

Analysis of Moral Hazards in Agricultural Workers in Indonesia

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ABSTRACT: This study aims to analyze the phenomenon of moral hazard among agricultural workers in Indonesia within the context of employment relationships, incentive systems, and social protection policies. Moral hazard is understood as behavior that arises when individuals or groups do not fully bear the risks of their actions due to certain guarantees or protections, thus encouraging suboptimal or irresponsible behavior. This study uses a qualitative descriptive approach with data collection techniques through literature studies, in-depth interviews, and field observations in several agricultural areas. The results show that moral hazard occurs in various forms, such as the misuse of fertilizer subsidies, work inefficiencies due to unfair profitsharing systems, and dependence on government assistance without efforts to increase productivity. Factors such as low financial literacy, weak institutional oversight, and unequal relations between sharecroppers and landowners also increase the potential for moral hazard. This study recommends the importance of improving incentive systems, providing moral education and work ethics, and strengthening local institutions as efforts to mitigate moral hazard in the agricultural sector.

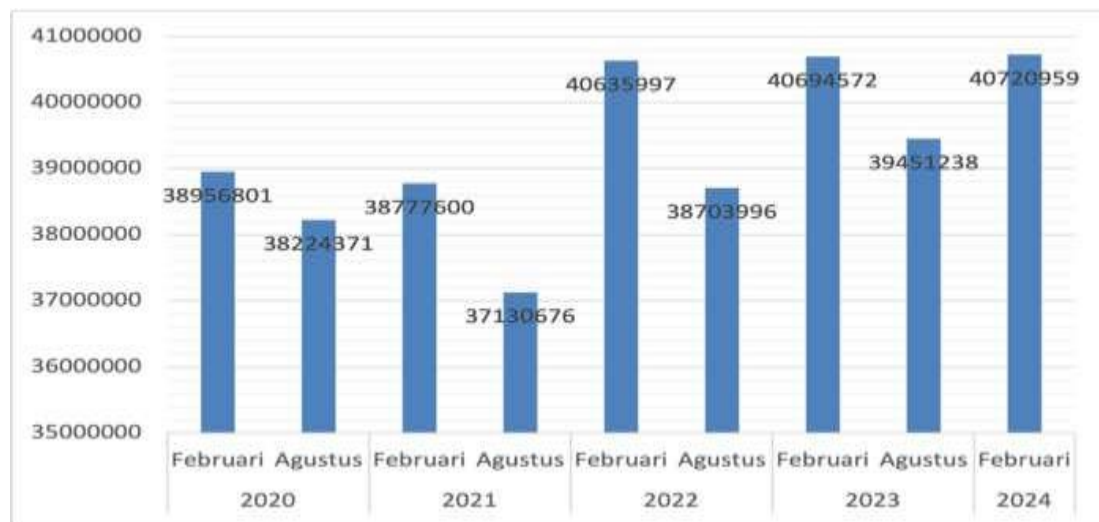
KEYWORDS: moral hazard, agricultural workers, incentive systems, work ethics, agricultural policy, Indonesia

I. INTRODUCTION

The agricultural sector in Indonesia plays a strategic role in national economic development, especially since the majority of the population relies on this sector to meet their daily needs. Agriculture in Indonesia is divided into several subsectors, such as food crops, horticulture, fisheries, livestock, and forestry. Of these subsectors, food crops make the largest contribution. This is inseparable from its role as a provider of staple foods for the majority of Indonesians, such as rice, corn, and soybeans, which form the foundation of national food security.

Indonesia remains an agrarian country, with the majority of its population working in the agricultural sector. This is attributed to the sector's significant contribution to the nation's economic growth and its role in meeting the basic needs of the Indonesian people (Ayun et al., 2020). Moreover, the agricultural sector plays a crucial role in generating substantial employment opportunities in both rural and urban areas. It not only provides livelihoods for millions of individuals but also supports the development of the food processing industry, which significantly contributes to national exports. In rural areas, where most of the population continues to rely on agriculture as their primary source of income, the sustainability of this sector is essential. By increasing productivity and diversifying agricultural enterprises, the sector can contribute to poverty reduction, enhance community welfare, and strengthen national food security. These factors underscore the importance of investing in agriculture, not only for food production but also for promoting broader economic development.

Figure 1 shows the number of people working in the agriculture, forestry, and fisheries sectors from 2020 to February 2024. Figure 1 shows the fluctuating labor absorption rate from year to year. The Central Statistics Agency (BPS) reports that employment in the agricultural sector is the highest among other business sectors, such as trade and the manufacturing industry. This indicates that the agricultural sector remains the primary source of income for the community today.



Source: BPS Indonesia, 2024

Figure 1 Population 15 Years and Over Working in the Agriculture, Forestry, and Fisheries Sector in 2020-2024

Indonesia's workforce is absorbed by various economic sectors, one of which is agriculture. The agricultural sector is one of the sectors that contributes to labor absorption in Indonesia (Safira, 2017). Statistics Indonesia (BPS) data shows that as of 2020, the top employment sectors absorbing workers aged 15 and over were agriculture, forestry, and fisheries. The agricultural sector plays a crucial role in the Indonesian economy, as it serves as the foundation for economic development (Dewi, 2016).

Farmers, particularly rice farmers, play a crucial role in building Indonesia's food security, especially given Indonesia's ambition to become the world's food barn (Adhiem, 2024). This sector's existence is vital, not only as a driver of the economy but also as a guarantor of national food security. Farmer productivity plays a crucial role in addressing the challenges of food insecurity and the food crisis in Indonesia, given that limited agricultural land significantly impacts agricultural production capacity and has the potential to cause malnutrition in the community (Neilson & Wright, 2017). As an agricultural country, Indonesia has significant potential in the agricultural sector, spread across all regions, earning it the title of national rice barn. Indonesia has a large agricultural land area, recorded in 2022 by Statistics Indonesia (BPS) data, which shows that the agricultural land area in Indonesia reached 10,452,672 hectares (BPS, 2023).

According to the BPS agricultural census, land area categories show a decline over time for land areas above 2,000 m². This is driven by the conversion of agricultural land into residential and industrial areas. The increasing rate of agricultural land conversion and the increasing national food demand increase the risk of reducing food security. Food security is a critical concern for the world today. Population growth drives the need for food to continue to increase, while food availability tends to decrease. The Food and Agriculture Organization (FAO) predicts that food demand in developing countries will increase by 60 percent by 2030 and double by 2050 (Rozi et al., 2023). Therefore, food estates are a strategy to address the food crisis occurring in Indonesia (Ministry of Agriculture, 2010).

Food estate is defined as a popular term for large-scale crop cultivation business activities (>25 ha) carried out with the concept of agriculture as an industrial system based on science and technology (iptek), capital, and modern organization and management (Ministry of Agriculture, 2010). The implementation of food estates is directed at an agribusiness system that is deeply rooted in rural areas based on the empowerment of indigenous/local communities which is the foundation for regional development (Ministry of Agriculture, 2010). The food estate program is one of the ten National Strategic Programs (PSN) for 2020-2024 as stipulated in Presidential Regulation of the Republic of Indonesia Number 109 of 2020.

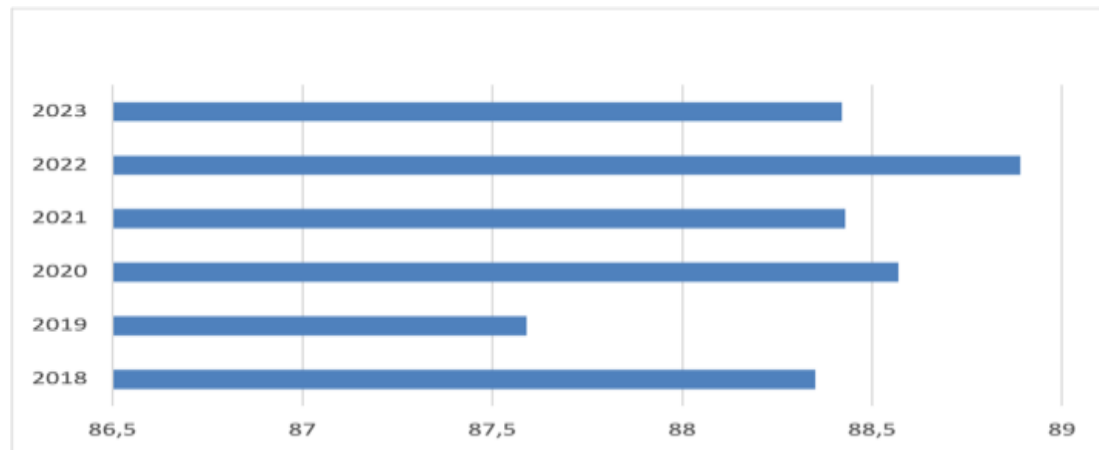
To support the implementation of the food estate program, the government issued Regulation of the Minister of Environment and Forestry Number 24 of 2020 concerning the Provision of Forest Areas for Food Estate Development. The Regulation states that a food estate is a large-scale food enterprise that is a series of activities carried out to utilize natural resources through human efforts by utilizing capital, technology, and other resources to produce food products to meet human needs in an integrated manner, encompassing food crops, horticulture, plantations, livestock, and fisheries in a forest area (Puspita Ayu, 2022).

The business mechanism of food estates, which involves human resources, has led to a principal-agent scheme involving landowners and farmers, typically in the form of work contracts. However, the result of these work contracts is that agricultural productivity remains far from expectations (Dewi, 2016). Human resources, along with natural resources, technology, and institutions, are the primary factors that synergistically drive agricultural development to achieve increased agricultural production

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(Johnson, 1985). In the institutional context of agricultural labor relations, technological change has altered the wage system, which can result in an increasingly unequal distribution of farmer income (Kasryno et al., 1981).

Institutions in the agricultural sector also demonstrate asymmetrical relationships among economic actors. Farmers are consistently at the weakest. In the relationship between cultivators and landowners, the agreed-upon profit-sharing system often favors the landowners. Failure to agree to this agreement risks unemployment. In a land rental system, tenant farmers are also disadvantaged due to the uncertainty of harvests and agricultural product prices. If the harvest fails and prices plummet, farmers face significant losses due to land rental payments and the costs of crop failure (Afifi, 2021).



Source: BPS Indonesia, 2024

Figure 2 Percentage of Informal Workforce in the Agricultural Sector 2018-2023

In this scheme, informal employment contracts often occur that do not clearly define the responsibilities of both parties, thus opening up the opportunity for moral hazard for smallholder farmers. Figure 2 shows that an average of 80 percent of the workforce in the agricultural sector works informally. Moral hazard in this context refers to the potential for land cultivators to reduce their level of effort, especially when the landowner cannot directly supervise their performance. Moral hazard refers to a situation where individuals or groups have an incentive to take more risks or behave less cautiously because the negative impacts of their actions are borne by another party (Arrow, 1963). This moral hazard phenomenon is even more pronounced given that many farmers in Indonesia work under employment contracts such as sharecropping, which often provide little incentive for farmers to increase productivity (Foster and Rosenzweig, 1994). When direct supervision is difficult, smallholder farmers may tend to prioritize other off-farm activities or reduce the level of work effort they allocate to the land. This can lead to decreased yields and overall land management efficiency.

Specifically in Indonesia, the phenomenon of moral hazard in the agricultural sector is influenced by several factors, including the characteristics of employment contracts, the level of supervision, and the economic conditions of farmers. In many cases, smallholder farmers work under contracts that do not directly link output to effort, such as profit-sharing or time-based wage systems. These contract systems are vulnerable to moral hazard because farmers have an incentive not to work optimally, especially if the financial incentives they receive are not directly dependent on productivity or yields. In this context, moral hazard is a major challenge to increasing productivity in the agricultural sector.

Farmer behavior in Indonesia in the context of moral hazard also varies widely, depending on various factors such as economic conditions, land ownership, and incentives. Foster and Rosenzweig (1994) showed that farmers working on land owned by others or through crop-sharing contracts often exhibit lower productivity than those working on their own land. This may be due to a lack of clear incentives or a lack of direct supervision from the landowner. As a result, many farmers choose to work at a lower intensity when working on land owned by others, especially if they feel that the results of their work will not directly impact their income.

II. RESEARCH METHODOLOGY

This study uses a qualitative descriptive approach with a literature review and secondary data observation to analyze the phenomenon of moral hazard among agricultural workers in Indonesia. The literature review was conducted by reviewing various relevant literature sources, such as scientific journals, research reports, policy documents, and publications from government agencies and agricultural organizations. In addition, observations were made on secondary data obtained from official sources such as the Central Statistics Agency (BPS), the Ministry of Agriculture, and reports from non-governmental organizations working

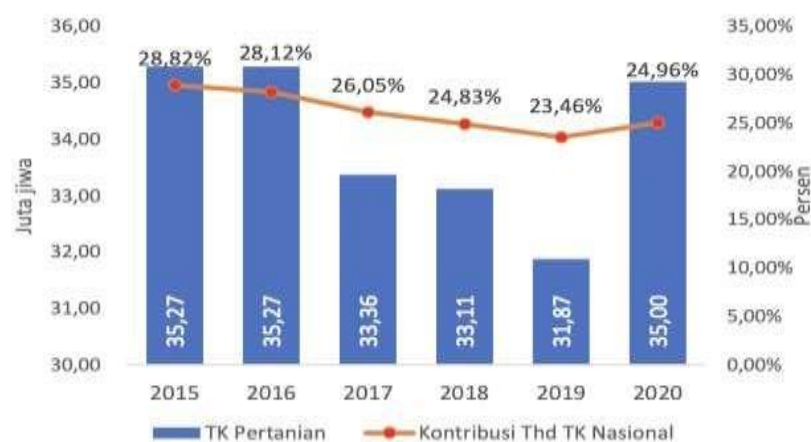
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in the agricultural sector. The analysis was conducted qualitatively by identifying patterns of moral hazard behavior, causal factors, and the institutional and policy context surrounding it. Data were analyzed through the stages of data reduction, data presentation, and conclusion drawing. This approach aims to provide a comprehensive picture of the forms and causes of moral hazard among agricultural workers, as well as its implications for the sustainability of the agricultural sector in Indonesia.

III. RESULT AND DISCUSSION

A. Overview of Indonesian Agriculture

The agricultural sector plays a crucial role in supporting human survival. This is due to its role as the primary provider of food for human consumption, animal feed, and raw materials for the development of renewable energy sources such as bioenergy. Therefore, agriculture is not only concerned with meeting basic needs but also contributes significantly to national economic development. More broadly, the agricultural sector's strategic role is reflected in its ability to support national food security, which is a crucial element in maintaining a country's social and economic stability. Furthermore, this sector plays a role in increasing the competitiveness of domestic products by improving the productivity and quality of agricultural products. The agricultural sector contributes significantly to employment, particularly in rural areas.



Source: BPS, 2025

Figure 3 Narrow Agricultural Workforce 2015 – 2019

Based on Figure 3, the majority of Indonesia's population works in the agricultural sector, with a labor market share of 24.96 percent in 2020, or 35.00 million people out of a total workforce of 140.22 million. This has a direct impact on reducing unemployment and improving public welfare. Furthermore, agriculture is a crucial instrument in poverty alleviation efforts, given its role in providing income and opening up business opportunities for low-income communities. Considering these various strategic roles, strengthening the agricultural sector is a crucial step in realizing inclusive and sustainable economic development. To meet national food needs and achieve sustainable food security, the Indonesian government has established development directions and priorities through various strategic policies. This is stated in Law Number 17 of 2007 concerning the National Long-Term Development Plan (RPJPN) 2005–2025, which emphasizes the importance of the agricultural sector as a key pillar of national development. This commitment is further strengthened by Presidential Regulation Number 18 of 2020 concerning the National Medium-Term Development Plan (RPJMN) 2020–2024, which places the agricultural sector as a priority sector in supporting food security and overall economic growth (Sidharta, 2021). In line with this, the agricultural sector is expected to make a significant contribution to national economic growth, not only quantitatively but also qualitatively and inclusively.

The economic growth achieved must be able to create added value, create jobs, and improve community welfare, especially in rural areas that are heavily dependent on agricultural activities. Nationally, Indonesia's economic growth projection for the next five years is targeted at 5.7 percent to 6.0 percent per year. This target is expected to be achieved through various development strategies, including increasing productivity in various sectors, including agriculture, encouraging sustainable investment, strengthening labor market efficiency, and improving the quality of human resources (HR) comprehensively.

The agricultural sector plays a highly strategic role, not only as a food provider but also as a key driver in creating resilient, sustainable, and equitable economic growth. Therefore, synergy between national development policies, increased agricultural productivity, and human resource capacity development is key to supporting the achievement of Indonesia's medium- and long-term development goals. Agricultural sector development will face various dynamic changes in the strategic environment, both domestically and globally.

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Within the framework of sustainable development, the agricultural sector is viewed as an integral development system, optimizing the synergistic use of human resources, natural resources, and technology to achieve the primary goal of improving community welfare (Susilowati, 2016). Agricultural development aims not only to increase production and productivity but also encompasses long-term social and environmental aspects. However, in recent years, there has been a downward trend in the rate of labor absorption in the agricultural sector. This phenomenon indicates a shift in the national employment structure, which has the potential to have serious impacts on national food security. According to Oktaviani (2023), the reduction in the agricultural workforce can weaken food production capacity, thus risking disrupting the stability of the domestic food supply. Maintaining and increasing labor involvement in the agricultural sector is a critical challenge in sustainable agricultural development. This effort needs to be carried out by increasing the attractiveness of the agricultural sector, both through improving incentive systems, implementing appropriate technology, and increasing the income and welfare of farmers as key actors in the national food system. Farmer institutions play a crucial role not only as socio-economic platforms but also as public actors in agricultural development. Farmer institutions, both formal and informal, possess collective potential derived from their members. This potential can be mobilized to strengthen farmers' bargaining power, increase production efficiency, and expand access to resources and markets. However, the collective nature of farmer institutions can also pose challenges to the implementation of agricultural development programs. This is due to the diversity of interests, social backgrounds, and levels of participation among members, which can impact the effectiveness of the institution in carrying out its functions.

B. Agricultural Productivity in Indonesia

Indonesia has vast land resource potential, but its utilization remains suboptimal. Much of the undeveloped land is classified as suboptimal, such as drylands, tidal swamps, and lowlands. These lands generally suffer from low productivity due to various agroecological constraints, including imbalanced water availability (both under- and over-watering), high soil acidity, excessive salinity, and nutrient toxicity and deficiencies.

These suboptimal land use constraints are not only caused by the biophysical conditions of the land but are also closely related to individual issues, particularly for farmers, the primary actors in the agricultural sector. Many farmers lack the physical capacity, technical skills, or access to the latest cultivation information and technologies suited to the characteristics of suboptimal land. Furthermore, the lack of agricultural infrastructure, such as irrigation, farm roads, harvest storage facilities, and other post-harvest facilities, can hamper the intensification and extensification of agriculture in these areas.

Agricultural productivity in Indonesia is a crucial indicator for measuring the extent to which the agricultural sector is able to meet national food needs and support farmer welfare. Although Indonesia is known as an agricultural country, agricultural productivity still faces various challenges, such as limited access to technology, minimal farmer education, and reliance on traditional farming methods. Low productivity impacts food security, farmer incomes, and the competitiveness of agricultural commodities in international markets.

Various data show that the productivity of several strategic commodities in Indonesia, such as rice, corn, and soybeans, remains below their optimal potential. One of the causes is the limited use of modern agricultural technology and low investment in agricultural research and development. Furthermore, problems with irrigation systems, limited land ownership, and the conversion of agricultural land to industrial and residential areas exacerbate low productivity.

The government has undertaken various efforts to increase agricultural productivity, such as agricultural mechanization programs, the provision of subsidized fertilizer, and capacity building for extension workers and farmers through training. However, the effectiveness of these policies is often hampered by inaccurate targeting, weak oversight, and low farmer participation in decision-making processes. Therefore, a more comprehensive and participatory approach is needed to design productivity improvement strategies that focus not only on harvest quantity but also on the sustainability and fair distribution of benefits. Going forward, agricultural productivity in Indonesia must be boosted through the integration of digital technology, strengthening farmer institutions, and protecting productive agricultural land. Collaboration between the government, the private sector, universities, and local communities is key to creating an efficient, resilient, and inclusive agricultural system. Thus, Indonesia's agricultural sector will not only serve as the backbone of the national food supply but also as a driving force for sustainable economic development.

C. Moral Hazard Analysis of Agricultural Workers in Indonesia

This study found that moral hazard in Indonesia's agricultural sector manifests in various forms, directly impacting its performance and sustainability. One major form is the misuse of fertilizer subsidies, where government-provided assistance is often misused for its intended purpose. For example, certain farmers or distributors sell subsidized fertilizer to third parties for personal gain, while other farmers in need are denied adequate access. This phenomenon demonstrates a failure in the monitoring and distribution system, which is not yet operating effectively (Hidayat, 2018).

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Furthermore, work inefficiencies resulting from unfair profit-sharing systems also contribute to moral hazard. Under this system, smallholder farmers often receive a small share of the harvest, despite the significant effort and time they put in. This creates a sense of injustice and leads to decreased work motivation, with farmers reluctant to innovate or perform optimally because they feel they are not receiving adequate compensation (Sadono, 2020). This inequality is a structural problem that hinders overall agricultural productivity growth.

Dependence on government assistance also reinforces moral hazard practices. Assistance such as direct cash assistance programs, seeds, agricultural tools, and training, which should be initial incentives to increase farmer capacity, often becomes the primary source of dependency. Some farmers do not develop independent initiatives, instead waiting for further assistance without innovating in their farming efforts. This indicates a degradation of the value of independence and a weak awareness of sustainable agricultural development (Fitriani & Nugroho, 2019).

Factors exacerbating this situation include low financial literacy among farmers. Many farmers lack understanding of the importance of financial management, farm investment, and risk management. This makes them susceptible to consumerism and a lack of long-term thinking. Furthermore, local institutions that should act as supervisors and facilitators, such as farmer groups, cooperatives, or agricultural extension workers, often lack the capacity or independence to encourage behavioral change (Nasution, 2021). The unequal relationship between landowners and cultivators also leads to a passive attitude among cultivators, leaving them unable to advocate for their rights or develop more productive business strategies.

Given the complexity of these issues, comprehensive efforts are needed that focus not only on providing assistance but also on building farmers' overall capacity. Financial education, improving local institutions, transparency in subsidy distribution, and reforming the profit-sharing system to be more equitable are crucial steps to reduce moral hazard and create a more efficient, equitable, and sustainable agricultural sector.

IV. CONCLUSIONS

Based on the results of descriptive research on moral hazard among agricultural workers in Indonesia, it can be concluded that moral hazard practices are a real and complex problem in the agricultural sector. Moral hazard manifests itself in various forms, such as the misuse of fertilizer subsidies, work inefficiencies due to unfair profit-sharing systems, and workers' dependence on government assistance without any real effort to increase productivity. This phenomenon is exacerbated by several key factors, namely low financial literacy among agricultural workers, weak institutional oversight of the implementation of assistance programs, and unequal power relations between sharecroppers and landowners. To address these issues, systematic efforts are needed through improving fairer incentive systems, increasing moral education and work ethics for agricultural practitioners, and strengthening the role of local institutions in overseeing and fostering sustainable and responsible agricultural practices. With these steps, it is hoped that the potential for moral hazard can be minimized and the Indonesian agricultural sector can grow more productively and ethically.

Based on the research findings, it is recommended that the government and policymakers in the agricultural sector reform the incentive system, which has actually encouraged moral hazard. Subsidies and assistance should be distributed based on performance or productivity, with transparent and participatory oversight. Education on financial literacy and agricultural work ethics needs to be improved through training programs for farmers and agricultural workers, both through formal institutions such as agricultural extension workers and through local communities. Furthermore, it is crucial to strengthen the capacity of local institutions, such as farmer cooperatives, farmer groups, or village-owned enterprises, to more effectively carry out their supervisory, mentoring, and facilitation functions. The unequal relationship between landowners and tenant farmers also needs to be addressed through a more equitable approach to agrarian law and social mediation to create mutually beneficial working relationships.

This study has limitations in terms of geographic coverage and depth of field data analysis. The study locations were limited to several agricultural centers in Indonesia, so the findings do not fully represent the full complexity of moral hazard issues across regions with varying social and agrarian characteristics. Furthermore, because the approach used was descriptive, this study did not quantitatively measure the impact of moral hazard on agricultural productivity or farmer welfare. Therefore, further research is recommended to conduct comparative studies across regions and use quantitative or mixed-method approaches to obtain a more comprehensive and in-depth picture.

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