

INNOVATION SCIENCE AND TECHNOLOGY



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ISSUE 3

 Acceptance of papers **March, 2026**



Acceptance of papers

Published monthly



Topics

economics, technology, social sciences





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AGENCY FOR INFORMATION AND MASS
COMMUNICATIONS (AOKA) OF THE
REPUBLIC OF UZBEKISTAN, EFFECTIVE
FROM OCTOBER 9, 2024.

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The scientific electronic journal "Innovation Science and Technology" has been included in the list of scientific publications recommended for the publication of main scientific results of dissertations for the award of PhD and DSc degrees in economics and technical sciences, in accordance with the Resolution No. 370 of the Presidium of the Higher Attestation Commission of the Republic of Uzbekistan, dated May 8, 2025.

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THE “MISSING MIDDLE” PROBLEM IN SOCIAL PROTECTION SYSTEMS AND MECHANISMS FOR ADDRESSING IT

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Abstract: This article examines the “missing middle” problem in social protection systems and its implications for expanding social protection coverage. The study is based on conceptual frameworks and statistical data developed by international organizations, including the International Labour Organization, the World Bank, and the International Social Security Association. The findings indicate that a significant share of the population, particularly those engaged in informal employment, self-employed individuals, and workers with unstable labour relations, remain insufficiently covered by social protection systems. This gap reduces the effectiveness of social policies and increases socio-economic vulnerability among these groups. Based on international experience, the article proposes policy recommendations aimed at expanding social protection coverage, integrating informal workers into social insurance systems, and improving institutional mechanisms of social protection.

Key words: social protection, social protection coverage, missing middle, informal sector, social insurance, social policy, social inequality, labour market, institutional mechanisms.

INTRODUCTION

Today, the social protection system is considered one of the key instruments for ensuring social stability in society, reducing poverty, and increasing the resilience of the population to economic risks. One of the primary objectives of modern states' social policies is to ensure that all segments of the population are covered by social protection mechanisms and protected from economic risks. From this perspective, the level of coverage of the social protection system is regarded as one of the important indicators for assessing the effectiveness of state social policy.

At the same time, the results of international studies indicate that not all population groups are fully covered by social protection systems. According to data from the International Labour Organization, a significant portion of the world's population still does not have adequate access to social protection mechanisms. In particular, groups engaged in the informal sector, self-employed individuals, or those without stable employment relationships often remain outside social protection systems. This situation is described in the international academic literature as the “missing middle” phenomenon.

The concept of the “missing middle” reflects an institutional gap within social protection systems. Individuals belonging to this group are typically not poor enough to qualify for government social assistance programs, yet they also lack stable employment relations or formal income sources required to participate in social insurance systems. As a result, these population groups are unable to benefit sufficiently from social protection mechanisms when facing economic risks such as unemployment, illness, a sharp decline in income, or loss of work capacity.

In recent years, transformations in labor markets, the rapid development of the digital economy, and the high share of informal employment have further intensified this problem. Consequently, expanding social protection coverage and addressing the “missing middle” phenomenon have become priority areas of social policy in many countries.

The purpose of this study is to analyze the nature of the “missing middle” problem within social protection systems, identify the factors contributing to its emergence, and substantiate institutional mechanisms aimed at expanding social protection coverage based on international experience.

REVIEW OF LITERATURE ON THE SUBJECT

The development of social protection systems and their role in ensuring social stability have been widely studied in economic and social sciences. In modern economic theory, social protection systems are regarded as important institutional mechanisms for reducing poverty, strengthening the resilience of populations to economic risks, and mitigating social inequality. From this perspective, studies focusing on social protection mechanisms and their economic effectiveness occupy a significant place in the international academic literature.

The theoretical foundations of social protection systems have been shaped by the works of several prominent economists and sociologists. In particular, economist Nicholas Barr, in his book "The Economics of the Welfare State," analyzes social protection as an institutional mechanism that helps mitigate social risks within a market economy. According to Barr, social protection policies implemented by the state play a crucial role in stabilizing living standards and protecting populations against economic risks.

The research of Danish sociologist Gøsta Esping-Andersen is also of particular importance in the analysis of welfare state models. In his influential work "The Three Worlds of Welfare Capitalism," published in 1990, he examines different types of welfare state regimes and proposes an analytical framework for evaluating the institutional role of the state in providing social protection. Esping-Andersen classifies welfare states into three main models—liberal, conservative, and social-democratic—thereby providing a theoretical foundation for understanding the institutional diversity of social policy systems.

In recent years, the coverage of social protection systems has also been widely studied by international organizations. In particular, the International Labour Organization (ILO) considers the expansion of social protection coverage as an essential condition for sustainable economic development and has developed the "Social Protection Floor" concept aimed at ensuring minimum social protection guarantees. According to this approach, every country should establish a basic level of social protection that guarantees protection against key social risks for all members of society.

Issues related to social protection coverage have also been examined by the World Bank and the International Social Security Association (ISSA). These studies highlight the high share of informal employment in labor markets as one of the major challenges in expanding social protection coverage. In particular, individuals working in the informal sector or engaged in self-employment often remain outside formal social protection systems.

In international academic literature, this situation is described as the "missing middle" phenomenon. This concept refers to population groups that are not poor enough to qualify for social assistance programs, yet lack formal employment relationships and therefore cannot participate in contributory social insurance systems. Such an institutional gap reduces the effectiveness of social protection policies and contributes to the emergence of population groups that remain vulnerable to economic risks.

Therefore, in recent years, international organizations and academic research have increasingly focused on expanding social protection coverage, integrating informal workers into social insurance systems, and developing adaptive social protection mechanisms. These studies provide an important scientific foundation for modernizing social protection systems and improving their institutional effectiveness.

RESEARCH METHODOLOGY

This study employs comparative analysis, institutional analysis, and scientific generalization to examine the problem of the "missing middle" in social protection systems. During the research process, statistical data and analytical reports published by international organizations—namely the International Labour Organization (ILO), the World Bank, and the International Social Security Association (ISSA)—were reviewed and analyzed. In addition, international experiences related to expanding social protection coverage were examined, and the level of social protection coverage among population groups engaged in the informal sector was assessed.

Within the framework of the research, the institutional characteristics of social protection systems, the level of informal employment in labor markets, and the coverage of social insurance mechanisms were analyzed in terms of their interrelationships. Furthermore, institutional gaps emerging in social protection coverage were identified, and institutional mechanisms aimed at addressing these challenges were evaluated based on international experience. Based on the research findings, scientific conclusions and practical recommendations aimed at expanding social protection coverage were developed.

ANALYSIS AND RESULTS

In recent years, the coverage level of social protection systems has been regarded as one of the key indicators of international social policy. Although social protection systems play an important role in protecting populations from economic risks, reducing poverty, and mitigating social inequality, not all population groups are

fully covered by these systems at the global level. According to data from the International Labour Organization, more than half of the world's population is still not fully covered by social protection systems, and this situation is particularly evident in developing countries.

This institutional gap in social protection coverage is described in international academic literature as the “missing middle” phenomenon. This concept refers to population groups that fall between two main mechanisms of social protection systems—social assistance programs and social insurance schemes. Individuals belonging to this group are usually not poor enough to qualify for government social assistance programs, yet they also lack formal employment relationships that would allow them to participate in contributory social insurance systems.

International research indicates that the “missing middle” mainly consists of workers engaged in the informal sector, self-employed individuals, and those involved in temporary or unstable employment relationships. In particular, small entrepreneurs, independent workers, agricultural laborers, and individuals working within the platform economy constitute the main coverage gaps within social protection systems. This situation can largely be explained by institutional changes in labor markets, the high level of informal employment, and the inability of traditional social insurance models to adapt to new forms of employment.

At the same time, transformations in the global economy are further intensifying this problem. The rapid development of the digital economy, the expansion of freelance employment, and the growth of platform-based work have limited the coverage capacity of traditional social protection mechanisms. As a result, population groups lacking stable employment relationships in labor markets remain vulnerable to economic risks.

Research conducted by international organizations emphasizes that addressing the “missing middle” problem requires the modernization of social protection systems and their adaptation to new economic conditions in labor markets. From this perspective, the development of institutional mechanisms aimed at expanding social protection coverage, integrating informal sector workers into social insurance systems, and introducing adaptive social protection models has become one of the priority areas of international social policy (Figure 1).

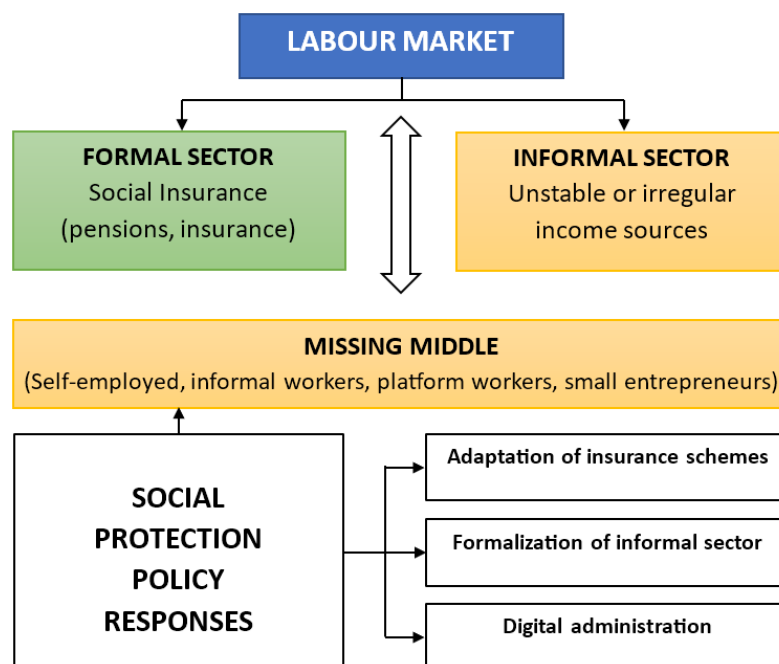


Figure 1. Conceptual structure of the “missing middle” in social protection systems

The figure illustrates the structural gap in social protection coverage commonly referred to as the “missing middle.” In most countries, formal sector workers are generally covered by contributory social insurance schemes, while the poorest segments of the population may receive benefits through social assistance programs. However, a significant group of workers—particularly the self-employed, informal workers, and individuals engaged in non-standard forms of employment—often remain outside both systems. As a result, they face higher vulnerability to economic risks such as unemployment, illness, or income instability.

Addressing this institutional gap requires the development of adaptive social protection mechanisms, including the expansion of contributory schemes for non-standard workers, the formalization of informal employment, and the introduction of digital governance tools to improve coverage and administrative efficiency.

International data indicate that social protection coverage remains insufficient at the global level. According to international reports, only 29 percent of the world’s population is covered by comprehensive social protection systems, while the remaining 71 percent, or approximately 5.2 billion people, are either partially covered or not covered at all by social protection mechanisms. This situation is particularly evident in developing countries and highlights the existence of significant institutional gaps in the coverage of social protection systems.

At the same time, substantial disparities in social protection coverage can be observed among different population groups. For example, among individuals aged 65 and above, coverage reaches around 90 percent in high- and middle-income countries, whereas in low-income countries this figure remains at approximately 15 percent. This disparity indicates that the effectiveness and coverage of social protection systems are strongly correlated with the level of economic development.

This situation further underscores the importance of achieving the objective of establishing universal social protection systems within the framework of the United Nations Sustainable Development Goals (SDG 1.3) by 2030. From this perspective, expanding social protection coverage—particularly by integrating workers engaged in the informal sector into social insurance mechanisms—has become one of the priority directions of international social policy (Table 1). [1]

Table 1. Global Social Protection Coverage Indicators¹

Indicator	Value
Population fully covered by social protection systems	29 %
Population partially covered or not covered	71 % (approximately 5.2 billion people)
Coverage of population aged 65+ in high- and middle-income countries	≈ 90 %
Coverage of population aged 65+ in low-income countries	≈ 15 %
SDG 1.3 objective	Universal social protection coverage

The data presented in Table 1 demonstrate that social protection coverage remains uneven at the global level. According to international estimates, only 29 percent of the world’s population is fully covered by comprehensive social protection systems, while the remaining 71 percent—approximately 5.2 billion people—are either partially covered or not covered at all. This situation indicates a significant global protection gap, particularly in developing and low-income countries.

Moreover, substantial disparities exist across different population groups. For example, social protection coverage among individuals aged 65 and above reaches nearly 90 percent in high- and middle-income countries, whereas in low-income countries it remains around 15 percent. These differences highlight the strong relationship between the level of economic development and the effectiveness of national social protection systems (Table 2).

Table 2. Categories of Workers Included in the “Missing Middle”²

Category of workers	Main characteristics	Social protection coverage challenges
Self-employed workers	Individuals working independently without formal employment contracts	Limited access to contributory social insurance schemes
Informal sector workers	Workers engaged in economic activities outside formal regulation	Absence of mandatory social security contributions
Small entrepreneurs and microbusiness owners	Owners of small-scale businesses with unstable income streams	Irregular contributions and weak integration into formal systems
Agricultural and seasonal workers	Workers engaged in temporary or seasonal employment	Lack of continuous employment records and insurance eligibility
Platform and gig economy workers	Workers providing services through digital platforms	Ambiguous employment status and weak legal protection

Table 2 illustrates the main categories of workers that are typically included in the “missing middle” within social protection systems. These groups share a common characteristic: they are not sufficiently poor to qualify for social assistance programs, yet they often lack access to contributory social insurance schemes due to

1 Source: International Labour Organization. World Social Protection Report 2020–2022.

2 Source: Based on analytical frameworks of the International Labour Organization (ILO), World Bank, and ISSA reports.

unstable or informal employment conditions. As a result, a substantial portion of the labor force remains outside formal social protection mechanisms.

This institutional gap is particularly evident among self-employed workers, informal sector employees, and small-scale entrepreneurs whose economic activities are not fully integrated into formal labor markets. In addition, the rapid growth of digital labor platforms has created new categories of workers whose employment status remains unclear in many national legal frameworks. Consequently, these workers often face difficulties accessing pension systems, unemployment benefits, and health insurance programs.

CONCLUSIONS AND SUGGESTIONS

The analysis conducted in this study demonstrates that the expansion of social protection coverage remains one of the key challenges of contemporary social policy. Despite significant progress in developing social protection systems across many countries, a considerable share of the global population still lacks adequate protection against economic and social risks. In particular, the phenomenon known as the “missing middle” represents a structural gap between social assistance programs aimed at the poorest populations and contributory social insurance systems typically designed for formal sector workers.

The findings of the study indicate that workers engaged in informal employment, self-employed individuals, small entrepreneurs, and participants in platform-based labor markets constitute the main groups within this coverage gap. Due to their unstable employment status and irregular income patterns, these workers often remain excluded from traditional social insurance mechanisms, while simultaneously not qualifying for targeted social assistance programs.

International experience suggests that addressing the “missing middle” requires the implementation of adaptive and inclusive social protection policies. These policies should focus on expanding contributory schemes to include non-standard workers, simplifying administrative procedures for participation in social insurance programs, and introducing flexible contribution mechanisms that reflect the economic realities of informal and self-employed workers.

Furthermore, the development of digital governance tools and integrated social registries can significantly improve the identification of vulnerable groups and enhance the efficiency of social protection systems. The integration of digital platforms into social protection administration also enables governments to reduce administrative costs, increase transparency, and expand coverage among previously excluded population groups.

In conclusion, bridging the gap in social protection coverage requires comprehensive institutional reforms that combine inclusive policy design, flexible insurance mechanisms, and modern digital management tools. Such reforms can contribute to strengthening the resilience of labor markets, reducing socio-economic vulnerability, and ensuring more equitable access to social protection systems.

List of used literature:

1. International Labour Organization. (2021). *World Social Protection Report 2020–2022: Social protection at the crossroads – in pursuit of a better future*. Geneva: ILO.
2. International Labour Organization. (2012). *Social Protection Floors Recommendation (No. 202)*. Geneva: ILO.
3. World Bank. (2019). *Protecting All: Risk Sharing for a Diverse and Diversifying World of Work*. Washington, DC: World Bank.
4. International Social Security Association. (2022). *Extending Social Security Coverage: Good Practices Guide*. Geneva: ISSA.
5. Barr, N. (2012). *The Economics of the Welfare State*. 5th ed. Oxford: Oxford University Press.
6. Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Princeton: Princeton University Press.
7. Devereux, S., & Sabates-Wheeler, R. (2004). *Transformative Social Protection*. Brighton: Institute of Development Studies.
8. Holzmann, R., & Hinz, R. (2005). *Old-Age Income Support in the 21st Century: An International Perspective on Pension Systems and Reform*. Washington, DC: World Bank.
9. International Social Security Association. (2021). *Administrative Solutions for Coverage Extension*. Geneva: ISSA.
10. Атамурадов, Ш. А. (2021). Инновацион тадбиркорлик фаолиятини венчур фондлари орқали молиялаштиришнинг ташкилий-иқтисодий механизмини такомиллаштириш. Иқтисод фанлари бўйича фалсафа доктори (PhD) илмий даражасини олиш учун диссертация автореферати, 8.
11. Атамурадов Шерзод Акрамович (2022). Корхонанинг инновацион фаолиятини стратегик режалаштиришда boston consulting group (bcg) матрицасидан фойдаланиш. *Экономика и финансы (Узбекистан)*, (12 (160)), 43-50. doi: 10.34920/EIF/VOL_2022_ISSUE_12_6
12. Атамурадов Шерзод Акрамович (2023). Жаҳон амалиётида венчур капитали бозорининг ташкилий субъектлари. *Экономика и финансы (Узбекистан)*, (1 (161)), 58-65. doi: 10.34920/EIF/VOL_2023_ISSUE_1_8
13. Atamuradov Sh. (2023). Financing of innovative projects through venture funds and the types of risk involved in it. *Economics and Innovative Technologies*, 11(1), 24–35. https://doi.org/10.55439/EIT/vol11_iss1/a3

Proofreader: Zokir ALIBEKOV

Layout and Designer: Oloviddin Sobir ugli

2026. № 3

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