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The Impact of COVID-19 on Mongolian Nomadic Society

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Хураангуй

Энэхүү судалгаагаар ковид-19 цар тахал болон түүний дараах 2023-2024 онд 5.2 сая гаруй мал хорогдсон өвлийн зудын Монгол Улсын малчдад үзүүлсэн нөлөөг судалсан. Хустайн байгалийн цогцолборт газрын зэргэлдээх Алтанбулаг сумын малчин айл өрхүүдэд тулгамдаж буй нийгэм эдийн засаг, эрүүл мэндийн асуудалд анхаарлаа хандуулан асуулга судалгаа хийсэн. Нийт 29 малчин өрхтэй урьдчилан бэлдсэн бүтэцтэсэн ярилцлага хийн газарзүйн мэдээллийн системийн орон зайн шинжилгээгээр үр дүнг харуулсан. Судалгаанаас үзэхэд нийт малчин өрхийн 34% нь ковидийн халдвар авсан бөгөөд эдийн засгийн хувьд янз бүрийн нөлөө үзүүлжээ. Малчин өрхийн 35% -д нь зорчих хөдөлгөөн багасч, худалдаа тасалдлаас болж орлого буурсан гэж мэдээлсэн бол 55%-д нь мэдэгдэхүйц өөрчлөлт гараагүй. Харин зочид дайлах зорилгоор мал муулах нь багассан тул 10%-д нь орлого нэмэгдсэн гэсэн үр дүн гарсан. Адууны мах, цагаан идээгээр хооллох зэрэг уламжлалт анагаах ухааны дадал зурилгыг орчин үеийн эмнэлгийн зөвлөгөөний хамт цар тахлын үр дагаврыг зохицуулахын тулд малчид ашиглажээ. Судалгаагаар дэлхийг хамарсан цар тахал-хямралын үед малчид дасан зохицох чадвартайг нотолж, ийм тохиолдолд малчин өрхийг дэмжих төрийн тусгайлсан бодлого шаардлагатай байгааг онцолж байна.

Түлхүүр үгс: Монгол дахь цар тахал, Малчдын амьдрал, Улаанбаатар хот орчмын хөдөөгийн газарзүй, Алтанбулаг сум

Abstract

This study investigates the impact of the COVID-19 pandemic on Mongolia's nomadic society, particularly following the severe winter disaster known as Dzud in 2023-2024, which resulted in over 5.2 million livestock deaths. Research was conducted in Altanbulag sum and the adjacent Hustai National Park, focusing on the socio-economic and health-related challenges faced by nomadic families. Structured interviews were conducted with 29 nomads, complemented by Geographic Information Systems (GIS) spatial analyses. The findings reveal that 34% of households experienced COVID-19 infections, with varying economic impacts: 35% reported decreased income due to reduced mobility and trade disruptions, while 55% saw no significant change, and 10% reported income increases, mainly attributed to fewer livestock slaughters for hospitality purposes. Traditional health practices, such as dietary reliance on horse meat and dairy products, were utilized alongside modern medical advice to manage the pandemic's effects. The study highlights the resilience of nomadic communities and underscores the need for tailored policy responses to support these populations during global health crises.

Keywords: Pandemic in Mongolia, Nomadic Life, Rural Geography of the Ulaanbaatar Metropolitan Area, Altanbulag soum

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Introduction

The COVID-19 pandemic, first identified in Wuhan, China in late 2019, was declared a global pandemic by the World Health Organization (WHO) on March 11, 2020. Mongolia, a sparsely populated country bordered by China and Russia, faced unique challenges due to the pandemic. With a population of 3.41 million, about half reside in the capital Ulaanbaatar, while approximately 142,500 nomadic families are scattered across 1.5 million square kilometers. This geographic and demographic makeup significantly influenced Mongolia's pandemic response (WHO, 2020; Batbaatar and Nergui, 2021; Altantuya *et al.*, 2022; Amgalan 2022).

The Mongolian government implemented strict measures, including closing its borders with China, suspending international flights, and imposing nationwide lockdowns. By the end of 2020, Mongolia had recorded 2,120 COVID-19 cases, with the majority in Ulaanbaatar. Although these containment efforts initially proved successful, the economic toll was severe, with the national economy contracting by 6% in 2020. The mining and quarrying sectors were particularly affected, shrinking by 30%, while other industries such as agriculture experienced modest growth (Erkhembayar *et al.*, 2020; Batbaatar and Nergui, 2021; Bayasgalan *et al.*, 2021).

Mongolia's economy is heavily reliant on livestock, with 80 million head of livestock forming the backbone of nomadic livelihoods. The harsh winter of 2023-2024 exacerbated the pandemic's challenges, with more than 5.2 million livestock deaths caused by extreme cold and starvation during the Dzud. This dual crisis severely strained both the economic and social fabric of nomadic communities, compounding the ongoing public health emergency (Jigjidsuren *et al.*, 2019; NSO, 2022 and 2023; Ministry of Health, 2021).

This study focuses on the socio-economic and cultural adaptations of nomadic populations living approximately 100 km southwest of Ulaanbaatar, in the Altanbulag sum and the adjacent Hustai National Park. Through structured interviews and GIS analyses, the study explores how these communities navigated the challenges of both the COVID-19 pandemic and the dzud.

Material and methods

This study focuses on the socio-economic and cultural adaptations of nomadic populations living approximately 100 km southwest of Ulaanbaatar, in the Altanbulag sum and the adjacent Hustai National Park. Through structured interviews and GIS analyses, the study explores how these communities navigated the challenges of both the COVID-19 pandemic and the dzud (Figure 1).

A mixed-methods approach was used to examine the effects of the COVID-19 pandemic on nomadic communities in Mongolia. Primary data were collected through structured interviews and questionnaires administered to 29 nomadic households in the Altanbulag sum and Hustai National Park region in August 2023. The interviews focused on changes in income, health, trade practices, and social behaviors during the pandemic.

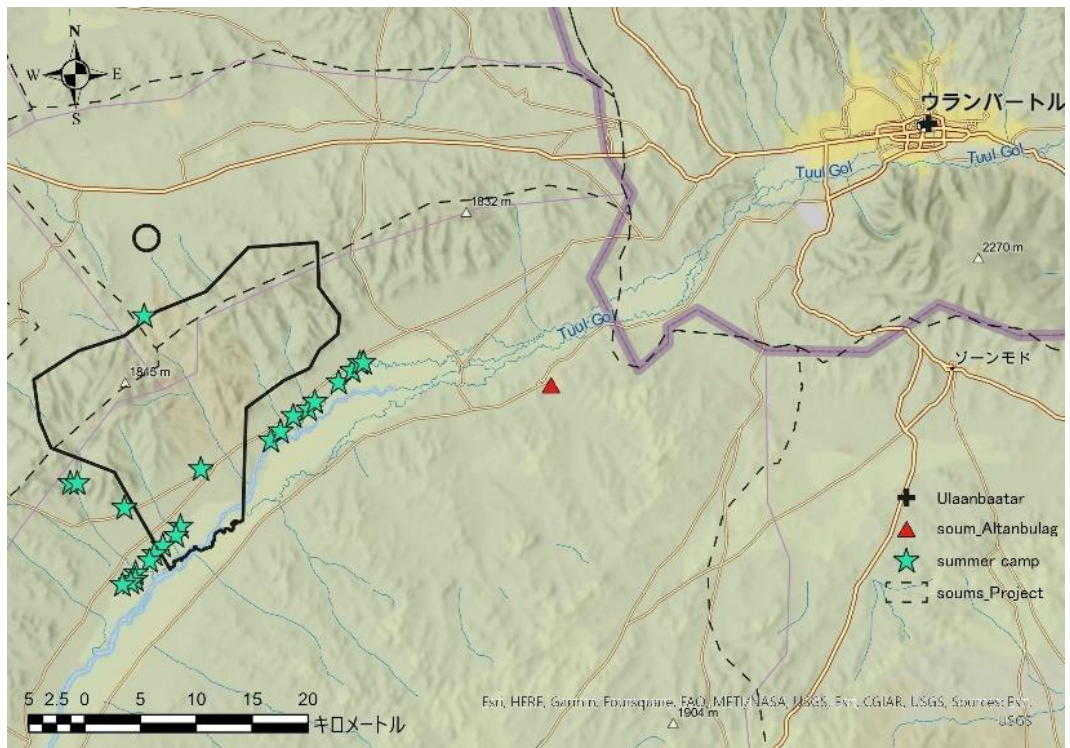


Figure 1. Geographical locations of the interviewed households (represented in green star points)

Data sources: ESRI & USGS

Geographic Information Systems (GIS) spatial analysis was employed to map nomadic movement patterns and analyze how these intersected with pandemic impacts (Figure 2). Meteorological data from the Mongolian Meteorological Network were used to contextualize the effects of environmental factors on nomadic livelihoods.

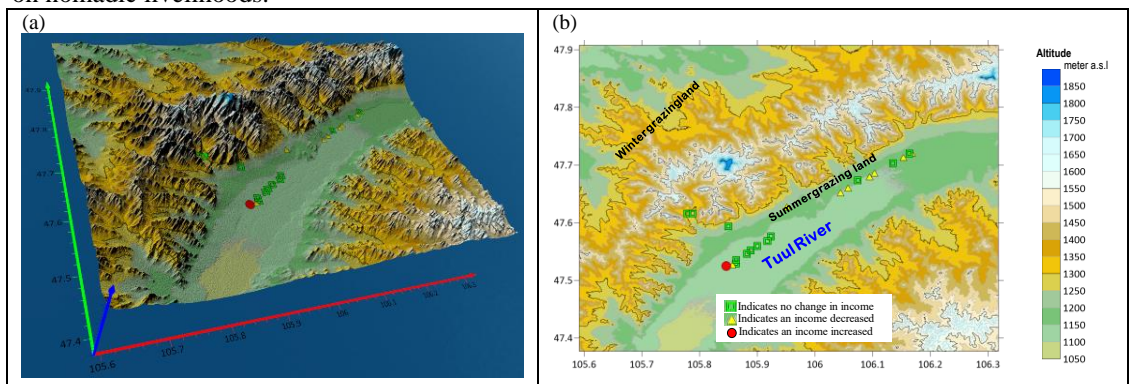


Figure 2. a: Topography of the study site b: elevation and location of the interviewed households

Data sources: ASTER-GDEM 30 m (<http://www.jspacesystems.or.jp/ersdac/GDEM/E/>)

Statistical analysis was applied to the survey data to quantify the extent of the pandemic's economic and social impacts. The analysis specifically addressed changes in income, access to markets, and the adoption of remote education for children. The findings provide a comprehensive understanding of the pandemic's multifaceted impacts on these remote, rural communities.

Results

COVID-19 infection and prevention: The survey indicated that 34% of the interviewed nomadic households had at least one member infected with COVID-19. Despite the sparse population density, the virus spread to these rural areas. Nomads employed a combination of modern medical advice and

traditional practices to manage the illness. For instance, dietary reliance on horse meat and dairy products, considered immune-boosting, was commonly reported as a protective measure (Figure 3).

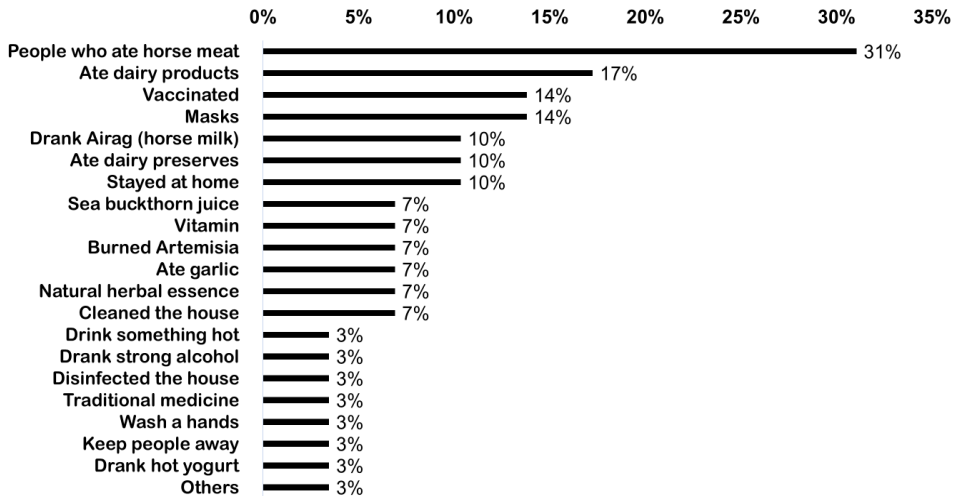


Figure 3. Peoples multiples responses on question: What did you do to prevent coronavirus?

Economic impacts of the pandemic: The economic consequences of the pandemic were varied among the nomads. While 55% of the households reported no significant change in income, 35% experienced a decline, primarily due to reduced access to markets and the halt of tourism. Nomads who relied on selling livestock or hosting tourists in homestays were especially affected. However, 10% of households reported an increase in income, as fewer visitors meant fewer livestock were slaughtered, allowing them to preserve their herds and livestock capital (Figure 4).

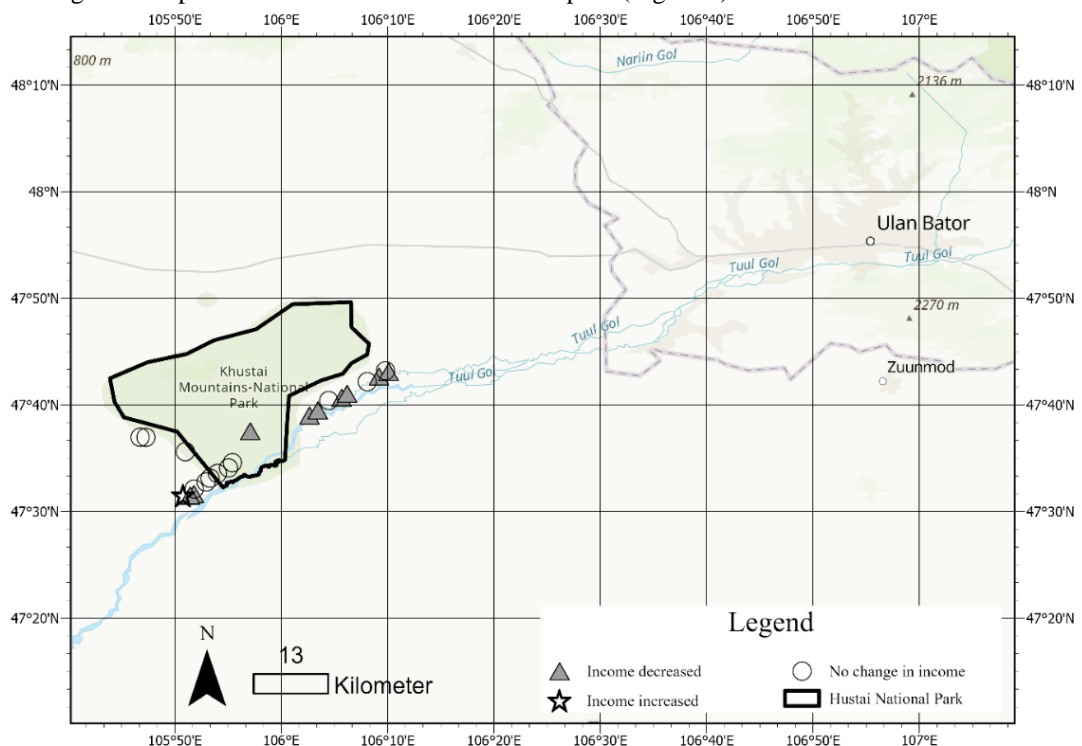


Figure 4. Changes in income during the COVID-19 pandemic in study site (Where, the symbols mean that a star (☆) indicates an income increased, a circle (○) indicates no change in income and a triangle (▲) indicates an income decreased).

Trading Patterns and Livelihood Adjustments: The closure of major markets during the pandemic forced nomads to adjust their trading practices. The frequency of visits to trading centers decreased, and nomads increasingly relied on localized bartering systems or small-scale direct sales within their communities. Livestock remained the primary source of income, but the traditional exchange routes were disrupted. Educational practices also shifted, with children from some households attending school remotely, which altered the daily routines and movements of the nomads (Figure 5). The pandemic significantly disrupted social and cultural practices among the nomads. Traditional gatherings, festivals, and community events, which play a crucial role in maintaining social cohesion, were either canceled or scaled back. For instance, the Tsagaan Sar (Mongolian Lunar New Year) celebrations, which typically involve family reunions and economic exchanges, were severely restricted. This not only impacted social ties but also affected mental health due to prolonged isolation.

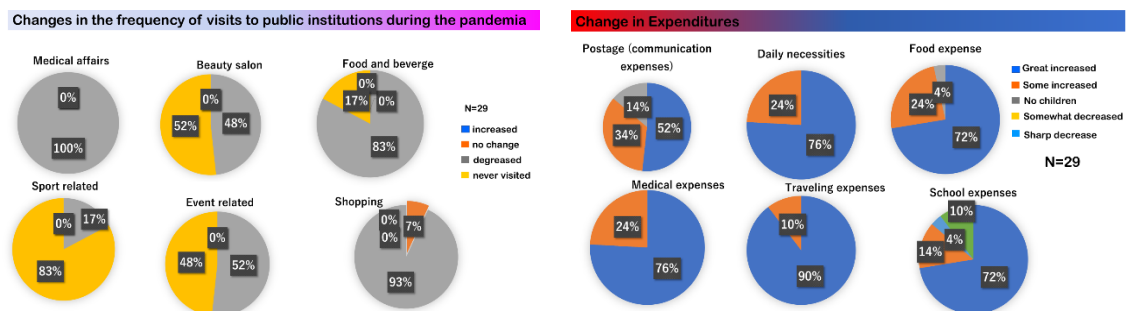


Figure 5. Changes in livelihood during the COVID-19 pandemic

Effects of the COVID-19 Pandemic on Rural Nomadic Livelihoods: In a broader survey conducted between January and March 2022, the Mongolian Meteorological Network administered questionnaires to 121 nomadic households across 19 provinces. The results showed that 95% of households experienced significant disruptions in their traditional livelihoods. Livestock trading was particularly affected by the pandemic, with restrictions on movement and market closures leading to decreased economic activity (see Table 1).

Table 1. Percentage of products sold (N=121)

Product Items		Horse	Cattle	Sheep	Goat
Livestock	Adult	66%	69%	83%	66%
	Child	3%	3%	3%	3%
Dairy products	Fresh milk	3%	3%	×	×
	Processed goods	45%	52%	3%	3%
Meat		66%	76%	69%	62%
Wool		×	×	93%	×
Fur		3%	×	14%	86%

Despite these challenges, the survey revealed the resilience of nomadic communities in maintaining traditional practices. Grazing areas remained largely unchanged, and nomads continued to rely on community networks and traditional knowledge to navigate the difficulties posed by COVID-19. The pandemic underscored the importance of preserving cultural heritage and community resilience in the face of global health crises.

Discussion

As Mongolia transitions beyond the COVID-19 pandemic, several global trends are likely to influence the future of its nomadic society. First, there is an increasing emphasis on the Sustainable Development Goals (SDGs), which has already gained momentum in recent years. The pandemic has heightened

awareness of the interconnectedness of global health, environmental sustainability, and economic resilience, potentially driving further attention to sustainable practices among nomadic communities.

Second, a shift from centralization to decentralization and multipolarity in economic and social systems has emerged, accelerated by the pandemic's disruptions. Business models and lifestyles, previously concentrated in urban centers, are likely to decentralize as resilience becomes more valued than pure efficiency. For Mongolia, this could mean further diversification of nomadic livelihoods and less reliance on centralized markets, with communities focusing more on self-sufficiency and local trade.

Third, the acceleration of digitalization is expected to continue, integrating more deeply into both urban and rural life. The pandemic demonstrated the importance of digital technologies, not only in education but also in health monitoring and trade. For nomadic populations, digital tools could enhance access to markets, healthcare, and educational resources, helping bridge the gap between remote areas and urban centers.

Despite these global trends, Mongolian nomads have maintained their traditional dietary and health practices, as shown during the COVID-19 pandemic. When asked about preventive measures taken during the pandemic, in addition to adopting masks and physical distancing, many nomads employed traditional remedies, such as consuming horse meat and dairy products, which are believed to have protective properties. These responses reflect the nomads' reliance on indigenous knowledge systems, which they integrated with modern health guidelines to manage the pandemic's effects.

Conclusion

This study provides a detailed examination of the spread of COVID-19 within Mongolia's rural areas, particularly its impact on nomadic communities, their economic stability, and their use of traditional knowledge to mitigate health risks. Despite Mongolia's low population density, the study revealed that COVID-19 infections spread even in remote regions, primarily due to movement between rural areas and the capital, Ulaanbaatar.

Economically, the lockdowns and movement restrictions imposed during the pandemic had a pronounced effect on nomadic livelihoods. Households heavily dependent on specific trading activities, particularly those connected to urban markets or tourism, faced significant income declines. In contrast, households with more diverse income sources or those located near Ulaanbaatar's borders adapted more easily, managing to stabilize or even improve their economic conditions by shifting their trade to local markets or reducing livestock slaughter for hospitality purposes (Erkhembayar *et al.*, 2020; Research Institute of Labor and Social Protection, 2021; UNFPA Mongolia Country Office, 2020; World Bank, 2021).

The study also identified rising expenditures during the pandemic, particularly in areas such as healthcare, cost of living, and education. The shift to remote learning increased educational expenses, while healthcare costs rose due to the need for COVID-19-related treatments and preventive measures. On the cultural front, traditional knowledge played a significant role in nomadic communities' responses to the pandemic. The use of horse meat, horse milk wine, and other traditional dietary practices, alongside modern preventive measures such as mask-wearing and handwashing, highlights the relevance of indigenous health strategies in coping with modern crises. These traditional practices are deeply rooted in the nomadic lifestyle, underscoring the potential of combining local knowledge with global health recommendations in pandemic responses.

In conclusion, this study demonstrates that the impacts of global health crises, such as COVID-19, extend far beyond urban centers and reach into the most remote and rural regions. The economic effects of the pandemic were found to vary significantly depending on individual livelihood strategies, with some nomads adapting more successfully than others. The role of traditional knowledge emerged as crucial in these communities, offering valuable insights into how indigenous practices can be effectively integrated into modern public health responses. These findings emphasize the importance of tailoring pandemic responses to local conditions and respecting the resilience and traditions of nomadic populations, both in Mongolia and globally.

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