests that the HDI is stable and inert, and that changes in development levels are more pronounced in the short term. This suggests that a country's development performance can be assessed by directly relating it to the effects of actual policies in the short term, rather than over the long term.

Economic growth ($\ln GDP_g$)

A 10% increase in economic growth tends to increase the HDI by 0.06%, which is statistically significant and positive. This correlation confirms that economic growth provides a foundation for improving human development by increasing opportunities for investment in education, health, and income levels.

Life expectancy ($\ln LE$)

Our results show that life expectancy is negatively correlated with HDI, but not statistically significant. This suggests that although life expectancy is theoretically a component of HDI, the impact of other variables may be stronger within a given dataset. Additionally, in some countries, increases in life expectancy may put negative pressure on demographics and labor markets, and may not have a direct impact on human development outcomes. Life expectancy is an indicator that can influence the HDI, but it depends primarily on macroeconomic conditions and the quality of social protection policies.

Social protection assessment ($\ln CPIA$)

A 10% increase in CPIA tends to increase HDI by 0.29%, making it one of the variables with the strongest positive correlation. Since the CPIA is a comprehensive assessment of governance quality, policy stability, macroeconomic management, and access to social services, improvements in this index have a positive impact on citizens' education, health, and livelihoods, leading to a significant increase in the HDI. The quality and effectiveness of social protection systems has thus proven to be a key institutional driver of the HDI.

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Table 5. Dynamic results of variables affecting the Human Development Index

VARIABLES	GMM
t-1	0.894*** (8.33)
t-2	0.090 (0.89)
lnGDPg	0.006*** (3.33)
lnLE	-0.03 (-1.01)
lnCPIA	0.029*** (6.13)
Constant	0.09 (6.15)
Observations	109
Prob > chi2	0.000
Number of countries1	6
Hansen test	0.9

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4. CONCLUSION

Child labor is a serious social problem not only in underdeveloped countries, but also in developed countries that have fully achieved the industrialization process. However, child labor is more common in underdeveloped and developing countries, and the concept of child labor is a combination of several interacting factors. This shows that the problem of child labor cannot be considered in isolation from the socio-economic problems of a country, and measures to address it require a wide range of policies. The study showed the dynamic nature of the Human Development Index (HDI) and its correlation with population growth, education indicators, labor market, and economic growth. In the short term, the employment rate of minors was found to be stable, with the employment rate of the past few years having a strong influence on the current level. Furthermore, in terms of child labor and population growth, rapid population growth is likely to increase the level of child labor by affecting access to education, lack of healthcare, and labor market pressures. In such shortages, it is recommended to take a broad approach, such as introducing advanced, child-friendly technologies in each sector. Furthermore, child labor should be viewed not only as an economic liability, but also as a social norm and cultural feature. There is a need to study in-depth how factors such as household income, education levels, and social pressures affect child labor levels. Child labor has a negative impact on health, education, and psychological development. The positive effect of education on the HDI is consistent with the theory that increased education leads to decreased child labor and improved human development[23]. It is necessary to analyze how the lack of education mentioned in the study affects the long-term development of children. To address this issue, it is important not only to

protect the right to work, but also to improve children's ability to contribute to society. It is concluded that child labor is likely to increase due to the nature of the local labor market and economic instability. Economic growth can reduce the level of child labor, but there is a risk that child labor will increase in the informal sector if appropriate policies are not implemented. Economic growth has a positive impact on reducing child labor, but it can be achieved more effectively through education and social protection policies.

In addition to implementing policies to increase access to education, which reduces child labor by increasing school enrollment, it is important to increase the number of schools and attract teachers to increase access to education in remote areas, and to improve labor market regulation. There is a clear need to reduce child labor in the informal sector. Research shows that six countries need state-supported social protection policies, financial support to protect poor families from child labor, and tailored measures to better identify and target at-risk groups within families. Furthermore, while increasing access to education is critical to reducing child labor, it is also necessary to pay attention to the quality of the education system and the consistency of educational standards and methodologies. Therefore, it is important to improve the foundations of education, including quality, regulations, and curriculum content, to increase children's learning opportunities.

The study also aimed to identify macroeconomic factors affecting the human development index (HDI) in Central Asia and Mongolia through dynamic panel data analysis. The results of the study showed that factors such as economic growth, social protection policies, and previous HDI have a positive impact on HDI, while the impact of life expectancy is insignificant. This suggests that developing and implementing social protection programs can be a key mechanism for reducing child labor in poor households. These programs aim to reduce financial and labor hardship by increasing investment in children's education and developmental support, and are critical to protecting children's rights. Improving social protection policies is a key way to promote human development, as countries with higher CPIA scores support HDI growth. Related to social protection, poverty is also a major issue. Implementing policies to reduce poverty, increase access to education, and improve health systems appears to have a significant impact on Central Asian countries. For Central Asian countries, improving social protection benefits all citizens and helps increase economic and household prosperity. It is also necessary to align economic growth with human development policies. While economic growth has a positive impact on reducing child labor, it can also encourage child labor and provide income-generating opportunities in the informal sector if appropriate policies are not implemented. It is necessary to assess whether there are mechanisms in place to distribute the benefits of economic growth in a way that is accessible to all, eliminate social inequalities, and develop universal social responsibility. The quality of education and healthcare have been key sectors for all countries, and special attention should be paid to improving them. While life expectancy does not directly affect the HDI, higher levels of access to education and social protection policies are more likely to support human development. Quality education and healthcare have been shown to be factors that consistently increase the Human Development Index over the long term. Therefore, in addition to economic growth, countries need to rationalize social policies and implement development policies that ensure equal access. In the end, child labor is not a single problem and cannot be solved with a single solution. Countries, communities, and organizations need to understand that if we cannot protect children, we cannot protect national development.

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