



Socioeconomic and Emotional Dimensions of Retiree Welfare in Kosovo: The Basic Pension and Implications for Sustainable Social Policy

Remzi Smajli¹, Vesa Morina^{2*}, Julinda Morina³, Nakije Kida¹, Burhan Reshat Rexhepi⁴, Florije Miftari¹

¹ Department of Banking and Finance, AAB College, Pristina 10000, Kosovo

² Department of Computer Science, AAB College, Pristina 10000, Kosovo

³ Department of Psychology, AAB College, Pristina 110000, Kosovo

⁴ Department Management, Business and Economy, UBT College, 10000 Pristina, Kosovo

Corresponding Author Email: vesa2.morina@aab-edu.net

Copyright: ©2025 The authors. This article is published by IETA and is licensed under the CC BY 4.0 license (<http://creativecommons.org/licenses/by/4.0/>).

<https://doi.org/10.18280/ijstdp.200903>

ABSTRACT

Received: 21 July 2025

Revised: 1 September 2025

Accepted: 15 September 2025

Available online: 30 September 2025

Keywords:

social sustainability, pensioners, legal framework, Kosovo

This study examines the interplay between economic security and emotional well-being in shaping the overall welfare of pensioners within the framework of the Basic Pension Scheme in Kosovo. Primary quantitative data were collected through a structured questionnaire from 100 pensioners across various categories and regions of Kosovo until December 2024. Data analysis involved tests for normalization, factor analysis, and reliability testing (Cronbach's Alpha), including the GLM model and Pearson's Rho correlation method, as well as Kruskal-Wallis tests for non-parametric comparisons. The study categorized factors into financial, legal, and emotional groups. Results showed that older age negatively impacts financial security and increases stress ($B = -8.867$, $p = 0.035$). Male pensioners tend to have better economic opportunities, while females face lower finances. Marital Status ($B = -7.850$, $p = 0.000$) pensioners who are married generally have more financial security and social support, while those who are unmarried face greater financial insecurity and emotional distress. Financial instability leads to emotional insecurity ($B = -12.115$, $p = 0.000$). Well-managed pensions enhance security ($B = 10.433$, $p = 0.000$), while pension reductions and lack of state support cause stress ($B = 12.214$, $p = 0.001$; $B = 29.120$, $p = 0.995$). Emotional factors, such as hobbies ($B = -3.402$, $p = 0.018$), show that lack of recreational activities increases emotional distress. The study underscores the importance of financial and social support for improving pensioner well-being. The equation for well-being indicates that 31.01% of welfare is explained by the factors studied, while the remaining 68.99% may be influenced by unexamined variables. The novelty lies in applying the Global Well-being Index for pensioners and the GLM model for broader analysis. The novelty of the study lies in the use of the Global Well-being Index for pensioners, which has not been utilized before. Additionally, the GLM model was applied, offering a broader scope for analysis compared to other econometric models.

1. INTRODUCTION

This study investigates the impact of the basic pension on the socio-economic and emotional well-being of pensioners in Kosovo. Retirement represents a significant stage of life, often accompanied by economic, legal, and emotional challenges. While the pension serves as a source of financial stability and social protection, its effectiveness and adequacy vary considerably depending on the context. The situation is particularly critical for older adults who have never engaged in formal employment, the majority of whom are women, relying primarily on the basic pension to meet their essential needs and maintain overall well-being.

Basic pensions in Kosovo are a universal, non-contributory pension scheme for those aged 65 and over. This pension is financed from the state budget and does not depend on previous contributions to the pension system.

International research has extensively examined the relationship between pension systems and social well-being; however, empirical studies in Kosovo remain limited and fragmented. Most research has focused on macroeconomic aspects, leaving the direct analysis of individual beneficiaries and their socio-economic and emotional dimensions largely unexplored. This gap underscores the necessity for research that evaluates the effects of the basic pension and socio-demographic factors on pensioners' well-being, including their perceptions of implementation, shortcomings, and legal challenges within the scheme.

Existing literature indicates that retirement is often associated with feelings of pessimism and loss of life purpose [1], while reduced income compels pensioners to seek additional financial resources. Old age is described as a phase of fluctuation between integrity and despair [2], where financial planning remains essential, yet psychological

concerns are frequently overlooked [3]. For individuals who are unprepared, this stage can be particularly challenging, making financial and emotional preparedness indispensable [4]. Recent contributions emphasize the importance of proactive planning [5], while Clare et al. [6] highlight the need for hybrid pension products that balance flexibility with security.

The health implications of retirement are diverse. Certain studies report improvements in mental and oral health, yet simultaneously an increased risk of chronic and lifestyle-related diseases [7]. Findings vary according to country, gender, and the indicators employed [8-12]. In China, pension reforms improved health behaviors and reduced poverty in rural areas [13-15], whereas disparities between public and private sector retirees significantly influenced mental well-being [16].

In Kosovo, the basic pension remains insufficient, covering only essential needs [17]. Social protection expenditures reached €854.6 million in 2024, with pensions accounting for 76% of the budget, thereby limiting investments in children and other social services [17]. Although public spending correlates positively with GDP [18], the pension system continues to confront informality and administrative weaknesses [19]. Despite the budgetary burden, old-age basic pensions remain low, even though they constitute the largest group of social scheme beneficiaries in Kosovo in September 2025, with over 162,947 individuals, and monthly expenditures for this category exceed €20,418,448, making it the main component of social protection with a low burden relative to the quarterly real GDP growth of 4.5% [20]. Monthly inflation, measured by the Harmonized Index of Consumer Prices, was -0.2% in September 2025, while the annual inflation rate compared to September 2024 reached 4.7%, mainly explained by rising consumer prices, which particularly affect the cost of living and old-age basic pensions [21].

Pension benefits remain inadequate: contributory pensions range from €182-256, whereas the basic pension is only €100, substantially below the minimum wage of €570 [22]. A 20% increase in pensions has been announced for 2025 [20]. Remittances, exceeding €1.3 billion in 2024, continue to play a critical role in alleviating poverty [23]. Additional factors, including tourism and diaspora mobility, contribute to economic growth [20, 24], although net emigration remains negative. International organizations stress that the basic pension is superficial, covering only the most vulnerable populations [25], highlighting the urgent need for sustainable reforms to ensure fiscal stability, equity, and adequacy [26]. Global frameworks, such as Mercer & CFA Institute [27], emphasize the alignment of pension indicators, positioning Kosovo as an urgent case for reform.

Building on this background, the present study aims to analyze the impact of the basic pension on the socio-economic and emotional well-being of pensioners in Kosovo, considering economic, legal, and psychological dimensions. The objectives are threefold: to examine the impact of pension payments; to assess the legal and administrative framework of the scheme; and to identify key challenges, offering practical recommendations for improvement.

To achieve these objectives, the study addresses the following research questions:

- **RQ1:** How do pension income and socio-demographic characteristics affect pensioners' welfare?

- **RQ2:** Are income or personal/socio-demographic characteristics more important for predicting pensioners' welfare?
- **RQ3:** Which socio-demographic characteristics have the greatest impact on pensioners' welfare?
- **RQ4:** How do pensioners evaluate the implementation of pension schemes and their shortcomings?

Two primary hypotheses are tested using Generalized Linear Models (GLM) [28] and Pearson correlation analysis [29]. The empirical analysis is based on primary quantitative data collected from September to December 2024, involving 100 beneficiaries of the Basic Pension Scheme.

The methodology is designed to address the legal, economic, and emotional challenges of pensioners, ensuring rigorous and comprehensive analysis.

The article is structured into five sections: introduction, literature review, methodology, empirical findings and discussion, and conclusion with recommendations for public policy and future reforms. This study contributes to the academic literature by providing robust empirical evidence on the impact of the basic pension on the well-being of pensioners in Kosovo, while offering practical guidance for policymakers seeking to improve the pension system.

2. REVIEW LITERATURE

This section aims to analyze the existing literature related to the study topic, with a focus on the Basic Pension Scheme (First Pillar). The subsections will cover the definition and concept of aging, pensions, preparations for this period, retirees' expectations, the effectiveness of pension schemes in Kosovo, and the challenges faced by retirees in the country, including social, economic, legal, health, and emotional aspects.

2.1 The concept of aging and retirement

Concepts of aging and retirement have evolved over time, with various theories explaining the aging process. The Disengagement Theory suggests that individuals withdraw from social roles as they age [30]. However, this view creates despair among retirees and contributes to poverty due to limited job opportunities, adding fiscal pressure on the state. Pension systems, therefore, are structured into pillars based on their function. In Kosovo, the system includes two main pillars:

a) **Contributory Pension (Pillar II)** – This pension is based on the contributions of individuals during their active life. The more years of work and contributions made, the higher the pension received.

b) **Basic Pension (Social/State Pension Pillar I)** – It is provided to all citizens over the age of 65, regardless of whether they have contributed to social security schemes or not. This pension is provided by the state budget and has a fixed amount, which is relatively low.

Since the objective of the study is the impact of basic contributions on the well-being of pensioners in Kosovo, we will start with the second pillar briefly while expanding further into the first pillar of Basic pensions.

a) *Contributory Pension System in Kosovo*–The Contributory Pension System is a scheme based on mandatory contributions from employees and employers during their active lives, providing income at retirement age. This system

is mainly related to [31]: i) Actuarial Theory, ii) Bismarckian Pension Model, and iii) Life Cycle Savings Theory.

i) *The Bismarckian Pension Model* [32] -The Bismarckian Pension Model, introduced by Otto von Bismarck in 1889, was designed to provide financial support to retirees based on their prior contributions. This model is prevalent in countries with social insurance systems, including Kosovo, where pension benefits are determined by wages and contribution duration [31].

ii) *Life-Cycle Savings Theory* [33]–The Life-Cycle Savings Theory argues that individuals save during their working lives to maintain their standard of living after retirement [34]. The contributory pension reflects this theory, as it is a mandatory savings mechanism that allows retirees to receive benefits according to their contributions [33]. Life Cycle Savings Theory argues that individuals plan savings throughout their lives to maintain a stable consumption after retirement [35]. There are studies that emphasize other models for evaluating pensions. The age pension aims to help eligible elderly Australians maintain basic living standards, while the Hamilton-Perry model is used to forecast age-specific populations and assess sustainable pension ages across states and territories [36].

iii) *Actuarial Theory* [37]–The Actuarial Theory proposed mathematical models that describe the relationship between contributions, benefits, and the life expectancy of retirees. Samuelson argues that, in the absence of money and opportunities for savings, supporting the elderly through the contribution of active generations is a social necessity. The Actuarial Theory of Pensions, proposed by Samuelson [37] suggests that pensions can be modeled through an approach based on investment returns and risk.

iv) *Feldstein Theory* [38]–The contributory pension in Kosovo is closer to the Feldstein model, as it is based on individual savings during working life. This system allows individuals to contribute to a pension fund, which can be invested to generate additional income. Contributory pensions create capitalization, allowing retirees to rely on their savings and not be completely dependent on the state. The contributory pension is more consistent with Feldstein's theory, as it aims to create a sustainable system where individuals finance their pensions instead of relying on new taxpayer resources. The well-being of retirees (W_t) in Kosovo is affected by the type of pension they receive: The basic pension is low and does not guarantee a high standard of living. The contributory pension can offer greater stability, but depends on the time of contribution and on future reforms in the pension system. Feldstein suggests that a capitalized pension system (contributory pension) is more efficient and provides higher welfare for retirees [39].

Contributory Pension (CP) – is based on contributions paid during the working period [39]:

$$PK = \alpha \sum_{t=1}^T w_t C_t \quad (1)$$

where,

- PK is the amount of the contributory pension;
- α is benefit coefficient (percentage of income replaced by pension);
- W_t is annual salary in year t ;
- C_t are the annual contributions paid in period t ;
- T is the total number of years of work.

This equation shows that the contributory pension depends on earnings during the career and the level of contributions paid into the system. In Kosovo, the contributory scheme is challenged by the low level of contributions and informality in the labor market, affecting the future benefits of retirees.

b) *Basic Pension (Social/State Pension Pillar I)* - The basic pension in Kosovo, financed by taxes rather than individual contributions, could create long-term fiscal challenges, as Feldstein argues, by increasing the burden on the economy and becoming unsustainable if the growth in the number of retirees exceeds contributions from workers, while the lack of capitalization of savings does not encourage individuals to create sustainable retirement funds.

• *Theoretical Aspect of Basic Pension Pillar I*

The basic pension is a social benefit guaranteed by the state to the elderly, regardless of their previous contributions. It is part of the Welfare State system and is related to the theory of: i) Social Distribution Theory, ii) Beveridgian Pension Model, and iii) Welfare State Theory.

i) *Social Redistribution Theory*, as presented by Wilensky [40], emphasizes the state's central role in ensuring a fair and equitable distribution of resources, particularly for vulnerable groups such as low-income pensioners. The goal is to reduce social inequalities, provide financial support to those in need, minimize poverty, and foster social inclusion. Wilensky [40] explored how welfare states, including pension systems, act as redistributive mechanisms. He argues that social policies, particularly public pensions, are essential for reducing income inequality and ensuring economic security for older populations. His work contributes to Social Redistribution Theory by demonstrating how state intervention redistributes resources across social groups, mitigating disparities caused by market forces. A study by Titova and King [41] shows that the link between well-being and friendship is partially explained by the satisfaction of basic psychological needs. Additionally, the findings by Muñoz-Fernández and Cabanillas-Jiménez [42] reveal that pensioner-led households with dependents exhibit a 10.2 percent reduction in total spending compared to pensioner-led households without dependents. Johnson et al. [43] highlight that economic stability and social policies play a crucial role in shaping pension adequacy and the financial well-being of retirees. They investigate the growing importance of social support networks and advocate for policies aimed at poverty reduction as central to welfare state models. Furthermore, Kazuhiro [44] examines the impact of social identity on income redistribution policies and economic development, emphasizing that the scale of redistribution is often limited in many developing countries and how national identity influences these processes.

The equation of Social Redistribution Theory is: a) Initial income before state intervention [40]:

$$Y = W + OI \quad (2)$$

where,

- Y is total income before taxes and transfers,
- W is income from work (wages);
- OI is other income (e.g., from capital, property, business).

ii) The Beveridge Model of Pensions [45] proposes that basic pensions should be financed by taxes and guarantee a minimum standard of living for all citizens, irrespective of

their contributions. Applied in Kosovo, this model provides state-funded basic pensions aimed at reducing poverty among the elderly. The model is based on universalism, ensuring that all citizens receive a basic pension, regardless of their work history, to maintain a living above the poverty line. Beveridge [45] introduced this system to eliminate poverty and offer financial security for the elderly through a tax-funded mechanism.

A mathematical formulation of the Beveridge model can be presented as:

$$P = PB + a(Y - Y_{min}) \quad (3)$$

where,

- P is the total pension received by an individual;
- PB is the basic pension guaranteed by the state;
- A is the coefficient of supplementary benefit based on previous earnings (in some variants of the Beveridge model, this value can be zero, making the system completely universal);
- Y is the earnings during working life;
- Y_{min} is a minimum income threshold that affects the increased pension benefit (if a system with additional elements on top of the basic pension is applied).

The universal pension system guarantees support for all citizens, regardless of their contributions, being financed by state tax revenues and ensuring a minimum standard of living for the elderly, while horizontal equality ensures that benefits do not depend on individuals' previous income or contributions.

iii) *Welfare State Theory*-Welfare State Theory emphasizes the state's responsibility to provide comprehensive social support systems, including pensions, healthcare, and unemployment benefits, to ensure social stability and equality. Esping-Andersen [46] classified welfare states into liberal, conservative, and social democratic models, highlighting how welfare provisions vary across countries based on their political and economic structures. He argued that the welfare state plays a crucial role in reducing inequalities, particularly for retirees. Catherine and Patrick [47] explored the shifting paradigms of welfare states, focusing on innovations needed to address aging populations. Lee [48] emphasized the importance of social support policies in reducing poverty and improving living conditions for vulnerable groups.

A more detailed approach can be formulated as follows:

b) Effect of taxes and social contributions:

$$T = T_y + T_s \quad (4)$$

where,

- T_y are income taxes;
- T_s are social security contributions.

c) Social benefits and transfers:

$$R = P + B + S \quad (5)$$

where,

- P are the pensions received from the state;
- B are other social benefits such as unemployment benefits or social assistance;
- S are subsidies or additional assistance from the government.

d) Income after state intervention (disposable income):

$$Y_d = Y + T + R \quad (6)$$

$$Y_d = (W + OI) - (T_y + T_s) + (P + B + S) \quad (7)$$

This formula shows the impact of fiscal and social policies on the incomes of individuals, including pensioners and vulnerable groups.

A general mathematical formulation of this theory is presented as:

$$U = f(Y_d, T, R) \quad (8)$$

where,

- U is social welfare (Social Welfare);
- Y_d is disposable income after taxes and transfers (Disposable Income);
- T represents taxes and social contributions (Taxes and Social Contributions);
- R represents social benefits and transfers (Redistributive Transfers).

The basic pension supports the well-being of pensioners (W_τ), which can be described as a function of various socio-economic variables:

$$U_\tau = f((PB, H_\tau, M_\tau, B_{other}, Regu_{law}) \quad (9)$$

where,

- U_τ is pensioners' Welfare (dependent variable);
- PB is basic pension;
- H_τ is health expenses;
- M_τ is marital status;
- B_{other} is other sources of income;
- $Regu_{law}$ is state support for pensioners (pension laws);
- Other variables ...

Kosovo's pension system includes two main pillars: the Old Age Pension (Basic Contribution), a state-funded social pension for all citizens over 65, and the Contributory Pension, based on individual savings for those who have made contributions [20]. The basic pension aligns with the Social Assistance Theory of Pensions, which advocates for minimum pensions to prevent poverty among the elderly [49-51]. Similarly, in Vietnam, a supplementary pension program exists for the elderly without contributory pensions, but it is limited and available to only a few [52].

2.2 The development path of Kosovo's economy in the context of pensions

Between 2021 and 2023, Kosovo's economy saw both progress and challenges. In 2023, GDP per capita reached 25% of the EU-27 average, indicating improved living standards, although growth was slow [53]. Real GDP growth was 4.3%, following a high of 10.7% in 2022, with a slowdown linked to reduced exports and trade contributions [20]. Nonetheless, household consumption and public investment continued to grow, and Kosovo experienced substantial wage and employment increases. Unemployment dropped from 28.7% in 2021 to 12.6% in 2023, while wage growth reached 7.6%. However, inflation rose to 11.6% in 2023, driven by high prices [20].

On the fiscal front, Kosovo's domestic debt decreased by 13%, with the Kosovo Pension Savings Fund [54] holding 48% of the debt. External debt increased by 8%, and Kosovo received a ‘BB-’ credit rating from Fitch Ratings in April 2024, potentially aiding in accessing international bond markets [55]. While there have been positive economic developments, challenges remain in managing inflation, the trade balance, and employment. The country has laws supporting pensions, social assistance, and vulnerable groups like people with disabilities and war victims:

In line with Annex 1 of the Law on the Status and Rights of

Martyrs, Invalids, Veterans, and Civilian Victims, the Government of Kosovo approved a 20% increase in pensions and social benefits for war veterans and other eligible groups. This policy aims to enhance the social and economic well-being of individuals who contributed to or were affected by the war. The decision officially came into effect in January 2025 and reflects the government’s ongoing efforts to strengthen social protection mechanisms. Table 1 summarizes the main legislative frameworks governing social welfare and the rights of individuals in Kosovo [56].

Table 1. Laws related to social protection and the status of individuals in Kosovo

Law No.	Law Title	Description
04/L-131	Law on State Pension Funds	Regulates the administration and management of pension funds in Kosovo.
2003/15 & 04/L-096	Law on the Social Assistance Scheme	Defines social assistance for families in need and its subsequent amendments.
04/L-054 & 04/L-172	Law on the Status and Rights of Martyrs, Invalids, Veterans, Members of the Kosovo Liberation Army, Victims of Sexual Violence during the War, Civilian Victims, and Their Families	Provides protection and benefits for categories involved in the Kosovo war.
02/L-17, 04/L-081 & 08/L-255	Law on Social and Family Services	Regulates social and family services to support individuals in need.
04/L-096	Law on Social Assistance in Kosovo	Defines the criteria and values of social assistance for vulnerable families.
07/L-016	Law on Economic Recovery – COVID-19	Includes measures for economic support during and after the COVID-19 pandemic.
03/L-022	Law on Material Support for Families of Children with Permanent Disabilities	Provides financial aid for children with disabilities.
05/L-067	Law on the Status and Rights of Persons with Paraplegia and Tetraplegia	Defines the rights and support for persons with these disabilities.
04/L-092	Law on Blind Persons	Ensures support and rights for blind persons in Kosovo.
QRK Nr. 04/2021	Regulation on Social and Pension Schemes	Regulates the distribution of financial aid to vulnerable groups.

Source: [56]

Table 2. Summary of social protection schemes in Kosovo

Category	Benefits for Programs
Transfer Schemes	Social Assistance Scheme; Subsidy for foster families; Energy/electricity subsidy; Subsidy for children with disabilities (0-18 years)
Pensions	<i>Contributory Pensions:</i> Mandatory pensions; Voluntary pensions. <i>Non-Contributory Pensions:</i> Basic pension. Pensions for those who have not contributed: Family pension; Disability pensions in employment; Early retirement pension scheme for Trepça Company employees. <i>Special Laws:</i> Special pensions for Kosovo Protection Corps, Security Force, former political prisoners, and teachers of the 1990s. War-Related Pensions: Pensions for war veterans; Pensions for war-related categories (martyr's families, disabled veterans, civilian victims, sexual victims of war, etc.). <i>Disability Pensions and Compensation:</i> Pensions for persons with permanent disabilities (ages 18-64); Pension for blind persons; Pension for persons with tetraplegia and paraplegia.
Mother & Child Schemes	Maternity allowance; Child benefit
Social Services	Social services at the municipal level; Social and family services

Source: Kosovo Agency of Statistic (2025) Statistical Yearbook of the Republic of Kosovo 2025 [57]

Table 3. Pension category and amount received

Category of Beneficiaries	Monthly Amount (€)	Comments
Families of Martyrs and Missing Persons from the Kosovo Liberation Army (KLA)	448.13-672.19	Amount varies based on the number of martyrs or missing persons in the family; for some families, this amount is considered insufficient.
War Invalids (over 80% disability)	448.13	Amount is deemed insufficient to cover continuous medical care needs.
Civilian War Invalids	152.50	Low pension that does not meet the basic needs of beneficiaries
Families of Deceased War Invalids	180.00-358.50	Amount does not fully cover the expenses of the respective families.
Families of Civilian Victims and Missing Persons	168.75-253.13	Pensions are often insufficient to meet the families' needs.
Invalids with Caregivers (over 80% disability)	225.00	Amount is inadequate to cover daily needs and necessary care.
War Veterans	170.00	After the veteran's death, families receive 119.00 € per month; the amount is considered low to cover living expenses.
Children with Disabilities	100.00	The cost of treatment and care often exceeds the received amount.

Source: Kosovo Agency of Statistic (2025) Statistical Yearbook of the Republic of Kosovo 2025 [57]

Table 2 summarizes social protection schemes in Kosovo, including transfer schemes (social assistance, energy subsidies, and support for children with disabilities), pensions (contributory, non-contributory, and war-related pensions), mother & child schemes (maternity allowance and child benefits), and social services at the municipal level. The system is fragmented, and benefits are often considered insufficient. Based on Table 2, the current pension system, in Kosovo has undergone changes over the years, covering different categories of beneficiaries. If we compare the monthly payments for each category of pensioners in Kosovo in December 2024, they only cover basic living needs [57].

Table 3 presents the categories of pension beneficiaries and the monthly amounts they receive. Families of martyrs and missing persons from the KLA receive between €448.13 and €672.19, depending on the number of martyrs or missing persons in the family, but for some families, this amount is considered insufficient. War invalids with over 80% disability receive €448.13, which is deemed inadequate to cover their continuous medical care needs. Civilian war invalids receive €152.50, a low amount that does not meet their basic needs. Families of deceased war invalids receive between €180.00 and €358.50, but this amount does not fully cover their living expenses. The Government of Kosovo has approved a 20% increase in 304,016 beneficiaries of the 20 percent increase in pensions for war-related categories that entered into force in January 2025, and the social assistance scheme will continue to be implemented according to Law No. 04/L-096 and Regulation QRK No. 04/2021 [58]. However, economic and social challenges require a continuous increase and review of these benefits. Kosovo Budget Expenditures for Social and Pension Schemes.

Table 4. Kosovo budget expenditures for social and pension schemes

Category	Expenditure
Total Expenditures for Social and Pension Schemes	51,374,415.81
Basic Age Pensions	19,276,560.00
Contributory Age Pensions	12,078,156.64
Partial Contributory Age Pensions	1,838,804.40
Pensions for Persons with Disabilities	2,691,865.00
Pensions for Former Employees of the Trepça Mining Industry	169,041.60
Pensions for Kosovo Security Forces and Kosovo Protection Corps	N/A
Blind Persons Scheme	531,900.00
Work Disability Pensions	4,800.00
Support for Paraplegic and Tetraplegic Persons	1,186,691.00
Education Compensation for the 1990-1999 Period	1,267,065.00
Pensions for Families of Martyrs and War Invalids	3,178,820.17
Pensions for Veterans	6,202,561.00
Social Assistance Scheme	2,249,650.00
Pensions for Children with Disabilities	502,500.00

Source: Kosovo Agency of Statistic (2025) Statistical Yearbook of the Republic of Kosovo 2025 [57]

Table 4 presents Kosovo's budget expenditures for social and pension schemes, highlighting the distribution of funds across various categories. Basic age pensions account for the largest share (€19.27 million), followed by contributory pensions (€12.08 million) and veterans' pensions (€6.20

million). Social assistance and pensions for families of martyrs and war invalids also represent significant expenditures. Some categories, such as pensions for former Trepça employees and the blind persons' scheme, receive minimal funding. The lack of data on pensions for the Kosovo Security Forces and Kosovo Protection Corps suggests limited transparency in this sector. These figures reflect the challenges in ensuring a sustainable and equitable social protection system.

Expenditure on social and pension schemes, amounting to €51,374,415.81 and covering 328,781 beneficiaries, is an essential element of public policies in Kosovo, but needs to be reviewed. The first pillar, fully financed by the state, will not be able to cover all costs in the future. The second pillar is failing to provide sufficient pensions for its contributors, as payments last on average only two years. Furthermore, the current system creates inequalities, guaranteeing long-term pensions for some categories and leaving those who become unable to work unprotected.

3. STUDY METHODOLOGY

This chapter presents the methodology used to investigate the impact of the Basic Pension Scheme on the socio-economic and emotional well-being of pensioners in Kosovo. The methodology is designed to ensure reproducibility, reliability, and comprehensive analysis, addressing the economic, legal, and emotional challenges faced by retirees.

3.1 Research design

The study employs a mixed-methods approach, combining descriptive and exploratory research techniques [59]. Exploratory research is particularly necessary to obtain accurate insights from retirees, a population that has historically been difficult to reach [60].

Qualitative data were collected through structured interviews conducted in social centers, while quantitative data were gathered using standardized questionnaires. This approach enable81s triangulation of results, enhancing the validity and richness of findings.

3.2 Population, sampling, and data collection

The population of interest comprises beneficiaries of the Basic Pension Scheme in Kosovo. According to the Kosovo Agency of Statistics [57] and the Ministry of Labor and Social Welfare [56], the Basic Pension Scheme serves 154,349 retirees. Given the impracticality of surveying the entire population, a sample of 100 pensioners was selected.

A stratified random sampling strategy was employed to ensure representation across gender, age groups, and geographic regions. Inclusion criteria required participants to be active beneficiaries of the Basic Pension Scheme, aged 65 or older, and willing to provide informed consent. Individuals with severe cognitive impairments or those residing outside Kosovo were excluded.

Data were collected from September to December 2024, both in-person at social centers and via online platforms such as Facebook for additional outreach. The structured questionnaire captured demographic, financial, legal, health, social, and emotional variables, measured predominantly using a 5-point Likert scale.

3.3 Research instrument

The primary instrument was a structured questionnaire designed based on the Mercer & CFA Institute Global Pension Index [27] and adapted to the local context.

Key domains included: a) Financial Welfare: Sufficiency of pension to cover basic needs. b) Health Welfare: Satisfaction with healthcare services. c) Social Welfare: Frequency of engagement in social and family activities. d) Emotional Welfare: Overall life satisfaction as a pensioner.

Each domain contained 3-5 sub-questions. Responses were collected on a 5-point Likert scale, with higher scores indicating better outcomes.

3.4 Hypotheses of the study

In this context, two primary hypotheses guide the study:

The first Hypothesis (H2): Socio-demographic, financial, and legal factors (marital status, savings, pension adequacy, pension spending, additional income, hobbies, legal support, health status, and personal concerns) are positively and significantly associated with the well-being of pensioners.

The second Hypothesis (H2): “The variables of marital status, savings, adequate pension, pensioners' spending, other sources of income, pensioners' hobbies, legal support from the state, pensioners' health, and pensioners' concerns have a positive and statistically significant impact on the Welfare of pensioners in Kosovo.”

Research questions were formulated to explore retirees' perceptions regarding the adequacy of pensions, health services, social engagement, and emotional satisfaction.

3.5 Theoretical model and definition of variables

In this case, the model used is a cumulative logit model, which is a subcategory of generalized linear models (GLMs) and is used to model an ordinal dependent variable [61].

Model Information: i) Dependent Variable: Pensioners' Well-being; ii) Probability Distribution: Multinomial; iii) Link Function: Cumulative Logit.

Generalized Linear Models (GLM)- are an extension of linear models that can be applied to dependent variables that do not follow a normal distribution. This model includes three main components [61]:

a) Distribution function:

$$Y \sim f(\theta, \phi) \quad (10)$$

This notation shows that the dependent variable Y follows a certain distribution $f(\theta, \phi)$, where θ and ϕ are the parameters of the distribution. The dependent variable follows a distribution from the family of exponential distributions (Normal, Binomial).

b) Correlation function (Link Function) [62]:

$$g(EY) \quad (11)$$

This function transforms the expectation of the dependent variable into a linear combination of the independent variables [63].

$$g(EY) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \quad (12)$$

g is a connecting function, which can be:

The identity function (used in classical linear regression):

$$g(EY) = (EY) \quad (13)$$

The logit function (used in logistic regression):

$$g(EY) = \text{Log} \left(\frac{E(Y)}{1 - E(Y)} \right) \quad (14)$$

Logarithmic function (used in Poisson regression):

$$g(EY) = \text{Log} (EY) \quad (15)$$

c) Linear Structure of E Predictor:

The model is described by the basic equation:

$$\mu = X\beta\mu. \quad (16)$$

where,

- μ is the linear predictor,
- X is the matrix of independent variables, and
- β are the corresponding coefficients [64].

The GLM model can be expanded into three or more equations: i) Interaction model, ii) multiple hierarchy model, and iii) latent variable model.

Models with latent variables: In some cases, the dependent variable may be influenced by a hidden factor.

$$Z: g(E(Y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Z \quad (17)$$

And, Z itself may be a function of other variables:

$$Z = Y_0 + Y_0 W_1 + Y_0 W_2 \quad (18)$$

The model is described as: where is the link function that transforms the expected value of the dependent variable.

The welfare of retirees can be measured through a Welfare Index, which includes economic, social and emotional factors. A general formula to measure the welfare of retirees could be [27]:

$$W = \alpha P + \beta C + \gamma H + \delta S + \epsilon \quad (19)$$

where,

- W is Pensioners' welfare index (dependent variable)
- P, C, H, S is Financial, social, health, and emotional factors
- $\alpha, \beta, \gamma, \delta$ is Coefficients for each dimension
- ϵ is Error term

To assess these systems, Mercer and CFA Institute [27] uses three main sub-indices: adequacy, sustainability, and integrity, which are assessed based on more than 50 indicators.

These indicators cover different aspects of pension income systems and aim to measure the performance of each system in terms of providing adequate benefits, maintaining long-term sustainability, and maintaining trust and transparency.

To assess the pension system, Mercer and CFA Institute [27] uses three main sub-indices: Adequacy 40% (Benefits, System design, Savings, Government support, Home ownership, Growth assets), Sustainability 35% (Pension coverage, Total assets, Demography, Public expenditure, Government debt, Economic growth), and integrity 25%

(Regulation, Governance, Protection, Communication, Operating costs), which are assessed based on more than 50 indicators. These indicators cover different aspects of pension income systems and aim to measure the performance of each system in terms of providing adequate benefits, maintaining long-term sustainability and maintaining trust and transparency [27].

In the context of Kosovo, as the OECD points out, pension systems are diverse and often include multiple programs, making comparisons difficult. The pension system in Kosovo has evolved in specific economic, social and political conditions, therefore a model of a pension system from another country cannot be applied without being modified to suit local needs. However, some characteristics are included below regarding the indicators that create the independent variable “well-being of pensioners” in order to improve

benefits for pensioners (such indicators are also taken when the dependent variables are defined). At the moment, Kosovo is not included in the Mercer CFA Institute Global Pension Index for 2023 but in this research each variable is based on this index with some additional variable that is relevant to pensioners in Kosovo and is considered the first empirical research of this nature.

The following is the Interpretation of the Model (Multinomial Probability Distribution) and the inclusion of 80% of the study variables according to the Global Pension Index [27]:

- i) This shows that the dependent variable (Pensioners' well-being) has more than two ordered categories (e.g., different groups, etc.).
- ii) It is a binary variable; therefore, the model is a classic logistic regression.

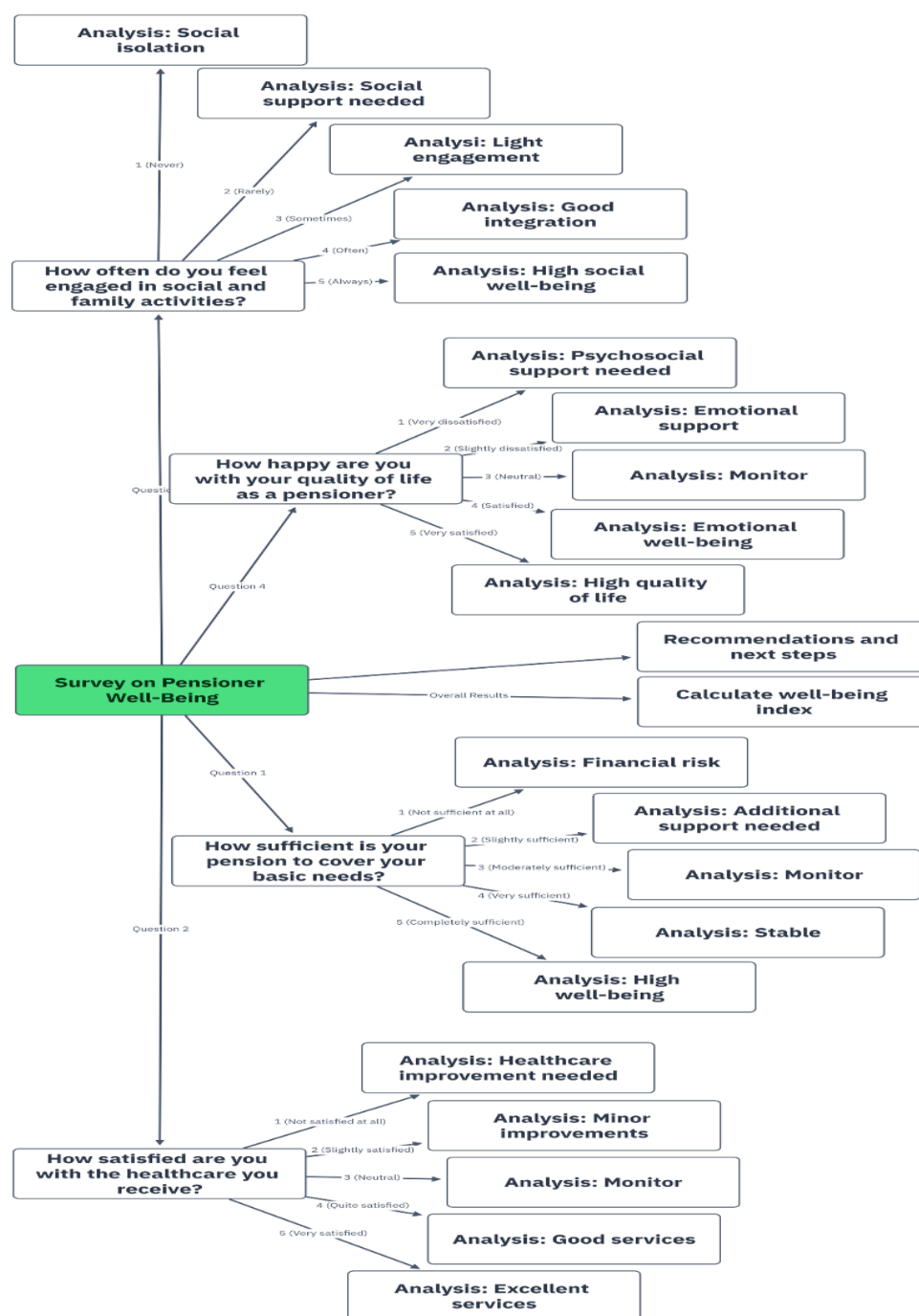


Figure 1. Questions with Likert scale for measuring basic pensioners' welfare
Source: Author

Measuring the Welfare of pensioners using the Likert scale can be done through a series of questions covering key dimensions of Welfare (financial, health, emotional, and social and legal). A common Likert scale is 5-point or 7-point, where pensioners rate their level of agreement or experience (Figure 1) [27].

A Pensioner Well-being Index (PWI) is created by combining all four factors (financial, health, social and emotional) into a single value. This is done through the statistical method Principal Component Analysis (PCA) [65], to reduce the four factors into a single component (a well-being index). This method, first, normalizes the data to the interval [0,1] to bring all factors to the same scale. *Second*, Principal Component Analysis (PCA) [65] reduces the data to a single component that represents the well-being of retirees. *Third*, Graph (Scree Plot and PCA Biplot) to display the results visually.

Data Analysis: Calculating the average responses to assess overall Welfare; Statistical analysis (GLM regression) to identify the most influential factors on Welfare; Categorizing pensioners based on their Welfare levels according to their responses. The welfare of surveyed pensioners is the dependent variable, while the independent variables include marital status, personal savings, the base pension scheme, the adequacy of the pension amount (specifically whether it should be €500), pension spending habits, additional income sources (such as support from sons, daughters, or investments), pensioners' hobbies, legal support from the state, retirees' health status, and their primary concern—the current €120 pension [66].

3.6 Empirical generalized linear models (GLMs)

The GLM regression method is used to analyze the impact of the basic pension scheme on the well-being of pensioners in Kosovo.

This model evaluates the effectiveness of the pension system and informs future policy decisions to support retirees. A well-structured pension system ensures social security for elderly individuals without prior contributions.

The General Equation for Pensioner Welfare is:

Pensioners' Welfare ($W\tau$) = $\beta_0 + \beta_1$ (Pensioners' Age) + β_2 (Pensioners' Gender Male) + β_3 (Pensioners' Gender Female) + β_4 (Marital Status) + β_5 (Adequate Pension) + β_6 (Pension Spending) + β_7 (Other Income) + β_8 (Pensioners' Hobby) + β_9 (Pensioners' Savings) + β_{10} (Pensioners' Concern) + β_{11} (State Legal Support) + β_{12} (Pensioners' Health) + ε

where, $W\tau$ = Pensioners' Welfare (Dependent Variable); β_0 = Constant; β_1 - β_{12} = Coefficients measuring the impact of independent variables on welfare; ε = Error term.

Positive coefficients indicate an improvement in welfare with an increase in the predictor.

After explaining the empirical GLM model and defining the included variables, the following section presents a summary of the research methodology through an illustrative flowchart, which clearly reflects the main steps of the study from setting the objectives to interpreting the results.

The methodology flowchart (Figure 2) provides a structured and coherent overview of the entire research process by logically linking the objectives, research questions, hypotheses, variables, and methods of analysis. The process was finalized through the empirical data processing in SPSS 24, ensuring both accuracy and reliability of the obtained results.

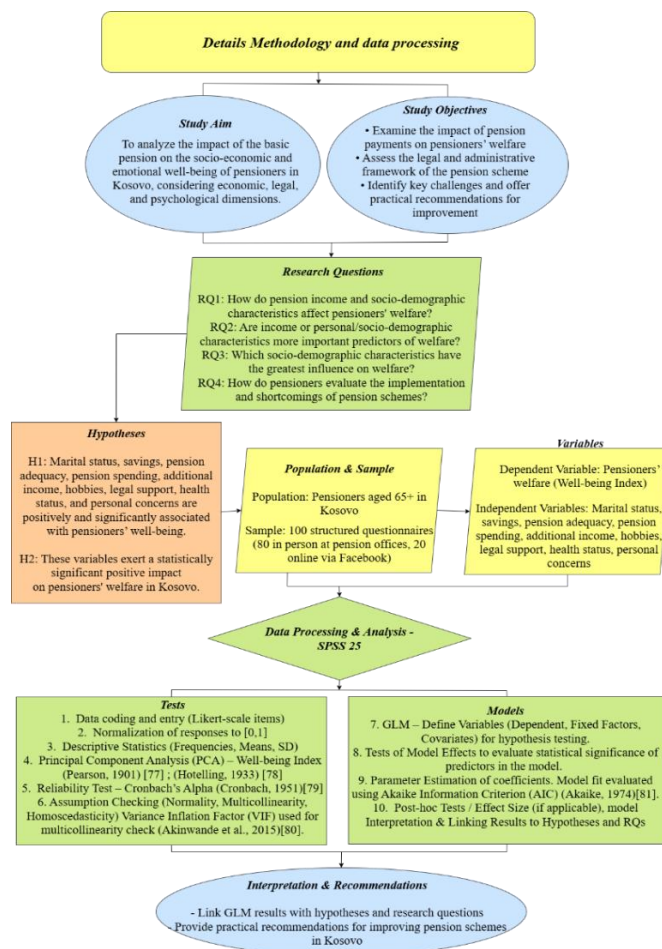


Figure 2. Summary of methodology and data processing steps

4. THE STUDY RESULTS

This study analyzes the well-being and income of basic scheme pensioners in Kosovo, through a descriptive analysis of data collected from the field. 100 pensioners belonging to the Basic scheme were surveyed. The questionnaire addressed issues related to the financial, legal, socio-emotional and health situation and addresses the challenges faced by Basic scheme pensioners in Kosovo.

4.1 Descriptive analysis

Analysis of study variables through mean and standard deviation provides a more complete analysis of the Welfare of Basic category pensioners in Kosovo.

The survey results show significant variability among pensioners (Table 5). The mean age is 1.62 with a high standard deviation (1.524), indicating diverse age ranges and financial needs. Marital status is relatively stable (mean 1.98, SD 0.714), while savings are low (mean 1.22, SD 0.54548). Pension schemes are uniform (0 on scale 0-0). Most pensioners believe their pension is adequate (mean 1.72, SD 0.45356), but spending patterns vary (SD 1.01840). Other income sources are limited (mean 0.52, SD 0.73512). Hobbies (mean 1.53, SD 1.43970) and state support (mean 1.1042, SD 0.80529) show significant diversity. Health issues are also varied (mean 1.60, SD 1.04978), with the greatest concern being financial survival (mean 2.32, SD 1.40611).

The summary reveals significant variability in pensioners' living conditions, with some facing financial hardships while others have more stability. This highlights the need for targeted social and economic policies to address the diverse needs of pensioners.

4.2 The demographic statistic

In the basic category, pension income has a significant impact on the well-being of retirees, but many retirees also emphasize the importance of family support and socio-demographic factors. The state of pension schemes has been criticized for unfairness and financial inadequacy, while retirees who have never worked face great financial difficulties.

The research includes 100 retirees, all over the age of 65.

Most of them are in the 65-70 age group, while the lowest percentage belongs to the ages of 74 and 77. $R^2 = 0.681$ and R^2 quadratic = 0.835 show a strong model for analyzing the well-being of retirees, explaining a large part of the variation in this well-being and suggesting opportunities for improvements in policies that support retirees (Figure 3).

The marital status of the surveyed pensioners (Figure 4), shows that the majority, 81% of them, are married. Meanwhile, 10 are widowed, 8 are divorced and only 1 is single. Most of the pensioners are aged 65, 66 and 67 years.

Pensioner savings (Figure 5): The majority of surveyed pensioners (70%) have no savings at all (ages 66, 70, 75 and 80), while 20% have saved a little (ages 66, 67, 69, 72 and 74), and only 10% of pensioners have sufficient savings (ages 65 and 72).

Table 5. Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Welfare's of the surveyed pensioners	100	0	5	1.62	1.524
Marital status	100	.00	3.00	1.9800	.71400
Savings they have	100	.00	2.00	1.2200	.54548
Pension scheme base	100	.00	.00	.0000	.00000
The right pension, how much it should be	100	1.00	2.00	1.7200	.45356
How to spend the pension	100	.00	3.00	.9400	1.01840
Other resources they have	100	.00	2.00	.5200	.73512
Hobbies that pensioners have	100	.00	5.00	1.5333	1.43970
Proper support from the state	100	.00	2.00	1.1042	.80529
Health of the surveyed pensioners	100	.00	4.00	1.6000	1.04978
The biggest concern of pensioners	100	1.00	5.00	2.3200	1.40611
Valid N (listwise)	100				

Source: Author

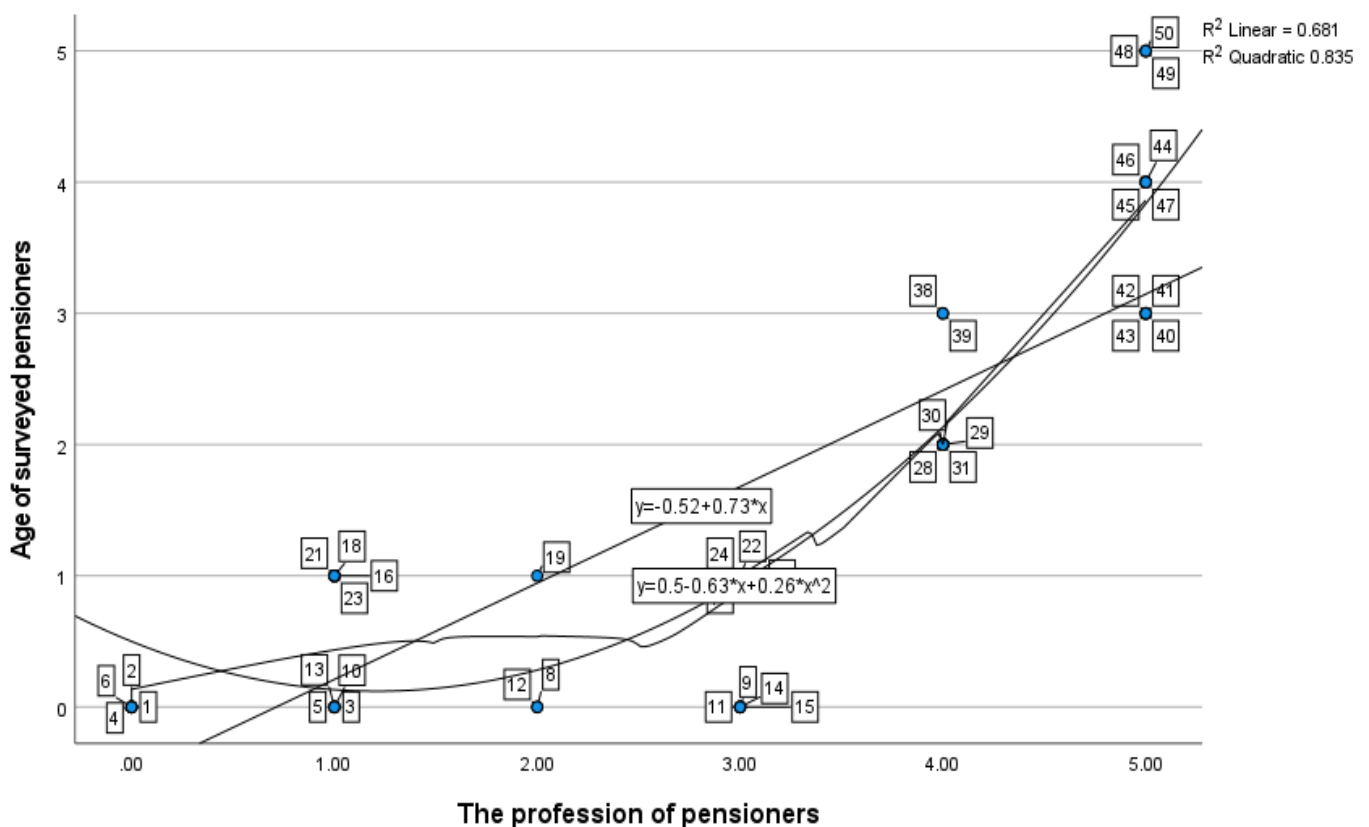


Figure 3. Age of the pensioners and profession of pensioners

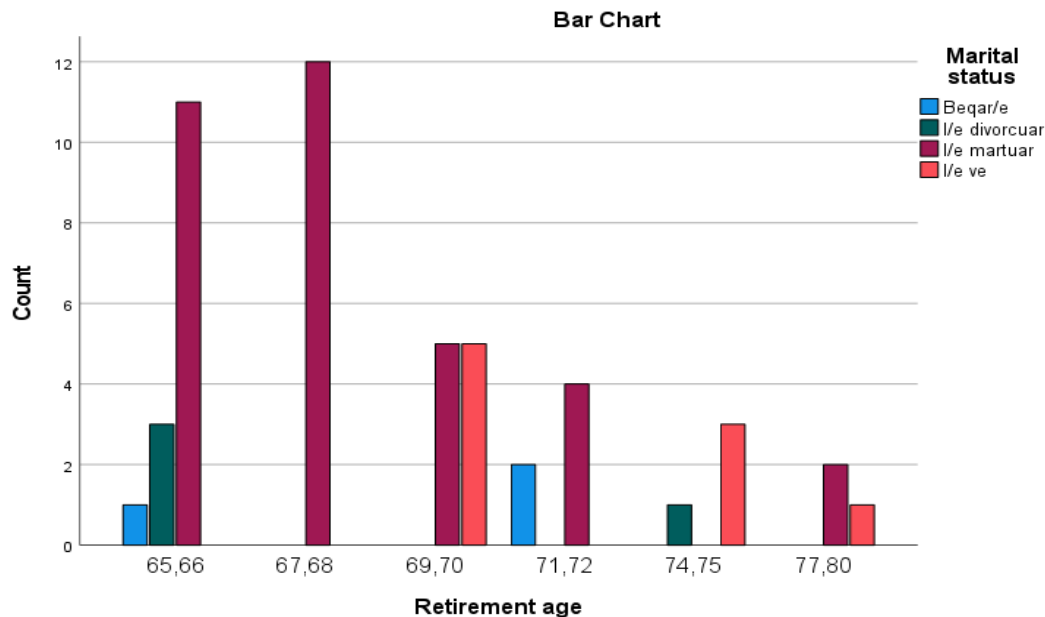


Figure 4. Marital status and retirement age

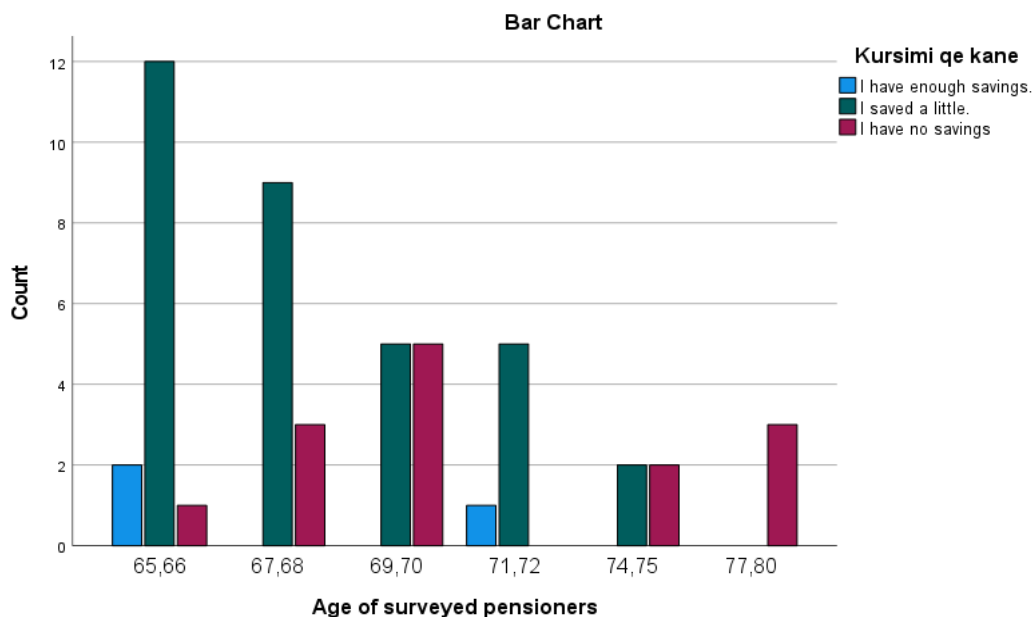


Figure 5. Pensioners' savings and their age

4.3 The statistical tests

To analyze pensioners' well-being, several statistical tests are employed: a) Principal Component Analysis (PCA) [67]: Identifies key factors influencing welfare or Well-being. b) Cronbach's Alpha [68]: Assesses the internal consistency of variables to ensure reliability. c) Variance Inflation Factor (VIF) [69]: Evaluates multicollinearity among independent variables to prevent complications in analyses. d) *Auto-Clustering* (AIC, AIC Change): Determines the optimal number of groups to identify distinct pensioner profiles.

These tests help understand the factors affecting pensioners' well-being and ensure the reliability of analytical results.

a) *The Factor Analysis Tests*, to find the dependent variable -Pensioners' Well-being (W) which is represented by 4 variables (Pensioners' Well-being = Financial Well-being,

Health Well-being, Social and Legal Well-being and Emotional Well-being or Welfare's).

Table 6 shows that all the extraction values are above 0.7, indicating that PCA provides a good explanation for these variables. However, "Health Welfare" has the highest explanatory percentage (85.5%), meaning that this factor has a strong influence on the analysis model. "Emotional Welfare" has the lowest value (77.6%), but it is still within the acceptable range.

The creation of a *Common Index* (Aggregation of all Four Components) is calculated as Total: $0.816 + 0.855 + 0.835 + 0.776 = 3.282$. By aggregating all the components, you can create a Pensioners' Welfare Index (PWBI). This index represents an overall measure of welfare based on all dimensions (financial, health, social, and emotional).

Taking "Health Welfare" as the main component has the highest communality value (0.855), meaning it is most strongly linked to the total variance in the data. However, pensioners' health is not the main factor influencing overall welfare, so you cannot use this variable alone as the primary representative.

Option 1 (the Common Index of 3.282) is the best. The value 3.282, which we obtained from the sum of the communalities (0.816 + 0.855 + 0.835 + 0.776), shows the percentage of the total variance explained by the four welfare components.

The value 3.282 is the sum of the communalities and shows that these four factors together explain a significant portion of the total variance in your dataset. There are 4 factors with initial values of 1.000 each (because in PCA, each variable initially has a variance of 1.000), so a value of 3.282 out of 4.000 means that around 82% ($3.282 / 4.000 \times 100$) of the total variance is explained by these factors.

The PCA analysis showed that the four main components (Financial Welfare, Health Welfare, Social and Legal Welfare,

and Emotional Welfare) together explain 82% of the total variance in pensioners' welfare. This suggests that these factors are significant determinants in measuring the welfare of this age group.

Table 6. Communalities

	Initial	Extraction
1. Financial Welfare (81.6% of the variance is explained by the principal components).	1.000	.816
2. Health Welfare (85.5% of the variance is explained by the principal components).	1.000	.855
3. Social and legal Welfare (83.5% of the variance is explained by the principal components).	1.000	.835
4. Emotional Welfare (77.6% of the variance is explained by the principal components).	1.000	.776
Total: .816 + .855 + .835 + .776 = 3.282	4.000	3.282
Extraction Method: Principal Component Analysis.		

Table 7. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.204	55.098	55.098	2.204	55.098	55.098	1.697	42.423	42.423
2	1.078	26.955	82.053	1.078	26.955	82.053	1.585	39.631	82.053
3	.449	11.228	93.281						
4	.269	6.719	100.000						
Extraction Method: Principal Component Analysis.									

Table 7 illustrates how the variance is distributed across the principal components in the *Principal Component Analysis (PCA)* of pensioners' well-being data. The first component accounts for 55.1% of the total variance, making it the most significant. The second component explains 26.96%, bringing the cumulative percentage to 82.05%. The third component accounts for 11.23%, increasing the cumulative percentage to 93.28%, while the fourth component explains only 6.72%, reaching a total of 100%. Ultimately, the first two components are the most important, as they explain over 82% of the variance and can be used to simplify the analysis by retaining the most critical information. This indicates that dimensionality reduction can be effectively achieved by using only the first and second components.

The Scree Plot (Figure 6), assists in determining the number of components to retain for our analysis. The *Eigenvalue Plot* is utilized to visualize the distribution of variance among components. Components with eigenvalues greater than 1 are considered significant and should be retained to explain the variance. Eigenvalues or components less than 1 are typically not retained, as they do not explain sufficient variance and are deemed insignificant. In our case, the first two components are the most important, but they correspond to the first component above the "elbow" point in the Scree Plot.

Table 8. Component matrix^a

Variables	Component	
	1	2
Financial Welfare	.785	-.447
Health Welfare	.758	-.529
Social and legal Welfare	.655	.637
Emotional Welfare	.764	.438
Extraction Method: Principal Component Analysis; a. 2 components extracted.		

Table 9. Rotated component matrix^a

Variables	Component	
	1	2
Financial Welfare	.882	.196
Health Welfare	.918	.116
Social Welfare	.058	.912
Emotional Welfare	.272	.838
Extraction Method: Principal component analysis. Rotation Method: Varimax with kaiser normalization. a. Rotation converged in 3 iterations		

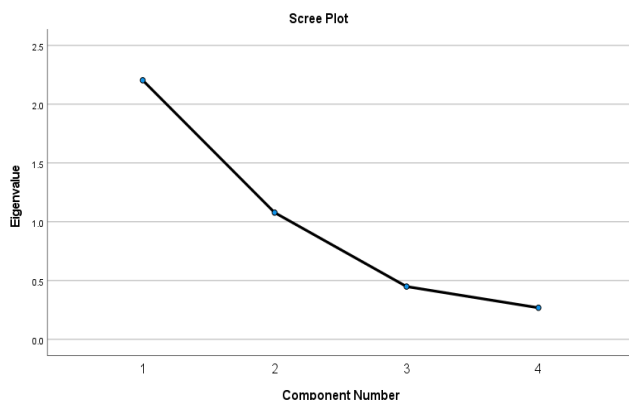


Figure 6. Screen Plot, eigenvalue and component number

Table 10. Component transformation matrix

Component	1	2
1	.741	.671
2	-.671	.741

Extraction Method: Principal component analysis.
Rotation Method: Varimax with kaiser normalization.

Table 8 shows the loadings of each factor in the two main components extracted from the Principal Component Analysis (PCA). Here is the analysis of each relevant factor for each component. Component 1 is the most important and explains 55.098% of the total variance, indicating that it is the primary component helping to explain many of the changes in the pensioners' well-being data. Component 2 explains 26.95% of the variance and is also an important component, although less significant than component 1. It has a negative relationship with financial and health well-being but a positive relationship with social and emotional well-being. This suggests a divided model where social and emotional factors have an opposite impact from financial and health factors. Both components encompass important aspects of pensioners' well-being, helping to explain the diversity of well-being experiences across different groups.

Table 9, component 1 (Financial Welfare (loading: .882) and Health Welfare (loading: .918), focuses on financial and health welfare, having high loadings for these two aspects. Component 2 (Social Welfare (loading: .912) and Emotional Welfare (loading: .838) is related to social, legal and emotional well-being, having high loadings for these two factors.

The rotation has helped to clearly separate these two groups of factors. This helps in understanding the impact of these factors on the overall well-being of retirees. Both components encompass important aspects of pensioners' well-being, helping to explain the diversity of well-being experiences across different groups. Taking "Health Welfare" as the main component has the highest communality value (0.855), meaning it is most strongly linked to the total variance in the data. However, pensioners' health is not the main factor influencing overall welfare, so you cannot use this variable alone as the primary representative.

Table 10 shows the following relationships: *Component 1*: 0.741 with the first rotated component, -0.671 with the second rotated component. *Component 2*: -0.671 with the first rotated component, 0.741 with the second rotated component. This indicates a clear rotation, with each component contributing to

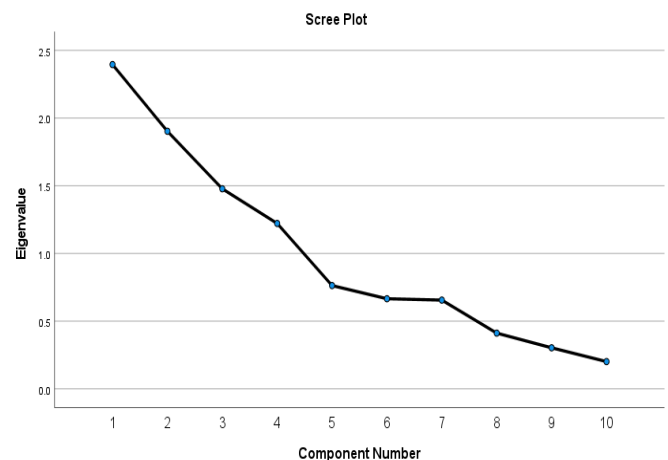
one of the new rotated factors.

Factor Analysis test for all variables

After finding the pensioners' well-being index (dependent variable), the index value was entered into SPSS along with the independent variables to eliminate variables that are insignificant in determining the well-being of basic category pensioners in Kosovo. To classify the 10 independent variables of the study (each independent variable has 4 answers, a total of 40 variables), the Factor Analysis test is used (Table 11).

In constructing analytical models on retirees (Table 11), variables with high communalities (> 0.7) should be considered key factors as they best explain the data structure, while variables with moderate communalities (0.5-0.7) may be important, but their impact remains more limited, and some of them could be eliminated to improve the model. Meanwhile, the variable "Adequate Pension," with the lowest communality (0.555), may not be a crucial component and should be reviewed for inclusion, confirming that well-being, state support, and health are the most important factors, while hobbies and the desired pension level have a more limited impact on the overall structure of the model.

In this case (Figure 7), 10 nodes for 10 independent variables, indicates a good separation of information between components, and the elimination of sub-questions helps simplify the analysis, focusing more on the variables that have a significant impact on the overall data structure.

**Figure 7.** Eigenvalue and component number**Table 11.** Communalities

	Initial	Extraction
Well-being of retirees (financial, health, social, legal, and emotional)	1.000	.805
Marital status (married, divorced, widowed, single)	1.000	.754
Adequate pension amount (120, 260, 350, 500)	1.000	.555
Other sources they have (son, daughter, investments, social security)	1.000	.684
Hobbies of retirees (traveling, driving, walking, caring for grandchildren)	1.000	.627
Adequate state support (legal support, free medicine, tax exemptions, bi-annual check-ins, restriction on receiving two pension schemes)	1.000	.883
Health of retirees (high blood pressure, limb diseases, diabetes, forgetfulness, etc.)	1.000	.788
Biggest concerns of retirees (low pension, low medical support, lack of excursions, lack of support in case of loneliness, etc.)	1.000	.594
Savings they have (many savings, average, few or no savings)	1.000	.715
Implementation of pension schemes (reform in pension levels, legal support reforms for issues from health commission, digitalization for pension verification, etc.)	1.000	.593

Extraction Method: Principal Component Analysis.

Table 12. Component matrix^a

	Component			
	1	2	3	4
Age of the surveyed pensioners	.455	.648	-.367	.208
Marital status	.753	.017	.411	-.135
The adequate pension amount	-.107	.506	.493	.210
Other sources of income they have	.504	.314	-.352	.456
Hobbies of the pensioners	.151	.475	.579	-.206
Adequate support from the state	-.364	.024	.255	.827
Health of the surveyed pensioners	.287	-.607	.557	.163
Biggest concerns of the pensioners	-.448	.497	-.031	-.380
Their savings	.806	.217	.089	-.099
Implementation of pension schemes	.517	-.488	-.295	-.013

Extraction Method: Principal Component Analysis; a. 4 components extracted

Table 12 identifies four main components that impact the lives of pensioners. The first component focuses on economic and social factors such as marital status and savings, the second is related to demographic and health aspects, the third focuses on pension and health, and the fourth emphasizes the importance of state support. These components help in identifying key factors that influence the well-being of pensioners.

- Cronbach's Alpha Test

Cronbach's Alpha Test [68] (Table 13) provides an assessment of the reliability of the instrument for measuring various dimensions. Here is the analysis of the results:

The Cronbach's Alpha value for the different dimensions is generally positive and ranges from 0.654 to 0.795. This suggests that the instrument is reliable, as Cronbach's Alpha values above 0.7 are considered good for analytical purposes.

- The explained variance (Eigenvalue) for each dimension indicates how much information is explained by its components. For example, for dimensions 1-5, the Eigenvalue is 3.285, which explains 41.1% of the total variance.

- Inertia represents the percentage of variance explained by each dimension, and here it is at appropriate levels to confirm that each component has contributed significantly to the analyzed model.

- The average Cronbach's Alpha value is 0.781, which is a strong indicator of the instrument's reliability.

This result shows that the instrument is reliable for further analysis.

Table 13. Model summary (Cronbach's alpha test)

Dimension	Cronbach's Alpha	Variance Accounted for	
		Total (Eigenvalue)	Inertia
1-5	.654, .678, 789, 792, .795	3.285	.411
5-10	.654, .678, 789, 792, .766	3.029	.379
Total		6.315	.789
Mean	.781 ^a	3.157	.395

a. Mean Cronbach's alpha is based on the mean eigenvalue.

- Test TwoStep Cluster

Analysis Table 14, TwoStep Cluster Auto-Clustering shows that the optimal number of clusters is three (3), as up to this point, Akaike's Information Criterion (AIC) [70] drops significantly from 1032.497 to 772.076, with a substantial reduction of -181.689 when transitioning from one to two clusters, and then with a smaller decrease of -78.732 from two to three clusters. However, when a fourth cluster is added, the

AIC increases to 782.949 (+10.873), suggesting overfitting. Furthermore, the AIC change ratio drops from 1.000 to 0.433, indicating that the benefit of adding clusters after the third is minimal. Therefore, based on these indicators, the best choice for this model is three clusters, as it ensures effective partitioning and avoids overfitting the model.

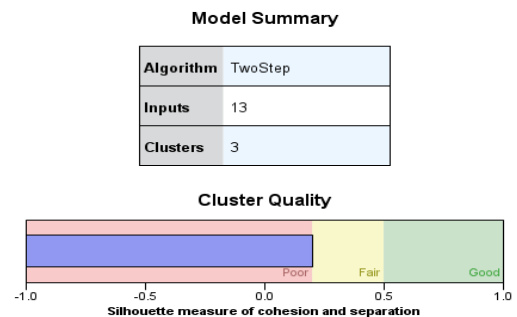
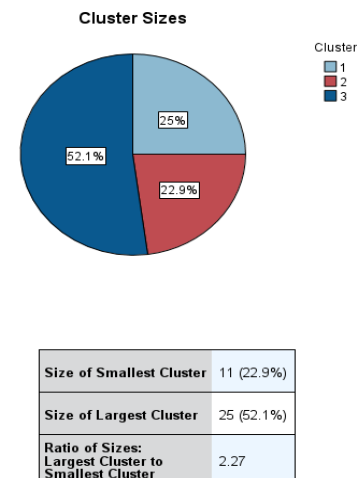
Table 14. Auto-Clustering (AIC, AIC change)

Number of Clusters	Akaike's Information Criterion (AIC)	AIC Change ^a	Ratio of AIC Changes ^b	Ratio of Distance Measures ^c
1	1032.497			
2	850.808	-181.689	1.000	1.683
3	772.076	-78.732	.433	2.466
4	782.949	10.873	-.060	1.181
5	803.185	20.235	-.111	1.207
6	832.283	29.098	-.160	1.063
7	863.927	31.644	-.174	1.154
8	900.947	37.020	-.204	1.049
9	939.592	38.645	-.213	1.133
10	982.165	42.572	-.234	1.214
11	1029.927	47.762	-.263	1.247
12	1082.486	52.559	-.289	1.020
13	1135.421	52.935	-.291	1.234
14	1191.969	56.548	-.311	1.300
15	1252.084	60.115	-.331	1.057

a. The changes are from the previous number of clusters in the table.

b. The ratios of changes are relative to the change for the two cluster solution.

c. The ratios of distance measures are based on the current number of clusters against the previous number of clusters.

**Figure 8.** Model summary viewer, cluster quality**Figure 9.** Cluster size

Object Points Labeled by Casenumbers Wt = The well-being of the surveyed pensioners (Dependent variable)

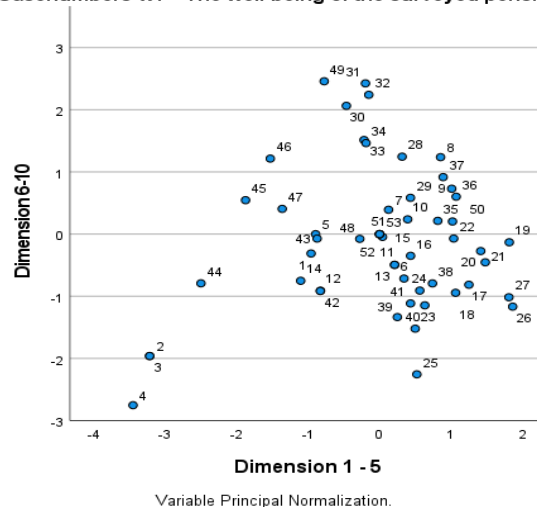


Figure 10. Wt-Welfare of basic pension

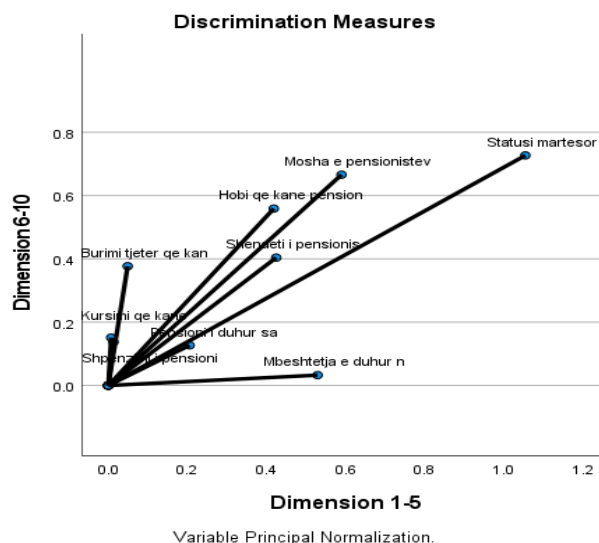


Figure 11. Discrimination measure

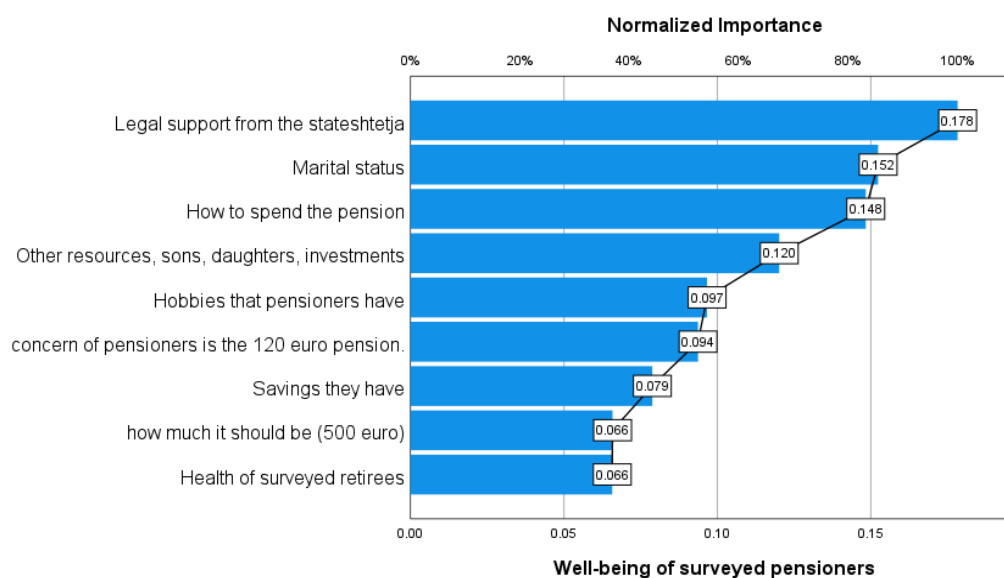


Figure 12. The importance of the determinants of pensioner welfare

Figures 8 and 9 indicate whether the data has structural issues, but it is not the final test for the reliability of the data for GLM. For a stronger evaluation, specific statistical tests are used. The TwoStep Cluster test recommends conducting additional reliability tests before using GLM.

Figure 10 shows a moderate relationship between the independent variables (Dimensions 6 to 10) and the dependent variable (Well-being of pensioners), where the points are labeled with case numbers and form a moderately downward-curved line. This suggests that changes in the independent variables may impact the well-being of pensioners, but this impact is not direct or very strong.

Discrimination measure (Figure 11) shows the measures of discrimination for different dimensions, where the average of different variables ranges from 0.007 to 1.055. Pensioners are different in terms of factors such as age, marital status, hobbies, health, other sources of income, savings, pension spending, and state support and concerns of pensioners. The active total is higher for category 1-5.

Figure 12 shows that the variables legal support, marital status, how the pension is spent, other resources from the son, daughter or investments contribute significantly to the well-being of pensioners, but the variables pension rate, savings, the desire to have a pension of 500 euros or the health of pensioners are not overlooked in terms of importance.

challenges in Kosovo. *Pension income's impact is mixed*, with 53% finding it beneficial, but 44% seeing no effect. *Income vs. socio-demographics* is debated, as 41% disagree that income is more important. *Family support, marital status, and children* are key factors for welfare (49%). *Pension schemes are widely seen as flawed*, with 58% deeming categorization unfair. *Legal challenges* include low payments (35%) and lack of pension indexation (20%). *Non-working pensioners struggle*, with 62% facing severe financial difficulties. The findings highlight systemic issues in pension adequacy and implementation.

4.4 The testing of study hypotheses

In Hypothesis H1, the relationship between each variable and the Welfare of pensioners is examined based on the Pearson correlation result. Below, the potential economic and psychological effects of each variable are commented on:

Testing first Hypothesis (H1): "The variables of marital status, savings, adequate pension, pensioners' spending, other sources of income, pensioners' hobbies, legal support from the state, pensioners' health, and pensioners' concerns are positively and statistically significantly related to the Welfare of pensioners in Kosovo."

• Correlation Analysis and Interpretation of Variables

This section presents the results of the Pearson correlation analysis between the well-being of pensioners and a series of socio-demographic, financial and legal factors, according to hypothesis H1. This hypothesis predicts that these factors are positively and statistically significantly associated with well-being.

Table 15 shows the correlations and the level of statistical significance (p-value) for each factor:

In the Pearson correlation analysis examining the impact of socio-demographic, financial, and legal factors on pensioners' well-being, varying degrees of association were identified across variables. Personal savings showed a positive and statistically significant correlation with well-being ($r = 0.373$, $p = 0.008$), indicating that pensioners with greater savings report higher levels of welfare. Similarly, additional income from sources such as children or investments had an even stronger positive relationship ($r = 0.471$, $p = 0.001$).

Marital status demonstrated a positive but not statistically significant correlation at the 0.05 level ($r = 0.237$, $p = 0.098$). A sufficient pension of €500 ($r = 0.168$, $p = 0.244$) and hobbies ($r = 0.093$, $p = 0.546$) did not show statistically significant effects on welfare. Legal support from the state showed a very weak and negative correlation ($r = -0.023$, $p = 0.877$), suggesting no meaningful association.

On the other hand, health status exhibited a negative and statistically significant correlation with well-being ($r = -0.352$, $p = 0.012$), indicating that worsening health is associated with lower welfare levels among pensioners. The variable personal concerns, as well as the €120 pension amount, did not show significant associations (both $r = -0.085$, $p = 0.557$).

In summary, these results partially support Hypothesis 1 (H1) by demonstrating that financial and health-related factors are significantly associated with pensioners' well-being, while legal factors and some personal characteristics do not have a statistically significant impact.

This indicates that hypothesis H1 is partially supported: some socio-demographic, financial, and health factors affect the well-being of retirees, but the influence of legal factors and some personal characteristics is not significant in this case.

Answer research questions through descriptive analyses from the questionnaire

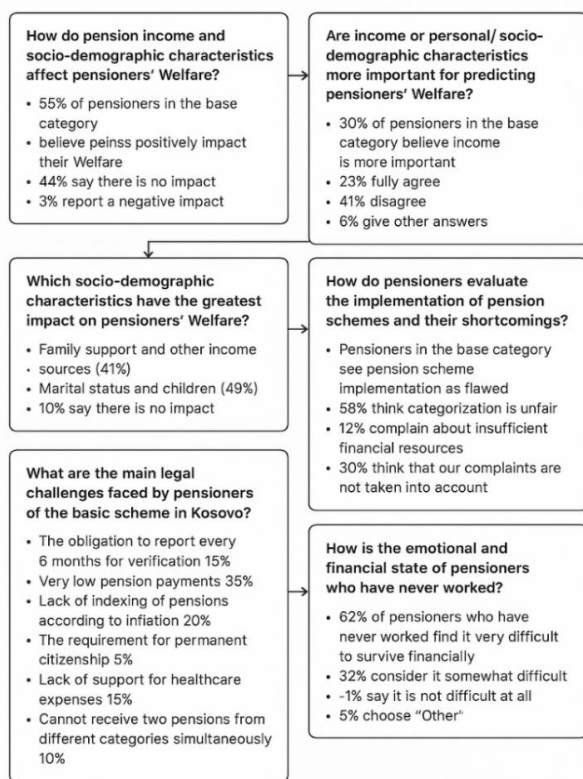


Figure 13. Answer research questions through descriptive analyses from the questionnaire

Answering Research Questions-Providing answers to research questions through descriptive statistics for Basic Category Pensioners (Figure 13).

Figure 13 provides insights into pensioners' welfare and

Table 15. Correlation Pearson

Variables	Welfare of the Surveyed Pensioners	Marital Status	Savings They Have	Proper Pension of 500 Euros	Other Source from Daughter, Son, Investments	Hobbies That Pensioners Have	Legal Support from the State	Health of Pensioners	Concerns of Pensioners Pension of 120 Euros
Welfare of the surveyed pensioners	1	0.237	0.373**	0.168	0.471**	0.093	-0.023	-0.352*	-0.085
Sig. (2-tailed)	-	0.098	0.008	0.244	0.001	0.546	0.877	0.012	0.557
N	100	100	100	100	100	100	100	100	100
Marital status	0.237	1	0.588**	-0.018	0.137	0.278	-0.185	0.370**	-0.176
Sig. (2-tailed)	0.098	-	0.000	0.903	0.343	0.065	0.208	0.008	0.220
N	100	100	100	100	100	100	100	100	100
Savings they have	0.373**	0.588**	1	0.007	0.371**	0.153	-0.314*	0.157	-0.120
Sig. (2-tailed)	0.008	0.000	-	0.964	0.008	0.315	0.030	0.277	0.405
N	100	100	100	100	100	100	100	100	100
Proper pension of 500 euros	0.168	-0.018	0.007	1	-0.044	0.332*	0.315*	-0.069	0.175
Sig. (2-tailed)	0.244	0.903	0.964	-	0.761	0.026	0.029	0.636	0.223
N	100	100	100	100	100	100	100	100	100
Other source from daughter, son, investments	0.471**	0.137	0.371**	-0.044	1	0.067	0.046	-0.016	-0.046
Sig. (2-tailed)	0.001	0.343	0.008	0.761	-	0.663	0.756	0.913	0.752
N	100	100	100	100	100	100	100	100	100
Hobbies that pensioners have	0.093	0.278	0.153	0.332*	0.067	1	-0.069	-0.013	0.113
Sig. (2-tailed)	0.546	0.065	0.315	0.026	0.663	-	0.654	0.930	0.459
N	100	100	100	100	100	100	100	100	100
Legal support from the state	-0.023	-0.185	-0.314*	0.315*	0.046	-0.069	1	0.099	-0.033
Sig. (2-tailed)	0.877	0.208	0.030	0.029	0.756	0.654	-	0.505	0.824
N	98	98	98	100	100	96	98	100	100
Health of pensioners	-0.352*	0.370**	0.157	-0.069	-0.016	-0.013	0.099	1	-0.285*
Sig. (2-tailed)	0.012	0.008	0.277	0.636	0.913	0.930	0.505	-	0.045
N	100	100	100	100	100	100	98	100	100
Concerns of pensioners pension of 120 euros	-0.085	-0.176	-0.120	0.175	-0.046	0.113	-0.033	-0.285*	1
Sig. (2-tailed)	0.557	0.220	0.405	0.223	0.752	0.459	0.824	0.045	-
N	100	100	100	100	100	100	100	100	100

** . Correlation is significant at the 0.01 level (2-tailed); * . Correlation is significant at the 0.05 level (2-tailed).

These findings directly address Research Questions RQ1, RQ2, and RQ3, highlighting the stronger influence of financial security and health status in determining pensioners' welfare.

RQ1: How do pension income and socio-demographic characteristics affect pensioners' Welfare?

Financial factors such as personal savings ($r = 0.373$, $p = 0.008$) and additional income from family or investments ($r = 0.471$, $p = 0.001$) have a positive and statistically significant impact on pensioners' welfare. Health status shows a significant negative relationship ($r = -0.352$, $p = 0.012$), indicating that poorer health is associated with lower welfare. Other socio-demographic factors, such as marital status ($r = 0.237$, $p = 0.098$), hobbies ($r = 0.093$, $p = 0.546$), and legal support ($r = -0.023$, $p = 0.877$), show weak or non-significant associations.

RQ2: Are income or personal/socio-demographic characteristics more important for predicting pensioners' Welfare?

Financial factors are stronger predictors of welfare than most socio-demographic characteristics.

Additional income ($r = 0.471$) and savings ($r = 0.373$) show higher correlations with welfare than marital status ($r = 0.237$) or hobbies ($r = 0.093$). However, health status remains an important exception among socio-demographic factors, with a significant negative impact ($r = -0.352$, $p = 0.012$).

RQ3: Which socio-demographic characteristics have the greatest impact on pensioners' Welfare?

Among the socio-demographic variables analyzed, health status has the strongest and statistically significant effect on pensioners' welfare ($r = -0.352$, $p = 0.012$). Other variables, such as marital status and hobbies, show no significant influence.

RQ4: How do pensioners evaluate the implementation of pension schemes and their shortcomings?

Responses to research question 4, which concerns pensioners' assessment of the implementation and

shortcomings of pension schemes in Kosovo, were obtained through descriptive analyses from the questionnaire (Figure 13). The results show that the majority of pensioners (58%) perceive that the categorization in the pension scheme is unfair, reflecting concerns about the way benefits are distributed and assessed. A further 12% complain about the lack of sufficient financial resources for pensions, while 30% state that their complaints are not taken into account by the responsible institutions.

These data provide a critical insight into pensioners' perceptions and directly address research question 4, underlining the need for improvements in the transparency and fairness of the implementation of pension schemes.

In the future, it is recommended to develop further studies with mixed methodologies that include qualitative data to better understand aspects that were not fully addressed in this study, especially for question RQ4.

• *Testing the Second Hypothesis (H2) Generalized Linear Models (GLM)*

The second Hypothesis (H2): "The variables of marital status, savings, adequate pension, pensioners' spending, other sources of income, pensioners' hobbies, legal support from the state, pensioners' health, and pensioners' concerns have a positive and statistically significant impact on the Well-being (Welfare) of pensioners in Kosovo".

This *Multinomial Logistic Regression* model analyzes the Welfare of pensioners based on several factors, using the *Cumulative Logit* as a link function, which predicts the probabilities of pensioners falling into different Welfare categories (e.g., "low", "medium", "high"). This model is useful for understanding how factors such as pension, health, state support, etc., influence the division of pensioners into these groups.

The *Omnibus Test* shows a *Chi-Square* value of 288.762 with 26 degrees of freedom and a significance value of 0.000. Since the p-value is less than 0.05, it indicates that the fitted model, which includes various predictors like marital status, savings, pension schemes, and others, significantly improves the prediction of pensioners' Welfare compared to the thresholds-only model. This confirms the importance of the variables in explaining pensioners' Welfare.

• Interpretation of Study Results Test of Model Effect

The high Chi-Square value (288.76) and $p < 0.001$ (in Table 16) indicate that the model is statistically significant. This means that including variables such as pension, health, and other income helps predict the well-being of retirees in a statistically significant way.

This result directly supports research question RQ1, which examines how income and socio-demographic characteristics affect well-being.

The relationship between the various factors that affect the Welfare of retirees can be examined using the results of the GLM model tests (Table 17). Next, the significance of each variable was tested by entering them one by one into the model. The p-values indicate whether the variable in question has a significant and significant effect in the model, or vice versa, if it does not.

Wald Chi-Square (Type I): This assesses the significance of each variable according to the order of entry into the model, assuming that the previous variables are already included.

Wald Chi-Square (Type III): This tests the impact of each variable while holding constant the effects of all other variables, providing a more reliable and independent estimation from the order of the variables.

Marital Status: Significance: Statistically significant in both models ($p = 0.000$). Married pensioners tend to report higher levels of welfare, likely due to emotional and financial support from their spouses, contributing positively to their quality of life.

Savings: Significance: Not statistically significant (Type I: $p = 0.215$; Type III: $p = 0.830$). Savings do not have a noticeable impact on pensioners' welfare, implying that even with savings, pensioners may still face financial insecurity. Other factors like pension amounts and state support are more influential.

Adequate Pension: Significance: Highly significant in Type III ($p = 0.000$), not significant in Type I. Adequate pension levels are crucial for pensioners' welfare, as insufficient pensions contribute to insecurity and dissatisfaction. Many pensioners feel their pensions are inadequate to meet their needs.

Table 16. Omnibus test^a

Likelihood Ratio Chi-Square	df	Sig.
288.762	26	.000
Dependent Variable: The Welfare of the surveyed pensioners		
Model: (Threshold), Marital status, Savings they have, Pension scheme Base, the right pension, how much it should be (500 euro), How to spend the pension, other resources, sons, daughters, investments, Hobbies that pensioners have, Legal support from the state, Health of surveyed retirees, The biggest concern of pensioners is the 120 euro pension.		
a. Compares the fitted model against the thresholds-only model.		

Table 17. Model threshold (Tests of model effects)

Source	Type I			Type III		
	Wald Chi-Square	df	Sig.	Wald Chi-Square	df	Sig.
Marital status	18.295	3	.000	27.501	3	.000
Savings they have	3.071	2	.215	.372	2	.830
Pension scheme Base	^a	.	.	^a	.	.
The right pension, how much it should be (500 euros)	.000	1	.998	14.250	1	.000
How to spend the pension	15.415	3	.001	29.012	3	.000
Other resources, sons, daughters, investments	23.380	2	.000	20.148	2	.000
Hobbies that pensioners have	6.304	5	.278	14.215	5	.014
Legal support from the state	2.088	2	.352	5.643	2	.060
Health of surveyed retirees	25.890	4	.000	25.355	4	.000
The biggest concern of pensioners is the 120 euro pension	12.311	4	.015	12.311	4	.015

Dependent Variable: Well-being of surveyed pensioners

Model: (Threshold), Marital status, Savings they have, Pension scheme Base, the right pension, how much it should be (500 euro), How to spend the pension, other resources, sons, daughters, investments, Hobbies that pensioners have, Legal support from the state, Health of surveyed retirees, The biggest concern of pensioners is the 120 euro pension.

a. Unable to compute due to numerical problems.

Table 18. Summary of the results of Table 19 confirming H2 and the answers to the research questions

Variable	P-Value (Type III)	Simple Interpretation	Link to RQ
Marital Status	0.000	Married pensioners report higher welfare	RQ1, RQ3
Savings	0.830	No significant impact on welfare	Does not support H2
Adequate Pension (500€)	0.000	Adequate pension strongly affects welfare	RQ1, RQ2
Pension Spending	0.000	Good financial management is linked to higher welfare	RQ1, RQ3
Additional Income	0.000	Income from children/investments positively influences welfare	RQ1, RQ2
Hobbies	0.014	Contribute to emotional well-being when controlling other factors	RQ3
Legal Support	0.060	Nearly significant but not statistically valid	RQ4 (indicates need for legal improvements)
Health	0.000	Very strong influence on welfare	RQ1, RQ3
Concern about 120€ Pension	0.015	Anxiety over low pension harms welfare	RQ4

Table 19. Parameter Estimation GLM

No	Acronym	Parameter Estimation GLM	B	Std. Error	Wald Chi-Square	Sig.	Exp(B)
1.	PA	Pensioners' Age	-8.867	4.197	4.465	0.035	0.000
2.	PGM	Pensioners' gender (Male)	9.626	4.715	4.169	0.041	15156.946
3.	PGF	Pensioners' gender (Female)	12.687	4.766	7.086	0.008	323542.025
4.	MS	Marital Status	-7.850	1.743	20.279	0.000	0.000
5.	AP	Adequate Pension 500 euro	-4.853	1.286	14.250	0.000	0.008
6.	PS	Pension Spending	10.433	2.487	17.596	0.000	33945.136
7.	OI	Other Income (s,d,i)	-12.115	2.699	20.148	0.000	5.475E-6
8.	PH	Pensioners' Hobby	-3.402	1.441	5.576	0.018	0.033
9.	PS	Pensioners' saving	-7.460	2.239	11.102	0.001	0.001
10.	PC	Pension concern 120 euros	12.214	3.809	10.281	0.001	201651.201
11.	SLS	State Legal Support	29.120	5145.5635	.000	.995	1.66495E+11
12.	PH	Pensioners' health	-10.965	5145.5641	.000	.998	1.730E-5

Pension Spending: Significance: Significant in both models (Type I: $p = 0.001$; Type III: $p = 0.000$). How pensioners manage their pension spending significantly impacts their well-being. Effective management of finances contributes to higher satisfaction, with more control over finances leading to better welfare.

Other Sources of Income: Significance: Significant in both models (Type I: $p = 0.000$; Type III: $p = 0.000$). Additional sources of income, such as family support or investments, play a crucial role in enhancing pensioners' welfare. Pensioners who have other income sources beyond their pension tend to experience a better quality of life.

Hobbies: Significance: Not significant in Type I ($p = 0.278$), but significant in Type III ($p = 0.014$). While hobbies were not significant in the initial model, they became more significant when controlling for other factors. Hobbies can contribute to mental well-being and life satisfaction in retirement.

State Support (Pension Laws): Significance: Not significant in Type I ($p = 0.352$), nearly significant in Type III ($p = 0.060$). Legal support (pension laws) does not significantly impact pensioners' welfare. The results suggest that existing pension laws might not be sufficient to provide substantial support, indicating a need for reforms in pension policies.

Health: Highly significant in both models ($p = 0.000$). Interpretation: Health is a critical factor influencing pensioners' well-being. Poor health significantly affects their quality of life, emphasizing the need for accessible healthcare services and support for pensioners with health issues.

Major Concerns of Pensioners: Significance: Significant in both models ($p = 0.015$). Interpretation: Pensioners' concerns, such as financial insecurity or uncertainty about pensions, directly affect their mental well-being. Reducing concerns and providing emotional and financial security are essential for improving their quality of life.

In conclusion, the findings (Table 18) emphasize that multiple factors especially marital status, adequate pension, financial management, additional income, hobbies, health, and pension-related concerns play a crucial role in shaping pensioners' welfare. Addressing these areas can improve quality of life, while the lack of impact from savings and legal support suggests a need for targeted policy reforms.

Dependent Variable: Pensioners' Welfare (W) Constant's 12.453

Model: (Threshold), 1. Pensioners' Age; 2. Pensioner Gender (Male); 3. Pensioners' Gender (Female); 4. Marital Status; 5. Adequate Pension: 500 euros; 6. Pension Spending; 7. Other Income: son, daughter, investments; 8. Pensioners' Hobby; 9. Pensioners' savings; 10. Pension concern decreases by 120 euros; 11. Proper support from the state; 12. Pensioners' health. Set to system missing due to overflow. b. Set to zero because this parameter is redundant. c. Computed based on the Pearson chi-square.

The equation for this study can be expressed as a logistic regression model (Table 19), where the dependent variable (Y) represents the Welfare of pensioners, and the independent variables (X) are the analyzed economic, legal, and psychological factors.

$$\begin{aligned} \text{Pensioners' Welfare (W)} = & \beta_0 + \beta_1 (\text{Pensioners' Age}) \\ & + \beta_2 (\text{Pensioners' Gender Male}) + \beta_3 (\text{Pensioners' Female Gender}) + \beta_4 (\text{Marital Status}) + \beta_5 \\ & (\text{Adequate Pension}) + \beta_6 (\text{Pension Spending}) + \beta_7 \\ & (\text{Other Income}) + \beta_8 (\text{Pensioners' Hobby}) + \beta_9 \\ & (\text{Pensioners' Savings}) + \beta_{10} (\text{Pensioners' Concern}) + \\ & \beta_{11} (\text{State Legal Support}) + \beta_{12} (\text{Pensioners' Health}) \\ & + \varepsilon \end{aligned} \quad (20)$$

$$W = 12.453 + (-8.867) + \beta_2(9.626) + \beta_3(12.687) + \beta_4(-7.850) + \beta_5(-4.853) + \beta_6(10.433) + \beta_7(-12.115) + \beta_8(-3.402) + \beta_9(-7.460) + \beta_{10}(12.214) + \beta_{11}(29.120) + \beta_{12}(-10.965) = 31.01\% \quad (21)$$

The equation represents well-being (W), including a constant value (12.453) and the impact of 10 independent variables, each with a coefficient indicating its effect on well-being. The parts of the equation that represent the variables (β_2 , β_3 , etc.) correspond to economic, social, legal, and emotional factors and are multiplied by the respective values of these variables. In this case, the calculated value for well-being is 31.01%, while the remaining 68.99% may be influenced by variables not included in the study.

- *The analysis of the table for each variable and comments on economic, legal and psychological aspect's:*

a) Pensioners' Age: Coefficient B = -8.867, Std. Error = 4.197, Wald Chi-Square = 4.465, Sig. = 0.035, Exp(B) = 0.000. *The Economic Impact*, an increase in pensioners' age has a negative economic impact because, as people age, they often face challenges such as deteriorating health, decreasing income, and rising healthcare expenses. Older pensioners may find it harder to cover their daily living costs. *The psychological Impact*, Older pensioners often experience feelings of insecurity and fear about the future, which can negatively affect their emotional Welfare and contribute to anxiety and depression.

b) Pensioners' Gender (Male): Coefficient B = 9.626, Std. Error = 4.715, Wald Chi-Square = 4.169, Sig. = 0.041, Exp(B) = 15156.946. *The Economic Impact*, Male pensioners may have had greater opportunities for employment and career advancement during their working years, which can lead to higher income and pensions. This financial stability supports a better quality of life. *The Psychological Impact*, Male pensioners who had better economic opportunities may feel more secure and satisfied, reducing levels of anxiety and stress.

c) Pensioners' Gender (Female): Coefficient B = 12.687, Std. Error = 4.766, Wald Chi-Square = 7.086, Sig. = 0.008, Exp(B) = 323542.025. *The Economic Impact*, Female pensioners often face lower pensions due to shorter work histories and wage disparities. However, they may have stronger support from family and other social groups, which can help mitigate economic challenges. *The Psychological Impact*, despite having lower economic opportunities, female pensioners may feel more connected to their families and social networks, leading to positive emotions such as love and support, which contribute to emotional Welfare.

d) Marital Status: Coefficient B = -7.850, Std. Error = 1.743, Wald Chi-Square = 20.279, Sig. = 0.000, Exp(B) = 0.000. *The Economic Impact*, married pensioners may face economic pressure due to having to share financial resources among family members. This can create additional financial burdens and affect their ability to maintain a comfortable standard of living. *The Psychological Impact*, Increased responsibilities and expectations can lead to higher stress levels and anxiety, negatively affecting emotional Welfare.

e) Adequate Pension (500 euros): Coefficient B = -4.853, Std. Error = 1.286, Wald Chi-Square = 14.250, Sig. = 0.000, Exp(B) = 0.008. *The Economic Impact*, an insufficient pension (below 500 euros) directly affects pensioners' ability to maintain a decent standard of living and cover daily expenses. This can lead to poverty and financial insecurity. *The*

Psychological Impact, Financial insecurity resulting from a low pension can lead to anxiety and stress, contributing to depression and feelings of helplessness.

f) Pension Spending: Coefficient B = 10.433, Std. Error = 2.487, Wald Chi-Square = 17.596, Sig. = 0.000, Exp(B) = 33945.136. *The Economic Impact*, Pensioners who manage their pension spending better can maintain a stable financial situation and are more likely to sustain a comfortable standard of living. Effective financial management contributes to economic Welfare. *The Psychological Impact*, feeling in control of their finances can reduce stress levels and improve emotional Welfare, leading to greater feelings of security and contentment.

g) Other Income (Son, Daughter, Investments): Coefficient B = -12.115, Std. Error = 2.699, Wald Chi-Square = 20.148, Sig. = 0.000, Exp(B) = 5.475E-6. *The Economic Impact*, Dependence on additional income sources (from children, investments) can have a negative economic impact as these sources are often unreliable or unpredictable. *The Psychological Impact*, the insecurity that comes from not having a stable income can negatively affect emotional Welfare, causing stress and anxiety.

h) Pensioners' Hobby: Coefficient B = -3.402, Std. Error = 1.441, Wald Chi-Square = 5.576, Sig. = 0.018, Exp(B) = 0.033. *The Economic Impact*, Pensioners engaged in hobbies may benefit from additional economic opportunities (e.g., selling art or crafts), which can contribute to financial support. *The Psychological Impact*, engaging in hobbies can provide enjoyment and fulfillment, which improves emotional Welfare and reduces depression and anxiety.

i) Pensioners' Saving: Coefficient B = -7.460, Std. Error = 2.239, Wald Chi-Square = 11.102, Sig. = 0.001, Exp(B) = 0.001. *The Economic Impact*, Pensioners without savings often struggle to maintain a decent standard of living and may face challenges covering unexpected expenses. *The Psychological Impact*, the lack of savings creates feelings of insecurity and anxiety, negatively affecting emotional Welfare.

j) Main Concern: Pension decrease (120 euros): Coefficient B = 12.214, Std. Error = 3.809, Wald Chi-Square = 10.281, Sig. = 0.001, Exp(B) = 201651.201. *The Economic Impact*, A reduction in pension amounts directly affects pensioners' ability to maintain a decent standard of living, making it difficult to cover expenses. *The Psychological Impact*, Financial insecurity due to pension cuts leads to anxiety and stress, increasing feelings of depression and fear about the future.

k) Adequate Support from the State: Coefficient B = 29.120, Std. Error = 5145.5635, Wald Chi-Square = .000, Sig. = 0.995, Exp(B) = 1.66495E+11. *The Economic Impact*, Lack of adequate support from the state leads to poverty and financial insecurity for pensioners, leaving them unprepared for economic challenges. *The Psychological Impact*, The absence of state support can cause feelings of isolation and dissatisfaction, negatively impacting social and emotional Welfare.

l) Health of Pensioners: Coefficient B = -10.965, Std. Error = 5145.5641, Wald Chi-Square = .000, Sig. = 0.998, Exp(B) = 1.730E-5. *The Economic Impact*, Health problems directly affect pensioners' expenses, adding financial pressure and making it difficult to maintain a comfortable living standard. *The Psychological Impact*, Health issues lead to insecurity and anxiety, decreasing emotional Welfare and contributing to depression.

Variables such as age, gender, inadequate pensions, and lack of state support have significant economic and psychological impacts on pensioners. These factors contribute to financial insecurity and stress, affecting overall Welfare. Effective pension management, social support, and engagement in hobbies can improve both economic and psychological outcomes for pensioners.

- Summary of Coefficients (Table 19)
 - ✓ Marital Status (-7.850, $p = 0.000$): Marital status has a strong effect, with married retirees having better well-being.
 - ✓ Adequate Pension (-4.853, $p = 0.000$): Adequate pensions are associated with higher well-being.
 - ✓ Expenses (10.433, $p = 0.000$): Effective management of expenses improves well-being.
 - ✓ Other Income (-12.115, $p = 0.000$): Other sources of income have a significant positive impact.
 - ✓ Hobbies (-3.402, $p = 0.018$): Activities and hobbies contribute to well-being.
 - ✓ Health (-10.965, $p = 0.000$): Health is one of the most important factors for well-being.
 - ✓ Savings (-7.460, $p = 0.001$): Contrary to expectations, savings do not show a clear positive impact.
 - ✓ Legal support (29.120, $p = 0.995$): No statistically significant impact, suggesting the need for legal improvements.

According to Eq. (21), the model's explanation percentage for well-being is 31.01%, which means that 68.99% of the influencing factors may be outside this model.

- Summary of Results H2 and Link to Research Questions

RQ1: Variables such as adequate pension, marital status, health and other sources of income positively affect the well-being of pensioners.

RQ2: Income (adequate pension and additional sources) has a greater impact than savings or legal support.

RQ3: The most influential socio-demographic factors are marital status and health of pensioners, while hobbies also have a positive impact.

RQ4: Pensioners assess that legal support from the state is

insufficient and are concerned about the low level of pensions, seeking improvements.

Tables 19 and 20 confirm that marital status, adequate pension, pension spending, additional income, hobbies, and health significantly enhance pensioners' welfare. Savings and legal support show no significant effect, indicating areas for improvement. Concerns about low pensions negatively impact well-being, emphasizing the need for better financial security and policy reforms.

Table 20. Independent-Samples Kruskal Wallis test summary

Total N	100
Test Statistic	10.719 ^a
Degree of Freedom	3
Asymptotic Sig. (2-sided test)	.013

a. The test statistic is adjusted for ties.

The results of the Kruskal-Wallis test presented in Table 20 show a test statistic of 10.719 with 3 degrees of freedom and an asymptotic p-value of 0.013, indicating statistically significant differences between the compared groups at the 95% confidence level ($p < 0.05$). This leads to the rejection of the null hypothesis (H_0), which assumes no significant differences among groups, and the acceptance of the alternative hypothesis (H_1), which posits the existence of significant differences.

The analysis reveals that factors such as gender, marital status, savings, health status, adequate pension income, additional income sources, hobbies, and family support have a significant impact on the welfare of pensioners in Kosovo. Conversely, variables like pension spending, concerns about pension reduction, and state support did not show statistically significant effects in this study.

These findings highlight the importance of personal, economic, and social factors in improving the quality of life for pensioners, suggesting that social and economic policies should focus on strengthening these areas to enhance pensioners' welfare. Furthermore, the lack of significant impact from state support and pension spending indicates a need for further investigation and targeted policy interventions in these domains.

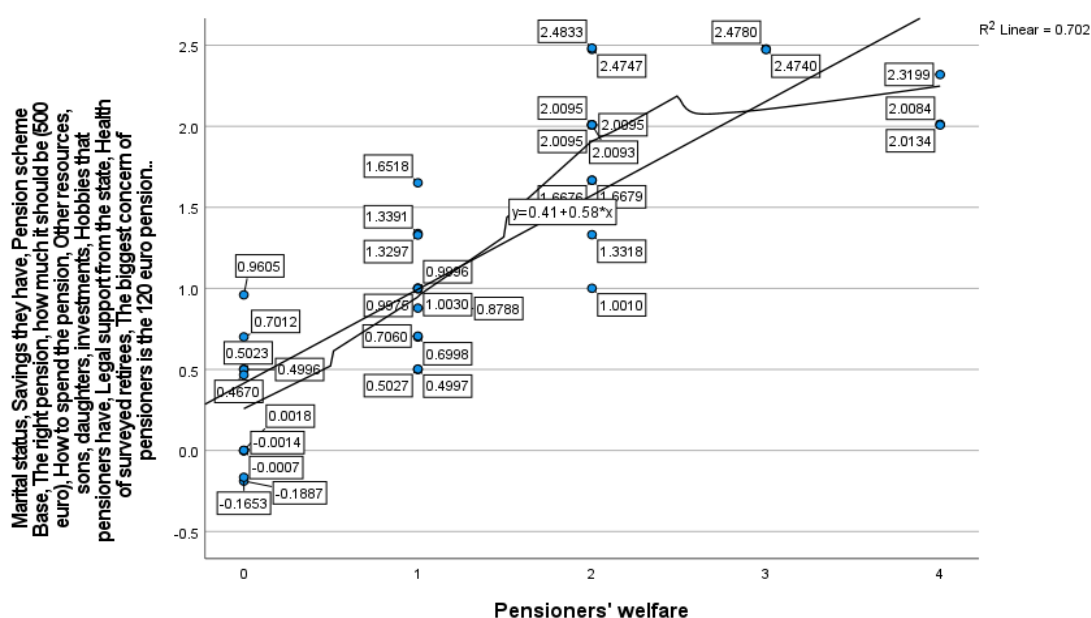


Figure 14. Pensioner's welfare

Figure 14, indicating the relationship between the independent variables and the well-being of pensioners, together with the linear regression line and the R^2 value of 0.702, shows a strong and visible connection between various economic factors and the well-being of pensioners, suggesting that these factors have a significant impact on the lives of pensioners.

5. DISCUSSION OF STUDY RESULTS

The results of this study show that the well-being of pensioners in Kosovo is primarily influenced by financial and health-related factors. The Pearson correlation analysis (H1) revealed that personal savings and additional income from other sources are positively and significantly associated with well-being, while deteriorating health status has a significant negative effect. In contrast, legal support and certain personal characteristics, such as marital status or hobbies, did not demonstrate statistically significant effects.

The GLM analysis (H2) further reinforced these findings by confirming that a combination of socio-demographic, financial, and health variables explains a considerable portion of the variation in pensioners' well-being, although the explanatory power of the model remained modest. Adequate pension, marital status, expenditure management, health, and additional sources of income emerged as the most influential predictors. These results suggest that financial and health aspects are essential for pensioners' well-being, whereas institutional and legal mechanisms currently play a minimal role.

Link to Research Questions-RQ1: Adequate pension, marital status, health, and additional income positively influence pensioners' well-being. RQ2: Income-related variables (pension and additional sources) have a stronger impact compared to savings or legal support. RQ3: The most influential socio-demographic factors are marital status and health, while hobbies also have a small but positive effect. RQ4: Pensioners perceive state-provided legal support as insufficient and express concerns about the low level of pensions, calling for improvements.

The discussion on the well-being of pensioners in Kosovo and pension system reforms is closely linked to the specific challenges and needs of this group. Since Kosovo does not have a PAYG pension system, the reform becomes more complex and requires a detailed analysis of the functions and impacts of potential system changes. As Barr and Diamond [71] highlighted, analyzing reform requires assessing the transition costs and risks. Improving pensions, opportunities for alternative income sources, healthcare services, and legal support is essential for sustainable support for pensioners, considering the diverse needs of the population.

Compared to other studies, our research on pensioners' well-being in Kosovo and the impact of the basic pension scheme on this well-being is closely related to similar social and economic issues. Some conclusions from the studies mentioned, such as those by Ebersole et al. [72] and Erikson [73], emphasize that pensioners often face feelings of pessimism and a loss of meaning in life, which is similar to the psychological concerns noted in our study, where the future after retirement is challenging for those unprepared.

Our study also reflects the impact of the basic pension scheme and legal support, addressing social inequalities and

reducing poverty. Additionally, our study relates to concerns raised in other studies, such as those by Azaare et al. [4] who have shown that higher pension benefits positively affect pensioners' mental health.

On the other hand, the impact of potential changes in pension schemes, as highlighted in our study, aligns with the analyses of Barr [74], regarding the sustainability of the welfare state and the need for deep pension reform to support a sustainable financial system and address the needs of an aging population.

In our study, a pension below 500 euros has a significant negative impact on well-being, leading to financial insecurity and stress. Additionally, engagement in activities and expense management contribute to higher well-being.

In comparison with other studies, several authors have examined the impact of various factors on pensioners' well-being. Asamoah [75] views retirement as a gradual process of liberation from work that reshapes an individual's identity and well-being, while Myers and Riker [76] emphasize psychological challenges such as age stigmatization and loss of self-worth. These findings align with your study, which highlights the multidimensional nature of pensioners' well-being.

From an economic perspective, Blanchett et al. [77] show that age, education, and employment status significantly affect retirement preparation, while Hurd and Rohwedder [78] stress the importance of adequate financial resources. These conclusions reinforce your findings on the decisive role of financial security in determining pensioners' quality of life.

Psychologically, Wilson and Aggrey [79] underline the need for preparation for retirement challenges such as adaptation and self-esteem. Similarly, Kida et al. [80] confirm that economic, legal, and social factors jointly influence the well-being of pensioners in Kosovo.

At the macroeconomic level, the financial gap between high- and low-income countries affects the sustainability of pension systems in states such as Kosovo [81]. Moreover, digitalization in Kosovo's banking sector has improved service quality, suggesting that similar reforms could enhance pension delivery and pensioners' welfare [82]. To reach the living standards of Croatia and Slovenia, Western Balkan countries must focus on effective policies that raise per capita income [83].

In conclusion, the study finds that pensioners' well-being in Kosovo is primarily determined by financial security and health status, while legal and institutional factors remain weaker predictors. Policies aimed at improving pension adequacy, creating additional income opportunities, and expanding healthcare access are essential for improving their overall welfare.

6. CONCLUSIONS AND RECOMMENDATIONS

Retirement has become a pivotal phase in citizens' lives, reflecting significant changes in how income is organized after active employment. For most retirees, income is derived from multiple sources: primarily, earnings from investments which depend on market performance and can be variable and clearly defined social security benefits. In addition, this study has also examined the basic pension, analyzing its importance in providing a stable income level for retirees.

6.1 Conclusions

The findings underscore the importance of retirees as a sensitive and crucial segment of Kosovar society, with their well-being serving as a key indicator of overall social and economic development. By analyzing various factors that influence their quality of life such as marital status, pension levels, expense management, health, access to alternative income sources, and future concerns the study offers valuable insights for shaping future policies. Specifically, the study reveals that marital status plays a critical role in the well-being of retirees. Those who are married often benefit from the financial and emotional support of their partners, whereas unmarried retirees require targeted support measures, including social support groups and alternative avenues to access financial and emotional resources. Moreover, the level of pensions is fundamental to ensuring a satisfactory standard of living. Although current pension benefits may not always fully cover retirees' needs, state assistance and effective expense management can help alleviate this shortfall. Therefore, increasing pension levels and enhancing related policies are essential steps toward guaranteeing long-term financial stability for retirees. Health is another key factor. Retirees facing health challenges often experience a decline in their quality of life and increased economic insecurity, highlighting the need for improved healthcare services and a robust insurance system that effectively addresses their ongoing treatment needs. Furthermore, managing expenses and accessing alternative income sources such as family support or returns from investments play vital roles in empowering retirees to feel in control of their lives. This calls for policies that promote financial education and create opportunities for diversifying income sources for this group. The study also emphasizes that retirees' concerns about the future and the adequacy of current pension levels significantly impact their overall well-being, underscoring the need for policies that directly address these issues and offer stable support. In conclusion, improving the well-being of retirees in Kosovo requires a comprehensive strategy that includes enhancing pension benefits, promoting alternative income sources, improving healthcare services, and strengthening the legal and social support framework. Such policies will contribute to creating a fairer and more equitable society, ensuring that every retiree has the opportunity to enjoy a higher quality of life.

Based on the findings of this study, the author believes that the research has made valuable contributions to the existing literature particularly by providing empirical insights into the experiences of retirees and has effectively filled an important gap in academic knowledge.

6.2 Recommendations for Kosovo

Based on the analysis of pensioners' welfare in Kosovo, the following policy recommendations are proposed:

- a) Introduce additional benefits to strengthen the existing pension scheme.
- b) Adjust yearly pension increments in line with the wage inflation rates of active members or an alternative rate determined by the Ministry of Social Welfare. This measure aims to protect pensioners from the erosion of their pension's real value, which currently stands at only 120 euros.
- c) Develop frameworks and advisory services for

individuals approaching retirement to assist them in transitioning smoothly, offering both practical and emotional support.

d) Raise pensions, especially for those currently receiving less than 500 euros, to ensure basic living costs are met and to reduce financial insecurity and psychological stress.

e) Strengthen the state's role in providing assistance to pensioners, particularly those without alternative income sources or savings, to alleviate isolation and economic pressure.

f) Introduce initiatives to improve pensioners' financial literacy, including budget management and savings, to ensure economic stability and reduce stress.

g) Implement policies aimed at reducing disparities between genders.

h) Develop initiatives like community centers or hobby groups to encourage social engagement among pensioners, reducing isolation and enhancing emotional well-being.

i) Provide easy and affordable access to healthcare services for pensioners to lessen the economic burden of medical expenses and improve both physical and mental health.

j) Offer subsidies and support for pensioners living with dependents to ease financial pressures and enhance emotional well-being.

k) Establish programs that encourage pensioners' financial autonomy, reducing reliance on state or family assistance, and bolstering economic and psychological security.

These recommendations, grounded in a thorough analysis of Kosovo's basic pension system, aim to enhance the economic stability and emotional well-being of pensioners by comprehensively addressing both short-term and long-term challenges they face.

6.3 Policy and practice implications

The findings have important implications for policymakers and practice in Kosovo. Strengthening pension schemes to ensure sustainable financial security, creating opportunities for additional income, and improving access to health services should be priorities. The weak role of legal support highlights the need for institutional reforms to provide more effective protection for pensioners. Furthermore, community-based initiatives promoting healthy lifestyles, social inclusion, and financial education may also contribute to improving pensioners' well-being.

6.4 Limitations and generalizability and future

This study, although it offers valuable insights, has some limitations. The sample was relatively small (100 pensioners), collected randomly at pension offices, while 20 additional questionnaires were collected through Facebook to include also pensioners who, for material or health reasons, could not physically come to the offices. This way of data collection reduces the tendency for selection bias, but the small sample size limits the generalizability of the results.

Future studies should be based on larger samples and include longitudinal designs that would allow the identification of changes over time. In addition, the inclusion of more indicators related to institutional, social, and psychological aspects could provide a more comprehensive understanding of the well-being of pensioners in Kosovo.

ACKNOWLEDGEMENTS

Our gratitude to the AAB College for funding the scientific article.

REFERENCES

- [1] Forster, P., Morris, M. (2012). Successful transition to retirement in Australia. *Social Sciences Directory*, 1(1): 4-12. https://doi.org/10.7563/SSD_01_01_01
- [2] Hearn, S., Saulnier, G., Strayer, J., Glenham, M., Koopman, R., Marcia, J.E. (2012). Between integrity and despair: Toward construct validation of Erikson's eighth stage. *Journal of Adult Development*, 19(1): 1-20. <https://doi.org/10.1007/s10804-011-9126-y>
- [3] Osborne, J.W. (2012). Psychological effects of the transition to retirement. *Canadian Journal of Counselling and Psychotherapy*, 46(1): 45-58. <https://files.eric.ed.gov/fulltext/EJ969555.pdf>.
- [4] Azaare, B.A., Kuranchie, A., Affum, P.K. (2024). Public sector employees' arrangement and plans towards retirement in Ghana. *Asian Journal of Education and Social Studies*, 50(3): 121-131. <https://doi.org/10.9734/AJESS/2024/v50i31287>
- [5] Smith, S.G., Froidevaux, A., Hirschi, A., Johnson, L.U. (2024). An existential perspective on post-retirement decisions: The role of meaning in life and social identity. *Journal of Occupational and Organizational Psychology*, 97(3): 1166-1184. <https://doi.org/10.1111/joop.12508>
- [6] Clare, A., Seaton, J., Smith, P.N., Thomas, S. (2024). The science of flexible retirement choices: Switching retirement savings into an annuity. *Journal of Retirement*. <https://eprints.whiterose.ac.uk/208320/>.
- [7] Chen, F., Wakabayashi, M., Yuda, M. (2024). The impact of retirement on health: Empirical evidence from the change in public pensionable age in Japan. *The Journal of the Economics of Ageing*, 28: 100513. <https://doi.org/10.1016/j.jeoa.2024.100513>
- [8] Coe, N.B., Zamarro, G. (2011). Retirement effects on health in Europe. *Journal of Health Economics*, 30(1): 77-86. <https://doi.org/10.1016/j.jhealeco.2010.11.002>
- [9] Godard, M. (2016). Gaining weight through retirement? Results from the SHARE survey. *Journal of Health Economics*, 45: 27-46. <https://doi.org/10.1016/j.jhealeco.2015.11.002>
- [10] Celidoni, M., Dal Bianco, C., Rebba, V., Weber, G. (2020). Retirement and healthy eating. *Fiscal Studies*, 41(1): 199-219. <https://doi.org/10.1111/1475-5890.12196>
- [11] Nishimura, Y., Oikawa, M., Motegi, H. (2018). What explains the difference in the effect of retirement on health? Evidence from global aging data. *Journal of Economic Surveys*, 32(3): 792-847. <https://doi.org/10.1111/joes.12215>
- [12] Rose, L. (2020). Retirement and health: Evidence from England. *Journal of Health Economics*, 73: 102352. <https://doi.org/10.1016/j.jhealeco.2020.102352>
- [13] Li, R., Gao, D., Yang, Y. (2024). The impact of pension on the health behavior of elderly rural residents: Evidence from China. *BMC Geriatrics*, 24(1): 265. <https://doi.org/10.1186/s12877-024-04783-y>
- [14] Zhang, A., Imai, K.S. (2024). Do public pension programmes reduce elderly poverty in China? Review of Development Economics, 28(1): 3-33. <https://doi.org/10.1111/rode.13016>
- [15] Li, Q., Dong, L., Zhang, L. (2023). Have pensions reduced the relative poverty?-----Empirical analysis from China CHARLS data. *Heliyon*, 9(12): e22711. <https://doi.org/10.1016/j.heliyon.2023.e22711>
- [16] Pranav, M.K., Francis, P.T., Olickal, J.J., Rose, B.M., Sarma, P.S., Thankappan, K.R. (2024). Mental well-being and the quality of life among retired public and private sector employees: A comparative study from Kerala, India. *Cureus*, 16(10): e71663. <https://doi.org/10.7759/cureus.71663>
- [17] UNICEF. (2024). Social protection budget brief 2024 Kosovo. https://www.unicef.org/kosovoprogramme/media/5476/file/Budget%20Brief_Social%20Protection_2024.pdf.pdf.
- [18] Miftari, F., Kida, N., Shala, N. (2021). The effect of public expenditures on economic growth of Kosovo: An econometric analysis. *Economics, Management and Sustainability*, 6(1): 61-69. <https://doi.org/10.14254/jems.2021.6-1.5>
- [19] Jaha, A. (2020). Korporatat publike financiare në Kosovë (rast studimi: fondet pensionale). University for Business and Technology-UBT. <https://doi.org/10.33107/ubt-etd.2020.2770>
- [20] Kosovo Agency of Statistics. (2025). Statistikat e Mirëqenies Sociale Shtator 2025. <https://askapi.rks-gov.net/Custom/407bfa04-a67b-4a1e-8c21-f19ca370b54a.pdf>.
- [21] Kosovo Agency of Statistics. (2025). Publications. <https://askapi.rks-gov.net/Custom/56bc77b8-1a59-4522-8e60-4163b4252ac5.pdf>.
- [22] Kida, N., Smajli, R., Gjuraj, D., Morina, V., Morina, J. (2025). Driving factors of foreign direct investment in Kosovo: The roles of market access and government support. *International Journal of Sustainable Development and Planning*, 20(1): 433-451. <https://doi.org/10.18280/ijstdp.200139>
- [23] Central Bank of Kosovo. (2025). Time series. <https://bqk-kos.org/statistikat/serite-kohore/>.
- [24] Pristina Adem Jashari International Airport. (2024). LIMAC. Statistics. <https://www.limakkosovo.aero/>.
- [25] International Monetary Fund (2024). Republic of Kosovo: Selected issues. Report (Country Report No. 24/365). <https://www.imf.org/en/Publications/CR/Issues/2024/12/21/Republic-of-Kosovo-Selected-Issues-559949>.
- [26] Azemi, A. (2016). Analysis of pension contributions in Kosovo. Master's Thesis, UBT-Higher Education Institution. UBT Knowledge Center. <https://knowledgecenter.ubt-uni.net/etd/1114/>.
- [27] Mercer, CFA Institute. (2023). Mercer CFA institute global pension index 2023. <https://rpc.cfainstitute.org/sites/default/files/-/media/documents/article/industry-research/mercer-cfa-institute-global-pension-index-2023.pdf>.
- [28] Dobson, A.J., Barnett, A.G. (2018). An introduction to generalized linear models. Chapman and Hall/CRC. New York. <https://doi.org/10.1201/9781315182780>
- [29] Pearson, K. (1895). VII. Note on regression and inheritance in the case of two parents. *Proceedings of the Royal Society of London*, 58(347-352): 240-242. <https://doi.org/10.1098/rsp1.1895.0041>

- [30] Schroots, J.J.F. (2007). Theories of aging: Psychology. In *Encyclopedia of Gerontology* (Second Edition). Academic Press. <https://doi.org/10.1016/B0-12-370870-2/00187-6>
- [31] Schludi, M. (2005). The Reform of Bismarckian Pension Systems. A Comparison of Pension Politics in Austria, France, Germany, Italy and Sweden. Amsterdam University Press. <https://doi.org/10.1515/9789048503827>
- [32] Bismarck, Otto Von. (1889). Gesetz, betreffend die Invaliditäts- und Altersversicherung. Berlin: Deutsches Reich. https://www.inklusion-als-menschenrecht.de/data/user/Dokumente/Gesetze/1889_Gesetz_betreffend_die_Invaliditaet%20und_Alterssicherung_1889.pdf
- [33] Modigliani, F., Brumberg, R. (2013). Utility analysis and the consumption function: An interpretation of cross-section data 1. In *Post-Keynesian Economics*. Routledge, pp. 388-436. <https://www.arabictrader.com/cdn/application/2009/08/15/pdf/v202/B4E8E626-EFEE-42B4-FE04-862C02B7AC83.pdf#page=18>
- [34] Barr, N. (2001). The Welfare State as Piggy Bank: Information, Risk, Uncertainty, and the Role of the State. Oxford University Press. <https://doi.org/10.1093/0199246599.001.0001>
- [35] Modigliani, F. (1986). Life cycle, individual thrift, and the wealth of nations. *Science*, 234(4777): 704-712. <https://doi.org/10.1126/science.234.4777.704>
- [36] Chen, S., Shang, H.L., Yang, Y. (2025). Is the age pension in Australia sustainable and fair? Evidence from forecasting the old-age dependency ratio using the Hamilton-Perry model. *Journal of Population Research*, 42(1): 2. <https://doi.org/10.1007/s12546-024-09352-z>
- [37] Samuelson, P.A. (1958). An exact consumption-loan model of interest with or without the social contrivance of money. *Journal of Political Economy*, 66(6): 467-482. <https://www.journals.uchicago.edu/doi/abs/10.1086/258100>
- [38] Feldstein, M. (1976). On the theory of tax reform. *Journal of Public Economics*, 6(1-2): 77-104. [https://doi.org/10.1016/0047-2727\(76\)90042-6](https://doi.org/10.1016/0047-2727(76)90042-6)
- [39] Feldstein, M. (1989). Who pays for obesity? Nber. Working Paper, No. 2838. https://www.nber.org/sites/default/files/2019-08/2008number3_0.pdf
- [40] Wilensky, H.L. (1975). The Welfare State and Equality: Structural and Functional Approaches. University of California Press.
- [41] Titova, L., King, L.A. (2025). Can happiness make a house a home? *The Journal of Positive Psychology*, 20(2): 230-242. <https://doi.org/10.1080/17439760.2024.2325457>
- [42] Muñoz-Fernández, Á., Cabanillas-Jiménez, G. (2025). Expenditure behaviour of pensioners: Exploring differences between breadwinners and non-breadwinners. *Oxford Economic Papers*, 77(3): 619-636. <https://doi.org/10.1093/oenp/gpae042>
- [43] Johnson, N., Yang, S., Zhao, D. (2025). Effects of China's new rural pension scheme on aging populations. *Journal of Population Ageing*, 18(2): 315-350. <https://doi.org/10.1007/s12062-024-09451-y>
- [44] Kazuhiro, Y. (2023). Social identity, redistribution, and development. Munich Personal RePEc Archive. <https://mpra.ub.uni-muenchen.de/115965/>
- [45] Beveridge, W.H. (1942). Social insurance and allied services. Her Majesty's Stationery Office (HMSO). <http://pombo.free.fr/beveridge42.pdf>
- [46] Esping-Andersen, G. (1990). The Three Worlds of Welfare Capitalism. Princeton University Press.
- [47] Catherine, N., Patrick, H (2023). The limits of social care reform. In *Social Care in the UK's Four Nations*. Policy Press. <https://doi.org/10.47674/99781447364672.007>
- [48] Lee, K. (2024). Varying effects of public pensions: Pension spending and old-age employment under different pension regimes. *Journal of European Social Policy*, 34(1): 3-19. <https://doi.org/10.1177/09589287231223391>
- [49] Blake, D. (2006). Pension Economics. John Wiley & Sons.
- [50] Barr, N., Diamond, P. (2009). Pension Reform: A Short Guide. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195387728.001.0001>
- [51] Barr, N., Diamond, P., Engel, E. (2010). Reforming pensions: Lessons from economic theory and some policy directions [with comment]. *Economía*, 11(1): 1-23. <https://www.jstor.org/stable/25800053>
- [52] TRAN, D.T. (2021). Impacts of pension on elderly poverty reduction in Vietnam. <https://tesi.univpm.it/handle/20.500.12075/11863>
- [53] The World Bank (2024). The world bank in Kosovo. Kosovo is an upper-middle-income country which has experienced solid economic growth over the last decade. <https://www.worldbank.org/en/country/kosovo>
- [54] Kosovo Pension Savings Fund. (2021). Trustory. https://www.trusti.org/wp-content/uploads/2021/05/Trustory_Q12021.pdf
- [55] Fitch Ratings (2024). Fitch affirms Kosovo at 'BB-'; Outlook Stable. <https://www.fitchratings.com/research/sovereigns/fitch-affirms-kosovo-at-bb-outlook-stable-11-10-2024>
- [56] Official Gazette of the Republic of Kosovo. (2025). Legal acts. <https://gzk.rks-gov.net/>
- [57] Kosovo Agency of Statistics (2025). Statistical Yearbook of the Republic of Kosovo 2025. Pristina: Kosovo Agency of Statistics. <https://askapi.rks-gov.net/Custom/19d9c9c5-5ce7-4e49-b968-10bddfbce9e39.pdf>
- [58] Office of the Prime Minister of the Republic of Kosovo. (2024). 304,016 beneficiaries of the 20 percent increase in pensions. <https://kryeministri.rks-gov.net/en/news/304016-beneficiaries-of-the-20-percent-increase-in-pensions/>
- [59] Hox, J.J., Boeije, H.R. (2005). Data collection, primary vs. secondary. *Encyclopedia of Social Measurement*, 1(1): 593-599. http://joophox.net/publist/ESM_DCOL05.pdf
- [60] Lynch, T. (2024). Methodology: Research design and analysis of data. In *Physical Education and Wellbeing: Global and Holistic Approaches to Child Health and Academic Learning*. Cham: Springer Nature Switzerland, pp. 205-225. https://doi.org/10.1007/978-3-031-72874-7_12
- [61] Fox, M.P., MacLehose, R.F., Lash, T.L. (2021). Applying Quantitative Bias Analysis to Epidemiologic Data. Springer Cham. New York: Springer. <https://doi.org/10.1007/978-3-030-82673-4>

- [62] Hardin, J.W., Hilbe, J.M. (2007). Generalized Linear Models and Extensions. Stata Press.
- [63] Agresti, A. (2015). Foundations of Linear and Generalized Linear Models. John Wiley & Sons.
- [64] McCullagh, P. (2019). Generalized Linear Models. Routledge. <https://doi.org/10.1201/9780203753736>
- [65] Algoritma. (2022). Mengenal principal component analysis. <https://algoritma.blog/principal-component-analysis-2022/>.
- [66] Aninakwa-Bonsu, E. (2016). Evaluating post retirement experiences of pensioners in Ghana. Doctoral Dissertation, Kwame Nkrumah University of Science and Technology. <https://ir.knust.edu.gh/server/api/core/bitstreams/e2b4e1d5-dd54-4cdb-ade2-b2daa3afec75/content>.
- [67] Hotelling, H. (1933). Analysis of a complex of statistical variables into principal components. *Journal of Educational Psychology*, 24(6): 417-441. <https://doi.org/10.1037/h0071325>
- [68] Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3): 297-334. <https://doi.org/10.1007/BF02310555>
- [69] Akinwande, M.O., Dikko, H.G., Samson, A. (2015). Variance inflation factor: As a condition for the inclusion of suppressor variable(s) in regression analysis. *Open Journal of Statistics*, 5(7): 754. <https://doi.org/10.4236/ojs.2015.57075>
- [70] Akaike, H. (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control*, 19(6): 716-723. <https://doi.org/10.1109/TAC.1974.1100705>
- [71] Barr, N., Diamond, P. (2006). The economics of pensions. *Oxford Review of Economic Policy*, 22(1): 15-39. <https://doi.org/10.1093/oxrep/grj002>
- [72] Ebersole, P., Touhy, T., Hess, P.C., Jett, K., Luggen, A.S. (2007). *Toward Healthy Aging: Human Needs and Nursing Responses* (7th ed.) St Louis: Mosby.
- [73] Erikson, E.H. (1959) *Identity and the life cycle*. W W Norton & Co. <https://psycnet.apa.org/record/1994-97386-000>.
- [74] Barr, N.A. (2020). *The Economics of the Welfare State*. Oxford University Press.
- [75] Asamoah, N. (2012). Adjustment towards retirement. Doctoral Dissertation. <https://ir.knust.edu.gh/handle/123456789/4492>.
- [76] Myers, J.E., Riker, H.C. (2014). Retirement counseling: A practical guide for action. Taylor & Francis, p. 203. <https://doi.org/10.4324/9781315803111>
- [77] Blanchett, D., Finke, M.S., Pfau, W.D. (2017). Planning for a more expensive retirement. *Journal of Financial Planning*, 30(3): 42-51. <https://www.proquest.com/openview/eaafb9d384c7730c136a83f58a7eaf7a/1?pq-origsite=gscholar&cbl=4849>.
- [78] Hurd, M.D., Rohwedder, S. (2008). The retirement consumption puzzle: Actual spending change in panel data. National Bureau of Economic Research, No. w13929. <https://doi.org/10.3386/w13929>
- [79] Wilson, K.N., Aggrey, E.A.M. (2012). Retirement planning and counseling: Issues and challenges for teachers in public schools in the Sekondi Circuit. *US-China Education Review A*, 8: 755-767. <https://files.eric.ed.gov/fulltext/ED536451.pdf>.
- [80] Kida, N., Pasjaqa, A., Prekazi, Y., Ramadani, A., Morina, V., Morina, J. (2025). The impact of external, legal, and socio-economic environment on the well-being of pensioners in Kosovo: A generalized linear model (GLM) approach. *International Journal of Sustainable Development & Planning*, 20(6): 2379-2407. <https://doi.org/10.18280/ijstdp.200610>
- [81] Dalloshi, P. (2022). Financial development measurement: Comparison of the high-and low-income countries. *Journal of Governance and Regulation*, 11(2): 41-49. <https://doi.org/10.22495/jgrv11i2art4>
- [82] Shabani, L., Behluli, A., Qerimi, F., Pula, F., Dalloshi, P. (2022). The effect of digitalization on the quality of service and customer loyalty. *Emerging Science Journal*, 6(6): 1274-1289. <https://doi.org/10.28991/ESJ-2022-06-06-04>
- [83] Misini, S., Mustafa, A. (2025). The influence of government policies and differences in the standard of living of the Western Balkans countries compared to Croatia and Slovenia. *InterEULawEast: Journal for The International and European Law, Economics and Market Integrations*, 12(1): 139-167. <https://doi.org/10.22598/iele.2025.12.1.6>