# Theoretical Approaches to the Study of the Resource Potential of the State Pension System

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## Abstract

This research aims to develop theory and methodology for creating and operating resource capabilities within the infrastructure of state pension systems, focusing on long-term forecasting and ensuring full pension rights for participants. A comprehensive methodological approach was applied, incorporating systems analysis and synthesis, statistical analysis, structural-functional analysis, cause-and-effect relationships, actuarial calculations, and economic-mathematical modeling. Systems analysis and synthesis assessed the pension system as a whole, identifying key components and their interrelationships. Statistical analysis processed data to identify trends, patterns, and anomalies in pension resource distribution. Structural-functional analysis examined the roles of each system element, ensuring stability. Cause-and-effect analysis identified factors influencing resource potential and their consequences. Actuarial methods assessed risks and obligations, aiding long-term planning, while economic-mathematical modeling evaluated internal and external factors, forecasted development, and formulated optimal resource management strategies. Data from various Russian governmental bodies provided the research base. The study emphasizes aligning the criteria for selecting and nurturing pension system employees with those of civil service workforces, recognizing that while reforms have been beneficial, significant challenges remain. The research offers insights into the state pension system's current condition, potential enhancements, and the standards of pension benefits, highlighting the need for ongoing improvement and optimization.

**Keywords:** Distributive and Accumulative Pension System, Joint Liability, Pension Insurance, Pension Provision, Pension Services System, State Pension System.

## Introduction

In recent years, the analysis of pension systems has become increasingly important. This is due to the fact that the existing model of pension provision is not able to provide a high standard of living for individuals who have completed their professional careers (1, 2). Accordingly, the main goal of modernizing the pension system is to ensure adequate standards of living and consumption for retirees. In countries with developed economies, achieving this goal is possible through savings accumulated during the period of active work, as well as through additional support programs for pensioners. In Russia, the main focus is on the use of a distributive and insurance system, as well as on the principles of mutual support between different generations, universality, and voluntary participation (3). The importance of analyzing the "resource potential" of state pension systems cannot be overstated, particularly in the context of diverse economic, demographic, and political environments. Understanding the resource potential allows governments to strategically align their pension systems with these variables, ensuring stability and adaptability across different contexts. The level of well-being of the older generation largely depends on the size of retirement payments, however, health and access to social services also play a significant role. At the beginning of the 21st century, in countries belonging to the OECD group, pension expenditures on average accounted for 10 to 12 percent of the total gross domestic product, while in Russia this figure was 6.5 percent of gross domestic product (GDP).

At the same time, the percentage ratio of the elderly population to the total population in these countries and in Russia is almost the same and amounts to approximately 20%. However, if we consider the economic expression of the share of elderly people in relation to GDP, in industrially developed countries one percent of the age category accounts for 1 percent of GDP, while in Russia this figure is much lower and only amounts to about 0.4 percent for every percent of the elderly population, which is more than two times lower than in countries with a high level of economic development (4). This is due primarily to the fact that the pension system in Russia has undergone a short period of its development on a market basis. The main goal of this research is the development of theory and methodology related to the creation and operation of resource capabilities within the infrastructure of pension profile and services, including assessment procedures against the backdrop of long-term forecasting. This is necessary for predicting future development, with a focus on ensuring the full pension rights of system participants, aiming for its reliability and harmony. In the context of the set goal, it seems important to analyze pension provision in both comprehensive and specific aspects. In a broad understanding, this is a complex of legal, economic, and managerial activities initiated by the state to provide material support to individuals who have lost their income for reasons established by legislation. Within this definition, three main directions are distinguished: pension payments within mandatory insurance, state pensions for certain categories of the population, and accumulation pension programs. The effectiveness of implementing all three aspects of pension provision is ensured through management processes and the issuance of pension payments, carried out in accordance with the decision of the Board Order of the Social Fund of Russia (5). In a narrow understanding of the concept of pension provision, the diversity of approaches of numerous researchers reveals unique views on its essence. The works of many Russian specialists cover key aspects of the functioning and development of the current pension system, which is a critical part of

the sphere of public services (6). These studies often focus on the challenges of financial sustainability, the evolution of pension policies, and the effectiveness of different funding mechanisms (7-9). Studying scientific works dedicated to this topic demonstrates a significant lack of research on future trends and possible directions for the development of pension resources system in Russia in the context of market economy in the near future.

## Methodology

In the study of theoretical approaches to researching the resource potential of the state pension system, a comprehensive methodological approach was applied, including methods of systems analysis and synthesis, statistical analysis, structural-functional analysis, cause-and-effect relationships, as well as methods of actuarial calculations and economic-mathematical modeling. Economic, demographic, and sociopolitical factors are treated as interconnected influences that collectively determine the ability of pension systems to meet future obligations. To evaluate the "resource potential" of state pension systems, the study employed both measurable indicators and qualitative markers. Measurable indicators included financial reserves, which represent the total assets available for pension payments, and contribution rates, referring to the percentage of income contributed by workers and employers. Qualitative markers addressed governance, legal frameworks, and social support factors. These included institutional capacity, which covers management effectiveness and oversight within pension systems, and the legal and regulatory frameworks that define the system's structure.

The method of systems analysis and synthesis was used to assess the pension system as a whole, functioning system. It allows identifying key components and determining the relationships between them. Statistical analysis is used for processing and interpreting data related to the resource potential of the pension system. It helps to identify trends, patterns, and anomalies in the distribution of pension resources, evaluate the dynamics and effectiveness of the pension system's operation. Economic theories related to resource allocation, savings, and capital flows informed the models used to evaluate the long-term sustainability of pension funds. Structural-functional analysis focuses

on studying the structure and functions of the pension system. This helps determine the role of each element in ensuring the stability of the entire system. Cause-and-effect relationship analysis is necessary to identify factors influencing the resource potential of the pension system and determine the consequences of such influence. Actuarial methods are used to assess the risks and obligations of the pension system, as well as for long-term planning. Economic-mathematical modeling is used to build models of the pension system's functioning, allowing for the evaluation of external and internal factors, forecasting development, and formulating optimal resource management strategies. Sociopolitical theories were essential in understanding how state policies, legislative changes, and social welfare programs interact with economic and demographic factors to shape the resource potential of pension systems. Statistical data from the Federal State Statistics Service, the territorial body of the Federal State Statistics Service for the Republic of Tatarstan, official reporting data from the Social Fund of Russia, the branches of the Social Fund of Russia for the Republic of Tatarstan, statistical and analytical reports from the Ministry of Economic Development of Russia, the Ministry of Economy of the Republic of Tatarstan, and the subjects of the Volga Federal District served as the information base for the research. An important element of the Social Fund's toolkit is the actuarial database, which was specifically created within the pension system framework.

## Results

In the framework of our research, we will define the scope of pension provision in a strict sense, limiting it for a deeper analysis by excluding pension programs. In this context, we will perceive pension programs as processes related to managing pensions and providing individuals with the opportunity to earn money as financial compensation for lost income due to retirement, disability, or loss of a provider, including providing related informational and advisory services. The provision of these services is divided into several phases: preparing necessary resources, the process of carrying out the work, supervision, and

client support. The initial step in providing pension services is ensuring resources, primarily financial. In each area, the primary source of financial potential is unique. In accordance with the developed classification of pension provision systems, the elements forming the resource base can be organized as follows. Therefore, the basis for calculating pension benefits is a set of available resources, including financial assets intended for regular payments to individuals who have reached retirement age. These funds are accumulated in a targeted pension fund through contributions collected from entrepreneurs, self-employed individuals, various categories of workers, as well as from profits from investments of free cash and financial assistance provided from the state budget.

The foundation of government pension schemes is built upon financial assets accumulated through public budget allocations and elective donations from both individuals and corporations. This financial base enables the government to disburse monetary benefits to specific groups of the populace. Concurrently, the capability of the pension service system to support and manage pension programs is included within the broader spectrum of resource capabilities. This aspect encompasses the latent possibilities for enhancing the effectiveness of delivering and managing these services while paving the way for the forward evolution of various pension schemes.

Currently, Russia's pension infrastructure operates through both redistributive and saving mechanisms, with a strong emphasis on the insurance aspect. This approach is reflected in the reforms implemented in recent years. However, this focus on insurance limits the expansion of high-quality pension and social services available to individuals of retirement age and constrains the growth of a crucial component of the pension framework: the capacity for pension funding and service delivery. The capacity for pension funding and service provision stands as a critical component of the pension system; it signifies the aggregate resources available for securing pension rights. Essentially, it encompasses the means and capabilities that can be either currently utilized or potentially mobilized to fulfill objectives and execute functions within the pension system. Therefore, adopting a holistic approach when analyzing the concept of

resource capacity in studies is significantly critical. The theoretical framework encapsulating the "resource potential of the pension system" should be examined through a tripartite lens: legal, social, and economic dimensions, as this represents a comprehensive abstraction of various phenomena and facts validated through empirical observation (10). From a legal perspective, the essence of the pension system's resource potential is constituted by an amalgamation of statutes, directives, and regulations governing the accumulation of pension system resources. This legal foundation is pivotal in defining the system's ability to furnish pension benefits and services to individuals who are not in the workforce (11, 12). The concept of the resource potential within pension provision from a social standpoint is understood through the aggregation of various kinds and methods of societal support provided to individuals unable to work, either due to reaching retirement age, health issues, or the demise of the family's main earner. Moreover, this potential enacts a societal solidarity principle, shaping the way GDP is shared across different age groups as well as within the same age cohort (13). In the realm of economics, the essence and value of the resources allocated for retirement benefits and services are understood through their role in financial and economic interactions that contribute to the replenishment of the workforce, enhance labor efficiency, influence labor market dynamics, and manage the allocation and reallocation of financial resources within the economy. This process is crucial for establishing financial safety nets for those unable to work. The nature of the resource potential within this context is inherently twofold. It involves, initially, channeling a significant portion of funds towards ensuring a basic income level for beneficiaries. Subsequently, it aims to cover the loss of earnings, thereby providing a satisfactory personal replacement rate (14). The capability framework of the retirement system functions in twofold sectors: the state-managed retirement benefits scheme and the domain of personal retirement firms. Given the focus of this analysis, our primary concern revolves around the capability prospects within the state-driven retirement benefits arrangement. To properly encapsulate this phenomenon as a subject for examination, it's prudent to consider various theoretical insights regarding the notion of "capability framework," especially since a universally accepted definition has yet to be established (5). The Russian Federation's Social Fund stands as a pivotal financial and organizational cornerstone within both the pension scheme and the broader framework of national social insurance. Regarding the fund's capacity to harness its resource potential for the purpose of pension system overhaul, it's feasible to categorize its resources into three distinct groups: resources currently at the disposal of the pension fund, whether exploited or not, which act as internal drivers for its overhaul, resources situated in the external milieu, offering potential opportunities for overhaul that the fund might leverage, aptly referred to as external to the system and resources anticipated to emerge in the foreseeable future, often termed as forward-looking factors, and typically integrated into forecasting models. The assets and capacities inherent in the administration of pensions and pension-related services constitute a comprehensive network of various resources, knit closely together. This network encompasses economic, assets, human, technological, and both the organizational and leadership assets necessary for operations. The schematic representation of these components can be observed in Figure 1. From the illustration provided in Figure 1, it is evident that the ecosystem surrounding pension management and service delivery thrives on a multifaceted compilation of resources, including economic, assets, human, technological, and governance elements.
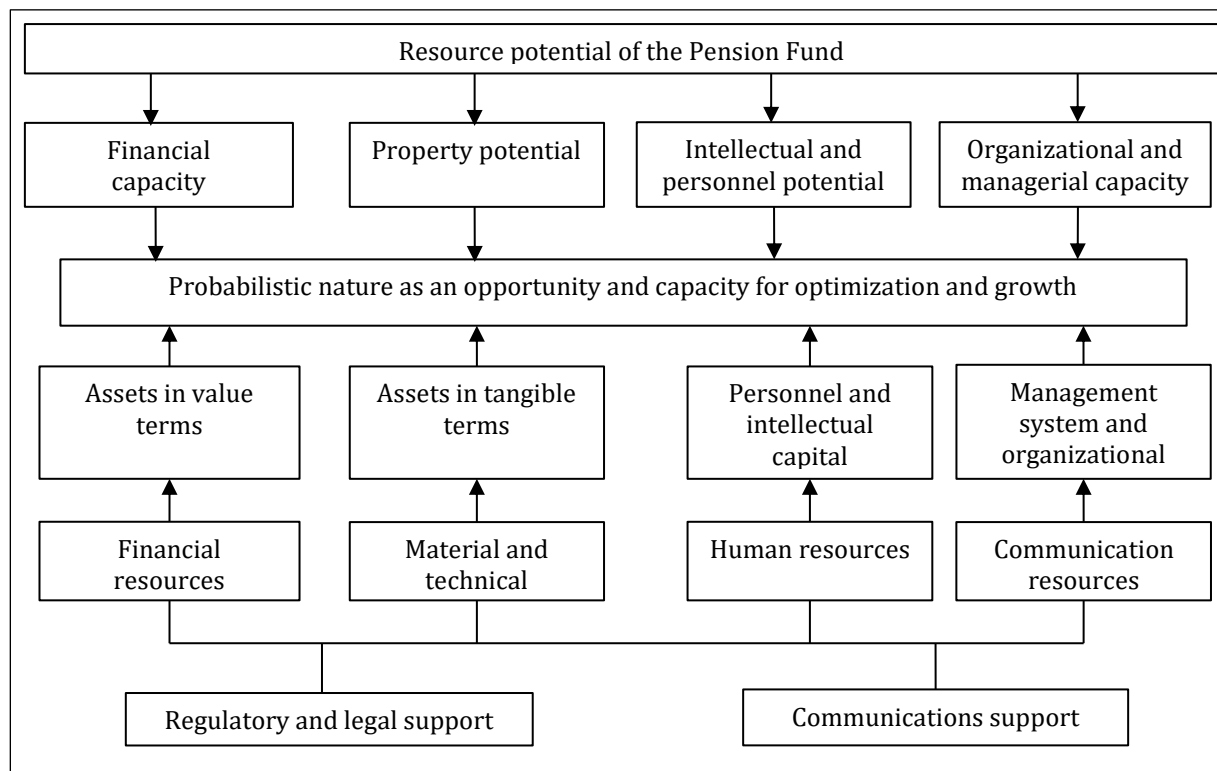
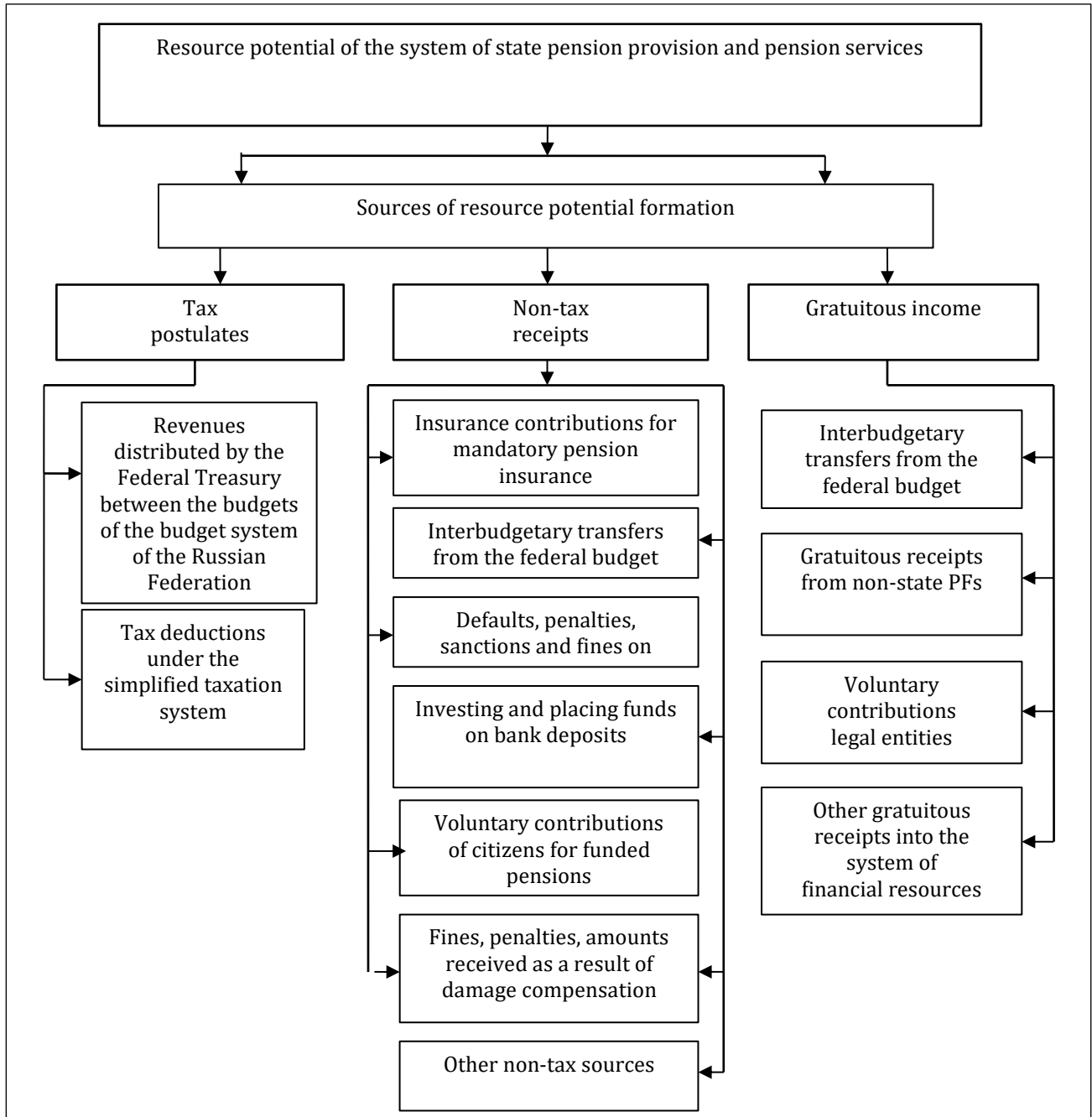**Figure 1:** Structure of Resource Potential of the Pension Fund

Each component is intricately linked, directing towards the efficient harnessing of the potential inherent in resource allocation. In essence, economic assets are pivotal in securing the rights to pensions amassed by the workforce, thereby ensuring the stability and efficiency of the pension frameworks and refining the delivery of pension-related services. Material assets not only encompass the economic resources and the operational framework critical to executing legal responsibilities but also comprise the pension fund's monetary reserves. These reserves are specifically earmarked for retirees' benefits and the creation of emergency funds. Contributions to pensions are aimed at securing funds for retirement payouts, whereas the reserves for pensions fulfill the twofold role of covering pension commitments and establishing backup funds. In the contemporary landscape, the significance of cognitive and workforce capabilities is growing. This encompasses the workforce, data and communication facilities and assets, intellectual holdings, and market-related assets. A person's cognitive and workforce capabilities manifest through the execution of professional functions, powered by their knowledge, skills, experience, innovative thinking, organizational culture, and communication skills during their work activities.

It is crucial to acknowledge that these collective capabilities, particularly communication proficiency and acquired skills, play a pivotal role in interfacing with customers availing public pension services from the pension fund. As the primary institution of social security offering public services, the pension fund's utilization of intellectual and human potential, which possesses an inherent uncertainty, can vastly contribute to the renovation and efficient operation of the pension provision and service system. Evaluating the possibilities inherent in resources necessitates adopting a comprehensive methodology. Implementing such a structured analysis proves invaluable when devising and evaluating forecasts concerning the capabilities of financial reserves for pensions and related services. During the assessment and projection of resource capabilities, examining specific resource categories separately is feasible. Though this strategy might appear rather arbitrary, it is entirely appropriate within this context as the fiscal

resource capability represents the pivotal and most influential element. It essentially forms the backbone of the financial provisioning network that fulfills the primary purpose of the pension scheme - to ensure that citizens receive financial assistance in the form of pensions by leveraging the accumulated monetary resources (15). In other words, the core financial strength of the government's pension apparatus primarily emanates from the portion of funds designated to cover pension disbursements and the operational costs of the government's Social Fund. Consequently, understanding the origins of its funding becomes imperative (16).



**Figure 2:** Sources of Formation of Resource Potential of the State Pension Provision System and Pension Services

In scholarly articles, the financial underpinnings of the pension system are frequently identified as emanating from multiple streams: employer insurance premiums, employed individuals' insurance payments, optional insurance contributions from those not in employment, allocations from the federal budget, corporate voluntary donations, and various other channels (17). However, to delve deeper, a granular analysis of the financial foundation is necessary, as depicted in Figure 2. It's important to highlight that the financial resources fueling the pension scheme derive from a broader spectrum than previously outlined. This encompasses gains from the appreciation of insurance reserves, adjustments for lowered insurance tariff rates, payments made under supplementary tariffs, contributions by employers on behalf of employees who make extra payments towards their retirement savings, all of which are funneled into the Russian Federation's Social Fund, among other sources (18).

Examining the composition of financial elements through a basic framework, as demonstrated in Figure 2, provides significant insights. It reveals aspects of the current condition, potential fluctuations in system component ratios, and the nature of financial interactions both within the system and externally. This analysis also offers a glimpse into the characteristics of the state pension system, prospects for its enhancement, and to a degree, the standard of pension benefits (19). Raised funds are the main source of expenditure of the Fund. These include the payment of pensions; organization of pension delivery (transfer to a bank account, postal delivery); administrative expenses and logistical support of the Fund's activities; expenses for ensuring the guarantee of pension savings (20).

## Discussion

Some authors believe that the category "resource potential" is a conglomerate of resources, without taking into account their qualitative side. Others believe that resource potential is the material basis of production, but in statics, i.e., until their involvement in the production process. Others do not take into account the purpose of resource potential (21). It's feasible to distinguish the

scholars who equate the two notions, drawing a parallel between them. Yet, amidst the myriad interpretations of resource potential, we believe its core essence is fundamentally rooted in its probabilistic characteristics. This entails the possibility for an organization to leverage its current assets, enhancing their value, and incorporating additional resources into its operations.

Drawing from these conceptual and methodological frameworks, our definition of the resource potential within the governmental pension system and pension services sector can be articulated as follows: it encompasses the entire sum of financial resources amassed within the Pension Fund as a component of the national gross domestic product that is readily accessible for its use. This includes not only the capacity for optimization through internal mechanisms but also the capability to draw in additional means. These capacities consider the prospects for growth and augmentation of these funds over an extended period, aimed at securing the pension entitlements of citizens. Such security is underpinned by state guarantees and defined by the stipulations and standards set forth in the Federal Law. Chernikova and Belokhvostova, succinctly captured the core idea of "resource potential," highlighting that the "resource potential of services" represents an aggregation of extra resources (22). These resources, for various internal or external reasons, remain untapped, yet their deployment could enhance service effectiveness and foster the organization's forward momentum. Although originally designed for service-oriented entities, this statement completely aligns with the essence and attributes of our subject of study, as it delineates a specific component within the broader service system framework. Consequently, the resource capacity inherent in pension schemes encapsulates elements of uncertainty along with opportunities for enhancing the mechanisms through which social guarantees are executed, including compensatory measures for income loss tied to inability to work. This finding inherently amplifies the focus on developing the resource capacity within the pension provision and pension service system. Regarding the intellectual and personnel potential, some authors emphasize that the role of qualified, creative personality as a component of intellectual and

labor resources in modern conditions is especially significant in the sphere of public service (23). While the staff within the pension system aren't officially classified as civil servants, they perform roles indicative of a governmental entity. Thus, the standards for nurturing and advancing the capabilities of those within the pension system need to align as closely as possible with the standards set for the cultivation and growth of staff within civil service sectors (24). Thus, resource potential characterizes not only the types of resources, but also the degree of their use, their ability to create a useful effect.

While individuals working within the pension system are not officially classified as public servants, they nevertheless serve within a governmental structure. Consequently, the criteria for selecting and nurturing pension system employees should align closely with those applied to the cultivation of civil service workforces.

In essence, it's important to acknowledge that, even with the introduction of several beneficial reforms, there are still numerous challenges that have yet to be addressed. Conducting an in-depth analysis of the available resources within the state's pension provision system and its services would be instrumental in uncovering solutions to these problems. The financial strain on the Social Fund of the Russian Federation has steadily become a more persistent issue. Adapting the administration's approach within the compulsory pension insurance realm and integrating cutting-edge financial technologies stands out as a viable strategy for mitigating this financial shortfall (25). Enhancing expertise and cultivating a more sophisticated organizational ethos among personnel across the entire pension system spectrum, not limited to pension provision services, stands to offer significant benefits. Crucially, refining the strategies and approaches for gathering financial contributions from various sources that establish the financial foundation of pension savings is becoming increasingly vital. This approach aims to prevent the misallocation of funds intended for immediate liabilities. Equally critical is the need for an overhaul of the current framework governing pension savings accumulation. Addressing these issues is paramount in the present but will also yield long-term benefits by bolstering the financial autonomy and robustness of the domestic pension infrastructure, thereby mitigating the fiscal shortfall faced by the Russian Social Fund. While the study offers valuable insights into the resource potential of pension systems, the limitation of this article is that it primarily relies on theoretical models, without extensive empirical validation. Future research should focus on integrating empirical data to ensure the models' accuracy and applicability in real-world scenarios.

## Conclusion

The study on the resource potential of the state pension system reveals several critical insights into its current state and future development. The research highlights the necessity for a comprehensive approach, incorporating systems analysis, statistical analysis, structural-functional analysis, cause-and-effect relationships, actuarial calculations, and economic-mathematical modeling. This multifaceted approach ensures a robust understanding of the pension system's dynamics, trends, and optimization strategies.

Despite beneficial reforms, significant challenges remain in the pension system. The study identifies the need for continuous improvement in financial management, the integration of advanced financial technologies, and the enhancement of organizational and personnel capacities. The research emphasizes the growing importance of human and intellectual resources in the pension system. Effective management and the development of these resources are crucial for improving service delivery and achieving long-term sustainability.

The study suggests that a strategic focus on optimizing resource potential, improving financial autonomy, and addressing the financial shortfall in the Russian Social Fund is imperative. This involves adopting new technologies, enhancing the skills and organizational culture of personnel, and ensuring better management of financial contributions. This study significantly contributes to the broader domains of public policy, social security, and welfare economics by synthesizing several theoretical frameworks that guide the development and optimization of state pension systems. By incorporating systems analysis, statistical

methodologies, actuarial calculations, and economic-mathematical modeling, the research not only addresses the technical aspects of pension system resource management but also enriches the theoretical foundations of social security and welfare economics. In the context of public policy, the study offers a framework for policymakers to evaluate the sustainability and resilience of pension systems, providing them with the tools necessary to craft evidence-based reforms. So, the research provides a detailed framework for understanding and enhancing the resource potential of the state pension system. By addressing current challenges and leveraging existing opportunities, the pension system can be better equipped to provide adequate support to retirees, ensuring financial stability and social security for the elderly population. Continued focus on comprehensive analysis and strategic planning will be essential for the system's evolution and effectiveness in the years to come.

## Abbreviations

OECD: The Organization for Economic Co-operation and Development, GDP: Gross Domestic Product.

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## Author Contributions

Eduard Vafin and Elena Razumovskaya contributed to the conceptualization of the study. Sergey Kiselev was responsible for writing the manuscript, and Lenar Safiullin handled the methodology. All authors reviewed and approved the final version of the manuscript.

## Conflict of Interest

Authors have no conflicts of interest to declare.

## Ethics Approval

Not applicable.

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