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Extended Abstract of Bachelor Thesis

A Comprehensive Analysis of Unemployment in Moldova

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Abstract

This bachelor thesis evaluates Moldovan unemployment through an assessment of key elements combined with spatial and demographic data together with legislative alterations. The researcher studies workforce dynamics through employment data analysis starting from 2019 up to 2023. The evaluation includes insights about how work sectors change along with population shifts between regions and employment differences between male and female workers. The evaluation of labor market trends depends on regression modeling and correlation analysis and forecasting. The employment rate first experienced a decline which was followed by an increase because of market conditions together with external economic influences. Statistics show that rural workers together with women encounter diminished employment success but men typically exceed women in job attainment rates. The research suggests strategies aimed at promoting employment security and matching school programs with market requirements alongside developing fresh job openings.

Keywords: Unemployment analysis, Moldova labor market, economic trends, policy recommendations, labor migration, workforce resilience.

Komplexní analýza nezaměstnanosti v Moldavsku

Abstrakt

Tato bakalářská práce hodnotí nezaměstnanost v Moldavsku prostřednictvím posouzení klíčových faktorů v kombinaci s prostorovými a demografickými údaji a legislativními změnami. Výzkumník zkoumá dynamiku pracovního trhu prostřednictvím analýzy údajů o zaměstnanosti od roku 2019 do roku 2023. Hodnocení zahrnuje poznatky o změnách v pracovních sektorech, pohybu obyvatel mezi regiony a rozdílech v zaměstnanosti mezi muži a ženami. Analýza trendů na trhu práce je založena na regresním modelování, korelační analýze a prognózování. Míra zaměstnanosti nejprve klesla, poté však vzrostla v důsledku tržních podmínek a vnějších ekonomických vlivů. Statistické údaje ukazují, že pracovníci ve venkovských oblastech a ženy mají nižší úspěšnost při hledání zaměstnání, zatímco muži obecně dosahují vyšší míry zaměstnanosti. Výzkum navrhuje strategie zaměřené na podporu jistoty zaměstnání, sladění školních programů s požadavky trhu a vytváření nových pracovních příležitostí.

Klíčová slova: Analýza nezaměstnanosti, Moldavský trh práce, ekonomické trendy, politická doporučení, pracovní migrace, odolnost pracovní síly.

1 Objectives and Methodology

1.1 Objectives

This research performs a statistical investigation to examine unemployment trends in Moldova from 2019 to 2023. The research investigates the various external elements and demographic patterns along with economic variables which drive unemployment changes in Moldova. Actual data together with conceptual models enable the research to determine labor market instability factors and evaluate present employment rules effectiveness.

Key aspects of the analysis include:

- Overall unemployment trends
- Regional differences between urban and rural areas
- Gender disparities in unemployment
- The impact of economic and labor migration factors

1.2 Methodology

The thesis divides into two sections which include theoretical foundations as well as the analytical approach. The theoretical part investigates academic research containing information about unemployment scenarios while presenting theories regarding employment policies alongside labor market behavior to support statistical research. The section explains fundamental terms which describe employment structure classification and different unemployment categories alongside labor migration effects and workforce participation responded to economic elements.

The analysis devotes its attention to conducting extensive research about unemployment patterns in multiple economic sectors. Future unemployment rates and labor market perils are predicted through regression analysis accompanied by interval estimate predictions. The statistical analysis of hypothesis testing with correlation methods proves the relationships that exist between economic variables and job market dynamics.

The research implements descriptive along with comparative methodologies to investigate Moldova's labor market conditions while developing implementable employment solutions for the country.

2 Theoretical Part

Active job seekers without work form the group known as unemployed individuals. The International Labor Organization views these jobless people as they fit the national age standards and actively pursue employment opportunities (Englama, 2001). According to Jones & Riddell (1999), the unemployment rate represents an essential economic measure which divides unemployed people by the total labor force (Jones & Riddell, 1999).

Economic theories create different explanations of phenomena. Robert E. Lucas (1978) supports classical economic theories that state wage adjustments create full employment yet Englama (2001) represents Keynesian theory by arguing market market failures need governmental action (Robert E. Lucas, 1978), (Englama, 2001).

- Classical and Neoclassical Views: Markets self-correct, and government intervention has minimal impact on employment (Nickell, 1998); (Solow, 1980).
- Keynesian View: Insufficient demand causes unemployment, requiring fiscal policies like public spending (Englama, 2001); (Birca, 2019).
- Monetarist View: Money supply controls inflation, but unemployment follows a "natural rate" (Ng'andwe, 2020).

<u>Types and Causes of Unemployment</u>

- Frictional: Temporary unemployment from job transitions (Englama, 2001).
- Structural: Skills mismatch due to industry shifts (Ogujiuba & Cornelissen, 2020).
- Cyclical: Job loss from economic downturns, countered by fiscal policies.
- Seasonal & Voluntary: Industry-based fluctuations and personal job preferences.

Youth unemployment rates along with regional differences in employment remain high throughout Moldova at a time when the overall national unemployment rate measured 4.1% in 2017 (Savelieva & Zaharov, 2022). People between working ages migrate for employment opportunities because nearly half of this population searches for work outside their home country (Vasilescu & Sandroshvili, 2017).[1]

The workforce of Moldova has decreased due to its 1 million citizens doing jobs abroad which produces 15.8 percent of GDP (University of Texas, 2007).[2] During the COVID-19 pandemic the economy decreased its GDP output by 7.2% while predominantly impacting youth employment rates negatively.[3]

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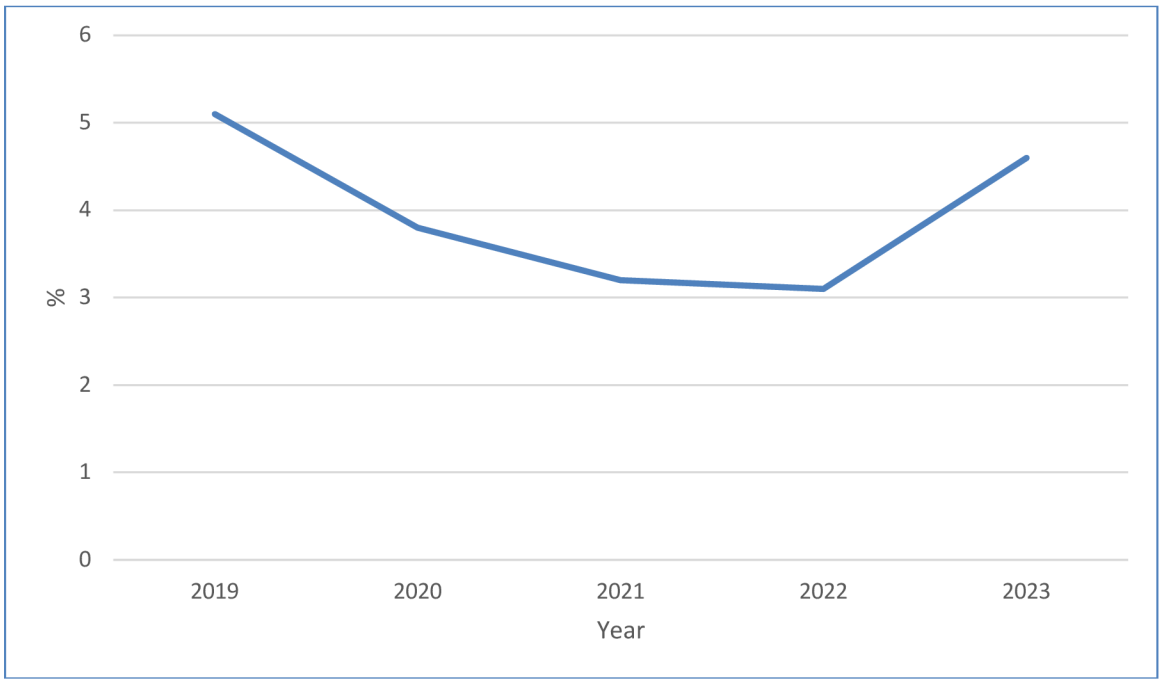
[1] Migration Policy Institute, 2024. Moldova: Country Resource. Available at: https://www.migrationpolicy.org/country-resource/moldova-republic [Accessed 27 February 2024].
[2] Federal Reserve Bank of St. Louis, 2020. Remittance inflows to Moldova (% of GDP). Available at: https://fred.stlouisfed.org/series/DDOI11MDA156NWDB [Accessed 27 February 2024].
[3] World Bank, 2024. Moldova: Overview. Available at: https://www.worldbank.org/en/country/moldova/overview[Accessed 27 February 2024].

3 Practical Part

The employment structure in Moldova follows three main categories consisting of 22.9 percent agriculture activities alongside 22 percent industry and construction sectors in addition to 55.1 percent services components (National Bureau of Statistics of Moldova, 2023). The loss of half the working population to foreign work opportunities diminishes Moldova's workforce while increasing dependence on money sent home by migrants (Ulandssekretariatet, 2023).

The analyzed period witnessed its minimum unemployment rate in 2021 with 3.1% due to pandemic support policies which reduced active workforce numbers. The unemployment rate started to rise from 2022 and climbed to 4.8% in 2023 because of economic falter combined with rising inflation and decreasing migrant flow.

Figure 1: Unemployment rate in Moldova for period 2019–2023



Source: Statbank MD, own processing, 2024

The interval estimate testing found the data prediction to be less reliable, with a high REF score of 53.26%. The estimated prediction interval, including the upper and lower confidence limits, is:

$$P\ (2.88\% < 3.96\% < 5.04\%) = 0.95$$

This suggests that the predicted unemployment rate for 2024 is 3.96%, with high uncertainty due to external economic conditions.

The average annual growth rate was -2.55%, reflecting a gradual decline in unemployment until 2023, when the trend reversed.

Reliability assessment shows low levels due to economic instability and external labor market pressures through a Relative Error Factor of 53.26%. The correlation analysis for unemployment against time produced a result of $r = -0.30772$ along with $p = 0.6145$, which suggests there is no significant statistical relationship between unemployment rates and time variables. Long-term patterns have minimal impact on unemployment changes since these shifts occur mainly because of economic changes and inflation and migration trends. Unemployment figures in 2023 were 90.2% of their 2019 rates according to the Fixed Base Index (FBI) but the Chain Base Index (CBI) of 1.4839 showed that unemployment increased by 48.39% from 2022 to 2023. Labor market stability suffers from economic downturns together with reduced migration and inflation processes.

Unemployment data from the test proved male and female employment trends move in exact complement ($r = 0.96186$, $p = 0.0089$). Men encounter more unemployment challenges compared to women because they primarily work in construction and manufacturing industries whereas women mostly work in healthcare and education sectors. Based on the paired t-test with $t = 9.65$ and $p = 0.0006$ the analysis confirmed that male and female unemployment rates exhibit a statistically significant difference. Linear regression results showed time to be poor at predicting unemployment trends because the R squared score reached only 16.61% for men but dropped to 3.20% for women. External economic conditions serve as the main drivers of unemployment instead of other influences. The analysis utilized linear regression to produce a theoretical dataset where the correlation coefficient for residual values reached $r = 1.0000$ thus confirming that economic factors affect male and female unemployment rates in the same manner without gender-specific influences.

The research showed urban along with rural unemployment rates had identical patterns since they decreased from 2019 until 2021 before increasing in 2023. The strong positive relationship between urban and rural unemployment rates becomes evident through the Pearson correlation coefficient ($r = 0.88971$) because this number demonstrates shared economic impact on both areas. H_0 was not rejected through a two-sample t-test ($t = -0.72$, $p = 0.49$) thus verifying that urban and rural unemployment rates show no statistically significant difference. Research evidence reveals external economic pressures affect urban as well as rural regions with comparable intensity thus reducing the gap between their employment conditions. Economic transformations throughout the past years have led to similar employment vulnerability between urban regions and their rural counterparts.

4. Conclusion

The unemployment pattern in Moldova declined initially from 2019 but rebounded between 2023 due to transformations within the labor market along with international economic impacts and shifting migration patterns of employees. The governmental policy responses during 2021 coupled with restrictions from COVID-19 work against people seeking employment helped reach an unemployment rate of 3.1%. However, by 2023, unemployment rose again to 4.8%, primarily due to inflation, economic downturns, and a decline in foreign worker migration. External economic variables create substantial uncertainty around the projected 2024 employment rate which experts expect to reach 3.96%.

The correlation results show that economic conditions serve as the primary factor behind changes in unemployment levels and time-based patterns do not influence these changes. Men face worse unemployment outcomes than women do throughout the labor force and in industries that include manufacturing and construction. The employment levels in urban locations reached 4.2% while rural areas maintained unemployment at 3.78% before the two sectors exhibited similar economic trends starting in 2021.

The research demonstrates the requirement of specialized employment policies for enhancing career options especially within occupations dominated by males as well as policies that ensure equal access to labor markets throughout various geographic areas. Workforce resilience improves when education follows employment paths better and when skills grow and when workplace rewards are present. The previous implementation of labor market interventions by Moldova continues to face ongoing challenges with migration and youth unemployment demanding complete novel policy approaches.

A sustained development strategy which combines job development within national borders along with entrepreneurship growth and investment making will support lasting employment expansion. By implementing effective policies to solve the systemic labor market issues Moldova can create a workforce adaptation system which leads to improved economic stability with better job opportunities for its citizens.

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