

GALATASARAY UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS

**THE MULTI-FACETED DIMENSIONS OF POVERTY
AND WELFARE DYNAMICS IN TÜRKİYE**

MASTER THESIS

Duran ÇEKİCİ

Supervisor: Assoc. Prof. Dr. Mustafa ULUS

JULY 2024

GALATASARAY ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
İKTİSAT ANABİLİM DALI

TÜRKİYE'DE YOKSULLUK VE REFAH
DİNAMİKLERİNİN ÇOK YÖNLÜ BOYUTLARI

YÜKSEK LİSANS TEZİ

Duran ÇEKİCİ

Tez Danışmanı: Doç. Dr. Mustafa ULUS

TEMMUZ 2024

PREFACE

I would like to express my special thanks to Assoc. Prof. Dr. Mustafa ULUS who spared his valuable time for my thesis and guided me during researching process. I owe also my thanks to the academics of Galatasaray University Department of Economics for their valuable contributions and dedication to my master education. I would like to dedicate this thesis to the cherished memories of my grandfathers Müslüm ÇEKİCİ and Vakkas SARIKAYA. Lastly, I would like to thank my family, my father Müslüm ÇEKİCİ, my mother Şenel ÇEKİCİ, my siblings Müslüm Can, Rahime and Hatice, and my wife Dilek for their valuable support during this thesis process and throughout my education.

TABLE OF CONTENTS

PREFACE	i
TABLE OF CONTENTS	ii
ABBREVIATIONS	iv
LIST OF TABLES	v
LIST OF FIGURES	vii
ABSTRACT	viii
ÖZET	ix
RÉSUMÉ	x
I. INTRODUCTION	1
II. LITERATURE REVIEW	6
II.A. Working Poverty in Europe and Türkiye	6
II.B. Türkiye's Main Labour Market Indicators In Line With Poverty	7
II.C. Theoretical Literature	17
II.C.1. Human Capital Theory	17
II.C.2. The Segmented Labour Market Theory	17
II.C.3. The Persistent Income Inequality Theory	18
II.D. Empirical Literature	19
III. CONCEPTUAL FRAMEWORK	23
III.A. Poverty	23
III.B. Absolute poverty	24
III.C. Relative poverty	24
III.D. The definitions of socio-poverty status	26
III.D.1. Unemployed Poor:	27
III.D.2. Inactive Non-Poor:	27
III.D.3. Working Poor:	28
III.D.4. Inactive Poores:	29
III.D.5. Unemployed Non-Poor:	29
III.D.6. Employed Non-Poor:	29
IV. THE MEASUREMENT OF THE POVERTY	30
IV.A. Poverty gap ratio	30
IV.B. The headcount index	30
IV.C. The poverty gap index	31
IV.D. Squared poverty gap index	31
IV.D. Sen index	32
IV.E. Time Taken to Exit index	32

IV.F. Chronic Poverty, Transient Poor, and Persistent Poor	33
IV.F.1. Spell Approach	34
IV.F.2. Component Approach.....	34
IV.F.3. Vulnerability Approach.....	35
V. NON-PARAMETRIC & DESCRIPTIVE ANALYSIS OF POVERTY	44
V.A. Poverty & Economic Status Transitions	55
V.B. Poverty and Reservation Wage Expectations	57
V.C. Income Groups Transitions.....	60
V.D. Exit And Entry into Poverty.....	65
V.D.1. Working Poverty Exit & Entry Probabilities	68
V.D.2. Non-Parametric Vulnerability Approach	70
VI. INDEX APPROACH FOR THE PERSISTENCE OF POVERTY	73
VII. ECONOMETRIC MODELLING OF MICRO PANEL DATA.....	78
VII.A. Random Effect Model.....	79
VII.B. Fixed Effects Model.....	81
VIII. THE BASE MODEL AND ESTIMATION RESULTS.....	83
VIII.A. The Base Model.....	86
VIII.B. The Impact of Social and Fiscal Policies.....	96
IX. CONCLUSION.....	99
X. REFERENCES.....	101
XI. APPENDIX	112
X.A. Household net annual disposable income.....	112
X.B. Equivalence scale/Equivalised household size	112
X.C. Equivalized household disposable income	112
X.D. Poverty rate.....	112

ABBREVIATIONS

BHPS: British Household Panel Survey

BLS: Bureau of Labor Statistics

EPHS: Argentina Permanent Household Survey

EU: European Union

EUROSTAT: European Statistical Office

FE: Fixed Effects (Model)

GDP: Gross Domestic Product

GRC: Gradín, Río, Cantó (Index)

HBA: Household Budget Survey

HS: Heckman Selection (Model)

ILO: International Labour Organization

ILOSTAT: International Labour Organization Statistical Database

INSEE: Institut National de la Statistique et des Études Économiques

OECD: The Organization for Economic Cooperation and Development

RE: Random Effects (Model)

REDPM: Random Effects Dynamic Probit Model

SILC: Survey of Income and Living Conditions

SS: Statistics Sweden

TTCPs: Tax Cuts for Social Purposes

TURKSTAT: Turkish Statistical Institute

UK: United Kingdom

UNDS: United Nations Development System

US: United States

LIST OF TABLES

Table 1. Poverty Rate By Median&Mean Income (raw %)	44
Table 2. Gender Composition of Socio-Poverty Statuses	46
Table 3. Marital Status of Working Poor	47
Table 4. Dwelling Type of Working Poor	47
Table 5. The Educational Attainment of The Working Poor	48
Table 6. The Household Type of Working Poor	49
Table 7. The Main Job Of Working Poor	49
Table 8. Main Job Of Working Poor	50
Table 9. Public & Private Sector Distribution	51
Table 10. Registration to Social Security Institution	51
Table 11. The Number of Hours Worked (Average)	51
Table 12. Material Deprivation, raw(%), 2022	52
Table 13. Socio-economic-poverty Rates, Raw(%)	52
Table 14. Poverty & Economic Status Raw Transition Matrices	55
Table 15. Poverty Raw Transition Matrices For Low-Educated People	58
Table 16. Poverty Raw Transition Matrices For High-Educated People	59
Table 17. Income Deciles Raw Transitions	60
Table 18. Poverty & Economic Status By Income Deciles (raw %), 2019	62
Table 19. Poverty & Economic Status By Income Deciles (raw %), 2020	62
Table 20. Poverty & Economic Status By Income Deciles (raw %), 2021	62
Table 21. Poverty & Economic Status By Income Deciles (raw %), 2022	63
Table 22. Low Pay (raw %)	63
Table 23. Annual Poverty Inflow & Outflow Rates (raw %)	65
Table 24. Working Poverty Exit & Entry Probabilities By Years	69
Table 25. Distribution of Transitions by Size of Income Changes (%)	71
Table 26. GRC INDEX FOR TÜRKİYE	73
Table 27. Decomposition of GRC INDEX	76
Table 28. Alternative Decomposition of GRC Index	77
Table 29. The Explanatory Variables & Descriptions	84
Table 31. Fixed Effects Model Estimation Results for Working Poor	89
Table 33. Fixed Effects Model Estimation Results for Unemployed Poor	90
Table 35. Fixed Effects Model Estimation Results for Inactive Poor	91
Table 37. The Effect of The Social and Fiscal Policies on Poverty	98

Table 38. The Effect of The Social and Fiscal Policies on Working Poverty.....	98
Table 39A. Income Distribution (raw %)	114
Table 40A. Social Assistance Rate	116
Table 41A. The Distribution of Attrition By Year & Status.....	116
Table 42A. Heckman Selection Model Estimation Results for Working Poor..	117
Table 36A. Random-effects Probit Regression Results for All Poor Statuses..	118
Table 30. Random Effects Model Estimation Results for Working Poor	120
Table 34. Random Effects Model Estimation Results for Inactive Poor	121
Table 32. Random Effects Model Estimation Results for Unemployed Poor...	122



LIST OF FIGURES

Figure 1. Unregistered Employment Statistics	8
Figure 2. Main Labour Market Indicators	9
Figure 3. Female Labour Participation Rates by Gender	11
Figure 4. Decomposition of Gross Domestic Product	12
Figure 5. Household Income Distribution by Quintiles, 2006-2023.....	13
Figure 6. Gini Coefficient of Türkiye	14
Figure 7. Corrected Gini Coefficient for Türkiye	16
Figure 8. S80/S20 & S90/S10 Ratio for Türkiye.....	16
Figure 9. Circular Flow of Poverty & Economic Status Dynamics	26
Figure 10. Sankey Diagram of The Transitions Between 2021-2022.....	57
Figure 11. Public Social Expenditure as % of GDP.....	96
Figure 12A. Sankey Diagram For 2019-2020	113
Figure 13A. Sankey Diagram For 2020-2021	114
Figure 14.A Gini Coefficient Before Social Transfers Including Pensions & Benefits	115
Figure 15.A Gini Coefficient Before Social Transfers Excluding Pensions & Benefits	115

ABSTRACT

The aim of this thesis is to reveal the multi-faceted dimensions and dynamics of the relative poverty, income distribution and the welfare in Türkiye with a special focus on working poverty. Working poverty has become one of the significant economic issues in the context of social and fiscal policies both in the world and in Türkiye. Increasing employment rates, which is considered as one of the primary alleviation strategies to overcome absolute poverty, *inter alia*, does not suffice as a policy to address relative poverty. The relative poverty does not only mean the lack of material resources, but also means not being able to benefit enough from the opportunities available to everyone in society and being socially excluded. For this reason, fiscal policies need to redistribute income through taxes and public expenditures, education policies, labor market regulations should be reconsidered and improved. Structural problems such as informality should be overcome, and social policies should directly target the vulnerable groups under the risk of poverty. In this respect, this new poverty needs to be better understood in order to develop the right policies. This study uses TurkStat's SILC micro panel dataset to reveal the main dimensions and dynamics of this new poverty in Türkiye between 2019 and 2022 in the context of labor market transitivity, income group transitivity and poverty transitivity. By focusing on the inflows and outflows of working poverty and poverty outside the labor market, it is revealed that there is in fact a loop.

ÖZET

Bu tezin amacı Türkiye'de nispi yoksulluğun, gelir dağılımının ve refahın çok yönlü boyutlarını ve dinamiklerini çalışan yoksulluğu özelinde ortaya çıkarmaktır. Çalışan yoksulluğu hem dünyada hem de Türkiye'de sosyal ve mali politikalar bağlamında önemli iktisadi meselelerden birisi haline gelmiştir. Mutlak yoksulluğun üstesinden gelmek için en temel iyileştirme stratejilerinden biri olarak kabul edilen istihdam oranlarını artırmak, bu meyanda, göreceli yoksulluğu ele almak için yeterli bir politika değildir. Zira nispi yoksulluk sadece maddi kaynaklardan yoksunluk anlamına gelmeyip aynı zamanda toplumda herkesin faydalanabildiği fırsatlardan yeteri kadar yararlanamamak ve sosyal olarak dışlanmak anlamına gelmektedir. Bu sebeple mali politikaların vergiler ve kamu harcamaları vasıtasıyla geliri yeniden dağıtıcı fonksiyonu, eğitim politikaları, işgücü piyasası düzenlenmeleri tekrar gözden geçirilmeli ve iyileştirilmelidir. Kayıtdışılık gibi yapısal sorunların aşılması ve sosyal politikaların toplumun yoksulluk riski altındaki kırılgan grupları doğrudan hedeflemesi gerekmektedir. Bu bakımdan doğru politikaların geliştirilebilmesi için yeni yoksulluğun daha iyi anlaşılması gerekmektedir. Bu çalışma, TÜİK'in Gelir ve Yaşam Koşulları mikro panel verisetini kullanarak 2019 ile 2022 yılları arasındaki Türkiye'deki bu yeni yoksulluğun temel boyutlarını ve dinamiklerini işgücü piyasası geçişliliği, gelir grubu geçişliliği ve yoksulluk geçişliliği bağlamında ortaya çıkarmaktadır. Çalışan yoksulluğu ile işgücü piyasası dışındaki yoksulluğa giriş ve çıkışlarına odaklanarak aslında bir loop olduğu ortaya konmaktadır.

RÉSUMÉ

L'objectif de cette thèse est de révéler les dimensions et dynamiques à multiples facettes de la pauvreté relative, de la distribution des revenus et du bien-être en Turquie, en mettant l'accent sur la pauvreté des travailleurs. La pauvreté des travailleurs est devenue l'une des questions économiques importantes dans le contexte des politiques sociales et fiscales, tant dans le monde qu'en Turquie. L'augmentation des taux d'emploi, qui est considérée comme l'une des principales stratégies d'atténuation de la pauvreté absolue, entre autres, ne suffit pas comme politique de lutte contre la pauvreté relative. La pauvreté relative ne signifie pas seulement le manque de ressources matérielles, mais aussi le fait de ne pas pouvoir bénéficier suffisamment des opportunités offertes à tous dans la société et d'être socialement exclu. C'est pourquoi les politiques fiscales doivent redistribuer les revenus par le biais des impôts et des dépenses publiques, les politiques d'éducation et les réglementations du marché du travail doivent être réexaminées et améliorées. Les problèmes structurels tels que l'informalité doivent être surmontés et les politiques sociales doivent cibler directement les groupes vulnérables exposés au risque de pauvreté. À cet égard, cette nouvelle pauvreté doit être mieux comprise afin d'élaborer les bonnes politiques. Cette étude utilise le micro panel SILC de TurkStat pour révéler les principales dimensions et dynamiques de cette nouvelle pauvreté en Turquie entre 2019 et 2022 dans le contexte de la transitivité du marché du travail, de la transitivité des groupes de revenus et de la transitivité de la pauvreté. En se concentrant sur les flux d'entrée et de sortie de la pauvreté des travailleurs et de la pauvreté en dehors du marché du travail, on constate qu'il existe en fait une boucle.

I. INTRODUCTION

Poverty is one of the crucial issues that governments must solve in order to increase the general welfare level of the society. They have a fundamental role in the fair distribution of the scarce resources through various policy instruments. These instruments could be monetary, fiscal, and social policies. The mechanisms like the minimum wage policy, a preferred wage to being unemployed in neo-classical setting, might offer a general solution. However, its effectiveness might be limited within economic cycles. On the other hand, social policies might be exposed to the exploitation due to political motivations. That's why achieving a social welfare and justice requires governments to find an optimum level. They are obliged to transfer effectively and fairly the scarce resources to prioritized groups to reach long-run welfare outcomes. The level of employment is generally seen as a powerful policy, but the changing distinction between absolute and relative poverty weakens the effectiveness of these policies. Relative poverty is now the main focus of social policy research in developed nations and put the different interpretations of the poor across nations.

In this regard, the aim of this thesis is to address the multi-faceted dimensions and dynamics of relative poverty in Türkiye. This thesis will try to answer the following questions by drawing on SILC micro-household data from 2019 to 2022: What are the dimensions and main determinants of relative poverty and working poverty in Türkiye? What is the impact of labor market transitions on poverty status transitions? What is the impact of fiscal and social policies in combating working poverty? What are the most important factors affecting entries and exits from working poverty? To answer these questions, first, a comprehensive descriptive analysis will be made to reveal the heterogeneous distribution of poverty experience in Türkiye according to the determined socio-poverty definitions. Secondly, the heterogeneous distribution of poverty experience among the poor will be examined through the GRC Index. Thirdly, three different econometric models, including two-step Heckman Selection Model related to the dimensions of poverty in Türkiye will be established to determine the main determinants of each poverty dimension.

So far, the changes in income inequality in Türkiye have often been analyzed through the snapshots taken at different time periods. However, this approach is insufficient to comprehensively capture what happens to individuals, especially the poor. These static rates at specific years do not show how much income the poor people could earn throughout their lives and how income distribution could change in the medium run. To understand this, it is needed to know how much people move up or down within the income distribution, in other words, income mobility. Additionally, looking at the number of working poor is also not enough. Instead of numbers, the persistence of poverty and how long this situation lasts are needed to examine. Rising income inequality may mean that people stay poor for longer periods, but this still does not provide a complete picture. This thesis will thus contribute to the literature by revealing the dynamic and multi-faceted structure behind seemingly stable poverty rates. As a first contribution to the literature, a comprehensive study on Türkiye's poverty situation is being put forwarded, based on the basic concepts in the poverty literature. As a second contribution, starting from the concept of working poverty, different concepts such as Inactive-Poors and Unemployed-Poors are being suggested regarding other dimensions of poverty. By revealing its differences with working poverty, this thesis will offer a different and collective perspective and guide to future researchers.

To begin with, a country's welfare system, or welfare state policies, is a critical institutional factor in the distribution of wealth. The concept of economic mobility, which is the key part of these policies, significantly affects the welfare levels of individuals and households, as put by Yaqup (2001). On the other hand, it can be said that the concept of economic mobility is closely related to the above-mentioned fiscal, monetary and social policies of governments because the decisions taken by governments also affect people's economic lives and their relative economic positions in society. For example, labor income accounts for a significant portion of households in a substantial segment of the society, especially in lower income groups. Therefore, any policy that has the power to affect people's income levels can directly affect their lives.

The concept of economic mobility can be examined in different dimensions: high, low, permanent, temporary, absolute and relative. In an economic cycle, any dimension might come to the fore or remain in the background by depending on the circumstances. According to one of the claims of this thesis, poverty emerges as a negative externality of a country's welfare system, which includes financial, monetary and social policies, and income inequality. Therefore, a strong relationship can be established between economic mobility and poverty.

Yaqub (2001) addresses economic mobility in two main ways here. First, absolute mobility can be defined as moving above or below a certain welfare threshold (Yaqub (2001). Second, relative mobility can be changes in individuals' personal positions within the wealth distribution (Yaqub, 2001). Looking at its relationship with poverty, absolute poverty can be defined as a state of insufficient command over material resources, regardless of the general welfare level of the society (Decerf, 2023). Conversely, relative poverty can mean having a low level of well-being compared to the general standard of society (Walker & Lichao, 2021). Given its association with relative poverty, relative mobility can cause individuals to move between poverty and welfare states, resulting in poverty that is being more widely and unequally distributed among more people (Yaqub, 2001; Biewen, 2003).

When considered in the context of high and low mobility, the concept of inequality comes to the fore here. Focusing on both mobility and inequality together provides a better understanding of income trajectories and inequalities over time for households and individuals (Carroll & Chen, 2016). For example, low mobility can further worsen existing income inequalities by preventing an individual's upward economic movement (Brunori, et al., 2013).

Based on this, concepts such as relative mobility, relative poverty, high mobility, temporary mobility and inequality can be closely associated with the human development. People can transfer the social capital and monetary resources they have accumulated throughout their economic life cycle to the next generation. Thus, a resource transfer between generations ensures the continuity of economic life. One of the main purposes of social policies can be considered as the correct and fair transfer of the wealth produced in a distribution area between needs and scarce resources to households and individuals. In this respect, economic mobility can also express an intergenerational relationship. Therefore, in the context of human development, it can be said that economic mobility includes access to basic human rights, especially education and health. (Hecman & Mosso, 2014). In particular, an efficient mobility between the generations ensures individuals to access better education and employment opportunities as social capital, independent of the above-mentioned monetary resources within their families (Neidhöfer, et al., 2023).

Basically, in this context, the sources of poverty can be traced back to three main pillars: Institutional factors, macro factors and micro factors. Firstly, institutional factors can be considered as the top category here. A country's definition of poverty and welfare is shaped by a wide range of factors, such as its economic resources, legal systems, welfare frameworks, demographics, and international affiliations (Berkman, 2023). For example, Scandinavian social democracies offer a broad state protection with minimal poverty. Liberal welfare states, like U.S. and U.K., prioritize market efficiency and limited government intervention (Crettaz et. al, 2010). Furthermore, from institutional social policy perspective, decommodification, which is a society's dependency on market income, and defamilization, which is the individual's dependency on the family income, could shape the structure of poverty in a country (Esping-Andersen, 1999; as cited in Lohmann, 2009). That's why how a country structures its social safety net policy is a crucial process. The strong welfare states with high decommodification might have less poverty, since they have a sufficient social transfer to economically inactive population. In terms of defamilization, the policies considering one more additional earner in the household could also reduce poverty (Lohmann, 2009).

This thesis examines the dimensions of relative poverty in Türkiye in six main sections:

1. **Literature Review:** This section will present a summary of empirical and theoretical literature for Türkiye and other emerging economies. It will contextualize the poverty concepts across various countries within historical, political economic, social policy, and human development perspectives. Also, a comprehensive review on poverty is presented in this section.
2. **Conceptual Framework:** This section will analyze the epistemology of poverty in terms of absolute and relative poverty. It will introduce especially defined concepts: *Unemployed Poor*, *Working Poor*, *Inactive Poor*, *Inactive Non-Poor*, *Employed Non-Poor*, and *Unemployed Non-Poor*, with associated definition rule sets.
3. **The Measurement of Poverty:** This part will comparatively evaluate generally known poverty indices by questioning their logic, advantages, and limitations. This part also will focus on dynamic analysis methods and demonstrate the theoretical design of an axiomatic index.
4. **Non-parametric and Descriptive Analysis:** This section will employ widely used methods in Turkish poverty literature to provide a general framework of poverty, particularly working poverty, through descriptive statistics. This part will examine the poverty transitions, income group mobility, and their interrelationships based on defined socio-economic-poverty statuses.
5. **The Index Approach for Persistence Of Poverty:** This section will benefit from common poverty indices to illustrate the transformation of persistent poverty into chronic poverty. It will introduce the GRC Index to address intertemporal poverty.
6. **Microeconometric Analysis:** This section will investigate working poverty and general poverty in Türkiye using Fixed Effects, Random Effects, Heckman Selection Model, and Random Effects Dynamic Probit Model. It will mainly focus on household-related determinants, individual determinants, and the impact of triggering events on poverty.

II. LITERATURE REVIEW

II.A. Working Poverty in Europe and Türkiye

This section will provide information about the history of the concept of working poverty in Europe and Türkiye. Also, it will present a comprehensive review on poverty.

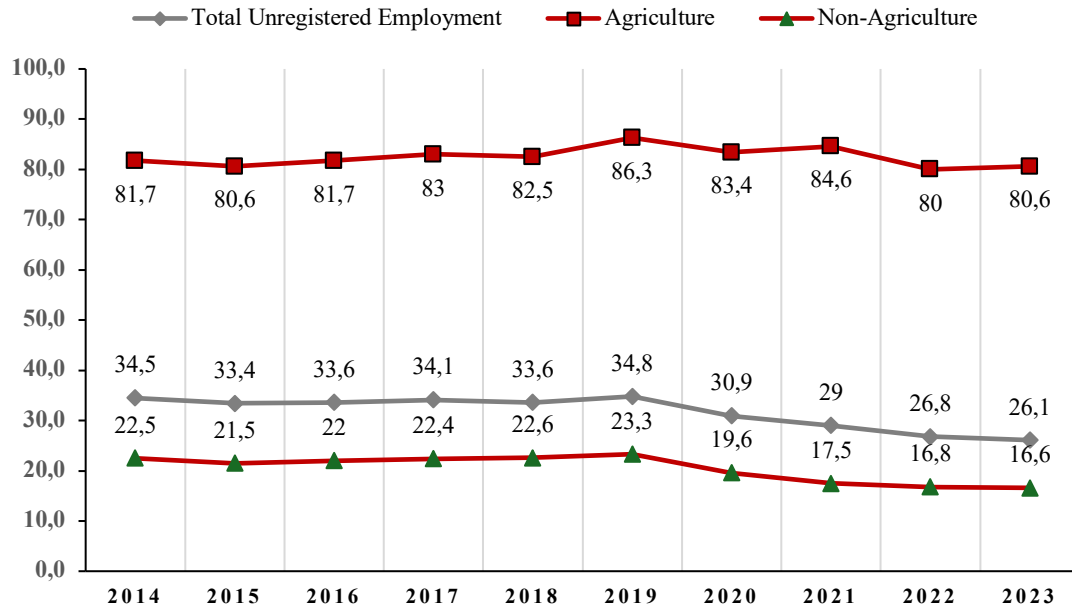
Firstly, until the late 1990s, the working poverty had not gained serious attention as an issue at supranational level in European Union (EU). This can be attributed to the completion process of economic integration of the EU. In contrast to Europe, the notion of the working poor emerged in the United States during the 1970s. In US, this notion was being used to describe a population that was employed but still struggling with poverty fundamentally (Gundogan, 2005, as cited in Kart, 2023). Therefore, this concept has then become relevant and useful for understanding the realities of today's labor market conditions (Gundogan, 2005, as cited in Kart, 2023). Thus, the working poor were officially defined by the Bureau of Labor Statistics in the U.S. in the mid-1980s (Fraser et. al, 2011). In this sense, it can be said that the foundations of the concept of working poverty in academic research were laid in the US.

EU's economic integration has reached a significant level of completion with the adoption of the common currency, the Euro, in the early 2000s. After this date, EU took the concept of working poverty seriously, and redefined this concept. It can be said that the reason behind this is that EU integration process brings with it new economic, employment and social transformations. Just like in the Schengen project, the mobility of labor between member states has been free by leading Union to produce common policies regulating the labor market among member states, developing common practices and taking common decisions. With these new transformations, labour market segmentation, and temporary employment trends in the labor markets of member states have become even more evident. Hence, this situation showed itself mostly in low quality works. The general features of these low-quality jobs could be low wages, limited working hours, temporary contracts, and poor working conditions.

In this respect, ILO conducted a research in its 2008 World of Work Report. The report was examining the share of wages in GDP across 73 countries. The report found that this share had declined in 51 of these countries. The most significant declines had been occurred in Latin America, the Caribbean, and Asia-Pacific (ILO, 2008). So, this trend in low-pay economies, considered together with increasing competition, has negatively impacted the wages of unskilled labor in Europe. As a result, “poverty is no longer confined to conventional archetypes such as long-term unemployed individuals and retirees but is increasingly affecting the economically active population” (Fraser et. al, 2011).

II.B. Türkiye’s Main Labour Market Indicators In Line With Poverty

Before embarking on a detailed literature review on the subject, it would be useful to review the state of the labor market in Türkiye. It was stated in the introduction that the sources of poverty are based on three main pillars. These are institutional, macro and micro foundations. Considering the labor market in Türkiye in the light of these concepts, informal employment in Türkiye stands out first. A segmented labour market structure leads the gap to increase between formal and informal sectors. Hence, income distribution inequalities occur easily among labour market participants, and play a major role in the development of poverty. For instance, the highest prevalence of informality in Türkiye is observed within the agricultural sector. This sector has the most significant contributor on the overall rate of informality. In recent years, there has been a trend against a reduction in informality. From Figure 1, the trajectory of informal employment over the past few years can be seen. As a result of this dualized labour market structure, along with these factors, low unionization rates, the weak bargaining power of low-paid workers, the content and level of minimum wage, and other institutional and micro factors could also contribute to poverty. Also, the changes in work arrangements and the rise of flexible models like remote working, subcontracting, and piece-working, with their wage and time elasticities, could further exacerbate working poverty. In sum, strong labor unions, coordinated wage-setting with different representative of state institutions, and minimum wages are linked to lower levels of low-paid work, and possibly also related to less working poverty (Lohmann, 2009).

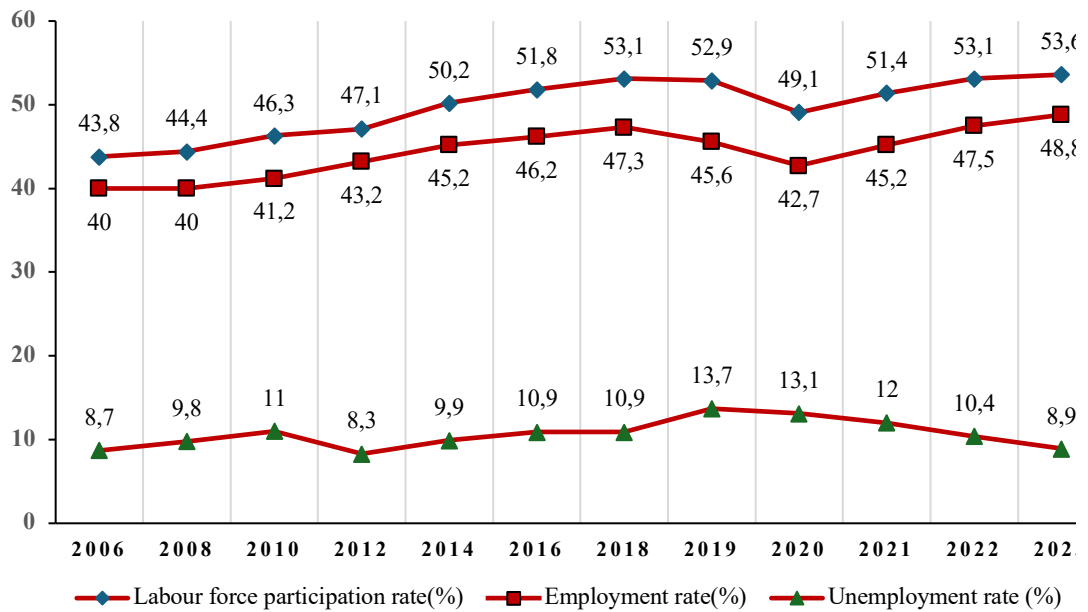
Figure 1. Unregistered Employment Statistics

Source: TURKSTAT, Labour Force Statistics

Secondly, as a macro factor related to abovementioned institutional labour market factor, governments' pre-determined growth models could directly impact the relative poverty from macroeconomic perspective. For instance, Türkiye's case historically illustrates this last macro growth-factor very well. Since the 1980s, the country has opted an outward-oriented market economy with a focus on comparative advantage in trade and liberal policies, and this has coincided with a rapid rural-to-urban migration and industrialization leading to the growth of urban ghettos (Seker & Dayioglu, 2015). Then, combatting against poverty has been viewed primarily through the lens of economic growth, in other words; numbers, by underestimating its broader social and economic dimensions. Boosting the level of employment has been seen as the sole solution. Overall, it can be said that economic, and social changes in Türkiye during early 1990s and 2000s have created a new form of urban poverty that is more persistent and lacks the social support systems that existed previously. Thus, from this point of view, participating to labor markets and income-generating activities, as well as developing social and economic networks, have become more difficult for disadvantaged groups (Adaman & Keyder, 2006; as cited in Kart, 2023).

On the other hand, informal employment is declining in the last decade. However, in initial phases of the industrialization from 1960's, the formal employment has been replaced by informal work arrangements mostly shaped by uncertainty and job insecurity (Kart, 2023). When it is considered along with the privatization process during 1980's, it can be said that poverty in Türkiye is essentially a concept that is shaped mostly by both labour market failures and institutional social factors in the last four decades. Since the rapid industrialization did not bring along with an efficient services sector, it can be said that the substitution of the decreasing labor force from agriculture to the industries in the cities is one of the key reasons for this new social structure in the cities. This has not only given rise to the dualized structure of the labor market, but also has had a significant impact on women's participation in the labor market.

Figure 2. Main Labour Market Indicators



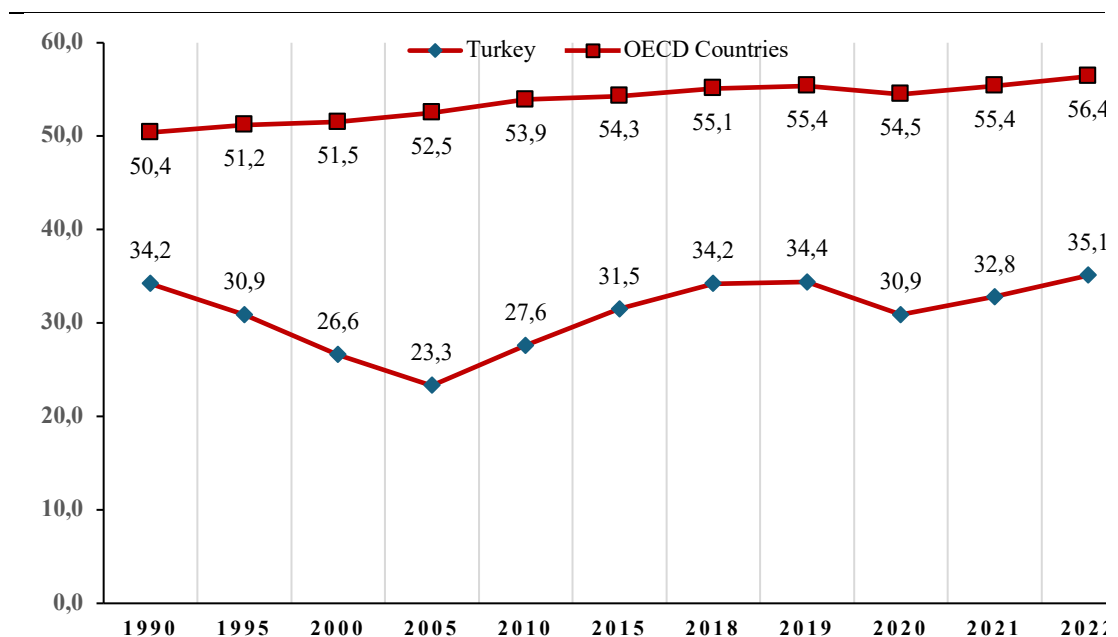
Source: TurkStat

Figure 2 shows three main labor market indicators for Türkiye from 2006 to 2023. Firstly, the labor force participation rate has increased from 43,8% to 53,6% in nearly last two decades. This is indicating that a substantial portion of the population have become economically active. Along with this, the employment rate demonstrates a similar trend by rising from 40% to 48,8%. Secondly, the unemployment rate has displayed a stable trend despite the high level growth years during early 2010s. Mechanically interpreted, the gap between the labor force participation rate and the employment rate can be considered as the unemployment rate. But it has also fluctuated throughout the period. The fluctuations in these main indicators demonstrate not only the positive and negative macroeconomic shocks, but also the structural effects in the labor market. From this point of view, when it is considered with poverty rates during this period, it can be said that despite being employed, poverty is still existing in a large portion of population. This phenomenon can be considered as new poverty (Kapar, 2010; as cited in Kart, 2023). This concept reveals the fragile relationship between labor market participation and poverty alleviation. It can be now said that the changing landscape of work in today's Türkiye is being characterized by a widening skills gap between low-skilled and high-skilled positions in the job market by creating a precarious situation for employed individuals by exposing them to new threats of poverty, which is income poverty (Kart, 2023).

In addition to macro contributors to poverty discussed above, on the other side of the medal, the micro-level factors that contributes to poverty and specifically working poverty can be explained by human capital theory. For instance, an individual's personal investment in his/her personal capital through education would positively affect his/her future earnings. Education helps reveal an individual's interests, skills, and abilities by facilitating his/her self-fulfillment. Traditionally, the literacy rates have been used to measure education levels in poverty studies. However, it can be stated that the changing definition of poverty, or a new form of urban poverty, has added a new dimension to the education factor. For instance, while a bachelor's degree generally leads to higher earnings compared to a middle school diploma, the concept of graduate unemployment has been appearing in the unemployment literature (Pelek, 2022). In Türkiye, it can be now said that education has recently become a quality and infrastructure issue rather than an access and quantity issue.

Additionally, another factor related to micro determinants, although female labor force participation has increased in recent years, this increase has been limited in Türkiye. Gender remains still a significant explanatory variable in understanding the dimensions of poverty in Türkiye (Kart, 2023). Compared to OECD countries, it can be said that the female labor force participation rate in Türkiye is still low. When looked at OECD countries over the past 30 years, the female labor force participation rates have increased from 50% to 56% by 2022 despite the 2008 financial crisis and 2020 pandemic. In Türkiye, the rate has dropped from 34,2% in 1990 to 23,3% before the 2008 crisis. Then, it rose until the 2020 pandemic, and it reached 35,1% in 2022. This comparison is illustrated in Figure 3. However, women's labor force participation in Türkiye needs a different interpretation. In Türkiye, family businesses are at the forefront of agriculture and agricultural work is carried out by families. Therefore, women's labor force participation is high in this sector due to family work. With the increasing migration to urban areas following rapid industrialization, women's labor force participation in Türkiye declined throughout the 1990s. After the early 2000s, women's relations with the labor market have diverged from the family context and exhibit a different pattern in cities. In the last two decades, women's labor force participation has exhibited a positive trend.

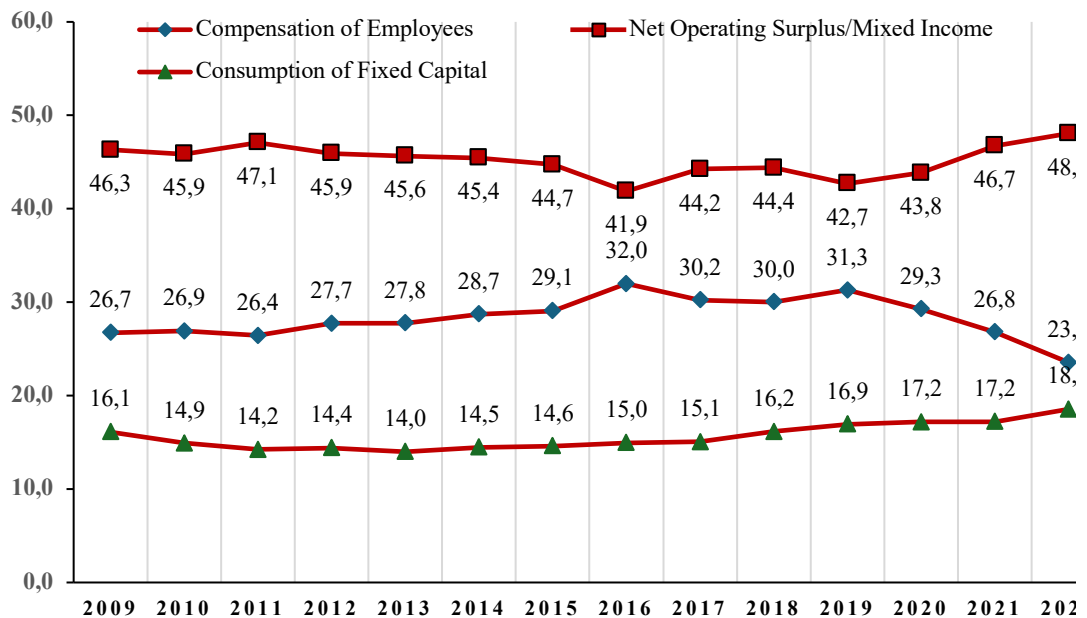
Figure 3. Female Labour Participation Rates by Gender



Source: OECD- Labour Participation Rate

When came back to poverty, the concept of working poverty is the combination of individual and household characteristics. For instance, an individual may not be poor according to his/her personal wage earnings and non-wage income. However, she/he may fall into poverty if he/she lives in a household with a high number of dependents, like children and elderly people. The reverse is also true. That's why household structure is a significant explanatory factor in Türkiye. In addition to this, in particular, unpaid family workers stand out in labor statistics. These individuals are not counted as unemployed because they are actively working to sustain their families' businesses. This situation complicates the measurement of poverty because these people's economic contribution to total household income in monetary terms cannot be fully measured, and then their individual poverty status cannot be determined clearly. In addition to these institutional, macro, and micro pillars, another key factor closely related to them is the problem of income inequality, which is becoming a chronic problem both globally and in Türkiye. Recent years, the share of labor in total gross domestic product has been decreasing (TurkStat, Figure 4.)

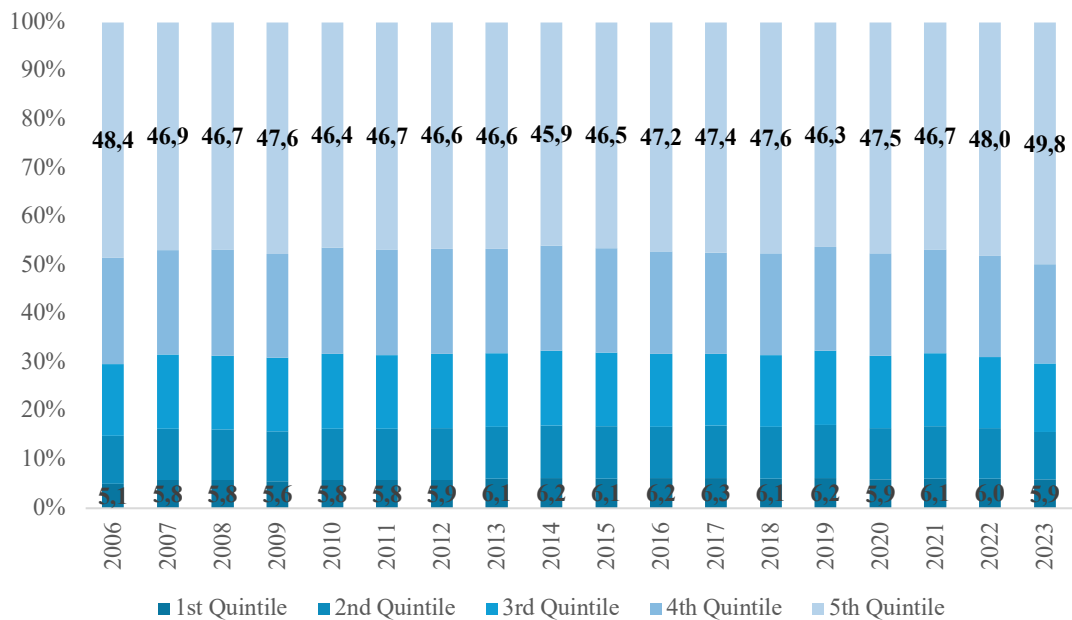
Figure 4. Decomposition of Gross Domestic Product



Source: TURKSTAT, Annual GDP Statistics

The decomposition of Türkiye's GDP from 2009 to 2022 reveals that there have been significant structural changes in the economy's factor distribution. Firstly, the most visible trend is the decline in the labor share denoted by compensation of employees from 31,3% to 23,6%, especially after 2019. According to some researchers, this decline can be explained by the decline in the relative price of investments (Karabarbounis & Neiman, 2014). Secondly, the share of capital indicated by net operating surplus/mixed income demonstrates a relatively stable trend compared to the share of labour. This stability, related to the declining labor share, could suggest an increasing concentration of income in capital returns by in turn worsening income inequality. Thirdly, the incremental increase in the consumption of fixed capital from 16,2% to 18,5% may indicate more capital-intensive production. All considered, these trends collectively may demonstrate that Türkiye's economy has been characterizing by a diminishing labor share and an increasing dependency on capital in the observed period. This structure has important social implications for income distribution, labor market dynamics and growth policies.

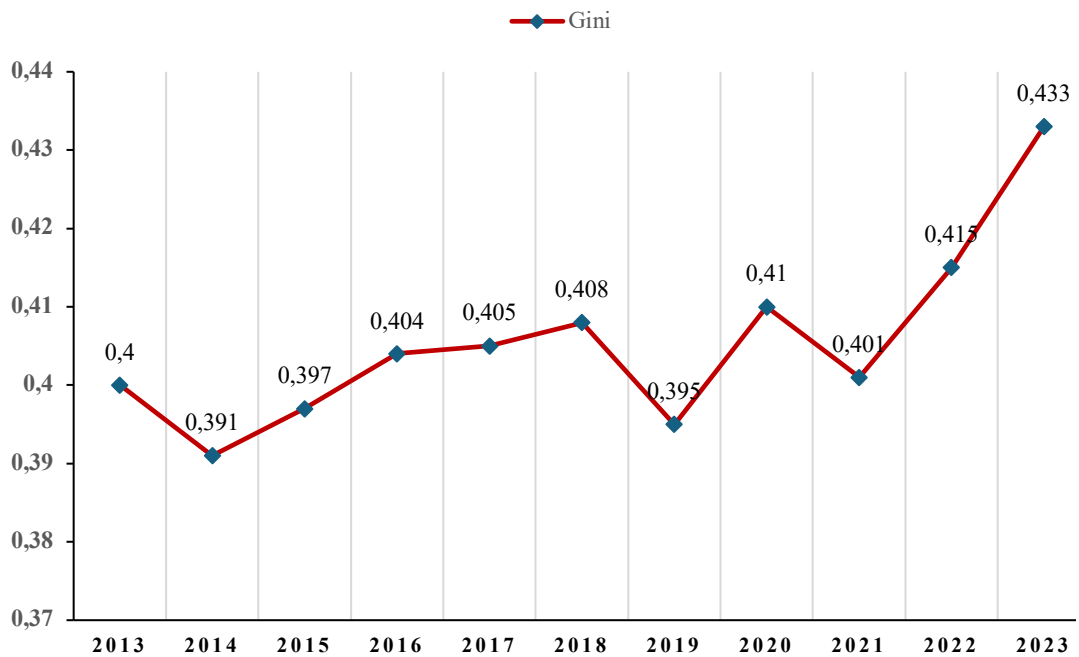
Figure 5. Household Income Distribution by Quintiles, 2006-2023



Source: TurkStat, SILC, 2006-2023. Reference period of income is the previous calendar year.

In parallel, as can be seen through Figure 5, the share received by the highest income group in society is increasing recent years. At the same time, the gap between other income groups is widening. This makes it difficult for lower income groups to move towards the highest income group. However, this could also make the mobility between the lower- and middle-income groups quite intense. Therefore, this creates a fertile ground for the context that this thesis aims to examine. So, poverty is not just an instantaneous snapshot rate. It is a situation with a very dynamic structure. Once a person falls into poverty, this situation continues for a while. Although income distribution generally shows a stable state, individuals often move up or down within this distribution over time (Stewart & Swaffield, 1999). A seemingly stable average income table can be misleading. People's positions within the income distribution are constantly changing (Jenkins, 2000).

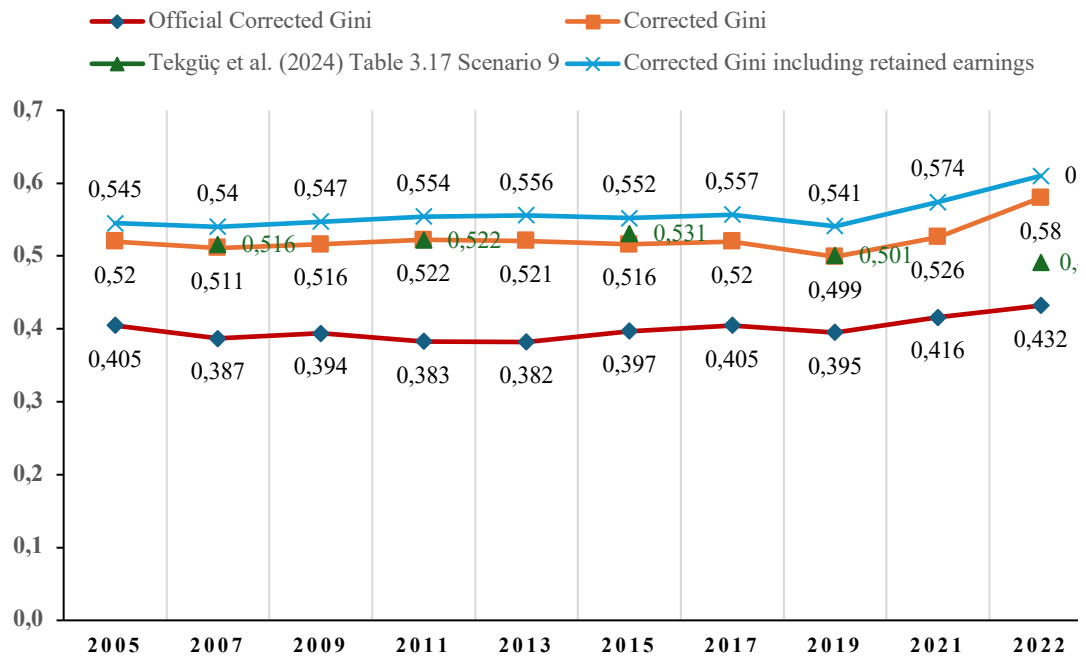
Figure 6. Gini Coefficient of Türkiye



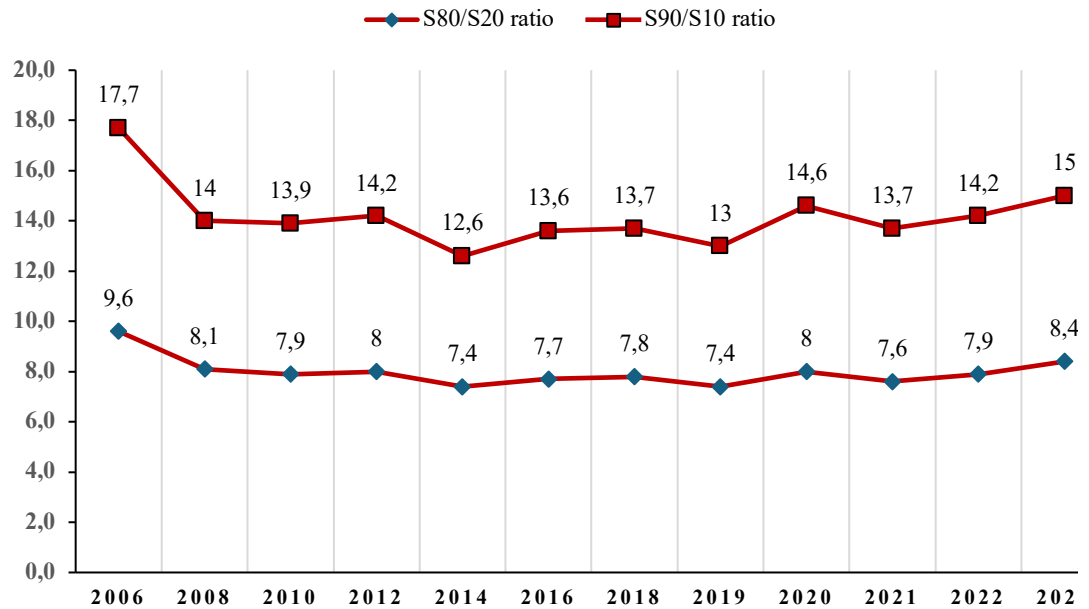
Source: TurkStat

Firstly, the Gini coefficient is a generally accepted and common measure of income inequality in the world. In this statistics, closing to 0 represents the perfect equality, and 1 represents perfect inequality. The graph in the Figure 6 shows the fluctuations of income distribution over the past decade in Türkiye. It can be clearly seen that there is a general upward trend in inequality from 2013 to 2023. However, the household micro datasets fail to represent the upper income groups well. This is a common issue known in the literature as the missing upper tail phenomenon (Tekguc et. al, 2024). This underrepresentation is significant issue when analyzing the income distribution. For the evaluation of poverty, the accurate estimation of high-income groups' share in total income and integration of these estimates into household survey data are essential. This is a sampling problem. That's why Tekguc et al. (2024) have developed various econometric and statistical methods to solve this data problem.

Their study uses multiple approaches to correct household survey data. They are firstly comparing HBAs with national accounts data. Then, they are using the real estate price data from a well-known selling website to estimate upper-income group incomes. Then, they are applying Pareto distribution methods to estimate top incomes. Hence, they can develop several scenarios to redistribute the difference occurred in comparison between survey and national accounts data. They are particularly focusing on capital and mixed income. They also adjust labor share calculations in national income to explain self-employed and unpaid family workers as mentioned in the introduction. As a result, their findings suggest that the household surveys significantly underestimate the inequality in Türkiye. From figure 7, after the corrections, the Gini coefficient for disposable income in 2019 increases from 0,351 to 0,501 (using total household income). The share of top 5% increases from 16,7% to 28,1%. Also, the labor share of income, when adjusted for self-employed and unpaid family workers, decreases significantly, especially after 2019. The following two graph illustrates the difference between officially reported Gini coefficients and adjusted Gini coefficients, with official S90/S10 ratio.

Figure 7. Corrected Gini Coefficient for Türkiye

Source: Tekguc et al. (2024)

Figure 8. S80/S20 & S90/S10 Ratio for Türkiye

Source: TurkStat

II.C. Theoretical Literature

II.C.1. Human Capital Theory

Firstly, human capital theory is one of the leading theories in order to understand income disparities within a society. According to this theory, the income differentials would arise from the different levels of individual investment in human capital (Becker, 1964; as cited in Seker, 2011). This theory explains working poverty with the insufficient human capital investment in education that maintains economic productivity and individual incomes (Becker, 1964; as cited in Seker, 2011). From this point of view, education improves people's employment possibilities and offers better material, and non-materials returns, and facilitates job mobility (Olaniyan & Okemakinde, 2008; as cited in Seker, 2011). Also, by investing in education and training, this can significantly reduce poverty and income inequality (Seker, 2011). However, this theory lacks in some points. For instance, while human capital theory mainly focuses on the supply side of labor, the demand-side factors also contribute to wage differences, so that this cannot be merely explained by worker characteristics (Seker, 2011).

II.C.2. The Segmented Labour Market Theory

Secondly, the segmented labor market theory is another useful theory that could explain working poverty from institutional perspective. According to this theory, working poverty is a structural problem since the labor market is divided into primary and secondary sectors. The primary sector offers better wages, conditions, and stability. On the other hand, the secondary sector is characterized by low pay, poor conditions, and high turnover (Kalleberg & Sorensen, 1979 as cited in Seker, 2011). So, this theory attributes working poverty to the secondary market due to low bargaining power of individuals and structural factors like the gender discrimination (Elson et al., 2007).

In addition to the dual labor market hypothesis, the entrapment hypothesis asserts that the initial entry into the secondary market has permanent negative impacts by making it hard for workers to move to the primary sector (Scherer, 2004; as in cited in Seker, 2011). On the supply side as stated above, low-paid jobs can prevent the future human capital to accumulate and depreciate the existing capital (Seker, 2011). Additionally, experiencing a low-paid employment can negatively affect an individual's self-perception about the productivity (Stewart & Swaffield, 1999).

II.C.3. The Persistent Income Inequality Theory

Lastly, the persistent income inequality theory is one of the useful theories. According to Durlauf (1996), the persistent income inequality theory asserts that how the income distribution is determined is essential, since it can identify certain conditions that lead to significant cross-sectional inequality. This identification can lead to re-design income redistribution policies aimed at maximizing social welfare. Additionally, the effectiveness of educational expenditure in reducing poverty and inequality depends on the interaction of these expenditures with various sociological factors. In this regard, Durlauf (1996) shows in his study that how wealthy families tend to isolate themselves to provide the best education for their children at minimal cost by leading to income stratification within the society. Since the average costs in human capital investment decrease, the incentives arise for communities to develop with varied income levels.

Hence, poverty can persist due to individual heterogeneity or state dependence. If poverty itself causes the future poverty, this cycle could be overcome with short-term measures like social benefits (Seker, 2011). For instance, well-targeted social assistance can reduce short-term poverty. On the other hand, it may also discourage from work by trapping individuals in poverty (Biewen, 2009). The structural factors like discrimination further inveterate individuals in poverty (Elson et al., 2007). Finally, effective poverty reduction policies require addressing both structural issues and individual-intensive policies.

II.D. Empirical Literature

From Latin America, in Argentina, Poy (2023) identifies the labor market events, such as; fluctuations in employment status, hours, and wages, as the most significant factors that is influencing working poor. The econometric method of the study is the multinomial logistic regression. According to Poy's findings, the persistent working poverty is closely linked to low education levels, dependent children, and poor job quality. Additionally, the study puts the limited efficacy of the social benefits in preventing poverty. For example, less than 2% of workers avoided from poverty through these means. The study used panel data from Argentina's Permanent Household Survey (EPHS) from 2017 to 2019.

From a Nordic continent, the study by Lovisa & Jansson (2023) has put important findings about the transformation of working poverty in Sweden from 1987 to 2016. According to their study, working poverty has a demographic pattern changing from predominantly native Swedish single women to married immigrant men. This points that there has been a structural change in Sweden. Also, there had been a decrease in income mobility among workers. The research also, drawing on data from Statistics Sweden (SS), indicates that while the working poverty rate remained stable at 1,4%, but the composition of Working Poor changed significantly. The study's approach is longitudinal and use two income definitions household disposable income and individual earned income. These income sources provide more accurate analysis of the persistence of working poverty. They also point the importance of education, household composition, and immigration status as determinants of income mobility. Since Türkiye is the leading country in holding migrant (asylum-seekers) population, migration/demographic related labour market events could also be influential poverty and labour market transition dynamics. Since this topic is out of the scope of this thesis, this issue will not be examined in detail. The paper by Aksu et al. (2022) analyzes the impact of Syrian asylum-seekers migration on the Turkish labor market.

From a liberal continent, Jenkins (2000) analyses the household income dynamics in Britain drawing on data from the British Household Panel Survey (BHPS) the years between 1991-1996. According to the study, there is an intense income mobility within this period. The individuals frequently moved between income groups. Then, this mobility is further supported by the finding that a proportion of the population experiencing poverty over a six-year spell is nearly twice. Additionally, the longitudinal averaging income reduces the inequality. For example, Gini coefficient is declining by 3% points. According to the findings, there are also other key socio-economic factors influencing these dynamics, such changes in labor earnings from non-breadwinner household members, non-labor income such as benefits, and changes in household composition. Jenkins's (2000) study methodologically employs a descriptive and multivariate modeling approaches.

When it comes our country, it can be said that studies on working poverty in Türkiye has started in the mid-2000s. First of all, the developments in relative poverty and income distribution have been regularly followed by TurkStat since 2006 with the Income and Living Conditions Research Surveys, abbreviating as SILC. Much of the research on overall poverty in Türkiye summarizes the unchanging characteristics or main determinants of poverty in Türkiye as noted by Akder (2000), Caglayan & Dayioglu (2011), and Yukseler & Turkan (2008). However, it can also be said that the studies focusing on the dynamics of poverty, particularly on its persistence, are quite limited. The first studies on the subject has dealt with working poverty indirectly (Isik & Pinarcioglu, 2001; Acikalin, 2007; Erdoğan, 2007; Sugur et al., 2008a). These studies are mostly based on field studies. It can be said that studies directly addressing working poverty started in parallel with TURKSTAT's implementation of SILCs. The first studies were mostly based on these data rather than field studies (Kapar, 2005; Kapar, 2010, Gundogan, 2008; Kahraman, 2015; Cavusoglu, 2012). In these studies, the general profiles of working poverty have been drawn. For example, Cavusoglu (2012) examined working poverty by sector and work situation using the aggregated data set of the Household Budget Surveys between 2002 and 2009.

An important contribution came from Acar & Baslevant (2014). Their study analyzes the households' poverty transitions from 2007 to 2010 by using the SILC panel data. Methodologically, they employ binary choice models to assess the impact of household characteristics and changes in income on poverty status year by year. They are focusing merely on triggering events that led households to exit or entry into the poverty status by 6 different binary choice models. For example, these events can be summarized as having a house or being tenant from homeowner, changing income and gender of the breadwinner, etc. At the end, their findings conclude that there is a high poverty risk for crowded households with inactive members. Also, there is a protective role of the household head's education and full-year employment. The significance of home ownership and income changes are another related and important finding.

The closest study to this thesis is Seker & Dayioglu (2015)'s paper. According to their study, they are not focusing specifically on the working poverty. Rather, they are analyzing the overall poverty. So, they analyze the poverty transitions by using data from the 2006-2009 SILC panel data. Then, they apply a *spell-based approach* to define poverty spells. They set the poverty line at 60% of median equivalized income according to the Eurostat scale. They also put a distinction between *transient* and *permanent* poverty by calculating the exit and re-entry probabilities non-parametrically. Then, using these probabilities, they measure how long poor stay poor. According to their findings, the poverty rate fluctuation is between 22.8% and 25%. 35% of the poor are escaping poverty each year. However, these people are again facing a high re-entry rate (8.6%). Along with this, the persistent poverty affects 23.1% of the poor for the whole period. The longer durations are reducing the exit probability. 8% of the population stay persistently poor. When looked at the reasons behind the exit and re-entry, the household's breadwinner income changing is the main poverty cause (90%). On the other hand, the demographic changes have less impacts (10%). The persistently poor often have lower education, work informally, and have larger households.

Another important study, Yildirim et al. (2018) has revealed that there is a strong state dependence in overall poverty, which is being poor in one period significantly increases the risk of remaining poor. Their study uses a dynamic random effects probit model to analyze data from SILC panel data the years between 2010-2013. They are then exploring unobserved heterogeneity. They also examine the impact of individual and household characteristics on poverty. They note that the factors, such as higher education levels and good health, significantly reduce poverty risk. The households with more dependents are more vulnerable. The stability of employment is another factor. For instance, the stable employment reduces poverty risk. On the other hand, the casual employment increases it.

Limanli's (2020) work contributes to poverty literature by an *ex-ante* approach on poverty measurement. According to his findings, there was a decline in poverty vulnerability from 17% to 9% between 2006 and 2017. Apart from other studies, he emphasizes the regional disparities, such as the high vulnerability rate in Eastern Anatolia (33%) and low in the West Anatolia (1%). Also, his study identifies education, employment, and health status of the household head as the key sources of vulnerability. The factors like unemployment and macroeconomic shocks also influence the vulnerability. For example, when unemployment is increased by 1%, it raises the probability of being poor by 4.6%.

Aydiner-Avsar & Onemli (2023) explores the main determinants of *working poverty* in Türkiye from 2007 to 2017, using SILC panel data. Their study can be considered as the first work analyzing working poverty econometrically. Their study applies the dynamic econometric approach by employing a dynamic random effects probit model to check state dependence and unobservable heterogeneity. As a result, their study identifies that there is a state dependence of working poverty just as noted by Yildirim et al. (2018). The past poverty experience increases the probability of being working poor from 14.87% to 37,2%. As in other studies, educational attainment is a significant protective factor as generally seen in poverty literature. For example, the higher education level reduces this probability to 13,6% from 15,7%. The household composition, specifically the number of children and elderly, increases the risk of working poverty.

III. CONCEPTUAL FRAMEWORK

In this section, the economic and statistical definitions of the concepts that will be used throughout the thesis will be made. As mentioned in the introduction, these definitions vary depending on both nation-specific definitions and international organizations to which nations are affiliated (Berkman, 2023). In general, OECD, ILO, TURKSTAT and EUROSTAT definitions will be used. In this way, comparisons between countries will be more accurate.

III.A. Poverty

First of all, in terms of the history of economic thought, it can be said that the definition of the concept of poverty, and specifically the poor person, has varied in different periods of world economic history (Ravallion, 2016). According to the definition made by Rowntree, “poverty is the situation in which the individual's total income cannot meet even the minimum level of items such as food and clothing that are necessary to maintain his biological existence” (Oztornaci & Demirdogen, 2015). According to Peter Townsend (1979), poverty is defined as relative deprivation meaning that individuals or families lack the resources to participate in the standard living patterns, customs, and activities. In other words, they are excluded from the normal way of life due to their severely limited resources compared to an average person or household in society. According to Amartya Sen, poverty is the situation of not being able to meet a certain minimum ability (Ceyhan, 2016). According to Sen's definition, poverty is a phenomenon that depends on individuals' material and spiritual assets (Ceyhan, 2016). More technically, in the approach proposed by Amartya Sen, the functions are the beings and doings of life, such as being safe, being able to live to older ages, being employed, and more generally being able to participate in social and economic activities (Kuklys, 2005). The capabilities, on the other hand, are the set of functions available to a person, given his/her circumstances, as determined by the person's own characteristics and environment (Kuklys, 2005).

III.B. Absolute poverty

Secondly, absolute poverty is the core concept that is being used in this thesis. It can be defined as a situation of insufficient command over resources, independent of the general welfare level in society (Decerf, 2023). In the context of absolute poverty, ILO defines working poverty as those who employed with a daily expenditure or income less than \$1,90 (UNSD, 2023). So, those with income or expenditure less than \$1,90 per day are classified as "extremely poor," those between \$1,90 and \$3,20 per day as "moderately poor," and those between \$3,20 and \$5,50 per day as "near-poor" (ILOSTAT, 2023a; as cited in Kapar, 2023). According to ILO calculations, in 2022, 0,08% of employees in Türkiye were classified as "extremely poor," 0,49% as "moderately poor," and 6,64% as "near-poor." (ILOSTAT, 2023b, as cited in Kapar, 2023).

However, \$1,90 per day international poverty line is being criticized for inaccurately measuring poverty (Gautie & Ponthieux, 2016). This threshold is a low standard of living and is incompatible with the basic human rights and freedoms (Kapar, 2023; Alston, 2020). Therefore, to better assess working poverty in Türkiye, particularly relative to European and OECD countries, this thesis adopts the EUROSTAT's working poor definition, except for a few details. The exception is to define working population, this study utilizes the definition from ILO, which is that at least 1 hour work during income reference period.

III.C. Relative poverty

In addition to absolute poverty, the relative poverty can be described as the circumstances in which people cannot afford actively to participate in society, and benefit from the activities and experiences that most people take for granted (Walker & Lichao, 2021). For instance, while they have some income, this might be insufficient to afford necessities beyond the fundamental necessities of them and exclude them from the ordinary pattern of activities and opportunities of average earners. All considered, it can be said that the relative poverty is a sort of social exclusion, rather than an absolute financial deprivation. It's also dynamic, as societal wealth increases.

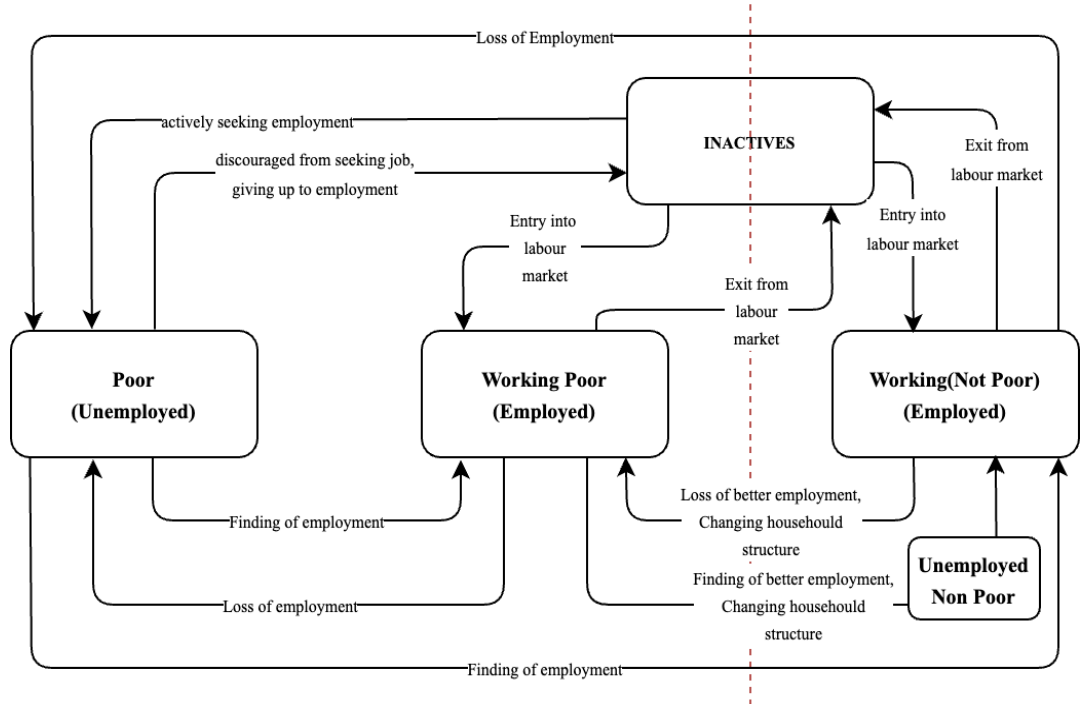
In the context of relative poverty, different income thresholds are set as the poverty line, such as 40%, 50%, or 60% of a country's median income, and even 70% or below. As a matter of fact, the choice of relative poverty to absolute poverty has important implications for poverty measurement. In general, poverty status is determined by the household size and total household income. According to this, firstly, the per capita income amount, obtained by dividing the total household income by the number of people living in the household, is compared to the poverty threshold. If the per capita income in the household falls below the poverty threshold, which is defined as a certain percentage of the median income, both the household and the employed individuals living in that household are classified as poor (Ahrendt et al., 2017, as cited in Kapar, 2023). In this context, finally, it can be said that reducing relative poverty is not possible only by economic growth, but also by improving income distribution. Thus, relative poverty can also be used for the proportion of households that are below the average income level of the society. EUROSTAT now uses the concept of at-risk of poverty (Sukur, 2005). This can be explained by considering poverty as a risk situation rather than a line.

Here, the distinction between absolute and relative poverty measures is crucial. Absolute poverty lines are based on good baskets that are sensitive to price changes over time. On the other hand, relative poverty indicators are based on an individual's relative welfare position within the society compared to the overall standard of living, so it is independent of inflation. From this point of view, absolute poverty thresholds are more useful for less developed nations. On the other hand, relative poverty metrics are more suitable for developed and developing economies. For a developing country like Türkiye, a relative poverty is more logical than an absolute poverty line, which is focused solely on fundamental needs. TurkStat uses 50% relative poverty line. This line is based on the median household income per adult (adjusted for family size). Someone is considered poor if their income per person falls below the chosen poverty line (TURKSTAT, SILC, 2022). This income can be wages, business profits, pensions, and social benefits received by all household members. They subtract taxes and regular transfers to obtain the net annual disposable income. Finally, they then divide this income by a special scale to account for family size by creating an adult equivalent income of OECD used for poverty calculations. The details of this calculation is shown in Appendix.

III.D. The definitions of socio-poverty status

In this study, the socio-economic-poverty status of individuals are determined based on their self-defined economic statuses in SILC. In SILC, individuals can define themselves in 10 different statuses. These statuses are as follows: employee (working full-time), employee (working part-time), self-employed (working full-time), self-employed (working part-time), looking for a job, pupil-student-unpaid work experience, in retirement or in early retirement or has given up business, disabled and/or unfit to work, fulfilling domestic tasks-care responsibilities, and other inactive person.

Figure 9. Circular Flow of Poverty & Economic Status Dynamics



Source: Author's definitions.

Based on these definitions, 6 different socio-economic-poverty statuses have been derived. These definitions have been created to also include the individuals' basic positions in the labor market.

In addition, to incorporate household structure, the socio-poverty status has been determined according to the OECD's equivalence coefficient(See Appendix). First, the equivalent household income for each household was found. Then, the median equivalent household income was determined based on the equivalent incomes in the entire sample. The poverty status was determined according to 60% of this median equivalent household income. Households with an equivalent household income less than 60% of the median equivalent household income were defined as poor. In the circular flow diagram, the red dashed line indicates this poverty threshold.

III.D.1. Unemployed Poor:

The socio-economic-poverty status of Unemployed Poor has been determined based on those who, during the survey, defined their self-defined economic status as "looking for a job" and who live in a household that is below the poverty line according to 60% of the equivalent household income. In other words, to be in this category, one must meet these two conditions: actively looking for a job (being unemployed) and living in a poor household.

III.D.2. Inactive Non-Poor:

When defining this group, the poverty status was determined based on the 60% median income as mentioned above. This category includes those whose equivalent household income is above 60% of the median equivalent household income. The 'inactive' part is defined in the same way above, according to the self-defined economic status of being outside the labor market. In other words, the requisite for being included to this group is to be a pupil-student-unpaid work experience, in retirement or in early retirement or has given up business, disabled and/or unfit to work, fulfilling domestic tasks-care responsibilities, or other inactive person.

III.D.3. Working Poor:

In order to define Working Poor, it is required to consider both employment status and work intensity. However, the definitions of working population and poverty are varying across institutions and countries. For instance, it can be stated that EU employs a very strict definition. Its working population definition requires an active employment at least 7 months in the past year (Fraser et. al, 2011; Kapar, 2023). France's INSEE requires at least 6 months of active labor market activity and at least 1 month of formal employment (Allègre, 2011). Here, it can be said that France's approach excludes those who have been unemployed for extended periods. In contrast, ILO uses more flexible definition by considering anyone who worked at least 1 hour in the reference week as employed can be actively working (Fraser et. al, 2011). It sets a very low threshold for what constitutes as employment, by including a wide range of work situations from casual, part-time to informal employment. On the other hand, OECD adopts the most inclusive approach. It is counting all members of a poor household as working poor if any of adult persons had employment during the reference year, and incorporating a work intensity scale (Fraser et. al, 2011). All considered, the variations in these definition less or more impact working poverty estimates. This thesis opts for ILO definition in order to capture a broad working base and better address at-risk poverty situations well. So, this category is consisting of those whose equivalent household income is less than 60% of the median equivalent household income. The condition for being employed, according to individuals' self-defined economic status, are: employee (working full-time), employee (working part-time), self-employed (working full-time), and self-employed (working part-time). Unpaid family workers are also included in the self-employed category.

III.D.4. Inactive Poors:

The poverty status of Inactive Poors was determined based on the 60% median income as mentioned above. The 'inactive' part was defined according to the self-defined economic status of being outside the labor market. In other words, the prerequisite for being included to this group is to be a pupil-student-unpaid work experience, in retirement or in early retirement or has given up business, disabled and/or unfit to work, fulfilling domestic tasks-care responsibilities, or other inactive person.

III.D.5. Unemployed Non-Poor:

When defining this group, the poverty status was determined based on the 60% median income as mentioned above. This category includes those whose equivalent household income is above 60% of the median equivalent household income. The self-defined economic status of someone in this category should be 'looking for a job', as in the case of unemployed poor, and they should be living in a household that is not considered poor according to the median income.

III.D.6. Employed Non-Poor:

When defining this group, the poverty status was determined based on the 60% median income as mentioned above. This category includes those whose equivalent household income is above 60% of the median equivalent household income. As stated earlier, the prerequisite for being considered employed is the ILO definition, which means an individual is considered employed if they have worked for at least one hour during the reference week of the survey. Additionally, the other conditions for being employed, according to individuals' self-defined economic status, are: employee (working full-time), employee (working part-time), self-employed (working full-time), and self-employed (working part-time). Unpaid family workers are also included in the self-employed category.

IV. THE MEASUREMENT OF THE POVERTY

In this section, the fundamental information on the classical poverty indices will be given. Then, the axiomatic approach will be addressed in detail in vulnerability section. By the same logic, the foundations of GRC Index will be constructed in order to present the outcomes of the index in subsequent sections.

IV.A. Poverty gap ratio

First, poverty gap ratio is being used for the severity of poverty. In this ratio, poverty gap of an individual is equal to difference between poverty lines and income.

Poverty gap ratio= ((Poverty threshold - Equivalised median income per individuals of poors) / Poverty threshold)*100

In this thesis, two basic poverty measurements will be referenced mostly to measure poverty. The first of these is the headcount index. The second one will be the poverty gap index.

IV.B. The headcount index

Second, the headcount index is being used to measure the proportion of the poor population. It is very well-known measure since it is easy to understand. However, the disadvantage of this measurement is that it fails to indicate how poor the poor are (Poverty Manual, 2005).

$$P_0 = \frac{N_p}{N}$$

where N_p is the number of poor and N is the total population.

$$P_0 = \frac{1}{N} \sum_{i=1}^N I(y_i < z),$$

In this equation, $I(.)$ is an indicator that takes on a value of 1 if the expression in parenthesis is true, and 0 otherwise. If the income y_i is less than the poverty line z , then $I(.)$ equals to 1 and the household would be poor. N_p is the total number of the poor.

IV.C. The poverty gap index

Secondly, the poverty gap index measures a gap ratio that shows how far below the poverty line individuals fall. The sum of the poverty gaps provides the minimum cost required to eliminate poverty, put it differently. However, this measure is not including the changes in inequality among the poor. It does not explore whether some individuals are experiencing greater severity than others (Poverty Manual, 2005).

There are also other measurements. These are squared poverty gap index, Sen index, Watts index and Time To Taken Index. These indexes generally derive index by using headcount index and poverty gap index. If the poverty gap is defined as G_i , the poverty line is as z , and income y_i for poor individuals; the gap is considered to be zero for everyone else. Using the index function, the following expression is obtained:

$$G_i = (z - y_i) \cdot I(y_i < z)$$

$$P_1 = \frac{1}{N} \sum_{i=1}^N \frac{G_i}{z}$$

IV.D. Squared poverty gap index

Thirdly, squared poverty gap index goes beyond a simple average. This index is giving more weight to the most disadvantaged in income level. By squaring the gaps and summing them up, the index increases the importance of those who far from the escaping poverty (Poverty Manual, 2005).

$$P_2 = \frac{1}{N} \sum_{i=1}^N \left(\frac{G_i}{z} \right)^2$$

IV.D. Sen index

Fourthly, in his seminal work, Sen (1976) as cited in Poverty Manual (2005) developed a poverty index that considers a multifaceted dimension of poverty. This measure is not only quantifying the headcount ratio, but also consider the severity of the deprivation and the inequality within the population (Poverty Manual, 2005). By incorporating these dimensions, Sen's index offers a more versatile understanding of poverty.

$$P_s = P_0 \left(1 - (1 - G^P) \frac{\mu^P}{z} \right)$$

where P_0 is the classical headcount index, μ^P is the mean income of the poor, and G^P is the Gini coefficient among the poor.

IV.E. Time Taken to Exit index

Sixthly, the time needed to alleviate poverty under various economic growth scenarios can be thought of an important policymaking in combatting against the poverty. Then, Morduch (1998)'s Time Taken to Exit index as cited in Poverty Manual (2005) is sensitive to income distribution among the poor. It can be calculated by dividing the Watts index (which considers both the number of poor and the depth of their poverty) by the expected growth rate of the poor's income (Poverty Manual, 2005).

$$t_g^j \approx \frac{\ln(z) - \ln(y_i)}{g} = \frac{W}{g}$$

In this respect, there are some studies related to these poverty indices in Türkiye, but they are quite limited. TurkStat also only uses the headcount rate and the poverty gap index as indicators from these indices. One of the most detailed studies on this subject is the work of Aran et al. (2006).

As briefly mentioned in the introduction, when analyzing the state of poverty along with economic mobility and income distribution nexus, choosing a dynamic or static analysis is becoming a significant issue. When basically compared, static analyses allow for inferences based solely on poverty rates snapshots, rather than videos (Seker, 2011). However, this approach is insufficient for understanding the multi-faceted concept of poverty. This is because it is significantly important to determine whether poverty stems from a temporary state or shock, or if it is a permanent state (Seker, 2011). At this point, dynamic analyses can provide more accurate rates. As written by Ellwood (1998): "Dynamic analysis gets us closer to treating causes, where static analysis often leads us towards treating symptoms... If, for example, we ask who the poor are today, we are led to questions about the socioeconomic identity of the existing poverty population. Looking to policy, we then typically emphasize income supplementation strategies. The obvious static solution to poverty is to give the poor more money. If instead, we ask what leads people into poverty, we are drawn to events and structures, and our focus shifts to looking for ways to ensure people escape poverty."

IV.F. Chronic Poverty, Transient Poor, and Persistent Poor

At this point, it is important to focus on whether poverty is temporary or persistent. In research on this topic, it can be said that persistent poverty is studied more than transient/temporary poverty in the literature. The main reasons for this can be explained by the fact that the prolonged exposure to poverty has detrimental effects on the overall well-being and mental health of those who experience it (Biewen, 2003). So, the chronic poverty can then be defined by its persistence over time (Hume & Shepherd, 2003). For instance, an individual or household, is chronically poor if the welfare over an observed length of time is below the minimum social subsistence. Here, after focusing on persistent poverty, there are three main measurement approaches used to determine the definition of persistent/chronic poverty: the spell approach, components approach and vulnerability approach.

IV.F.1. Spell Approach

Firstly, it can be said that the *spell approach* means the duration of poverty spells and the dynamics of entering and exiting poverty. In other words, this approach observes the periods that an individual spends in poverty. Thus, a poverty spell can be defined as “consecutive periods where an individual's income is below a certain poverty line” (Bane and Ellwood, 1986).

$$\text{Persistent poverty} = \max(y_{it}, y_{it+1}, \dots, y_{iT}) \leq z$$

where y is a measure of income, i indexes household, t indexes observation points, and z is the poverty line. Yaqub (2001) notes that the spells approach identifies persistent poverty, while the components approach makes a distinction between chronic and transitory poverty. McKay and Lawson (2003) suggest that the spells approach closely associates with the idea of chronic poverty.

IV.F.2. Component Approach

Secondly, the components approach focuses on the permanent and transitory components of poverty. It examines how an individual's income changes by the time. In this approach, the periods of low and high income can offset each other. With this offsetting, it is not necessary to determine who is the poor in each period. In its simplest form:

$$\text{Persistent poverty} = \hat{y}_i \leq z$$

where $\hat{y}_i = \frac{1}{T} \sum_{t=1}^T y_{it}$, i.e. $\hat{y}_i$ is time mean. The components approach, as proposed by Jalan & Ravallion (2000), focuses on chronically poor individuals by analyzing their income stability over time. This method defines an average component of income. Then, it is able to classify individuals as chronically poor if their income falls below a poverty line across multiple periods.

$$P_i = \frac{1}{N} \sum_{i=1}^N \left[1 - \left(\frac{y_i}{z} \right)^\alpha \right] \text{ where } y_i = \frac{1}{T} \sum_{t=1}^T y_i^t$$

In sum, the components approach evaluates poverty based on long-term average income and overlooks short-term poverty spells (Kudebayeva, 2019). On the other hand, the spells approach focuses on identifying poverty in each period without averaging, emphasizing the importance of each occurrence of insufficient earnings (Kudebayeva, 2019).

IV.F.3. Vulnerability Approach

Thirdly, the vulnerability approach is fundamentally different from poverty. Vulnerability can be defined as the probability of a household's being poor in the future. In other words, it identifies individuals or households that, although not currently poor, are at risk of falling into poverty under certain conditions. This is calculated based on ex-ante consumption or income. Poverty, on the other hand, is about whether a household or individual is currently poor. That is, it identifies households that current consumption or income levels are below the poverty line. This is determined based on ex post consumption or income. All approaches considered; these three measurements are not mutually exclusive. While the spell approach and components approaches are ex-post, the vulnerability approach is ex-ante.

According to vulnerability approach, if a household's current consumption or income is at or below the poverty line and there is a high probability that its future consumption or income will also be low, then this household is considered chronically poor (Barrientos, 2007).

$$\text{Persistent poverty} = (y_{it}, [E_t y_{it+1} | v_{it} > n]) \leq z$$

Where v_{it} is a measure of vulnerability to poverty in the future and n is a threshold. It can be said that this approach combines the information of current income with its variance across households to estimate the probability of being below the poverty line in terms of income (Pritchett et al., 2000). The variance of income across households is used in the prediction of future income and a threshold probability of future income focuses on downside outcomes (Barrientos, 2007). As a result, vulnerability is included directly into the identification of persistently poor through $E[.]$ and v in above notation.

From welfarist approach in vulnerability measurement, Ligon & Schechter (2003) identifies vulnerability v_i for household i as cited in Barrientos (2007):

$$v_i \equiv u_i(z) - E[u_i(c_i(\omega))]$$

where u_i is the utility function, $E[.]$ is the expectation operator, $z(z \geq 0)$ is the threshold-level certainty-equivalent consumption below which the individual is considered vulnerable, and $c_i(\omega)(z \geq 0)$ is the consumption expenditure per capita for household i that depends of the state of the economy $\omega(\in \Omega)$ for state space Ω (Fujii, 2016). Also, c_i can be considered as the consumption expenditure per-capita.

The FGT poverty measure is a widely used measurement in poverty analysis, which considers the depth and severity of poverty. From the expected poverty approach in vulnerability measurement, the vulnerability is defined as the expected value of the Foster-Greer-Thorbecke (FGT) poverty measure, which was introduced by Foster, Greer, and Thorbecke (1984) as cited in Fujii (2016). Then, the expected value of this measure provides the extent of future poverty:

$$v_{i,\gamma} = E \left[\left(\frac{z - c_i}{z} \right)^\gamma \cdot \text{Ind}(c_i < z) \right] = \int_0^z \left[\frac{z - c_i}{z} \right]^\gamma f(c_i) dc_i$$

$f(.)$ is the probability function for income or consumption, and γ is a FGT parameter. Since $f(.)$ is not known, in order to calculate vulnerability, the parameters for the conditional mean and the variance of c_i is estimated.

$$\ln c_i = \beta X_i + \varepsilon_i$$

β is a coefficient vector, X_i is individual characteristics for household or individual i , and ε_i is the error term. With normality assumption when $\gamma = 0$, it becomes:

$$v_i = \phi \left(\frac{\ln(z) - \beta X_i}{\sigma_i} \right)$$

$\phi(.)$ is the cumulative distribution function (CDF) for the standard normal distribution. σ_i is the standard deviation of ε_i .

Ravallion (1988) introduces a fundamental concept of the expected poverty measures to assess vulnerability as cited in Fujii's (2016). He examines how a random variable could affect individual welfare. Then he suggests to breaking down of this marginal impact into transient poverty and chronic (persistent) poverty (Fujii, 2016). The chronic poverty ($CP_{i,\gamma}$) and transient poverty ($TP_{i,\gamma}$):

$$CP_{i,\gamma} = \left(\frac{z - E[c_i]}{z} \right)^\gamma,$$

$$TP_{i,\gamma} = v_{i,\gamma} - CP_{i,\gamma},$$

These equations can be interpreted as a high vulnerability to poverty can arise from low average consumption (high chronic poverty) (Fujii, 2016). From the axiomatic approach, rather than defining vulnerability based on individual-level utility or poverty, it can also be derived a vulnerability measure from a set of axioms that outline the properties an ideal vulnerability measure should possess (Fujii, 2016).

By following Fujii's (2016) notations: There are K possible states in Ω such that $\Omega = (s^1, s^1, \dots, s^K)$. The income in state s^k by $y^k \equiv y(s^k)$ and the probability that the state s^k arises by $p^k (\equiv \Pr(\omega = s^k))$ for $k \in (1, 2, \dots, K)$. K -vectors of y and p by $y \equiv (y^1, y^1, \dots, y^K)$ and $p \equiv (p^1, p^1, \dots, p^K)$, respectively. The right-censored income at the poverty line by $\tilde{y}^k \equiv \min(y^k, z)$ and its vector analogue by $\tilde{y}^k \equiv (\tilde{y}^1, \tilde{y}^2, \dots, \tilde{y}^K)$. The k -th unit vector in a K -dimensional space by e^k , whose elements are zero except for the k -th element, which is 1. Then,

$$vulnerability = v(z, y, p).$$

In the context of the state, the state can refer to different possible conditions. For example, an individual might face different income levels due to changes in employment status, health, economic conditions, or other factors that introduce variability into his income

Focus axiom: For every $(z, \mathbf{y}, \mathbf{p})$, v satisfies $v(z, \mathbf{y}, \mathbf{p}) = v(z, \tilde{\mathbf{y}}, \mathbf{p})$.

First, this axiom asserts that the changes in income in a particular state are irrelevant. This is possible as long as the income level remains above the poverty line. In other words, the focus here is not on the actual income but on the censored income (Fujii, 2016).

Symmetry axiom: For every $(z, \tilde{\mathbf{y}}, \mathbf{p})$ and $K \times K$ permutation matrix B , v satisfies.

$$v(z, \tilde{\mathbf{y}}, \mathbf{p}) = v(z, B\tilde{\mathbf{y}}, B\mathbf{p}).$$

Second, this axiom is simple. exchanging the indices of different states does not affect vulnerability. In other words, only the censored income and the probability in each state are relevant. Thus, given $\tilde{y}^k$ and p^k , all states are treated alike (Fujii, 2016).

State-dependent effect of outcomes axiom: Suppose that we have $1 \leq k \leq K$,

$\tilde{y}_a^k = \tilde{y}_b^k > -d, p_a^k p_b^k \neq 0$. Then, $p_a^k = p_b^k$ if and only if

$$v(z, \tilde{y}_a, p_a) - v(z, \tilde{y}_a + de^k, p_a) = v(z, \tilde{y}_b, p_b) - v(z, \tilde{y}_b + de^k, p_b).$$

Third, when considered a positive value of d that satisfies above equation, the if part of the axiom implies that when the reduction in vulnerability remains constant for a change in income in the k -th state, the probability of the k -th state also remains constant (Fujii, 2016).

Probability transfer axiom: Suppose that we have $1 \leq k, l \leq K, a \neq b, p^k \geq d > 0$, and $1 - d \geq p^l \geq 0$. For every $(z, \tilde{c}, p)$, v satisfies:

$$v(z, \tilde{y}, p): v(z, \tilde{y}, p - +de^k + de^l) \text{ if and only if } \tilde{c}^l: \tilde{c}^k.$$

Four, this axiom, also called as *monotonicity*, implies that the vulnerability can increase when probability is transferred from a favorable state (high censored income) to an unfavorable state (low censored income), and vice versa (Fujii, 2016).

Risk sensitivity axiom: For every $(z, \tilde{y}, p)$, v satisfies:

$$v(z, \tilde{y}, p) = v(z, \bar{y} \mathbf{1}_K, p), \text{ for } \bar{y} \equiv p^T \tilde{y},$$

Where $\mathbf{1}_K$ is a K -vector of ones and the equation is held with equality if and only if $\tilde{y}^k = \bar{y}$ for all $1 \leq k \leq K$.

Five, risk sensitivity axiom states that the vulnerability is lower when the stochastic censored income is replaced by its expected value $\bar{y}$ (Fujii, 2016).

Scale invariance axiom: For every $(z, \tilde{y}, p)$ and $\lambda > 0$, v satisfies:

$$v(z, \tilde{y}, p) = v(z, \lambda \tilde{y}, p)$$

Six, scale invariance axiom states that an individual's vulnerability remains unchanged if both the poverty line and income are adjusted proportionally.

Differentiability axiom: $v(z, \tilde{y}, p)$ is twice differentiable in $\tilde{y}$.

Seven, this axiom indicates that minor changes in consumption do not cause sudden differentials in vulnerability (v), and the effect of income on vulnerability is gradual (Fujii, 2016).

$$v(z, y, p) = E[\phi(q)] = \sum_{k=1}^K p^k \phi\left(\frac{\tilde{y}_k}{z}\right),$$

$q \equiv \frac{\tilde{y}}{z}$ represents the ratio of censored income to the poverty line. It can be seen as a deprivation index that varies with the state (Fujii, 2016).

Normalization axiom: If $y = z\mathbf{1}_K$, $v(z, y, p) = 0$ for all (z, p) .

Eight, the normalization axiom states that the vulnerability measure should be 0 if an individual's income is exactly at the poverty line because this indicates they are just avoiding poverty (Fujii, 2016). This axiom is valid because it considers the absence of immediate poverty risk.

Constant relative risk sensitivity: For every $\lambda > 0$ and (z, y, p) , v satisfies

$$v(z, \lambda y, p) = v(z, \lambda y^* \mathbf{1}_K, p)$$

This last axiom states that if income rises by a factor of λ across all states, then the certainty-equivalent income should increase by the same factor, and all considered, the vulnerability measure v that satisfies all axioms above can be written as a multiple of the following expression (Calvo & Dercon, 2013; as cited in Fujii, 2016):

$$v(z, y, p) = \begin{cases} \frac{1 - E[q^\theta]}{\theta} & \text{for } \theta < 1 \text{ and } \theta \neq 0 \\ -E[\ln q] & \text{for } \theta = 0 \end{cases}$$

The impact of economic mobility on transient poverty here can be considered through two main mechanisms: entry and exit into poverty and the duration of poverty (McKay & Lawson, 2003). Firstly, economic mobility may affect the probability of individuals and households entering and exiting poverty. High mobility can lead to individuals entering and exiting poverty more frequently, which may increase the prevalence of transient poverty. Secondly, economic mobility also affects the duration that individuals and households remain in poverty. Then, low mobility can decrease the probability of exiting poverty, thereby, by extending the duration of poverty. These two mechanisms are important for understanding the effects of economic mobility on the dynamics of poverty (McKay & Lawson, 2003). Since the transition into and out working poverty is examined, in this study, the spell approach will be used.

The approaches used in poverty measurement have been discussed so far. As can be seen, although poverty measurement is mostly based on income or consumption data, it can be observed that poverty levels in different dimensions and different situations can be clearly distinguished from each other in precise measurements. If the aggregate poverty index is divided into dimensions, one should be able to see these divergences clearly. Thus, the comparisons made will gain a healthier quality. Additionally, since our panel data set covers a 4-year time period, it will help integrate spells approach, which has been frequently mentioned since the beginning, with the vulnerability approaches. In this way, by adding the time dimension to the poverty measurement dimensions put forward by Sen (1976), the analysis will be brought to a more precise state. According to Sen (1976), there are 3 basic dimensions of poverty. These are incidence, intensity, and inequality. Of these, incidence refers to a static state - the state of being poor. The other two dimensions are related to the dynamic aspect of poverty.

In addition to these, the inclusion of the *time* dimension in these dimensions expands the framework of the analyses to a more precise point. According to Gradín et al. (2012), this time dimension includes poverty transition and duration of poverty spells. These inclusions demonstrate the heterogeneity in the poverty dynamics patterns of different subgroups by including entries and exits from poverty (Gradín et al. 2012).

In the studies conducted so far, the dynamic setting of the spells approach has been modeled with the incidence and intensity dimensions. The modeling of incidence is done with a double cut-off. That is, the first cut-off is the proportion of the population below a poverty line. The second cut-off is the number of periods spent below the poverty threshold, apart from the poverty line. The intensity dimension, on the other hand, is mostly modeled with the poverty gap. However, not only larger poverty gaps will increase the intensity, but also the incorporation of the periods spent below the poverty threshold can be included in the modeling. Thus, the time dimension is also included in the modeling. This means more severe poverty by revealing the importance of poverty spell duration.

So far, it has been tried to explain how the time dimension can be integrated into the incidence and intensity dimensions. A question may be asked about how the *inequality* dimension, that is, the distribution of poverty among the poor, will be addressed with the time dimension. According to Gradín et al. (2012), this modeling can be developed with an index that considers the inequality between complete individual poverty patterns in time, which is called as path independence (Gradín et al. 2012). This property treats each period's observations of those identified as chronically poor as independent from one another. This concept emanates from Foster-Greer-Thorbecke (FGT) poverty measure.

Recent workings, including Calvo & Dercon (2009), Hoy & Zheng (2008), Bossert et al. (2010), Gradín et al. (2012) and Mendola et al. (2009), have integrated sensitivity to poverty persistence into intertemporal poverty indices. In summary, they emphasize measuring poverty trajectories over time rather than single periods of poverty.

By following them, Gradín et al. (2012) adopts the spells approach to construct a time-sensitive poverty measure. Their measurement is beneficial as it allows incorporating sensitivity to individuals' poverty trajectories over time and the duration of their poverty spells, which the components approach cannot easily capture. The aggregate intertemporal poverty index of Gradín et al. (2012):

$$P(Y, z) = \begin{cases} \frac{1}{N} \sum_{i=1}^N \left(\frac{1}{T} \sum_{t=1}^T \underbrace{\left(\frac{z - y_i^t}{z} \right)^\gamma}_{gap} \underbrace{\left(\frac{s_i^t}{T} \right)^\beta}_{weight} \right)^\alpha & \text{if } \alpha > 0 \\ \frac{q}{N} & \text{if } \alpha = 0 \end{cases}$$

Thus, GRC Index can capture the different aspects of poverty. For instance, duration (τ), sensitivity to distribution (α), weight of longer spells (β), and sensitivity to inequality over time (γ).

When $\gamma = 1$, p_i is influenced by the time-averaged normalized gap weighted by spell duration without considering its distribution within spells. For $\gamma = 0$, p_i depends on the proportion of time spent below the poverty line, also weighted by spell duration, but not on the average size or distribution of poverty gaps. For $\gamma > 1$, the parameter indicates that there is a sensitivity to inequality in poverty gaps over time. So, p_i ranges from 0 to 1, being 0 never poor, and 1 always poor with zero income.

This aggregate measure in Gradín's Index, P is normalized between 0 and 1. It is 0 when no one is ever poor and 1 when everyone is always poor with zero income. However, in this study, the reverse is true due to the algebraic calculations of weighting. In this study, the weighting scheme of the spells has been calculated by using 0,25 weight for each spell. For instance, the poverty spell (1,0,1,1) has been weighted by (0,25, 0, 0,25, 0,50). Thus, the index is again normalized between 0 and 1. As the index decrease, it means that the poverty experience becomes more severe.

For $\gamma > 0$, $\beta > 0$, and $\alpha > 1$, it satisfies all relevant axioms. The parameter α reflects the aversion to inequality in intertemporal poverty. For example, to study the distribution of time spent in poverty, one might set $\alpha > 1$ and $\gamma = 0$. The three parameters in expression allow for explicit value judgments about the duration of poverty spells, and inequality of intertemporal poverty across the population (Gradín et. al, 2012). This provides the dynamic aspect of poverty among population.

V. NON-PARAMETRIC & DESCRIPTIVE ANALYSIS OF POVERTY

In this section, different dimensions of poverty in Türkiye between 2019-2020 will be presented and a general profile of poverty will be drawn. Firstly, the distinction between mean and median approaches will be presented through poverty rates. Afterwards, working poverty will be examined in detail with education level, gender distribution, work intensity, household structure and labor market cross-sections in comparison with the general population. Secondly, the transitions between different socio-economic-poverty dimensions defined in the conceptual framework will be analyzed. In this part, along with Working Poor, the relation of Unemployed Pools with labour market will be evaluated in detail by exploring how education level affects the expectation of reservation wages of people in different poverty dimensions. Thirdly, income groups transition will be analyzed, then it will be combined with the analysis of how the different socio-economic-poverty statuses is distributed within income deciles. This will be an important contribution in order to understand the poverty dimensions in Türkiye. Fourthly, exit and entry poverty will be analyzed in three different transitions years between 2019-2020. Then, the exit and re-entry probabilities to working poverty will be calculated and analyzed. Finally, by using non-parametric vulnerability approach, the distribution of transitions by the size of income changes will be drawn in order to put that how poverty transitions is being realized within the fragile boundaries.

Table 1. Poverty Rate By Median&Mean Income (raw %)

Thresholds	2019	2020	2021	2022
Median				
70% Poverty Line	28.6	30.0	28.4	28.8
60% Poverty Line	21.9	22.9	21.3	21.2
50% Poverty Line	15.6	16.0	14.3	14.1
40% Poverty Line	9.1	10.0	8.7	8.0
Mean				
70% Poverty Line	43.2	45.1	44.6	46.7
60% Poverty Line	33.8	36.0	35.0	37.1
50% Poverty Line	25.0	26.9	25.5	27.0
40% Poverty Line	16.3	17.5	16.4	16.9

Source: Author's own calculations. SILC, 2019-2022.

Firstly, poverty incidence in Türkiye, based on equivalized disposable median income, is presented in Table 1. EUROSTAT uses a 60% poverty threshold, while TurkStat uses a 50% threshold. This study uses 60% threshold for all analyses. It can be seen that poverty rates are sensitive to different thresholds. It should be noted that the income reference period precedes the survey year by one calendar year. According to table, at least 20% of the population is relatively poor each year. From this point of view, while these poverty rates display a relative stability, they fail to capture poverty dynamics. Despite the static rates, individual' poverty statuses are highly volatile. Secondly, an obvious observation is the definite divergence between poverty rates between median and mean incomes. The mean income is always yielding higher poverty rates across all thresholds in Türkiye. So, this may be the indicator of income concentration in upper deciles.

Thirdly, there are peak poverty rates in 2020, with median-based poverty rate by reaching 22,9%. This corresponds to the pre-pandemic income reference year. The 2019 data, referencing the 2018 currency crisis, shows a 21,9% poverty rate. The 2022 survey, reflecting 2021 incomes, exhibits an incremental decline in poverty rate. This counter-intuitive trend may be explained by employment protection legislation implemented during the pandemic, expanded social transfers, and atypical consumption patterns during the pandemic period that may have affected household disposable income dynamics. When it comes to Working Poor, the working poverty in Türkiye has a downward trend. In 2022, 15,7% of the working population (i.e. full-time/part-time wage and salary earners, full-time/part-time self-employed, full-time/part-time self-employed) is the working poor. That rate was 17,1% in 2019, 16,9% in 2020 and 16,6% in 2021, respectively. In the same time period, according to 60% poverty line, the poverty rate of the whole population was 21,8% in 2019, 22,9% in 2020, 21,3% in 2021 and 21,2% in 2022, respectively.

Table 2. Gender Composition of Socio-Poverty Statuses

	2019		2020		2021		2022	
	Male	Female	Male	Female	Male	Female	Male	Female
Employed NP	68,9	31,1	69,7	30,3	68,4	31,6	68,1	31,9
Inactive NP	29,9	70,1	29,7	70,3	30,6	69,4	29,5	70,5
Inactive P	23,7	76,3	25,7	74,3	23,7	76,3	24,9	75,1
Unemployed NP	65,5	34,5	69,9	30,1	66,3	33,7	67,2	32,8
Unemployed P	87,9	12,1	87,7	12,3	86,8	13,2	87,0	13,0
Working Poor	73,6	26,4	74,5	25,5	75,0	25,0	74,3	25,7
Total	48,8	51,2	49,0	51,0	48,8	51,2	48,6	51,4

Source: Author's own calculations. SILC, 2019-2022.

From Table 2, the gender distribution of Working Poor is shown along with other socio-poverty definitions year by year. At a first glance, although the gender ratio appears to be a stable path over the years, there are significant differences with other socio-poverty statuses. For example, Working Poor are predominantly male by converging with Unemployed Poor. Unemployed Poor is the category with the largest ratio of men. The highest proportion of women is among Inactive Poor. The largest female population of this group is consisting of women engaged in housework, students and retirees.

In relation to gender distribution, the marital status of the working poor in Table 3 reveals that 77% of Working Poor are married on average. The rate of those who have never been married is 19% on average. Here, the existence of children in the household could be one of the key determinants of the working poverty since they are dependent on their families. Also, dependent elderly people could also be a significant contributor. However, elderly people could also increase the total disposable income of the household by pension incomes. A noteworthy observation in this analysis is the increase in the number of Working Poor whose spouses have passed away in recent years. The pandemic is likely to have an impact here.

Table 3. Marital Status of Working Poor

Years	2019	2020	2021	2022
Working Poor				
Married	77,4	77,4	76,8	77,0
Never Married	18,8	19,5	20,1	19,2
Widowed	1,0	0,8	0,5	1,1
Divorced	2,3	1,6	1,9	2,1
Live Separately	0,6	0,7	0,7	0,6
The Entire Population				
Married	66,6	65,0	64,8	65,3
Never Married	24,1	25,4	25,5	24,8
Widowed	5,9	6,0	6,0	6,1
Divorced	2,8	3,0	3,1	3,2
Live Separately	0,7	0,6	0,6	0,6

Source: Author's own calculations & SILC.

When the home ownership types of the working poor are analyzed, Table 4 shows that Working Poores are home-owner at a lower rate than the general population, and they are tenant at a higher rate than the general population. The “other” option in the survey, which is one of the answers given to this question in the survey, is also quite high. These people may be those who are staying somewhere unpaid and temporarily. In Türkiye, homeownership is one of the key determinants in poverty experience. Owning a home or obtaining real estate income could significantly influence the poverty rates.

Table 4. Dwelling Type of Working Poor

Years	2019	2020	2021	2022
Working Poor				
Owner	57,8	59,4	57,1	56,0
Tenant	26,1	22,9	25,5	25,5
Lodging	0,4	0,3	0,3	0,2
Other	15,7	17,4	17,1	18,3
The Entire Population				
Owner	62,3	61,6	61,6	60,9
Tenant	22,8	23,1	23,2	23,7
Lodging	1,6	1,5	1,3	1,3
Other	13,3	13,9	13,9	14,1

Source: Author's own calculations. SILC, 2019-2022.

Table 5. The Educational Attainment of The Working Poor

Education Level	2019	2020	2021	2022
Working Poor				
Illiterate	9,3	9,3	8,5	8,3
Literate but not graduate	10,8	8,8	9,1	9,1
Primary School	39,4	39,4	37,7	36,3
Secondary School	24,3	24,3	25,2	24,8
High School	8,0	9,3	9,3	9,9
Vocational or Technical High School	3,7	5,0	5,1	5,6
Higher Education	4,7	4,1	5,2	6,0
The Entire Population				
Illiterate	10,4	9,5	9,2	8,8
Literate but not graduate	6,6	6,0	5,8	5,6
Primary School	29,4	29,0	28,1	27,6
Secondary School	19,8	19,6	19,8	19,8
High School	10,6	12,0	12,2	12,2
Vocational or Technical High School	8,0	8,1	8,1	8,1
Higher Education	15,3	15,7	16,8	17,8

Source: Author's own calculations. SILC, 2019-2022.

The educational attainment of Working Poor from Table 5 reveals that they are dominantly primary and secondary school graduates. In 2022, 36,3% of Working Poor were primary school graduates and 24,8% were secondary school graduates. The relationship between poverty and education is clearly evident in the literature. As the level of education increases, the proportion of the poor decreases. The most striking data on the level of education for Working Poor is that there is a steady increase in the proportion of Working Poor with high school and above education from 2019 to 2022. While in 2019, the rate of Working Poor with higher education was 4,7%, this rate increased to 6% in 2022. This shows that the effect of education level on absolute poverty and relative poverty is not the same. Changing labor market conditions, fluctuations in the economic conjuncture, economic shocks, precarious work, informality, exclusion in the labor market to the detriment of low-skilled people also affect highly educated people and push them into relative poverty.

Table 6. The Household Type of Working Poor

Years	2019	2020	2021	2022
Working Poor				
One Person Household	1,3	1,2	1,5	1,7
Extended-family households	26,3	25,4	20,1	20,9
Multi-person no-family households	0,6	0,9	0,9	0,8
<i>Couple without resident children</i>	5,2	5,6	4,7	4,6
<i>Couple with at least one resident</i>	63,2	63,4	69,2	67,7
<i>Lone parents with at least one resident</i>	3,5	3,5	3,7	4,3
The Entire Population				
One Person Household	4,7	4,9	5,1	5,5
Extended-family households	18,3	17,0	15,5	15,0
Multi-person no-family households	1,8	1,6	1,3	1,4
<i>Couple without resident children</i>	15,2	14,5	14,9	16,1
<i>Couple with at least one resident</i>	54,5	56,1	56,9	55,7
<i>Lone parents with at least one resident</i>	5,6	5,9	6,3	6,4

Source: Author's own calculations. SILC, 2019-2022.

Similarly, when the household types of the working poor are analyzed in Table 6, it is being seen that they are mostly nuclear families consisting of a single parent and children (67,7% in 2022). Next, they are composed of at least one nuclear family and one multi-person household (20,9% in 2022). The size of the household is one of the key determinants in poverty literature in Türkiye since it affects significantly the poverty rates. For instance, if the number of working individuals is high in a household, the probability of being poor decreases.

Table 7. The Main Job Of Working Poor

Years	2019	2020	2021	2022
Working Poor				
Regular Employee	41,0	38,2	39,4	44,0
Casual Employee	18,3	16,9	20,0	18,5
Employer	1,3	0,8	1,0	0,9
Self-Employed	22,3	23,6	22,2	19,9
Unpaid Family Worker	17,1	20,5	17,4	16,7
The Entire Active Population				
Regular Employee	61,6	61,8	62,4	64,4
Casual Employee	6,9	6,3	7,4	7,3
Employer	3,9	3,8	3,6	3,5
Self-Employed	17,4	17,4	16,5	15,8
Unpaid Family Worker	10,3	10,7	9,9	8,8

Source: Author's own calculations. SILC, 2019-2022.

The data from Table 7 reveals the significant changes in employment patterns among Working Poor. The first trend is the increase in regular employees from 41% to 44% by year by year. Simultaneously, there is a decline in self-employment from 22,3% to 19,9%, which could indicate that there are growing challenges for unpaid family worker's small businesses or a change towards wage labour. Casual employment and unpaid family work show volatility. This is most likely reflecting economic instability, due possibly to the COVID-19 pandemic.

Table 8. Main Job Of Working Poor

Years	2019	2020	2021	2022
Working Poor				
Managers	1,3	1,1	1,4	1,1
Professionals	1,6	1,4	1,3	1,9
Technicians and Associate Professionals	2,7	1,6	1,7	1,5
Clerical Support Workers	0,8	1,3	1,2	1,6
Service and Sales Workers	17,4	15,6	16,7	19,3
Skilled Agricultural, Forestry, Fishery Workers	30,1	35,9	30,5	29,5
Craft and Related Trades Workers	18,0	15,4	16,9	16,0
Plant and Machine Operators and Assemblers	6,3	6,4	8,0	8,4
Elementary Occupations	22,0	21,3	22,2	20,8
The Entire Active Population				
Managers	5,4	5,2	5,1	5,0
Professionals	12,3	12,5	13,5	13,7
Technicians and Associate Professionals	6,7	6,6	6,3	6,4
Clerical Support Workers	5,4	5,6	6,0	6,0
Service and Sales Workers	18,7	18,5	18,3	19,2
Skilled Agricultural, Forestry, Fishery Workers	17,9	18,4	16,8	15,4
Craft and Related Trades Workers	13,6	12,6	12,7	12,8
Plant and Machine Operators and Assemblers	7,8	8,3	8,4	8,7
Elementary Occupations	12,1	12,4	12,9	12,8

Source: Author's own calculations. SILC, 2019-2022.

When the occupation code of the main job of Working Poor is analyzed in Table 8, the table reveals that the skilled agricultural, forestry, and fishery workers represent the largest share by peaking at 35,9% in 2020, and before decreasing to 29,5% in 2022. The elementary occupations are the second-largest group by remaining relatively stable around 21-22%. Service and sales workers show an increase from 17,4% in 2019 to 19,3% in 2022 by indicating that there is a growing employment in these sectors among Working Poor. Craft and related trades workers decreased slightly from 18% to 16%.

Higher-skilled occupations like managers and professionals represent a very small portion. These trends demonstrate that there is a concentration of Working Poor in lower-skilled and service-oriented occupations.

Table 9. Public & Private Sector Distribution

Year	2019		2020		2021		2022	
	Private	Public	Private	Public	Private	Public	Private	Public
Working Poor	91,4	8,6	94,3	5,7	94,5	5,5	93,9	6,1
The Population	79,7	20,3	80,0	20,0	79,7	20,3	80,2	19,8

Source: Author's own calculations. SILC, 2019-2022.

When the private sector and public sector indicators of Working Poor are analyzed in Table 9, the working poverty is concentrated in the private sector. While 8,6% of the working poor worked only in the public sector in 2019, this rate is 6,1% in 2022.

Table 10. Registration to Social Security Institution

Year	2019		2020		2021		2022	
	R	U	R	U	R	U	R	U
Working Poor	39,3	60,8	37,4	62,6	39,9	59,7	41,6	57,5
The Population	64,3	36,6	65,9	34,1	66,4	33,4	67,7	32,1

Source: Author's own calculations. SILC, 2019-2022. **R:** Registered, **U:**Unregistered.

Similarly, from Table 10, 57,5% of Working Poor is not working in a workplace affiliated with the social security institution in 2022. These employees work as unregistered. This rate is only 27,4% among Employed Non-Poors. As mentioned in the introduction, insecure work can be one of the important causes of working poverty. This situation makes Working Poor vulnerable to shocks in the labor market.

Table 11. The Number of Hours Worked (Average)

Years	2019	2020	2021	2022
Employed Non Poor	48	48	47	47
Inactive Non Poor	42	47	32	-
Inactive Poor	28	22	36	-
Unemployed Non Poor	39	50	38	-
Unemployed Poor	34	48	44	-
Working Poor	49	50	49	49

Source: Author's own calculations. SILC, 2019-2022.

From Table 11, when the weekly working hours of Working Poor are examined as an indicator of their work intensity, it is seen that they are the hardest working status compared to those in the entire socio-poverty statuses.

Table 12. Material Deprivation, raw(%), 2022

Status	Yes	No, Cannot Afford	No, Other Reason
Employed Non Poor	91,1	6,4	2,6
Inactive Non Poor	87,0	8,3	4,7
Inactive Poor	64,7	29,7	5,6
Unemployed Non Poor	85,4	11,3	3,3
Unemployed Poor	60,4	35,7	3,9
Working Poor	68,1	28,3	3,6
Total	83,9	12,3	3,9

Source: Author's own calculations. SILC, 2019-2022.

Finally, from Table 12, the material deprivation of Working Poor reveals different results. In SILC, this situation of material deprivation is examined through the question of being able to buy a new dress, other than second-hand. Then, the respondents are given the options of yes, no – financial hardship and no - other reasons. In 2022, 28,3% of Working Poor stated that they would not be able to buy a new dress due to financial hardship. This rate was 29,7% for Inactive Poor and 35,7% for Unemployed Poor.

Table 13. Socio-economic-poverty Rates, Raw(%)

Years	2019	2020	2021	2022
In The Entire Sample				
Employed Non Poor	35,4	33,4	34,9	36,9
Inactive Non Poor	39,1	39,0	39,9	38,4
Inactive Poor	12,2	13,3	12,0	12,3
Unemployed Non Poor	3,7	4,7	3,8	3,5
Unemployed Poor	2,3	2,8	2,4	2,0
Working Poor	7,3	6,8	7,0	6,9
In Working Population Sample				
Working Poor	15,7	17,1	16,9	16,6

Source: Author's own calculations. SILC, 2019-2022

Table 13 shows the rates and distribution of socio-economic-poverty situations determined according to the poverty status of the household, which is defined in the conceptual framework, over the years in the data set. It was observed that the share of Working Poor in the working population was 15,7% in 2019. This rate was 17,1%, 16,9% and 16,6% in 2020, 2021 and 2022, respectively. In the same years, poverty rates calculated based on 60% of the median income were 21,9%, 22,9%, 21,3% and 21,2%, respectively. From this point of view, when the poverty rates of the general population by years are decomposed according to the defined socio-economic-poverty situations, a table revealing the different dimensions of poverty in Türkiye is obtained.

Over the years, Inactive Non-Poors constitute the largest socio-economic status in all socio-poverty situations. To recall, poverty status is determined by household. If the household is poor by definition, all members of the household are considered poor. The next largest status is Employed Non-Poor segment. The share in the general population was 36,9% in 2022. Then, Inactive Poor is 12,3%, Working Poor with 6,9%, Unemployed Non-Poor with 3,5% and Unemployed Poor with 2%. These rates show the rates in the general population. Roughly, the sum of the ratios of Employed Non-Poor, Working Poor and Unemployed Poor gives the employment rate.

When observed over the years, it can be said that the shares of these socio-poor statuses in the general population show a general stability. However, since poverty rate in 2021 is determined by the income of the pandemic reference year, it shows the impact of the pandemic. When the year 2021 is thought with the pandemic effect, a decrease is being observed in the rates of socio-poor people defined as poor. The only exception is Working Poors. Their rate is the only one among the poor statuses that the rate has increased. It can be said that the pandemic, as both a supply-side and demand-side shock, increased the rate of this status. At the same time, moving from 2020 to 2021, the overall poverty rate decreased by 1,6%. Working Poor rate among the working population has decreased by 0,2%. However, their share in the general population increased by 0,2%. The fact that this group was not affected by the general poverty trend may have affected the entry and exit of the inactives and the unemployed, who define themselves as looking for a job as a socio-economic definition, into the labor market.

Here, the mobility of income and socio-economic-poverty statuses is a concept that extends beyond a simple zero-sum game in game theory. It is assumed that the upward mobility for some groups must result in downward mobility for others. However, the reality is a bit of different. The distribution of gains and losses in positional mobility is essential theme for policy-making and social welfare (OECD, 2018). This becomes clearer when the dynamism of labor market transitions and its relationship to poverty is considered together.

The research findings on income mobility have mainly focused on how individuals move up and down the income distribution by treating people as fixed groups (Stewart & Swaffield, 1999). However, it can be said that this approach fails to understand the whole transitions that affect income mobility and poverty statuses. The transitions are not limited to one or two directions. People enter and exit the workforce. Also, they retire, and re-enter the workforce. In general, it is thought that low-paid workers are more likely to be working poor, it may be true probabilistically. As matter of fact, to analyze the transitions between low and high pays only by looking at Employed Non-Poor can be misleading. More accurate approach would be to examine income mobility and poverty dynamics by labor market transitions, entry and exit from the workforce. This is one of the novel contributions of this thesis to the literature on poverty in Türkiye. The dynamics of poverty and the dynamics of labor market transitions can be closely related. This is the main inference of this study. Labor market transitions in this thesis is being addressed in terms of poverty, and vice versa. While state dependence is a one of the key factors in both labor market and poverty transitions in countries like Türkiye (Biewen, 2014; Yildirim, 2018), there is also substantial mobility between these socio-economic-states that is defined in the conceptual framework section.

V.A. Poverty & Economic Status Transitions

Table 14. Poverty & Economic Status Raw Transition Matrices

Status, year 2019		Poverty & Economic Status, year 2020				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	82,5	6,9	0,5	4,6	0,9	4,7
Inactive Non Poor	3,3	84,0	10,3	1,5	0,2	0,5
Inactive Poor	1,6	24,4	67,2	0,9	2,9	2,9
Unemployed Non P.	27,3	13,6	2,0	42,4	9,2	5,5
Unemployed Poor	6,6	3,9	12,2	11,6	44,8	21,0
Working Poor	28,9	2,8	5,0	3,6	10,8	48,9

Status, year 2020		Poverty & Economic Status, year 2021				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	85,4	4,9	0,5	2,8	0,8	5,6
Inactive Non Poor	4,8	84,3	8,1	1,8	0,3	0,6
Inactive Poor	2,4	31,4	59,7	1,0	1,8	3,7
Unemployed Non P.	34,7	13,0	2,1	33,8	9,0	7,4
Unemployed Poor	12,1	3,4	9,2	9,7	37,3	28,4
Working Poor	33,5	1,8	4,4	2,1	6,3	51,8

Status, year 2021		Poverty & Economic Status, year 2022				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	85,9	5,0	0,5	2,8	0,5	5,3
Inactive Non Poor	5,4	83,1	8,8	1,8	0,3	0,6
Inactive Poor	3,8	25,3	64,3	0,9	2,1	3,6
Unemployed Non P.	36,1	15,2	2,2	33,1	6,5	6,8
Unemployed Poor	18,2	3,4	7,6	9,3	33,3	28,2
Working Poor	35,1	2,8	4,0	2,0	5,8	50,2

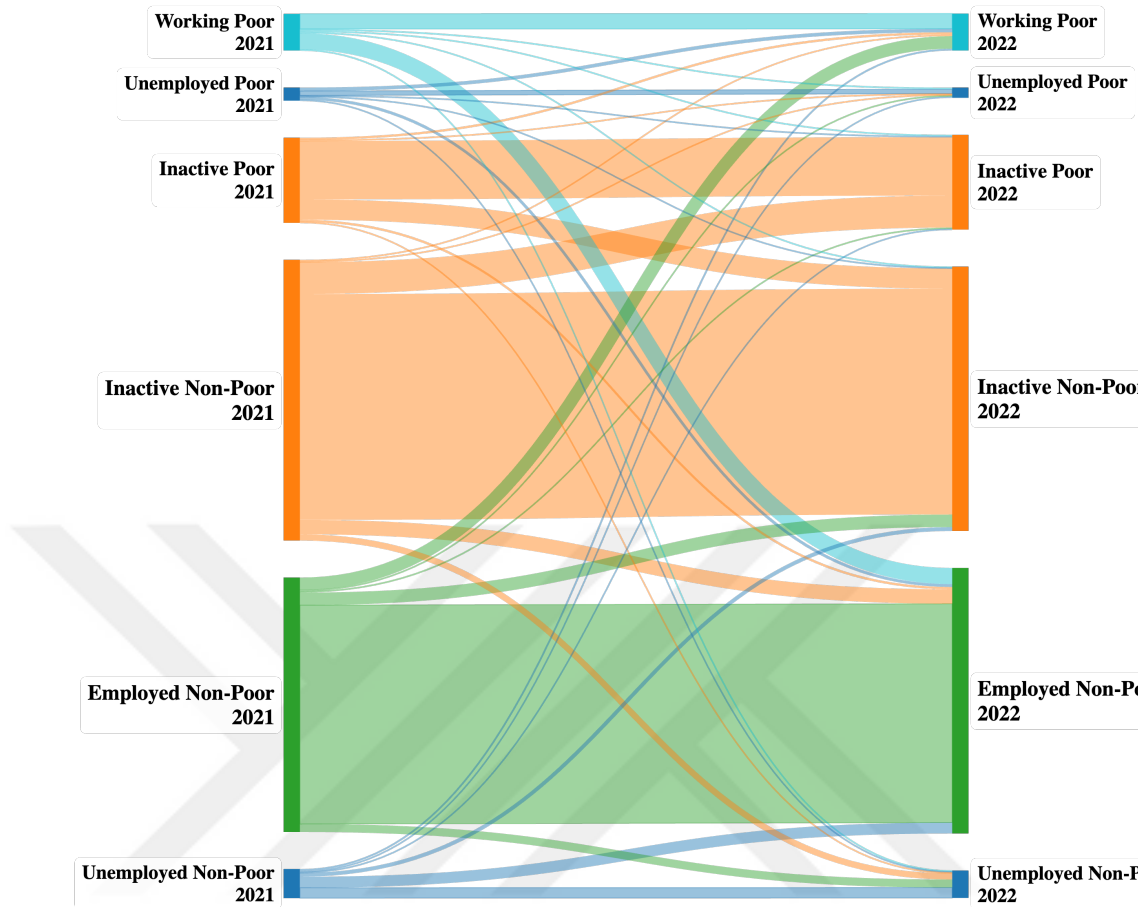
Source: Author's own calculations. SILC, 2019-2022.

Table 14 provides the entry and exit analysis of working poverty based on defined socio-economic-poverty statuses by focusing on two aspects: transitions into and out of working poverty. Firstly, working poverty receives the most inflows from Unemployed Poor followed by Unemployed Non-Poor. Year-by-year analysis reveals a rising trend of Unemployed Poor becoming working poor across the three observed transition periods. This trend is noteworthy, especially considering the average 1% decrease in unemployment rates during these years. The transition rate from Unemployed Poor to Working Poor rose from 21,0% in 2019-2020 to 28,2% in 2021-2022. On the other hand, there is a growing trend of Unemployed Poor transitioning to Employed Non-Poor status. This transition rate increased from 6,6% in 2019-2020 to 18,2% in 2021-2022.

In each transition period, Working Poor predominantly moves to Employed Non-Poor category. This transition rate increased from 28,9% in 2019-2020 to 35,1% in 2021-2022. The second most common transition for Working Poor is to Unemployed Poor status, even though this trend is decreasing year by year. The rate dropped from 10,8% in 2019-2020 to 5,8% in 2021-2022. Overall, these patterns suggest that while employment significantly influences poverty entry and exit, it is not the mere determining factor. Low-skilled individuals may face labor market exclusion, often trapped in a cycle of lasting working hours, in turn increasing their vulnerability. To address this, social policies should aim to compensate for the reduced welfare of these precarious individuals.

Regarding the inactive population, Inactive Non-Poor individuals largely protect their statuses. In contrast, Inactive Poor individuals experience significant transitions among other groups. During the 2021-2022 transition period, which includes the pandemic's impact, more Inactive Poor remained in their status, with the rate increasing from 59,7% to 64,3%. Annually, an average of 25% of the inactive group moves to Inactive Non-Poor status. Each year, approximately 4,5% of Working Poor moves to Inactive Poor status in the following year. These individuals, unable to escape poverty, only withdraw from the labor market.

The Sankey Diagram in Figure 10 visually presents these socio-economic-poverty transitions. The figure shows the transitions between 2021 and 2022. For other years, see Appendix. In the Sankey diagram, these transitions can be observed better visually. As can be seen from the images, the most mobile groups are the unemployed groups. The most rigid groups are the Inactive and Employed Non-Poor groups.

Figure 10. Sankey Diagram of The Transitions Between 2021-2022

Source: SILC, Author's own calculations.

V.B. Poverty and Reservation Wage Expectations

The transition matrices by educational levels reveals significant results for educational policy implications. The impact of education is most evident among Unemployed and Working Poor statuses. For low-educated Working Poor individuals, there is a 50% average probability of remaining Working Poor in the subsequent year, and a 30% probability of escaping poverty through better employment. This pattern is reversed for highly educated working poor individuals. They have a 30% average probability of remaining Working Poor the following year, but a 50% average probability of finding better employment and exiting poverty.

Table 15. Poverty Raw Transition Matrices For Low-Educated People

Status, year 2019		Poverty & Economic Status, year 2020				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	77,5	8,7	0,6	5,2	1,2	6,9
Inactive Non Poor	2,7	84,0	11,4	1,2	0,2	0,5
Inactive Poor	1,4	24,0	68,1	0,8	2,8	2,9
Unemployed Non P.	26,1	14,2	2,0	38,0	11,5	8,1
Unemployed Poor	5,5	3,4	11,3	10,7	47,4	21,6
Working Poor	28,2	2,5	5,2	3,0	11,1	50,0

Status, year 2020		Poverty & Economic Status, year 2021				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	80,8	6,0	0,7	3,0	1,2	8,2
Inactive Non Poor	4,2	84,7	9,1	1,2	0,2	0,6
Inactive Poor	2,2	30,8	60,9	1,0	1,6	3,5
Unemployed Non P.	34,2	12,9	2,7	28,1	12,1	9,9
Unemployed Poor	10,6	2,5	9,5	7,1	39,0	31,3
Working Poor	31,5	1,9	4,5	1,7	6,5	54,0

Status, year 2021		Poverty & Economic Status, year 2022				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	81,4	6,2	0,9	2,8	0,7	7,9
Inactive Non Poor	4,8	83,2	9,8	1,5	0,2	0,6
Inactive Poor	3,4	25,0	65,8	0,7	1,7	3,4
Unemployed Non P.	37,5	12,2	2,6	29,4	9,5	8,8
Unemployed Poor	17,8	2,4	7,1	8,0	34,6	30,1
Working Poor	33,3	2,7	4,2	1,6	5,8	52,3

Source: Author's own calculations. SILC, 2019-2022.

There is an evident difference between non-poor and poor unemployed groups in terms of probability of remaining and escaping from poverty. Unemployed Non-Poor individuals steadily have a higher probability of finding better jobs and becoming Employed Non-Poor compared to Unemployed Poor individuals across all years. Additionally, both low-educated and highly-educated Unemployed Poor are more likely to become Working Poor in the following year than Unemployed Non-Poor individuals. This difference is more evident among the highly educated. These patterns suggest that there is a significant correlation between low education, poverty, and reservation wage expectations. Less educated and poor individuals tend to have lower reservation wage expectations, while Unemployed Non-Poor individuals have higher expectations. Thus, education level appears to raise the reservation wage expectations.

Table 16. Poverty Raw Transition Matrices For High-Educated People

Status, year 2019		Poverty & Economic Status, year 2020				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	90,1	4,2	0,2	3,7	0,5	1,3
Inactive Non Poor	6,7	84,6	4,3	3,5	0,7	0,3
Inactive Poor	5,5	31,9	49,5	4,4	4,4	4,4
Unemployed Non P.	28,8	12,8	2,0	47,6	6,4	2,4
Unemployed Poor	11,3	5,6	15,5	15,5	33,8	18,3
Working Poor	37,8	5,6	2,2	11,1	7,8	35,6

Status, year 2020		Poverty & Economic Status, year 2021				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	92,0	3,4	0,2	2,4	0,2	1,8
Inactive Non Poor	8,0	82,5	2,9	5,2	0,7	0,8
Inactive Poor	4,2	39,9	40,8	2,1	5,0	8,0
Unemployed Non P.	35,4	13,2	1,3	41,3	4,8	4,1
Unemployed Poor	19,1	7,8	7,8	22,0	29,1	14,2
Working Poor	54,5	1,6	3,2	6,3	4,2	30,2

Status, year 2021		Poverty & Economic Status, year 2022				
Poverty line = 60 % median	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non Poor	Unemployed Poor	Working Poor
Employed Non Poor	91,9	3,4	0,0%	2,9	0,1	1,7
Inactive Non Poor	9,0	82,7	3,6%	3,7	0,5	0,5
Inactive Poor	10,6	30,3	38,7%	3,5	9,2	7,7
Unemployed Non P.	34,7	18,3	1,8%	37,1	3,4	4,7
Unemployed Poor	19,6	7,8	9,8%	14,7	27,9	20,1
Working Poor	50,9	3,0	2,7%	5,7	5,7	31,9

Source: Author's own calculations. SILC, 2019-2022.

Another striking finding is the transitions within the unemployed status itself. Highly educated individuals show a higher rate of transition from Unemployed Poor to Unemployed Non-Poor status. It seems that there is a stronger correlation between high education and both labor market participation tendency and the propensity to give up the labour market, when compared to those with low education. For those in the non-poor status, the decision to enter the workforce is less costly. Another significant observation is that when highly educated Inactive Poor individuals decide to participate the workforce, they have a higher probability of becoming Working Poor compared to low-educated individuals.

V.C. Income Groups Transitions

Table 17. Income Deciles Raw Transitions

2019	Income Deciles, 2020									
Deciles	1	2	3	4	5	6	7	8	9	10
1	50,0	24,0	9,8	6,0	4,4	2,4	1,7	0,8	0,8	0,1
2	15,0	38,1	21,4	10,0	6,8	4,3	2,7	1,1	0,5	0,1
3	8,2	15,3	33,4	18,7	9,6	5,7	3,7	3,8	1,3	0,6
4	7,0	8,8	15,8	29,2	19,1	7,5	5,5	5,5	1,3	0,3
5	4,9	6,3	7,8	13,6	25,9	20,7	11,1	5,8	3,2	0,8
6	2,9	1,8	6,4	7,6	17,6	24,7	20,8	11,5	4,7	2,0
7	2,1	2,0	3,7	3,5	9,5	22,1	28,8	16,9	8,3	3,3
8	1,9	2,4	1,9	3,4	4,5	9,1	18,6	35,0	17,0	6,3
9	0,7	0,3	1,6	2,0	2,8	5,4	7,8	17,2	44,6	17,7
10	0,3	0,2	1,0	1,0	1,3	1,1	2,6	5,1	17,9	69,5

2020	Income Deciles, 2021									
Deciles	1	2	3	4	5	6	7	8	9	10
1	50,3	17,5	8,7	7,0	5,2	2,7	2,0	0,9	0,5	0,4
2	19,9	36,1	15,0	9,8	6,6	3,2	2,2	0,9	0,8	0,2
3	9,2	19,8	28,6	15,2	8,7	6,2	3,4	2,7	1,1	0,2
4	5,4	9,9	21,3	26,4	14,6	8,1	5,6	2,8	1,7	0,8
5	3,1	5,2	9,3	20,0	24,7	16,7	8,1	5,3	2,7	1,8
6	1,3	3,5	5,2	9,8	16,3	27,0	17,3	9,2	4,2	1,7
7	1,0	2,3	3,5	6,4	9,0	17,4	27,3	17,7	8,4	2,7
8	1,1	2,0	1,7	2,7	5,7	10,1	18,6	33,1	16,8	5,0
9	0,6	0,6	1,0	1,5	2,7	3,9	8,5	20,0	41,8	15,8
10	0,2	0,4	0,5	1,0	1,5	1,3	3,1	4,7	20,0	63,7

2021	Income Deciles, 2022									
Deciles	1	2	3	4	5	6	7	8	9	10
1	49,9	16,4	10,2	6,7	4,3	2,7	2,3	0,9	0,7	0,6
2	23,2	32,6	15,4	8,7	7,0	3,7	2,5	1,5	0,9	0,2
3	8,7	24,7	26,4	15,7	7,9	5,0	3,7	2,2	0,8	0,4
4	4,8	10,1	22,4	21,3	14,6	9,8	5,4	3,5	1,7	1,1
5	3,0	4,6	9,1	23,3	21,9	14,3	7,4	5,7	3,8	1,2
6	2,0	3,0	5,4	9,2	23,4	22,9	14,8	7,5	4,7	1,9
7	1,3	1,6	3,4	4,6	9,2	22,1	24,6	16,1	9,3	2,7
8	1,0	1,0	1,6	2,8	3,9	7,7	22,9	30,3	16,7	6,9
9	0,8	0,8	0,9	1,0	1,9	4,6	8,6	23,3	37,5	15,6
10	0,8	0,4	0,5	0,9	0,9	1,5	2,3	4,4	19,2	64,4

Source: Author's own calculations. SILC, 2019-2022.

Table 17 presents the transition rates between income groups between 2019-2020, 2020-2021 and 2021-2022. It can be seen that the transitions between income groups in Türkiye are quite intense. First of all, there are substantial persistences at distributional extremes (1st and 10th) by aligning with the concepts of “sticky floors” and “sticky ceilings” (OECD, 2018). The fact that this thesis includes income groups according to 10% deciles also has an impact here. This thesis tries to consider the sensitivity of changes in income. The rate of people jumping two or more income deciles in lower income groups is quite limited. In lower income groups, transitions mostly occur one or two income deciles upwards. Every year, the rate of those from lower income groups who jump two deciles or higher is on average 10%. The declines in the top two income deciles are smaller each year than the declines in the middle income deciles.

The increasing retention rates in the top decile on average above than 60% demonstrate that there is a rising income concentration in upper income groups, which is consistent with the rising inequality trends observed in many economies (Karabarbounis & Neiman, 2014; Piketty & Zucman, 2014). The persistence of upper and bottom deciles across the years might suggest a structural rigidity in income distribution despite the exogenous economic shocks. In general, the observed patterns in income distribution have implications for assessing social safety net effectiveness, and for designing efficient policies to improve economic mobility, particularly for lower-income groups. These implications also emphasize some income groups’ adaptability to changing economic conditions, and others’ weaknesses and fragility.

Table 18. Poverty & Economic Status By Income Deciles (raw %), 2019

Decile	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non P.	Unemployed Poor	Working Poor
1	0,4	1,5	34,0	0,8	37,0	25,5
2	1,5	4,7	27,6	3,3	27,5	29,2
3	3,0	6,4	18,1	4,9	15,1	20,4
4	5,1	8,1	9,1	7,3	8,8	10,8
5	6,6	8,4	6,5	9,5	8,2	7,5
6	8,0	10,6	2,6	10,1	1,6	3,6
7	9,3	11,2	1,6	13,5	1,9	2,0
8	11,8	12,8	0,3	16,8	0,0	0,5
9	16,7	13,8	0,2	16,9	0,0	0,8
10	37,6	22,7	0,0	17,0	0,0	0,0
Total	100	100	100	100	100	100

Table 19. Poverty & Economic Status By Income Deciles (raw %), 2020

Decile	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non P.	Unemployed Poor	Working Poor
1	0,3	1,1	33,4	0,9	27,8	24,8
2	1,4	4,2	26,4	3,4	30,3	27,3
3	2,9	5,7	19,6	4,5	17,8	22,6
4	4,4	7,7	10,3	7,2	10,8	11,8
5	6,1	9,0	4,6	9,6	5,8	6,4
6	7,8	9,8	3,1	11,8	3,2	3,5
7	9,9	11,0	1,5	12,9	2,4	2,3
8	12,1	12,2	0,5	15,4	1,2	0,7
9	17,2	14,4	0,5	14,7	0,6	0,6
10	38,0	24,9	0,0	19,6	0,0	0,0
Total	100	100	100	100	100	100

Table 20. Poverty & Economic Status By Income Deciles (raw %), 2021

Decile	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non P.	Unemployed Poor	Working Poor
1	0,3	1,7	33,5	1,6	34,5	26,9
2	1,5	5,1	25,9	2,9	26,2	28,4
3	2,9	6,5	18,5	5,5	17,2	20,7
4	4,7	7,7	11,0	7,2	10,2	11,5
5	6,1	8,9	6,1	10,0	6,7	7,0
6	7,8	10,0	3,4	10,5	3,4	3,0
7	9,9	10,7	1,4	13,5	1,7	2,0
8	12,0	12,8	0,2	14,6	0,1	0,6
9	17,1	13,9	0,0	16,2	0,0	0,0
10	37,8	22,8	0,0	18,0	0,0	0,0
Total	100	100	100	100	100	100

Table 21. Poverty & Economic Status By Income Deciles (raw %), 2022

Decile	Employed Non Poor	Inactive Non Poor	Inactive Poor	Unemployed Non P.	Unemployed Poor	Working Poor
1	0,3	2,3	33,5	1,4	32,3	23,2
2	1,4	5,2	25,3	3,2	23,5	28,0
3	2,9	6,1	18,8	4,8	18,9	21,5
4	4,3	7,4	11,1	6,8	13,0	13,4
5	6,1	8,5	6,4	9,3	7,4	6,5
6	7,7	9,4	2,8	11,5	2,4	4,1
7	9,4	10,9	1,4	12,6	1,9	2,1
8	11,5	12,1	0,7	16,6	0,7	1,2
9	16,9	12,7	0,1	16,4	0,0	0,1
10	39,6	25,5	0,0	17,3	0,0	0,0
Total	100	100	100	100	100	100

Tables 18-21 present the multifaceted relationship between income distribution and poverty dynamics. Firstly, lower deciles between 1-3 exhibit a high concentration of Inactive Poor, Unemployed Poor, and Working Poor by showing the strong correlation between low income and multifaceted poverty (Alkire & Foster, 2011). However, this is not always true, especially for Working Poor. The correlation between low pay and poverty is not always direct (Andriopoulou & Tsakloglou, 2011). While low pays increase poverty risk, they are not its sole determinant. The inactive statuses in general denote the labor market exclusion based on self-defined economic status. It should be noted that the discrepancies may exist between self-reported and actual economic situations. For instance, retirees may engage in various forms of employment. The subsequent table presents interesting findings in this context.

Table 22. Low Pay (raw %)

Years	2019	2020	2021	2022
Transition Status	Low Paid	Low Paid	Low Paid	Low Paid
Employed Non Poor	13,8	13,2	13,9	13,8
Inactive Non Poor	65,3	64,5	76,4	70,1
Inactive Poor	97,1	96,3	96,3	94,2
Unemployed Non Poor	43,9	43,0	59,3	48,5
Unemployed Poor	71,8	72,8	83,3	74,3
Working Poor	49,1	49,8	52,2	40,7
Total	26,4	27,2	28,8	24,5

Source: Author's own calculations. SILC, 2019-2022.

Table 22 reveals the patterns of low pay and socio-economic-poverty statuses. This table takes into account people's labor earnings. Low paid status was determined according to the cash and in-kind labor income earned by individuals during the income reference period. The monetary equivalent of in-kind income is included in the data. First, median labour earning was found by year. Then, those earning less than 60% of the median earning were defined as low-paid earners. The high percentage in Inactive Poor status is ranging from 94% to 97%. This may suggest that there a visible poverty trap in line with theories of cumulative disadvantage (DiPrete & Eirich, 2006). When these people decide to enter workforce, they will most likely become low-paid.

From, Table 18-21, the upper deciles demonstrate a strict state dependence. These deciles are resided by Employed Non-Poor and Inactive Non-Poor categories. When it comes to Working Poor, while the general rate is diminishing, they could even persist up to deciles 7-8. This may indicate that working poverty extends from the lowest income deciles to upper income deciles (Eurofound, 2017). This might also denote that there are the limitations of employment alone to alleviate poverty in line with findings on working poverty in developed economies (Brady et al., 2010). Lastly, Unemployed Non-Poor status exhibits a general homogenous distribution by suggesting a heterogeneous unemployment experiences.

When Inactive Non-Poor and Inactive Poor categories are combined, a general inactivity patterns could reflect a different socio-economic situation, such as students in lower deciles and retirees or passive income earners in upper deciles. First of all, specifically, the concentration of Inactive Poor in lower deciles may indicate that there are possible structural barriers to labor market participation (Biegert, 2019). Secondly, temporal trends, particularly fluctuations in poverty rates within the bottom deciles, might reflect the impact of macroeconomic shocks. This can also be indicator of the vulnerability of lower-income groups to even small economic fluctuations (McKay & Lawson, 2003). In general, lower deciles (1-3) show over 60% in poor categories. The persistence of poverty in lower deciles, along with the increasing concentration of stable employment among the highest earners, might suggest that there is a limited economic mobility and sticky floors and sticky ceilings in the income distribution (OECD, 2018).

V.D. Exit And Entry into Poverty

Table 23. Annual Poverty Inflow & Outflow Rates (raw %)

Poverty status, year 2019	Poverty status, year 2020		
	Not poor	Poor	Missing
(a) Sample with non-missing income at 2019			
Not Poor	91,0	9,0	
Poor	29,2	70,8	
All	77,5	22,5	
(b) Sample with missing income at 2019			
Not Poor	87,2	8,7	4,1
Poor	28,0	67,8	4,2
All	74,3	21,6	4,1
Poverty status, year 2020	Poverty status, year 2021		
	Not poor	Poor	Missing
(a) Sample with non-missing income at 2020			
Not Poor	91,4	8,1	
Poor	34,4	65,6	
All	78,6	21,4	
(b) Sample with missing income at 2020			
Not Poor	88,1	8,3	3,6
Poor	32,3	61,5	6,1
All	75,3	20,5	4,2
Poverty status, year 2021	Poverty status, year 2022		
	Not poor	Poor	Missing
(a) Sample with non-missing income at 2021			
Not Poor	91,6	8,4	
Poor	33,4	66,6	
All	79,3	20,7	
(b) Sample with missing income at 2021			
Not Poor	87,1	8,0	4,9
Poor	31,5	62,9	5,6
All	75,3	19,7	5

Source: Author's own calculations. SILC, 2019-2022

This entry and exit analysis of poverty dynamics in Türkiye from 2019 to 2022 provides a valuable insight into the persistence economic severity. For example, there is a high poverty persistence rate with approximately 70% of those poor in 2019 remaining poor in subsequent years. The relatively stable annual poverty entry rate of 8-9% for non-poor individuals indicates a risk of entering poverty every year, which may reflect ongoing economic vulnerabilities even among those who are initially above the poverty threshold. The fluctuating poverty exit rate, which is ranging between 28-33,5% year by year, suggests that while there are ways out of poverty, these opportunities may be influenced by short-run economic conditions or social policy interventions. The slight trend towards poverty reduction, with the overall poverty rate decreasing from 21,9% to 20,2% over the period, indicates that there is a limited improvement in economic conditions, though the change is moderate.

As people escaping from the poverty, they generally move up in the income deciles. However, there are those who escaped from the poverty without changing their income group levels. Apart from the exceptions, no one escapes from poverty by falling in the income deciles. As moved from 2019 to 2020, 29,2% of the poor have exited from poverty. In the first 10% decile, which is the lowest income group, 14,2% of those who escaped from poverty maintained their place in the same income group. 7,6% of those in the second 10% decile were in the same income group in 2020. According to the socio-economic-poverty definitions determined above, when considered Working Poor who exited, 82% of them switched to Employed Non-Poor category from 2019 to 2020. 8% Were Inactive Non-Poor and 10% were Unemployed Non-Poor. Among Unemployed Poor, 30% found a job and became Employed Non-Poor, and 17,5% became Inactive Non-Poor. Being an inactive does not affect their actual working situation, as stated before, but means that people are out of the labor market according to their general economic definitions. Likewise, 52% of Unemployed Poor escaped from poverty as Unemployed Non-Poor. Recall that, Unemployed Non-Poor status consisted of those who were actively seeking employment, according to individuals' own economic definition, while living in a non-poor household.

According to the 20% quantiles, the improvement of those who jumped two steps or more from the first 20%, that is, a significant improvement, is 39,7%. The rate of those who jumped two steps or more from the second 20% is 38,4%. The conclusion to be drawn here is that although the relative poverty status changes, a meaningful improvement in income distribution is limited. Nearly 60% of those who escape from poverty are still in a risky ground that they are likely to fall back into poverty again. This will be shown in detail in the next section

It was also shown in the tables 18-21 that 86% of Working Poor were within 40% of the income distribution in 2019. In 2019, 54,7% of Working Poor were in the first 20% income group. When moved from 2019 to 2020, 41% of the poor people were Working Poor. 82% of these Working Poor people escaped from poverty as Employed Non-Poor. Only 36,2% of these Working Poor people skipped two or more by 20% deciles and became Employed Non-Poor. When interpreted mechanically, 63,7% have experienced a limited improvement in their income group and are still at risk of poverty.

The rate of those who were not poor in 2019 but became poor in 2020 was 9%. Of these 9% new poor, 61% are Inactive Non-Poor, 30,5% are Employed Non-Poor, and 8,2% are Unemployed Non Poor. When looked at the new socio-economic-poverty status of those who are poor in 2020, it is seen that 60% are Inactive Poor. 29% were Working Poor, and 11% were Unemployed Poor. Of the 30% Employed Non-Poor who became poor in 2020, 77% became poor as Working Poor, 15% became poor as Unemployed Poor, and 7.6% became poor as Inactive Poor. 93% of the Inactive Non-Poors became poor as Inactive Poor. 33% of the Unemployed Non-Poor became poor as Working Poor. 55% of them became poor as Unemployed Poor.

In 2019, it was shown that 75% of Employed Non-Poor were in the top 40% of the income distribution. 30,5% of the 9% new poor are Employed Non-Poor. 77% of Working Poor are Employed Non-Poor in 2020. 50% of Employed Non-Poor, who were in the top 40% of the income distribution and became Working Poor, fell by 2 quantiles or more in the income distribution and became Working Poor. However, it should be noted that more than half of the impoverished people are those who are not Inactive Poor. Almost all of them are inactively poor. This group consisted of retirees, students, disabled people and those doing household works. The fact that the household is a group directly affected by income fluctuations makes this group very vulnerable to changes in the income distribution spectrum. The fact that a significant portion of the new poor consists of the Unemployed Poor, and that the majority of this group is Working Poor shows that the effects of income fluctuations or external shocks may also have an impact on this group.

V.D.1. Working Poverty Exit & Entry Probabilities

By following the non-parametric approach of Seker & Dayioglu (2015), a similar study was conducted for working poverty. As in their method, due to the short panel, entry and exit probabilities were calculated based on single spells of poverty. For this reason, those who were already poor at the beginning of the data, which corresponds to 2019 in the panel data, were not included in the analysis. These are known as left-censored observations in the literature. To calculate the duration of poverty, it is necessary to know the time passed from the moment a person enters the state of poverty. For this purpose, a risk set is defined, as done by Seker & Dayioglu (2015).

This risk set consists of individuals who are in a position to potentially enter poverty. In other words, those in this risk set have the possibility of changing their poverty status during the observation period. It is not sufficient to include only those who were not poor at the beginning. It is also necessary to consider individuals who have temporarily exited poverty. Therefore, we include in the risk set those who became poor after 2019 but were not poor in 2019. It is difficult to include multiple poverty periods due to data limitations. Income data is referenced to a calendar year. Instead, the re-entry rates are calculated.

Let X : *Employed Non Poor*, Y : *Inactive Poor*, Z : *Inactive Non Poor*, W : *Working Poor*, E : *Unemployed Poor*, and G : *Unemployed Non Poor* be the socio-economic-poverty definitions.

Let the set of households above the poverty line, z :

$$a = \{X, Z, G \in (X \cup Z \cup G) \mid X_{t,j}^i, Z_{t,j}^i, G_{t,j}^i \geq z^*\}.$$

Let the set of households below the poverty line, z :

$$b = \{Y, W, E \in (Y \cup W \cup E) \mid Y_{t,j}^i, W_{t,j}^i, E_{t,j}^i < z^*\}.$$

Entry Rate Calculations:

$$Risk\ set = \{r_{exit} \mid r_{exit} \in a_t \cup [a_t \cap b_{t+1}]\}$$

Re-Entry Rate Calculation:

$$Risk\ set = \{r_{re-entry} \mid r_{re-entry} \in b_t \cup [b_t \cap a_{t+1}]\}$$

The analysis focuses on the single spells of poverty as mentioned above. In other words, the individuals who experience poverty at any time during the four-year period exit the risk set regardless of whether they go on to become poor in a later period. Given that SILC has only four years and income has a reference period of one year, incorporating multiple spells into the analysis is difficult. Instead, the re-entry rates can be estimated in the same way as exit rates to get an idea about the size of potential underestimation. The risk set consists of individuals who happen to be non-poor in terms $t+n$, but poor in the previous term, t . Individuals exit the risk set when they become poor in later terms. If they do not, they constitute the right-censored observations.

Table 24. Working Poverty Exit & Entry Probabilities By Years

Spell Length	Exit Probability	Re-entry Probability
1	0,7141	0,2523
2	0,5092	0,4908

Source: Author's own calculations. SILC, 2019-2022.

The observed exit probabilities shows that the probability of exiting working poverty is decreasing from 71,4% after one year to 50,9% after two years. Seker & Dayioglu (2015) found that the probability of exiting overall poverty from 49% to %40. As a result, when this survival analysis is implemented for Working Poor, it shows a high probability of exiting from working poverty than overall poverty. This observation reveals the state dependence on poverty (Yildirim, 2018; Biewen, 2009; 2014). This trend also suggests that the longer times individuals remain in working poverty, the more challenging it becomes to escape. The possible factors could be skill depreciation, reduced social networks, or prolonged low-paid employment.

At the same time, the substantial increase in re-entry probability from 25,2% after one year to 49% after two years presents the precariousness of poverty exits. This finding is line with the conclusions of Jenkins (1999)'s, Andriopoulou & Tsakloglou (2011)'s and Seker & Dayioglu (2015)'s studies where individuals move between low-income and slightly higher-income states without achieving long-term economic stability.

The high one-year exit probability (71,41%) could also indicate a significant short-term mobility in exiting working poverty, so that working poverty may be a transient state. However, one-year re-entry probability (25,23%) implies that a substantial portion of those who exit working poverty faces economic vulnerability again.

V.D.2. Non-Parametric Vulnerability Approach

In this thesis, since the poverty status is determined based on income level, that is, because the income variable is converted into binary variables, changings in household income and specifically changings in the household head's income, when the data is examined, directly affect entry into and exit from poverty. In this regard, by following the non-parametric approach of Seker & Dayioglu (2015), Table 25 shows the results of this analysis.

Table 25. Distribution of Transitions by Size of Income Changes (%)

Exits from poverty: Income range after transit				
	$z \leq AEI < 1.25 * z$	$1.25 * z \leq AEI < 2 * z$	$AEI \geq 2 * z$	Total
Income range before transit				
$0.75 * z \leq AEI < z$	47,0	46,1	6,9	100,00
$0.5 * z \leq AEI < 0.75 * z$	48,4	45,5	6,2	100,00
$AEI < 0.5 * z$	31,9	47,9	20,2	100,00
Entry into poverty: Income range after transit				
	$0.75 * z \leq AEI < z$	$0.5 * z \leq AEI < 0.75 * z$	$AEI < 0.5 * z$	Total
Income range before transit				
$z \leq AEI < 1.25 * z$	64,3	27,1	8,6	100,00
$1.25 * z \leq AEI < 2 * z$	41,0	26,8	32,2	100,00
$AEI \geq 2 * z$	44,2	18,0	37,8	100,00

2020-2021

Exits from poverty: Income range after transit				
	$z \leq AEI < 1.25 * z$	$1.25 * z \leq AEI < 2 * z$	$AEI \geq 2 * z$	Total
Income range before transit				
$0.75 * z \leq AEI < z$	52,8	38,3	8,9	100,00
$0.5 * z \leq AEI < 0.75 * z$	40,8	49,2	10,0	100,00
$AEI < 0.5 * z$	25,4	55,9	18,8	100,00
Entry into poverty: Income range after transit				
	$0.75 * z \leq AEI < z$	$0.5 * z \leq AEI < 0.75 * z$	$AEI < 0.5 * z$	Total
Income range before transit				
$z \leq AEI < 1.25 * z$	64,2	25,2	10,5	100,00
$1.25 * z \leq AEI < 2 * z$	69,9	21,6	8,5	100,00
$AEI \geq 2 * z$	59,4	32,2	8,3	100,00

2021-2022

Exits from poverty: Income range after transit				
	$z \leq AEI < 1.25 * z$	$1.25 * z \leq AEI < 2 * z$	$AEI \geq 2 * z$	Total
Income range before transit				
$0.75 * z \leq AEI < z$	45,3	44,1	10,6	100,00
$0.5 * z \leq AEI < 0.75 * z$	46,2	43,8	10,0	100,00
$AEI < 0.5 * z$	43,0	34,8	22,2	100,00
Entry into poverty: Income range after transit				
	$0.75 * z \leq AEI < z$	$0.5 * z \leq AEI < 0.75 * z$	$AEI < 0.5 * z$	Total
Income range before transit				
$z \leq AEI < 1.25 * z$	71,2	21,8	6,9	100,00
$1.25 * z \leq AEI < 2 * z$	66,7	24,4	8,9	100,00
$AEI \geq 2 * z$	60,2	15,6	24,2	100,00

Source: Author's own calculations. SILC, 2019-2022. AEI is the adult equivalent household income.

The analysis of the income mobility dynamics relative to the poverty line in Türkiye from 2019 to 2022 in Table 25 provides a detailed perspective. The findings reveals that there is a significant income volatility particularly for those who near the poverty line. The high proportion of those just above the poverty line ($z \leq AEI < 1,25*z$) falling into near-poverty ($0,75*z \leq AEI < z$) across all periods reveals the precariousness of escaping poverty. It can be inferred that this group is still at-risk of poverty.

When the 2021-2022 transitions are examined, 43% of those who have less than half of the poverty line, the group that can be defined as the most improvised, escaped from poverty by earning an income of 25% more than the median income. 34,8% have an income between 25% more and two times the poverty line. 22,2% earn more than twice the poverty line. When income changes at entry into poverty are examined in general, it is observed that there are transitions within a cluster just around the poverty line.

When exits from poverty are analyzed, among those who entered poverty in 2021-2022, 71,2% of those with adult equivalent income 25% above the poverty line became poor with an income 25% below the poverty line in the following year. Among those whose adult equivalent income was twice the poverty line, 24,2% entered poverty in the following year with an income less than half of the poverty line. The increased income polarization observed in 2021-2022, with higher proportions of both severe poverty entries and near-poverty entries, suggests a widening of income disparities.

VI. INDEX APPROACH FOR THE PERSISTENCE OF POVERTY

In this section, the results of the GRC Index for Türkiye are shared, which its theoretical axiomatic design has been demonstrated in the measurement of poverty section. The index results show the intertemporal poverty in Türkiye better than classical indices. Instead of making a distinction between transient poor and chronic poor, as a different perspective, this index has been used. This index demonstrates that a person moving from temporary poverty to chronic poverty experiences their poverty situation in a more painful way.

Table 26. GRC INDEX FOR TÜRKİYE

$\tau = 1$						
α	$\beta = 0$			$\beta = 1$		
	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$
0	0,4307	0,4307	0,4307	0,4307	0,4307	0,4307
1	0,1757	0,0432	0,0165	0,0733	0,0193	0,0077
2	0,0873	0,0084	0,0020	0,0225	0,0024	0,0006
$\tau = 2$						
α	$\beta = 0$			$\beta = 1$		
	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$
0	0,1979	0,1979	0,1979	0,1979	0,1979	0,1979
1	0,1176	0,0322	0,0129	0,0587	0,0166	0,0068
2	0,0727	0,0075	0,0018	0,0216	0,0024	0,0006
$\tau = 3$						
α	$\beta = 0$			$\beta = 1$		
	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$
0	0,0743	0,0743	0,0743	0,0743	0,0743	0,0743
1	0,0557	0,0175	0,0075	0,0330	0,0103	0,0044
2	0,0418	0,0051	0,0013	0,0158	0,0019	0,0005

Source: Author's own calculations by using SILC, 2019-2022.

As $\alpha > 1$, the parameter increases the sensitivity of the aggregate intertemporal poverty index to the distribution of intertemporal individual poverty experiences among poor individuals. As $\beta > 0$, this parameter increases the relative weight of the longer spells. As $\gamma > 1$, this parameter allows the sensitivity of individual intertemporal poverty index to the higher inequality of poverty experiences over time.

When Table 26 is considered as a whole, as τ increases from 1 to 3, the overall values in the table decrease. τ is also representing the consecutive periods, except for $\tau = 1$. This indicates that as the number of consecutive periods an individual is in poverty increases, the poverty measure becomes more severe. For example, when $\alpha = 0$, $\gamma = 0$, and $\beta = 0$; $\tau = 1$: 0,4307, $\tau = 2$: 0,1979, and $\tau = 3$: 0,0743. These are the classical head-count ratios $\left(\frac{q}{N}\right)$. For example, 43% of those included in the micro panel data experienced poverty at least once in a 4-year period ($\tau = 1$). 19,7% have experienced poverty for at least two consecutive periods ($\tau = 2$). 7,43% have experienced poverty for at least 3 consecutive periods ($\tau = 3$). Since the majority of those who experienced poverty for at least three consecutive periods were poor throughout the entire panel, those who were poor for 4 periods were not included.

It can be observed that the responsiveness of α decreases as τ increases. The differences between values for different α levels become smaller as τ increases. For instance, when $\gamma = 0$ and $\beta = 0$: at $\tau = 1$: $\alpha = 0$ (0,4307), $\alpha = 1$ (0,1757), $\alpha = 2$ (0,0873) and at $\tau = 3$: $\alpha = 0$ (0,0743), $\alpha = 1$ (0,0557), $\alpha = 2$ (0,0418). So, the range of values narrows as τ increases by showing α becomes less responsive. When β increases from 0 to 1, the values generally decrease for $\alpha > 0$, especially for higher γ values. This effect is more visible for lower τ values. For example, when $\tau = 1$, $\alpha = 1$, $\gamma = 2$; $\beta = 0$: 0,0165 and $\beta = 1$: 0,0077. This shows that higher β values (which increase the weight of longer poverty spells) lead to lower index values by indicating more severe poverty in these calculations. As γ increases from 0 to 2, the index values generally decrease for $\alpha > 0$. This effect is more visible for higher α values and when $\beta = 1$. For instance, when $\tau = 1$, $\alpha = 2$, $\beta = 1$; $\gamma = 0$: 0,0225, $\gamma = 1$: 0,0024, and $\gamma = 2$: 0,0006. This demonstrates that higher γ values (by indicating more sensitivity to inequality in poverty gaps over time) result in lower index values (more severe poverty).

The combined effects of α , β , and γ are more evident when τ is lower. As τ increases, the differences caused by changing other parameters become less visible by suggesting that long-term poverty overshadows the effects of other parameters. Despite the overall decrease in values as τ increases, the general patterns of how α , β , and γ affect the index remain consistent all across different τ values. As a result, this analysis shows that how the GRC Index captures various aspects of poverty, including duration (τ), sensitivity to distribution (α), weight of longer spells (β), and sensitivity to inequality over time (γ). The index becomes more rigid with longer poverty durations by emphasizing the severity of persistent poverty.

Additionally, like the FGT index decomposition into incidence, intensity, and inequality components (Foster et al., 1984; as cited in Gradín et. al, 2012), P with $\alpha = 2$ can be decomposed as:

$$P(Y; z) = H[I^2 + (1 - I)^2 C_{1-p}^2] = H[I^2 + V_p],$$

Where $H = \frac{q}{N}$ is the proportion of ever poor, and $I = \bar{p} = \frac{1}{q} \sum_{i=1}^q p_i$ and V_p respectively denote the average and variance of individual intertemporal poverty indicators across the ever-poor population. Moreover, $V_p = \frac{1}{q} \sum_{i=1}^q (p_i - \bar{p})^2 = (1 - I)^2 C_{1-p}^2$, with C_{1-p}^2 being the coefficient of variation of $1 - p_i$. For and $\alpha \geq 0$:

$$P(Y; z) = HI^\alpha [1 + E_p^\alpha],$$

Where $E_p^\alpha = \frac{1}{q} \sum_{i=1}^q \left[\left(\frac{p_i}{\bar{p}} \right)^\alpha - 1 \right]$ is related to generalized entropy inequality indices. Specifically, for any $\alpha > 0$ the generalized entropy index is $GE_p^\alpha = \alpha(\alpha - 1)E_p^\alpha$.

In this regard, Table 27 provides the head-count ratio, intensity, and inequality index for various parameter values. As observed in table, the head-count ratio remains unchanged all across the parameters within each spell length. So, this is making this classical poverty index inadequate for capturing the dynamic aspects of poverty. For example, the intensity measure decreases as the parameters β and γ increase. In contrast, the generalized inequality measure is highly sensitive to these parameters.

Table 27. Decomposition of GRC INDEX

$\tau = 1$						
α	$\beta = 0$			$\beta = 1$		
	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$
0	0,4307	0,4307	0,4307	0,4307	0,4307	0,4307
	0,4080	0,1003	0,0383	0,1701	0,0448	0,0178
	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
1	0,4307	0,4307	0,4307	0,4307	0,4307	0,4307
	0,4080	0,1003	0,0383	0,1701	0,0448	0,0178
	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
2	0,4307	0,4307	0,4307	0,4307	0,4307	0,4307
	0,4080	0,1003	0,0383	0,1701	0,0448	0,0178
	0,2169	0,9327	21633	0,8065	18146	35154
$\tau = 2$						
α	$\beta = 0$			$\beta = 1$		
	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$
0	0,1979	0,1979	0,1979	0,1979	0,1979	0,1979
	0,5939	0,1629	0,0653	0,2966	0,0837	0,0341
	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
1	0,1979	0,1979	0,1979	0,1979	0,1979	0,1979
	0,5939	0,1629	0,0653	0,2966	0,0837	0,0341
	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
2	0,1979	0,1979	0,1979	0,1979	0,1979	0,1979
	0,5939	0,1629	0,0653	0,2966	0,0837	0,0341
	0,0416	0,4249	11363	0,2405	0,7170	16080
$\tau = 3$						
α	$\beta = 0$			$\beta = 1$		
	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$	$\gamma = 0$	$\gamma = 1$	$\gamma = 2$
0	0,0743	0,0743	0,0743	0,0743	0,0743	0,0743
	0,7500	0,2353	0,1007	0,4443	0,1383	0,0592
	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
1	0,0743	0,0743	0,0743	0,0743	0,0743	0,0743
	0,7500	0,2353	0,1007	0,4443	0,1383	0,0592
	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
2	0,0743	0,0743	0,0743	0,0743	0,0743	0,0743
	0,7500	0,2353	0,1007	0,4443	0,1383	0,0592
	0,0000	0,2282	0,6727	0,0789	0,3301	0,8651

Source: Author's own calculations. SILC, 2019-2022. For each row of α represents H, I , and $E_p^\alpha (\alpha > 1)$ respectively.

As an example, when $\gamma = 2$, changing β has different effects on various measures: the head-count ratio stays the same, the intensity decreases, the coefficient of variation for $1 - p$ increases, and the variance of p increases. This illustrates that poverty measures respond differently to changes in the duration and variability of individual poverty experiences. When $\alpha = 2$, an alternative decomposition by using $1 - p$ instead of p can be derived. Table 28 shows this alternative decomposition. The table demonstrates that how different poverty measures are uniquely affected by two factors: the length of individual poverty spells and the variations in individual poverty experiences.

Table 28. Alternative Decomposition of GRC Index

γ	$\tau = 1$		$\tau = 2$		$\tau = 3$	
	$\beta = 0$	$\beta = 1$	$\beta = 0$	$\beta = 1$	$\beta = 0$	$\beta = 1$
0	0,4307	0,4307	0,1979	0,1979	0,0743	0,0743
	0,4080	0,1701	0,5939	0,2966	0,7500	0,4443
	0,1031	0,0339	0,0889	0,0428	0,0000	0,0505
	0,0361	0,0233	0,0147	0,0212	0,0000	0,0156
1	0,4307	0,4307	0,1979	0,1979	0,0743	0,0743
	0,1003	0,0448	0,1629	0,0837	0,2353	0,1383
	0,0116	0,0040	0,0161	0,0060	0,0216	0,0085
	0,0094	0,0036	0,0113	0,0050	0,0126	0,0063
2	0,4307	0,4307	0,1979	0,1979	0,0743	0,0743
	0,0383	0,0178	0,0653	0,0341	0,1007	0,0592
	0,0034	0,0012	0,0056	0,0020	0,0084	0,0034
	0,0032	0,0011	0,0049	0,0019	0,0068	0,0030

Source: Author's own calculations. SILC, 2019-2022. For each row of γ represents H, I, C_{1-p}^2, V_p respectively.

VII. ECONOMETRIC MODELLING OF MICRO PANEL DATA

Before embarking on choosing a suitable econometric model, it is useful to recall we have four-year panel micro dataset. In panel datasets, it is possible to find the time invariant and random effects. Here, it would be useful to remember shortly some estimation technics. A general model for conditional probability of a binary response variable y_{it} can be written by following notation of Lucchetti & Pignini (2017) as:

$$p(y_{it}|F_t, \alpha_i; \psi_o) \text{ for } i = 1, \dots, n, t = 1, \dots, T,$$

Where F_t is the information set at time t available for individual i , which, in general, may consist of a set of covariates $X_i = (x_{i1}, \dots, x_{iT})$ as well as the lag of the response variable $y_{it-1} = (y_{i1}, \dots, y_{it-1})$; α_i is the individual time-invariant unobserved effect, which is assumed to be a continuous random variable. ψ_o is the vector of parameters (Lucchetti & Pignini, 2017). In the basic case where the relevant conditioning information set is X_i , y_{it} is not depending on y_{it-1} , the joint probability of $y_i = (y_{i1}, \dots, y_{iT})$ for individual i (Lucchetti & Pignini, 2017):

$$p(y_{it}|X_i; \psi_o) = \int_{\mathbb{R}} \prod_{t=1}^T p(y_{it}|X_i, \alpha_i; \psi_o) dF(\alpha_i).$$

In a dynamic model, y_{it} depends on its past values. When unobserved effects are present, the process for the response variable must be initialized to account for how y_{it} relates to the process before observations began (Lucchetti & Pignini, 2017). The dependence of y_{it} on its past is limited to its first lag, making the relevant subset of $F_t[y_{t-1}, X_i]$ (Lucchetti & Pignini, 2017). Consequently, the joint probability of y_{it} , conditional on X_i becomes

$$p(y_{it}|X_i; \psi_o) = \int_{\mathbb{R}} \prod_{t=1}^T p(y_{i1}|X_i, \alpha_i; \psi_o) \prod_{t=2}^T p(y_{it}|y_{it-1}, X_i, \alpha_i; \psi_o) dF(\alpha_i)$$

By following Muck's (2024) notations, the theoretical background of the models that will be used for the estimation for working poverty, unemployed poverty, and inactive poverty are follows.

VII.A. Random Effect Model

Heckman's (1981b) estimator is based on a standard dynamic random effect binary choice model (Lucchetti & Pignini, 2017). By following Muck (2024), when considered the following model:

$$y_{it} = \alpha + X'_{it}\beta + u_{it}, \quad t \in \{1, \dots, T\}$$

The error u_t is the sum of the individual specific random component μ_i and idiosyncratic disturbance ε_{it} :

$$u_{it} = \mu_i + \varepsilon_{it} \text{ where } \mu_i \sim \mathcal{N}(0, \sigma_\mu^2) \text{ and } \varepsilon_{it} \sim \mathcal{N}(0, \sigma_\varepsilon^2).$$

Here, the independent variables can be time invariant. Individual (random) effects are independent:

$$E(\mu_i, \mu_j) = 0 \text{ if } i \neq j.$$

The estimation method is the generalized least squares (GLS). The diagonal elements of the variance covariance matrix of the error term can be written as:

$$\begin{aligned} E(u_{it}^2) &= E(\mu_i^2) + E(\varepsilon_{it}^2) + 2cov(\mu_i, \varepsilon_{it}) \\ &= \sigma_\mu^2 + \sigma_\varepsilon^2 \end{aligned}$$

Non-diagonal elements of the variance covariance matrix of the error term ($t \neq s$):

$$cov(u_{it}, u_{is}) = E(u_{it}u_{is}) = E[(\mu_i + \varepsilon_{it})(\mu_i + \varepsilon_{is})]$$

Then,

$$cov(u_{it}, u_{is}) = \underbrace{E(\mu_i^2)}_{\sigma_\mu^2} + \underbrace{E(\mu_i \varepsilon_{it})}_0 + \underbrace{E(\mu_i \varepsilon_{is})}_0 + \underbrace{E(\varepsilon_{it} \varepsilon_{is})}_0 = \sigma_\mu^2$$

Finally, the variance covariance matrix of the error term for given individual (i):

$$E(u_i, u_i') = \sum_{u,i} = (\sigma_\mu^2 + \sigma_\varepsilon^2) \begin{bmatrix} 1 & \rho & \dots & \rho \\ \rho & 1 & \dots & \rho \\ \vdots & \vdots & \ddots & \vdots \\ \rho & \rho & \dots & 1 \end{bmatrix} \text{ where } \rho = \frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\varepsilon^2}$$

If rewritten above model by simplifying:

$$y = \beta X + u$$

When the variance covariance matrix of the error term $E(u, u') = \sigma^2 I$ is spherical.

Then, the OLS estimator is:

$$\beta^{OLS} = (X'X)^{-1}X'y$$

When assumed about the variance covariance matrix of the error term, $E(u, u') = \Sigma$ and Σ is not diagonal but is positively defined. The simplified model above is transformed:

$$Cy = C\beta X + Cu, \text{ where } C = \Sigma^{-\frac{1}{2}}$$

The variance covariance matrix of the error term becomes in the newly transformed setting:

$$E(CuCu'u') = E\left(\Sigma^{-\frac{1}{2}} u (\Sigma^{-\frac{1}{2}})' u'\right) = E(\Sigma^{-1}\Sigma) = I$$

After all, the GLS estimator of the vector β is:

$$\beta^{GLS} = (X'\Sigma^{-1}X)^{-1}X'\Sigma^{-1}y$$

By using GLS estimator:

$$\begin{aligned}\hat{\beta}^{RE} &= (X'\Sigma^{-1}X)^{-1}X'\Sigma^{-1}y, \\ \text{Var}(\hat{\beta}^{RE}) &= (X'\Sigma^{-1}X)^{-1}\end{aligned}$$

It is already known that $\Sigma = E(uu')$ is block diagonal and:

$$\text{cov}(u_{it}, u_{js}) = \begin{cases} 0 & \text{if } i \neq j \\ \sigma_\mu^2 + \sigma_\varepsilon^2 & \text{if } i = j \text{ and } s = t \\ \rho(\sigma_\mu^2 + \sigma_\varepsilon^2) & \text{if } i = j \text{ and } s \neq t \end{cases} \text{ where } \rho = \frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\varepsilon^2}$$

The rest is up to estimations of σ_μ and σ_ε .

In the standard random effect model, the variance of the random effect is assumed to be σ_μ^2 ($\mu \sim \mathcal{N}(0, \sigma_\mu^2)$). In order to test the presence of heterogeneity:

$$\mathcal{H}_0: \sigma_\mu = 0$$

$$\mathcal{H}_1: \sigma_\mu \neq 0$$

If the null hypothesis is rejected, then it can be asserted that there are random individual differences among the sample individuals, and the random effects model is suitable. If the null hypothesis is failed to be rejected, then it means that the random effects exist.

Finally, the Lagrange multiplier statistic:

$$LM = \sqrt{\frac{NT}{2(T-1)}} \left(\frac{\sum_{i=1}^N (\sum_{t=1}^T \hat{u}_{it})^2}{\sum_{i=1}^N \sum_{t=1}^T \hat{u}_{it}^2} - 1 \right)$$

Where $\hat{u}_{i,t} = y_{it} - \hat{\alpha}_0 - \hat{\beta}_1 x_{1it} - \dots - \hat{\beta}_k x_{kit}$ stands for the residuals. Generally, $LM \sim \chi^2(1)$. In large samples, $LM \sim \mathcal{N}(0,1)$.

VII.B. Fixed Effects Model

FE approach has been put forward by Bartolucci & Nigro (2010) as cited in (Lucchetti & Pigini, 2017). By following above notation, except for linear probability models, Fixed Effects (FE) approaches to estimating dynamic binary choice models use the dynamic logit formulation. Here, the model is subject to exogeneity conditional on α_i . And it is assumed that the error terms ε_{it} are i.i.d. standart logistic random variables. Thus, the probability of observing y_{it} can be written as:

$$p(y_{it}|y_{it-1}, x_{it}, \alpha_i; \psi) = \frac{e^{[y_{it}(\gamma y_{it-1} + x_{it}^T \beta + \alpha_i)]}}{1 + e^{(\gamma y_{it-1} + x_{it}^T \beta + \alpha_i)}}$$

When considered the above-mentioned model again with a few algebraic differences:

$$y_{it} = \alpha_i + \beta_1 x_{1it} + \dots + \beta_k x_{kit} + u_{it}$$

And individual intercept α_i is included to control for individual-specific and time-invariant characteristics. That intercepts are called as fixed effects. These fixed effects capture the individual heterogeneity. The estimation is not possible by OLS or GLS directly. The estimation can be done by the least squares dummy variable estimator and the fixed effects/within estimator Muck (2024). The easiest way to estimate the fixed effect for all individual within the model is to include an indicator variable. For instance, for the first unit:

$$D_{1i} = \begin{cases} 1 & i = 1 \\ 0 & otherwise \end{cases}$$

The number of dummy variables is equal to N. It should be noted that it is not useful to use the least dummy variable estimator when N is large. Thus, the fixed regression can be written as:

$$y_{it} = \sum_{j=1}^N \alpha_j D_{ji} + \beta_1 x_{1it} + \dots + \beta_k x_{kit} + u_{i,t}$$

The other estimation method is the within group estimator. When averaged the observations across time and used the assumption on time-invariant parameters:

$$\bar{y}_i = \alpha_i + \beta_1 \bar{x}_{1i} + \cdots + \beta_k \bar{x}_{ki} + \bar{u}_i$$

If the above equation is subtracted from this equation, it is obtained:

$$(y_{it} - \bar{y}_i) = \underbrace{(\alpha_i - \alpha_i)}_0 + \beta_1 (x_{1it} - \bar{x}_{1i}) + \cdots + \beta_k (x_{kit} - \bar{x}_{ki}) + (u_{it} - \bar{u}_i)$$

$$\tilde{y}_{it} = \beta_1 \tilde{x}_{1t} + \cdots + \beta_k \tilde{x}_{kt} + \tilde{u}_{i,t}$$

The estimates of intercept to confirm whether the fixed effects are different among units can be tested by the null hypothesis:

$$\mathcal{H}_o: \alpha_1 = \alpha_2 = \cdots = \alpha_N$$

This test is called as poolability test, which is designed to test the joint significance of individual-specific intercepts. To test the null hypothesis, the unrestricted model is tested. Therefore, the sum of squared errors for both models can be calculated: SSE_U and SSE_R .

$$\mathcal{F} = \frac{(SSE_R - SSE_U)/(N - 1)}{SSE_U/(NT - K)} \text{ if the null is true then } \mathcal{F} \sim \mathcal{F}_{(N-1, NT-K)}$$

VIII. THE BASE MODEL AND ESTIMATION RESULTS

In this section, the estimation of three different econometric model results will be presented. The explanatory variables have been compiled through poverty literature. In addition to these explanatory variables, as a triggering event, main job changing for better pay has been included to understand labour market related changings. In order to estimate the main determinants of poverty, the explanatory variables have been categorized into three main groups. First, individual characteristics represent the basic characteristics of individuals. Second, the employment related variables show the individual's work intensity, work continuity, type of employment, registration with the social security institution and whether he/she works in the public or private sector. Third, the household related variables reflect the basic characteristics of an individual's household. It shows the type of ownership in the house where the household is located, whether the household is a large family or a nuclear family, whether there are dependent children or elderly dependents in the household, and whether the household receives social assistance. Finally, by following the literature, the effect of triggering events is examined. These are marriage status changing, main job changing and, specific to this thesis, the reason for the main job changing. This is provided in SILC and is used as an explanatory variable in this study.

In this thesis, poverty status is being examined in three main dimensions according to socio-economic-poverty status. These are Working Poor, Unemployed Poor and Inactive Poor. Thus, the claim of this thesis is that the fundamental dynamics of poverty will be better addressed in the nexus between poverty and labor market transitions. However, there is an issue that is needed to be underlined here. According to individuals' own economic definitions, the employment status of Inactive Poores and Unemployed Poores is uncertain at the time of the survey. For instance, as mentioned before, a person who defines himself as retired socio-economically is able spend certain months of the year by working. In this case, it is difficult to determine the work intensity and employment status of these people. Here, in order to solve this problem, the status of these people in their last job is taken as basis. This data is available in SILC. Since the impact of triggering events was tried to be determined on all three socio-poverty statuses, separate triggering events were not determined.

Firstly, FE model will be used to reveal unobservable individual heterogeneity and individual time-invariant effects, as widely covered in the literature. However, by using RE model, Hausman test result will be presented. Secondly, since the dependent variable has binary results, being poor and not being poor, REDP model will be used to estimate the probabilities for different socio-poverty statuses. Table 29 gives the explanatory variables used in the models.

Table 29. The Explanatory Variables & Descriptions

The Variables	Description
Individual Characteristics	
Age	The individual's age.
Age Square	The square of the individual's age.
Marital Status	1 = married, 0 otherwise.
Health Conditions	1 = good, 0 otherwise.
Gender	1 = male, 0 otherwise.
Education	1 = university & high school, 0 otherwise
Employment Related Variables	
Regular Employee	1 = regular employee, 0 otherwise
Casual Employee	1 = casual employee, 0 otherwise
Self-employed	1 = self-employed, 0 otherwise
Unpaid Family Worker	1 = unpaid family worker, 0 otherwise
Employee (Working Full-Time)	1 = full-time employee, 0 otherwise
Employee (Working Part-Time)	1 = part-time employee, 0 otherwise
Registration to SGK	1 = registered to SGK, 0 otherwise
Private Sector	1 = private, 0 = public
Permanent Job	1 = permanent job, 0 otherwise
Household Related Variables	
Property Type	1 = homeowner, 0 otherwise.
Household Type	1 = single person household, 0 otherwise.
Child Dependent	1 = yes, 0 otherwise
Elderly Dependent	1 = yes, 0 otherwise
Social Assistance	1 = yes, 0 otherwise.
Real Estate & Int. Inc.	1 = household with real estate or interest income, 0 otherwise
Woman Responsible H.	1 = woman responsible household, 0 ot.
Triggering Events Related Variables	
Main Job Changing	1 = changed main job, 0 otherwise
Reason For Main Job Changing	1 = the individual changed main job for better pay, 0 otherwise
Marital Status Changing	1 = the individual changed his/her marital status, 0 otherwise

Source: Author's own definitions.

Econometric modeling of working poverty brings with it some limitations and additional assumptions. In particular, the explanatory variables used in panel data sets that estimate the risk of working poverty have some endogeneity and selection bias issues. Moreover, this may lead to a multicollinearity problem among the selected explanatory variables and with the dependent variable itself. Here, a binary classification is made into working poor and all other categories. Working status variables (regular employees, casual employees, self-employed, employers and unpaid family workers) are also included in the model. The rationale behind including the employment status variables into the model is to examine the impact of different types of employment on poverty risk. In the literature, different types of employment have been shown to have different effects on income level and poverty risk. By including these variables, it is attempted to identify which types of employment are more associated with working poverty. However, these variables may be correlated with the dependent variable (being working poor) because the dependent variable already includes the condition of being “working” according to self-defined economic status of individuals. For example, the effect of being a regular employee will reflect not only the probability of being working poor, but also the probability of being working. This raises the problem of selection bias.

The causality is difficult to identify in the model because there is a possible endogeneity problem between employment status and poverty. Several methods are being used to address this issue. A Fixed-Effects Model is applied by using the characteristics of the panel dataset, so that I can control for time-invariant unobservable factors. Although causality cannot be fully determined, the strength and direction of the relationships can be revealed. The problem of selection bias is being solved using Two-Step Heckman Selection Model. The Heckman model allows to address the selection bias that may arise when examining the relationship between work status and poverty. This model considers the possible endogenous relationship between the decision to work and poverty. Thus, the working status is obtained in the first step and the probability of being poor among those who are working is obtained in the second step. In order to escape from time inconsistency problem from SILC, since the survey reflects preceding year’s income, the year 2022 has been omitted. The models are based on the years between 2019-2021.

In the first step, the factors affecting the individual's decision whether to work or not are modeled. Here, variables such as age, gender, education level are used, as well as variables that may affect the decision to work but are not expected to affect poverty “directly” (for example, the number of children in the household or other household related variables. However, the type of employment is affecting directly.). In the second step, the probability of being poor among working people is modeled. In this stage, the variables from the original model are used. Finally, separate models are then constructed for the whole population and separate analyses are carried out for other subgroups (Unemployed Poor and Inactive Poor) and the results are compared with models where the dependent variable is working poverty.

VIII.A. The Base Model

In a simple Heckman Selection Model (HS model hereafter):

$$y_j = x_j\beta + u_{1j}$$

The dependent variable is not easily observed. The dependent variable for observation j is observed if by following Mora (2024)'s notation:

$$s_j = z_j\gamma + u_{2j} > 0$$

$$\begin{bmatrix} u_1 \\ u_2 \end{bmatrix} \sim N \left(\begin{bmatrix} u \\ v \end{bmatrix}, \begin{bmatrix} \sigma_u^2 & \rho \\ \rho & 1 \end{bmatrix} \right)$$

$$\text{corr}(u_1, u_2) = \rho$$

Where y_j represents the dependent variable in poverty equation. x_j represents the list of covariates or controls in the working poor equation. s is showing the dependent variable in the working equation which is a binary variable. z represents the list of controls in the working equation. The rationale behind this model is that OLS is inconsistent. That's why ML estimation is consistent. If $\rho \neq 0$, y_j estimation results would be biased. By including z in the poverty equation is not solving the problem. OLS fails because for individuals in the poverty equation sample, the conditional expectation of the error term is not zero (Mora, 2024). Therefore, individuals are more likely to have large positive errors in the poverty equations.

From Tobit Model,

$$E[y_j|x_j, z_j, s_j = 1] = x_j\beta + \rho\lambda(\gamma'z_j)$$

λ is the inverse Mills ratio, which can be considered as a missing variable which is correlated with ε .

$$y_j = \alpha + x_j\beta + u_{1j}, \quad t \in \{1, \dots, T\}$$

y_j is the dependent variable which is being poor, unemployed poor, and inactive poor. x_j is the vector of covariates that includes individual related variables, employment related variables, household related variables, and triggering events. β is the vector of coefficients. u_{1j} is the error term.

$$s_j = z_j\gamma + u_{2j}$$

s_j is the selection equation's dependent variable, which is being working. z_j is the vector of covariates that includes abovementioned variables, except for employment related variables. γ is the vector of coefficients in selection equation. u_{2j} is the error term. The results from Heckman Selection Model for being working and poor is presented in below.

According to the results of the HS model in Table 30A, this model estimates the effect of above-mentioned variables on poverty. For instance, the model estimates the effect of education on poverty by taking into account all individuals who could most likely work, not only those who work. In other words, it shows the effect of education variable on poverty in two directions. First, the indirect effect is the finding that education reduces poverty by increasing the probability of working or finding a job. Second, the direct effect, is the finding that poverty decreases as the level of education among workers increases. A one-unit increase in education level positively affects the probability of being employed by 0.469 unit. In other words, people with higher levels of education are more likely to work. Among employed individuals, a one unit increase in educational attainment leads to a 0.086 unit decrease in poverty level.

For the home ownership variable, which is common in the literature, the coefficient of home ownership in the selection equation is 0.033. Home ownership has a positive and statistically significant effect on the probability of being employed. In other words, it can be said that people who own a house are more likely to work than those who do not. In the working poverty equation, the coefficient of the variable of home ownership is -0.007. Home ownership has a small but statistically significant negative effect on poverty among working population. Overall, the role of home ownership in improving the economic situation is positive, but it also reveals that this effect is mostly fulfilled through increasing the probability of finding a job. The direct effect among workers is smaller. When household variables are analyzed, those who live in households receiving social assistance are less likely to work (-0.118) but have higher poverty levels among those who work (0.216). This might suggest that social assistance could reduce labor market participation, but social assistance receivers are generally poorer. On the other hand, those who live in households with dependent children are more likely to work (0.039) but have higher poverty risk (0.093). This might point that the families with children are highly willing to work but more exposed to poverty due possibly to the additional expenses. Moreover, the households with elderly persons are more likely to work (0.098) but there is no statistically significant effect on poverty. Finally, single-person households are highly likely to work (0.327) but have no significant impact on poverty. Single-person households have high labor force participation. However, this does not have a significant impact on poverty.

The aim of using HS model was to examine the impact of different employment types on working poverty. In this respect, the poverty level of regular employees/wage earners, employers, self-employed, registered employees and permanent employees is lower than the other employment types. However, the probability of poverty for casual workers is higher than the others (0.023). Working in the private sector has no significant effect on poverty. Unpaid family workers are omitted because they cause multicollinearity issue in the model. The lambda value (-0.0323) in the model is negative. This is an indicator of selection bias. However, since the p-value is 0.152, this effect is not statistically significant. Also, since rho is negative (-.0175), it may indicate that the effect of unobserved factors in the selection process on poverty is in the opposite direction. However, this relationship is not very strong.

Therefore, additional models with working poor as the dependent variable can be used to examine the possible different effects of the variables.

Table 30. Fixed Effects Model Estimation Results for Working Poor

Working Poor	Coef.	St.Err.	t-value	p-value	[95%Conf	Interval]	Sig
Individual							
Age	-.003	.003	-0.97	.333	-.008	.003	
Age Square	0	0	0.49	.624	0	0	
Marital Status	.027	.009	3.11	.002	.01	.043	***
Health Conditions	.007	.004	1.61	.108	-.001	.015	
Gender	-.004	.02	-0.20	.845	-.042	.035	
Education	-.017	.012	-1.40	.16	-.04	.007	
Employment							
Regular Employee	.031	.007	4.25	0	.016	.045	***
Casual Employee	-.028	.008	-3.34	.001	-.044	-.011	***
Employer	-.069	.019	-3.70	0	-.105	-.032	***
Self-employed	-.027	.01	-2.62	.009	-.047	-.007	***
Unpaid Family	.038	.01	3.85	0	.019	.057	***
Registration to SGK	-.027	.006	-4.29	0	-.04	-.015	***
Private Sector	.294	.005	59.67	0	.284	.304	***
Permanent Job	-.105	.007	-15.27	0	-.118	-.091	***
Household							
Property Type	.003	.005	0.57	.57	-.008	.014	
Household Type	-.002	.011	-0.21	.832	-.023	.019	
Child Dependent	.011	.005	2.15	.031	.001	.022	**
Elderly Dependent	-.002	.006	-0.34	.731	-.015	.01	
Social Assistance	-.006	.003	-1.85	.065	-.013	0	*
Triggering Events							
Main Job Changing	.038	.007	5.23	0	.023	.052	***
Changing Better Pay	-.035	.009	-3.91	0	-.053	-.018	***
Marital Changing	.001	.01	0.08	.937	-.018	.019	
Constant	.045	.061	0.74	0.458			*
							**
Mean dependent var		0.066	SD dependent var			0.249	
R-squared		0.096	Number of obs			93291	
F-test		216.686	Prob > F			0.000	
Akaike crit. (AIC)		-128507.063	Bayesian crit. (BIC)			-128289.863	

Source: Author's own calculations. *** $p < .01$, ** $p < .05$, * $p < .1$

In a comparative analysis, the differences in the types of employment across models stand out. For example, for employment types, in RE model, being regular employee (0.018) has a positive statistically significant effect on being poor. While this variable has a negative effect in HS model and a positive effect in FE model, it has a positive but lower effect here. Being a casual employee is positive in HS and negative in FE, while it has a positive and stronger effect in RE model. Being an employer has a negative effect in all models, but in RE model, the negative effect of being working poor is stronger (-0.097). Being unpaid family worker has a positive effect on being working poor in all models.

Being in a single-person household is not significant in FE but has a significant and positive effect in RE model. Living in children dependent household has a positive effect on being Working Poor in all models. Living in an elderly dependent household is not statistically significant in any model. Living in a household receiving social assistance has a positive effect in Heckman, not significant in FE, and a strong positive effect in RE. Education is negative in Heckman, not significant in FE, but has a stronger negative effect in RE model. Marital status, being married, has a positive effect on being working poor in all three models. Having a permanent job and being a registered employee have a negative effect in all three models, but the strength of the effect is different.

Table 31. Fixed Effects Model Estimation Results for Unemployed Poor

Unemployed Poor	Coef.	St.Err.	t-value	p-value	[95%Conf	Interval]	Sig
Individual							
Age	-.002	.002	-0.84	.399	-.005	.002	
Age Square	0	0	0.60	.549	0	0	
Marital Status	-.018	.006	-3.06	.002	-.03	-.007	***
Health Conditions	.001	.003	0.20	.84	-.005	.006	
Gender	.028	.014	2.03	.043	.001	.055	**
Education	.038	.008	4.56	0	.022	.054	***
Employment							
Regular Employee	-.018	.005	-3.75	0	-.028	-.009	***
Casual Employee	.018	.006	3.19	.001	.007	.029	***
Self-employed	-.022	.013	-1.73	.084	-.047	.003	*
Employer	-.051	.007	-7.32	0	-.064	-.037	***
Unpaid Family W.	-.035	.007	-5.23	0	-.049	-.022	***
Household							
Property Type	-.002	.004	-0.50	.62	-.009	.006	
Household Type	-.036	.008	-4.72	0	-.051	-.021	***
Child Dependent	-.011	.004	-2.86	.004	-.018	-.003	***
Elderly Dependent	-.004	.004	-0.87	.385	-.013	.005	
Social Assistance	-.006	.002	-2.63	.008	-.011	-.002	***
Triggering Events							
Main Job Changing	-.087	.005	-17.45	0	-.097	-.077	***
Better Pay	.03	.006	4.71	0	.017	.042	***
Marital Changing	-.009	.007	-1.41	.16	-.023	.004	
Constant	.085	.044	1.94	.052	-.001	.17	*
Mean dependent var		0.024	SD dependent var			0.154	
R-squared		0.014	Number of obs			93291	
F-test		34.038	Prob > F			0.000	
Akaike crit. (AIC)		-193524.165	Bayesian crit. (BIC)			-193335.296	

Source: Author's own calculations. *** $p < .01$, ** $p < .05$, * $p < .1$

Table 32. Fixed Effects Model Estimation Results for Inactive Poor

Inactive Poor	Coef.	St. Err.	t-value	p-value	[95%Conf	Interval]	Sig
Individual							
Age	-.008	.003	-2.64	.008	-.015	-.002	***
Age Square	0	0	2.78	.005	0	0	***
Marital Status	.022	.01	2.13	.033	.002	.042	**
Health Conditions	-.019	.005	-3.90	0	-.029	-.01	***
Gender	-.03	.024	-1.27	.205	-.076	.016	
Education	-.036	.014	-2.52	.012	-.064	-.008	**
Employment							
Regular Employee	-.118	.008	-14.31	0	-.134	-.102	***
Casual Employee	-.108	.01	-11.13	0	-.127	-.089	***
Self-employed	-.137	.022	-6.27	0	-.179	-.094	***
Employer	-.137	.012	-11.60	0	-.16	-.114	***
Unpaid Family Worker	-.161	.012	-14.00	0	-.184	-.139	***
Household							
Property Type	-.013	.007	-1.94	.052	-.026	0	*
Household Type	-.047	.013	-3.62	0	-.072	-.022	***
Child Dependent	.027	.006	4.31	0	.015	.04	***
Elderly Dependent	-.012	.008	-1.63	.103	-.027	.003	
Social Assistance	.007	.004	1.60	.109	-.001	.014	
Triggering Events							
Main Job Changing	-.017	.009	-2.06	.04	-.034	-.001	**
Better Pay	.005	.011	0.49	.621	-.016	.026	
Marital Changing	-.025	.011	-2.17	.03	-.047	-.002	**
Real Estate & Int. Inc.	-.001	.002	-0.73	.468	-.006	.003	
Constant	.404	.074	5.45	0	.259	.549	***
Mean dependent var		0.122	SD dependent var			0.327	
R-squared		0.010	Number of obs			93291	
F-test		21.961	Prob > F			0.000	
Akaike crit. (AIC)		-94272.832	Bayesian crit. (BIC)			-94074.518	

Source: Author's own calculations. *** $p < .01$, ** $p < .05$, * $p < .1$

When examined in general, since RE model shows the effect of both time variant and time-invariant factors, the effect of some demographic variables such as age, gender and education is clearer here. Secondly, the effects of employment types differ across models, which may indicate that these effects are multidimensional. Therefore, considering these variables in different socio-poverty dimensions can provide more robust results. Thirdly, it can be said that the effects of household variables are more evident in RE model, especially the impact of social assistance. Fourthly, the positive poverty-increasing effect of working in the private sector on poverty is strong in both FE and RE models. However, this was not the case with Heckman Model.

When the outputs of different econometric models are interpreted together, the multi-faceted dynamics of poverty and welfare in Türkiye become clearer. For instance, the effect of education variable on poverty status varies significantly across different poverty categories and econometric models. In HS model, the effect of education is increasing the probability of working (.469). But it is decreasing the risk of poverty (-.086) at the same time. This might reflect the positive effect of education on labor market participation and income growth. For Working Poor, the negative effect in RE model (-.029) indicates indirectly that there is a positive effect of education on wages. The statistically insignificant effect in FE model (-.017) may point that the marginal effect of education decreases after controlling the individual heterogeneity.

The results for Unemployed Poor (RE: -.005, FE: .038) may demonstrate that there are two effects of education on unemployment. For example, higher reservation wage expectations of highly educated individuals may increase the risk of unemployment in the short run, as addressed in non-parametric analysis section. However, in the long run, human capital accumulation by time may help the exit from unemployment. On the other hand, the negative effect for Inactive Poor (RE: -.047, FE: -.036) shows the positive impact of education on the living standards of individuals outside the labor force according to their self-defined economic situations. This is due possibly to the impact of education not only on labor market outcomes. When these people decide to participate income generating activities, they are still exposed to matching and signaling mechanism of labour market. As a result, education is a long-term investment for an individual.

The results from HS model also show that social assistance, in other words, living in a household receiving social assistance, reduces the probability of working (-.118). However, it shows that it increases the risk of poverty (.216). This may show that social assistance is not fully eliminating poverty while having a negative effect on participation in the labor market. On the other hand, the positive effect (.063) in RE model for Working Poor shows that social assistance supports employees living in low-income households, while this effect is almost zero and less significant (-.006) in FE model. This may indicate that the effect of social assistance decreases with individual heterogeneity.

Additionally, this may also indicate that the impact of social assistance on Working Poor can be closely related to individual characteristics. For Unemployed Poor, the positive effect in RE model (.033) and the negative effect in FE model (-.006) show that the effect of social assistance on the duration of unemployment or job search may be different. This suggests that while social assistance supports unemployment in the short run, it may affect job search motivation, discouraging from job seeking, in the long run. Finally, the powerful positive effect in RE model for Inactive Poor (.138) indicates that these assistances significantly support individuals outside the labor force. However, the fact that this effect became insignificant in FE model (.007) shows that the effect of social assistance may decrease by controlling for changes over time.

When the main job changing as a triggering event is examined, HS model for Working Poor shows that main job changing has no statistically significant effect on poverty but changing for better pay reduce poverty (-.031) has. RE and FE models show that main job changings increase poverty (.056 and .038), but changings for better pays reduce poverty (-.055 and -.035). This situation can be roughly interpreted as main job changings may involve risks in the short run, but main job changings with the expectation of a wage increase can have positive results in order not to be Working Poor.

In both the RE and FE models for the Unemployed Poor, the main job changing reduces unemployed poverty (-.063 and -.087). However, changings for better pay slightly increase unemployed poverty (.014 and .03). This may indicate that changing jobs makes it easier to exit unemployment, but the expectation of higher pays may prolong the duration of unemployment.

For Inactive Poor, the main job changing significantly reduces poverty in RE model (-.053), but this effect weakens in FE model (-.017). So, the impact of changings for better pays is statistically insignificant. It can be said that these results may indicate the job mobility to include inactive individuals to the labor market.

In sum, a main job changing may occur risk and uncertainty in the short run, but it can also bring increased income in the long run. The important point here is that job changings for better pays can accelerate individuals' exit from poverty. On the other hand, the impact of the job changing may be closely related to the flexibility and dynamics of the labor market. Therefore, changing jobs for better pay can, in some cases, lead to skill mismatching and the risk of unemployment. So, job changings decisions may be related to individuals' social networks and their level of knowledge about the labor market.

When the effects of child and elderly dependency on poverty and labor market participation are examined together, roughly, both child (.039) and elderly (.098) dependency increase labor market participation. Child dependency increases the risk of poverty (.093), but elderly dependency has no statistically significant effect (-.006). In both RE and FE model, child dependency (.049, .011) increases working poverty. The effect of elderly dependency is insignificant and very low in both models. This may indicate that the burden of childcare on working families is not the same for every household. The presence of children increases inactive poverty in both RE (.058) and FE (.027) models. The effect of elderly dependency is insignificant. This may indicate that childcare influences the decision to stay out of the labor market.

It has already been mentioned that different types of employment have an impact on poverty. In HS model, being an employer (-.167) and self-employed (-.069) stand out as the factors that reduce poverty the most. Wage/salaried employment also reduces poverty (-.024), while casual employment increases poverty (.023). For Working Poor, in RE model, being a casual (.042) and unpaid family worker (.055) increases poverty and being an employer (-.097) decreases it. In FE model, wage/salaried work (.031) and unpaid family work (.038) increase poverty, while other types of employment decrease it. For Inactive Poor, in RE model, being an employer (-.018) and self-employment (-.016) reduce the poverty of the unemployed. In FE model, self-employment history (-.051) is the factor that reduces unemployed poverty the most. For Inactive Poor, all types of employment significantly reduce inactive poverty in both RE and FE models.

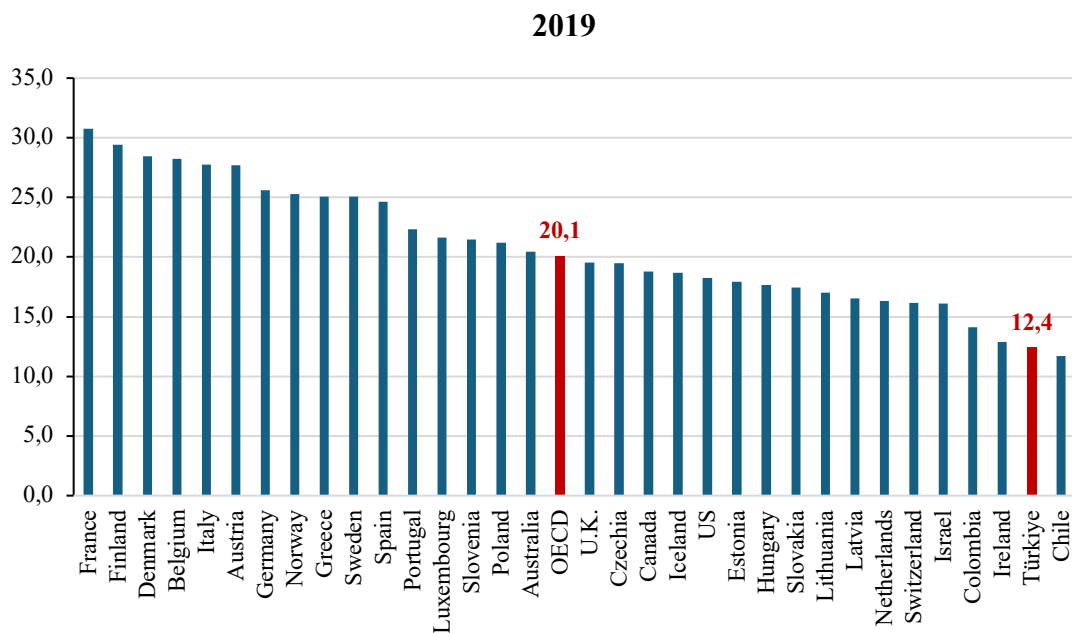
Wage/salaried work generally reduces poverty since it provides regular income. However, it can be said that the problem of the poor working in low-paid jobs still persists. Casual work and self-employment are more vulnerable to income fluctuations. That's why these types of employment can therefore increase the risk of poverty. On the other hand, being an employer generally reduces poverty as it is associated with higher income and capital. Additionally, being an unpaid family worker increases poverty, especially among Working Poor. This may suggest that family businesses, especially in the agricultural sector, may be low-income. In fact, agriculture came to the forefront when the sector of employment of Working Poor was analyzed. Finally, another striking finding is that a history of self-employment reduces the risk of poverty even during unemployed times. This might suggest that these individuals may have a social network in their previous jobs. For Inactive Poor, any work history significantly reduces inactive poverty. This shows the long-term benefits of work experience.

In order to make the comparative analyses more robust, a Random Effects Dynamic Probit Model (REDPM) with the same variables was also performed. The results are presented below in a single table in Table 36A. The effects of the variables on different socio-poverty statuses can be easily seen.

VIII.B. The Impact of Social and Fiscal Policies

The impact of social and fiscal policies on poverty reveals interesting findings. In the poverty literature, the social assistance has an improving effect on both poverty rates and income distribution (Tekguc, 2018). This improving effect also shows whether social assistance is provided to the right people or not. According to OECD data on the amount of social expenditures from Figure 11, Türkiye is far behind OECD countries in social expenditures. In 2019, the latest available data for Türkiye, social public expenditures in Türkiye amounted to 12.4% of total GDP. This includes old age pensions, veterans' benefits, and care for the elderly; survivors' pensions and funeral expenses; incapacity-related benefits such as disability pensions, occupational injury compensation, and sickness benefits; comprehensive health insurance coverage with both cash and in-kind benefits; family support through maternity and nursing benefits; active labor market programs focusing on skills training and vocational rehabilitation; unemployment insurance and severance pay; and assistance for immigrants and refugees. In the same year, the OECD average was 20.1%. In SILC, from Table Appedix, 20% of the population in Türkiye benefited from social assistance by 2022. This rate was 16.2% in 2019.

Figure 11. Public Social Expenditure as % of GDP



Source: OECD Social Expenditure Database

The impact of taxes and social assistance on poverty, inequality and income distribution is widely discussed in the literature. In general, the redistributive function of taxes is expected to improve income distribution. However, the studies show that the indirect and direct taxes have different effects on income distribution (OECD, 2023; Tabar, 2023). In Tabar's (2023) study for OECD countries including Türkiye between 2008 and 2018, he found that the indirect taxes have an increasing effect on inequality in income distribution and direct taxes have a decreasing effect on inequality in income distribution. According to the OECD (2023) study, in Türkiye in 2019, Tax Cuts for Social Purposes (TTCs), which are similar to cash benefits, amounted to about 1% of GDP. These tax breaks likely included the measures such as child tax allowances or credits, which are mentioned as common examples of such TBSPs. This puts Türkiye in the same category as other countries such as France, Germany, Hungary, Korea and the Netherlands, whose TBSPs amount to around 1% of GDP (OECD, 2023).

Based on this, from tables 38-39, it can be seen that correct taxation and social assistance have very important effects on the redistribution of income. In line with the studies conducted, different results emerge when a simple study is conducted on poverty. In the study, which was conducted by subtracting and adding together the social assistance provided to households and the taxes paid by the households from the total disposable income of the households, it was seen that social assistance has a reducing effect on the poverty rate. The relative poverty rate in 2022 is 21.2%. When social assistance is excluded from the disposable income of households, this rate becomes 22.2%. Similarly, while the working poverty rate is 15.7% for 2022, this rate becomes 16.5% when social assistance is excluded. Similarly, there are differences in poverty rates, which are found by adding the taxes paid by households in the income reference year back to the household's disposable income. While the relative poverty rate in 2022 is 21.2%, when taxes are added back to household income, the rate becomes 20.8%. For 2022, social assistance reduces the relative poverty rate by 1%, while taxes increase it by 0.4%. For the working poor, taxes increase the working poverty rate by 0.3%, while social benefits reduce it by 0.8%.

Table 33. The Effect of The Social and Fiscal Policies on Poverty

	2019	2020	2021	2022
<i>Poverty rate</i>				
	21,8%	22,9%	21,3%	21,2%
<i>Without social assistance</i>				
	22,6%	23,5%	22,6%	22,2%
<i>Without taxes</i>				
	21,6%	22,6%	20,9%	20,8%

Source: Author's own calculations SILC, 2019-2022

Table 34. The Effect of The Social and Fiscal Policies on Working Poverty

	2019	2020	2021	2022
<i>Working Poverty rate</i>				
	17,1%	16,9%	16,6%	15,7%
<i>Without social assistance</i>				
	17,8%	17,4%	17,6%	16,5%
<i>Without taxes</i>				
	16,9%	16,7%	16,3%	15,4%

Source: Author's own calculations SILC, 2019-2022

IX. CONCLUSION

This study showed that looking at the concept of poverty with the classical head-count ratio indexes may be misleading. Behind the seemingly stable rates, people's poverty status, economic status, labor market status and income distribution status have a very dynamic structure. Since a person's relative poverty status is determined her/his income, income fluctuations directly affect the poverty status. However, economic changings in people's life are not only limited to changings in their income levels. Their statuses in society and the labour market also change. For example, people can move from being economically inactive, like retirees, students, or those doing unpaid household work, to participating the workforce. Once in the labor market, they might find employment or become part of the unemployed population looking for job. On the other hand, depending on their participation in the workforce, they can define their own economic definitions as full-time employees, part-time employees, full-time employers, part-time employers, as part of their general perception based on time and according to their work intensity. In this regard, when we consider people's economic, labor market and income distribution statuses in the context of poverty; the dimensions of poverty in Türkiye are better understood. Understanding the fundamental causes of poverty is crucial for developing efficient anti-poverty measures and policies. In this thesis, relative poverty has been discussed in three main dimensions. By these dimensions, definitions of Unemployed Poor, Inactive Poor and Working Poor has emerged. Transitions between these dimensions can be considered as a part of the rational decision-making processes of individuals as economic agents. Here, the other dimension that can be considered as the Foucault pendulum between these dimensions is income distribution. Francis Quesnay is an economist who created the famous macroeconomic table of his time (Heilbroner, 1953). He thought of the wealth in the economy as a human body. Just like the circulation of blood in the human body, the fair distribution of added value produced in the world is important for the health and sustainability of economies. So, labor income constitutes the largest source of income for people at the bottom of the income distribution. That's why social and fiscal policies that consider the distribution of income fairly will improve the general welfare in the most effective way.

The research question of this thesis was basically that what the dimensions and main determinants of relative poverty and working poverty in Turkey were. In this respect, it has been revealed that poverty in Türkiye is closely related to income distribution, structural problems, and labor market structure. As the different econometric models in this thesis put, especially Unemployed Poor is the most vulnerable poverty status. When they make a change in their main job in the labor market, their risk of being poor decreases. However, when they decide to make this change for a better pay due to their relationship with the duration of unemployment and their reservation wage expectations, their risk of being poor increases in opposition to Working Poor. While the relationship between the Working Poor and the risk of poverty is mostly related to the type of employment, informality and work intensity, the relationship between the Unemployed Poor and the risk of poverty is more related to the structural state of the labor market and risk-taking in the labor market. For the Inactive Poor, work history and accumulated income due to work history and more structural reasons such as social networks and household structure have an impact on poverty status. At this point, different social and fiscal policies can be developed for vulnerable people in each poverty status.

X. REFERENCES

Acar, A., & Baslevant, C. (2014). Examination of the transition of Turkish households into and out of poverty between 2007–2010. BETAM Working Paper Series 15. Istanbul, Türkiye: Bahcesehir University.

Acikalin, N. (2007). Enformel Sektör ve Yoksulluk: Kentsel İşgücü Pazarı Üzerine Etkileri, İstanbul ve Gaziantep Örnekleri. *Sosyoekonomi*, 6(6).

Adaman, F., & Keyder, Ç. (2006). Poverty and Social Exclusion in the Slum Areas of Large Cities in Türkiye. Report for European Commission, Employment, Social Affairs and Equal Opportunities DG, Brussels.

Ahrendt, D., Sándor, E., Jean, A. R., Jungblut, M., & Anderson, R. (2017). In-work poverty in the EU. Luxembourg: European Foundation for the Improvement of Living and Working Conditions.

Akder, A. H. (2000). Türkiye’deki Bölgesel Eşitsizlikler ve Kırsal Yoksulluk. TESEV Report No. 21, İstanbul.

Aksu, E., Erzan, R., & Kirdar, M. G. (2022). The impact of mass migration of Syrians on the Turkish labor market. *Labour Economics*, 76, Article 102183.

Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty measurement. *Journal of Public Economics*, 95(7-8), 476-487.

Allègre, G. (2011). France: In-Work Poor or Poor Due to Lack of Work?. In: Fraser, N., Gutiérrez, R., Peña-Casas, R. (eds) *Working Poverty in Europe. Work and Welfare in Europe*. Palgrave Macmillan, London.

Alston, P. (2020). The parlous state of poverty eradication, Report of the Special Rapporteur on extreme poverty and human rights. United Nations, Human Rights Council Forty-fourth session 15 June–3 July 2020 Agenda item 3 (A/HRC/44/40).

Andriopoulou, E., & Tsakloglou, P. (2011). The Determinants of Poverty Transitions in Europe and the Role of Duration Dependence. IZA Discussion Paper Series, No. 5692.

Aran, M., Demir, S., & Sarica, Ö. Poverty and Inequality Changes in Türkiye (2003-2006). State Planning Organization of the Republic of Türkiye and World Bank Social Policy Analytical Work Program, Working Paper 1, Ankara.

Aydiner-Avsar, N., & Onemli, M. B. (2023). Working Poverty in Türkiye: A Dynamic Panel Analysis. *Social Indicators Research*, 168, 139–164.

Bane, M. J., & Ellwood, D. T. (1986). Slipping into and out of Poverty: The Dynamics of Spells. *Journal of Human Resources*, 21, 1–23.

Barrientos A (2007). Does Vulnerability Create Poverty Traps? CPRC Working Paper 76. Manchester, IDPM/Chronic Poverty Research Centre. Forthcoming in: Shepherd A, Brunt J, eds. *Addressing Chronic Poverty*. Basingstoke, UK, Palgrave.

Bartolucci, F., & Nigro, V. (2010). A Dynamic Model for Binary Panel Data with Unobserved Heterogeneity Admitting a $\sqrt{n}$ -Consistent Conditional Estimator. *Econometrica*, 78(2), 719–733.

Becker, G. (1964). *Human capital*. Columbia University Press.

Berkman, K. (2023). Türkiye’de çalışan yoksulluğunun yansıması: Çalışan maddi yoksunluğu. In A. A. Cengiz & B. U. Hekimler (Eds.), Prof. Dr. Ercan Güven’e Armağan, *Emeğin Hallerine Dair Yüzleşmeler* (pp. 61-110). Yeni İnsan Yayınları.

Biegert, T. (2019). Labor market institutions, the insider/outsider divide and social inequalities in employment in affluent countries. *Socio-Economic Review*, 17(2), 255–281.

Biewen, M. (2003). Who are the chronic poor? Evidence on the extent and the composition of chronic poverty in Germany, DIW Discussion Papers, No. 350, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin

Biewen, M. (2009). Measuring state dependence in individual poverty histories when there is feedback to employment status and household composition. *Journal of Applied Econometrics*, 24(7), 1095-1116.

Biewen, M. (2014). Poverty persistence and poverty dynamics. *IZA World of Labor*.

Bossert, W., Chakravarty, S., & D'Ambrosio, C. (2010). Poverty and time (UNU-WIDER Working Paper No. 2010/74). United Nations University World Institute for Development Economics Research.

Brady, D., Fullerton, A. S., & Cross, J. M. (2010). More than just nickels and dimes: A cross-national analysis of working poverty in affluent democracies. *Social Problems*, 57(4), 559-585.

Brunori, P., Ferreira, F. H. G., & Peragine, V. (2013). Inequality of Opportunity, Income Inequality, and Economic Mobility: Some International Comparisons. In: Paus, E. (eds) *Getting Development Right*. Palgrave Macmillan, New York.

Caglayan, E., & Dayioglu, T. (2011). Comparing the parametric and semiparametric logit models: Household poverty in Türkiye. *International Journal of Economics and Finance*, 3(5), 197-207.

Calvo, C., & Dercon, S. (2009). Chronic poverty and all that: The measurement of poverty over time. In T. Addison, D. Hulme, & R. Kanbur (Eds.), *Poverty dynamics: Interdisciplinary perspectives*. Oxford University Press.

Calvo, C., & S. Dercon. (2013). Vulnerability of Individual and Aggregate Poverty. *Social Choice and Welfare* 41: 721–740.

Carroll, D. R., & Chen, A. (2016). Income Inequality Matters, but Mobility Is Just as Important. Federal Reserve Bank of Cleveland, Economic Commentary 2016-06.

Cavusoglu, B. (2012). Türkiye’de Çalışan Yoksulluğunun Genel Görünümü. Sosyal Güvence(1), 22-33.

Ceyhan, T. (2016). Küreselleşme Sürecinde Türkiye’de Yoksulluk Sorunu (Order No. 28635107). Available from ProQuest Dissertations & Theses Global. (2579682452).

Crettaz, E., & Bonoli, G. (2010). Why are some workers poor? The mechanisms that produce working poverty in a comparative perspective. (Working Papers on the Reconciliation of Work and Welfare in Europe, REC-WP 12/2010). Edinburgh: University of Edinburgh, Publication and Dissemination Centre (PUDISCwowe).

Decerf, B. (2023). Chapter 3: Absolute and relative income poverty measurement: a survey. In Research Handbook on Poverty and Inequality. Cheltenham, UK: Edward Elgar Publishing.

DiPrete, T. A., & Eirich, G. M. (2006). Cumulative advantage as a mechanism for inequality: A review of theoretical and empirical developments. *Annual Review of Sociology*, 32, 271-297.

Durlauf, S. N. (1996). A Theory of Persistent Income Inequality. *Journal of Economic Growth*, 1(1), 75–93. <http://www.jstor.org/stable/40215882>

Elson, D. (1999). Labor Markets as Gendered Institutions: Equality, Efficiency and Empowerment Issues. *World Development*, 27(3), 611–627.

Ellwood, D., (1998), Dynamic Policy Making: An Insider’s Account of Reforming US Welfare, in L. Leisering, R. Walker (ed.) *The Dynamics of Modern Society: Policy, Poverty and Welfare*, The Policy Press, Bristol.

Esping-Andersen, G. (1999). *Social Foundations of Post-Industrial Economies*, Oxford: Oxford University Press.

Eurofound. (2017). *In-work poverty in the EU*. Publications Office of the European Union, Luxembourg.

EUROSTAT (2023a). *EU statistics on income and living conditions (EU-SILC) methodology- in-work poverty*. European Statistical Office.

Foster, J., Greer, J., & Thorbecke, E. (1984). A Class of Decomposable Poverty Measures. *Econometrica*, 52(3), 761–766.

Fraser, N., Gutiérrez, R., & Peña-Casas, R. (2011). Introduction. In N. Fraser, R. Gutiérrez, & R. Peña-Casas (Eds.), *Working Poverty in Europe. Work and Welfare in Europe*. Palgrave Macmillan, London.

Fujii, T. (2016). *Concepts and Measurement of Vulnerability to Poverty and Other Issues: A Review of Literature*. ADBI Working Paper 611. Tokyo.

Gautie, J., & Ponthieux, S. (2016). Employment and the working poor. In D. B.-L. M. Burton (Ed.), *The Oxford Handbook of the Social Science of Poverty* (pp. 486-504). Oxford University Press.

Gradín, C., Del Río, C., & Cantó, O. (2012). Measuring poverty accounting for time. *Review of Income and Wealth*, 58(2), 330–354.

Gundogan, N. (2008). *Türkiye’de yoksulluk ve yoksullukla mücadele*. Ankara Sanayi Odası, Ocak-Şubat.

Gundogan, N., Bicerli, K., & Aydin, U. (2005). “The working poor: a comparative analysis”, MPRA Munich Personal RePEc Archiv, MPRA Paper No. 5096,

Heckman, J. J. (1981a). Heterogeneity and State Dependence. In C. F. Manski & D. McFadden (Eds.), *Structural Analysis of Discrete Data with Econometric Applications*. MIT Press, Cambridge.

Heckman, J. J., & Mosso, S. (2014). The Economics of Human Development and Social Mobility. *Annual Review of Economics*, 6, 689-733.

Heilbroner, R. L. (1953). *İktisat Düşünürleri: Büyük İktisat Düşünürlerinin Yaşamları Ve Fikirleri*. Dost Kitabevi Yayınları.

Hoy, M., & Zheng, B. (2008). Measuring lifetime poverty (Working Paper No. 2008/14). University of Guelph, Department of Economics.

Hulme, D., & Shepherd, A. (2003). Conceptualizing chronic poverty. *World Development*, 31(3), 403-424.

ILO. (2023a). Statistics on working poverty. Accessed by <https://ilostat.ilo.org/topics/working-poverty/>

ILO. (2023b). Statistics on working poverty. Employment by sex, age and economic class -ILO modelled estimates, Nov. 2022 (thousands)-Annual. Accessed by <https://ilostat.ilo.org/topics/working-poverty/>

Isik, O., & Pinarcioglu, M. (2001). *Nöbetleşe Yoksulluk: Sultanbeyli Örneği* (Poverty in Turn: The Case of Sultanbeyli). İletişim Publishing, İstanbul.

Jalan, J., & Ravallion, M. (2000). Is Transient Poverty Different? Evidence for Rural China. *Journal of Development Studies*, 36(6), 82-99.

Jenkins, S. P. (2000). Modeling Household Income Dynamics. *Journal of Population Economics*, 13, 529-67.

Kalleberg, A. L., & Sorensen, A. B. (1979). The Sociology of Labor Markets. *Annual Review of Sociology*, 5, 351-379.

Kapar, R. (2005). Çalışan Yoksullar. Sendikal Notlar, 29, 52-75.

Kapar, R. (2010). Türkiye’de Çalışan Yoksullar. Aso Dosya, Ankara Sanayi Odası Yayın Organı.

Kapar, R. (2023). Türkiye’de Çalışanların Yoksulluğu, Yoksunluğu ve Sosyal Dışlanmaları. REFLEKTİF Sosyal Bilimler Dergisi, 4(2), 279–308.

Karabarbounis, L., & Neiman, B. (2014). The global decline of the labor share. The Quarterly Journal of Economics, 129(1), 61-103.

Kart, E. (2016). İstihdam ilişkilerinin taşeronlaşmış formları ve “aracı” aktörleri: İnşaat sektöründe ustabaşılar. Gaziantep University Journal of Social Sciences, 15(2), 225-251.

Kart, E., & Ongor, H. (2023). Çalışan Kadın Yoksullar ve Yoksulluğuna Dair. Gaziantep University Journal of Social Sciences, 22(1), 12-29.

Kudebayeva, A. (2019). Do the chronically poor have more interrupted spells of poverty in transition economies? Evidence from Kazakhstan. The Journal of Economic Research & Business Administration, 129, 206–219.

Kuklys, W. (2005). Amartya Sen’s Capability Approach: Theoretical Insights and Empirical Applications, Studies in Choice and Welfare, Springer-Verlag.

Ligon, E., & Schechter, L. (2003). Measuring Vulnerability. Economic Journal, 113, 95–108.

Limanli, Ö. (2020). Vulnerability to Poverty in Türkiye. Ekonomi Politika Ve Finans Araştırmaları Dergisi, 5(2), 210-227.

Lohmann, H. (2009). The working poor in European welfare states: Empirical evidence from a multilevel perspective. *The Working Poor in Europe: Employment, Poverty and Globalization*. 47-74.

Lovisa, B., & Jansson, B. (2023). Who are the In-Work Poor? A Study of the Profile and Income Mobility Among the In-Work Poor in Sweden from 1987 to 2016. *Social Indicators Research: An International and Interdisciplinary Journal for Quality-of-Life Measurement*, 165(2), 495-517.

Lucchetti, R., & Pignini, C. (2017). DPB: Dynamic Panel Binary Data Models in gretl. *Journal of Statistical Software*, 79(8), 1–33

McKay, A., & Lawson, D. (2003). Assessing the extent and nature of chronic poverty in low income countries: Issues and evidence. *World Development*, 31(3), 425-439.

McKnight, A., Stewart, K., Himmelweit, S. M., & Palillo, M. (2016). Low pay and in-work poverty: preventative measures and preventative approaches-Evidence Review. Publications Office of the European Union.

Mendola, D., Busetta, A., & Milito, A. M. (2009). The importance of consecutive spells of poverty: A longitudinal poverty index (IRISS Working Paper Series 2009-21). CEPS.

Morduch, J. (1998). Poverty, economic growth, and average exit time. *Economics Letters*, 59, 385-390.

Muck, J. (2024). *Econometrics of Panel Data*, Accessed through <https://web.sgh.waw.pl/~jmuck/links.html> (Accession date is July 1, 2024).

Neidhöfer, G., Ciaschi, M., & Gasparini, L. (2024). Social mobility and economic development. *Journal of Economic Growth*, 29, 327–359.

Mora, R. (2024). Truncation and Selection. Universidad Carlos III de Madrid, Department of Economics, (<https://www.eco.uc3m.es/~ricmora/miccua/materials/>)

OECD. (2018). Sticky floors and sticky ceilings in occupation. In *A Broken Social Elevator? How to Promote Social Mobility*. OECD Publishing, Paris.

OECD (2019), OECD SOCX Manual 2019 Edition: A guide to the OECD Social Expenditure Database.

Olaniyan, D. A., & Okemakinde, T. (2008). Human Capital Theory: Implications for Educational Development. *European Journal of Scientific Research*, 24(2), 157-162.

Oztornaci, B., & Demirdogen, A. (2015). Farklı Eşdeğerlik Ölçeklerine Göre Temel Yoksulluk Göstergelerinin Değişimi: Türkiye Örneği. *Tarım Ekonomisi Dergisi*, 21(1 ve 2), 7-15.

Pelek, S. (2022). Türkiye’de Diplomalı İşsizlik: İşsiz Üniversite Mezunlarının İş Piyasası Örüntüleri. *Journal of Management and Economics Research*, 20(1), 247-270.

Piketty, T., & Zucman, G. (2014). Capital is Back: Wealth-Income Ratios in Rich Countries 1700–2010. *The Quarterly Journal of Economics*, 129(3), 1255–1310.

Poverty Manual (2005). An Introduction to Poverty Analysis. All, JH Revision of August 8, 2005. Pp.69-82.

Poy, S. (2023). In-work poverty dynamics: Trigger events and short-term trajectories in Argentina. *Journal for Labour Market Research*, 57(1).

Pritchett, L.; A. Suryahadi & S. Sumarto (2000) Quantifying vulnerability to poverty: A proposed measure, applied to Indonesia, Working Paper WPS 2437, Washington DC: World Bank.

Ravallion, M. (1988). Expected Poverty under Risk-induced Welfare Variability. *Economic Journal* 98(393): 1171–1182.

Ravallion, M. (2016). *The Economics of Poverty: History, Measurement, and Policy*. Oxford University Press.

Stewart, M. B. & Swaffield, J. K. (1999). Low pay dynamics and transition probabilities. *Economica*, 66(261):23–42.

Sucur, Z., (2005), Poverty and Social Transfers in Croatia, *Financial Theory and Practice*, 29(1), 17-38.

Sugur, P. N., & Sugur, S. (2008). Hizmet Sektöründe Çalışan Yoksulların Yoksulluk Algıları Üzerine Bir Araştırma. *ISGUC The Journal of Industrial Relations and Human Resources*, 10(4), 1-29.

Seker, S.D. (2011). The dynamics of poverty in Turkey (Thesis No. 300663) [Doctoral thesis, Middle East Technical University]. YÖK Ulusal Tez Merkezi.

Seker, S.D. & Dayioglu, M. (2015). Poverty Dynamics in Turkey. *Review of Income and Wealth*, 61: 477-493.

Tabar, Ç. (2023). “Vergilerin Gelir Dağılımı Üzerindeki Etkisi: OECD Ülkeleri Üzerine Panel Veri Analizi”. *International Journal of Public Finance*. 8(1), 67-84.

Tekguc, H. (2018). Declining Poverty and Inequality in Türkiye: The Effect of Social Assistance and Home Ownership. *South European Society and Politics*, 23(4), 547–570.

Tekguc, H. Almaz, H.E., Guzelsoy, H., Goc, A., Karabulut, F.Ç., Kisa, Y. Calikoglu, A. Baris, D. (2024). “Türkiye’de En Üst Gelirli Grubun Tespiti ve Vergilendirilmesi” TÜBİTAK 3005 122G241 Nolu Proje Birinci Gelişme Raporu.

Walker, R., & Yang, L. (2021). China's move to measuring relative poverty: Implications for social protection (ILO Working Paper No. 23). International Labour Organization.

World of work report. (2008). International Labour Organisation, International Institute for Labour Studies.

Yaqub, S., (2001). "Intertemporal Welfare Dynamics," Human Development Occasional Papers (1992-2007) HDOCPA-2001-10, Human Development Report Office (HDRO), United Nations Development Programme (UNDP).

Yildirim, J., Bakir, M. A., & Savas, A. (2018). State Dependence in Poverty: The Case of Turkey. *Emerging Markets Finance and Trade*, 54(9), 1963–1972.

Yukseler, Zafer; Turkan, Ercan (2008): Türkiye'de Hanehalkı: İşgücü, gelir, harcama ve yoksulluk açısından analizi, Discussion Paper, No. 2007/4, Turkish Economic Association, Ankara

XI. APPENDIX

Here are the definitions of Turkstat.

X.A. Household net annual disposable income

It is calculated as the total of individual disposable income of all members of the household (total of the income in cash or in kind such as salary-wage, per diem, enterprises income, pension, widowed-orphan salary, old-age salary, unpaid grants, etc.), adding the total of yearly income for the household (such as real property income, unreturned benefits, incomes gained by household members less than age 15, etc.) and subtracting taxes paid during the reference period of income and regular transfers to the other households or persons.

X.B. Equivalence scale/Equivalised household size

Today, income disparities are measured by considering the differences between individual incomes. Therefore, total income of the household should be transferred to the individual income. It is not correct way to calculate the individual income as total income divided by number of household members. In this calculation, it is necessary to consider the adult-child structure of the households. Because the consumption of the children is scientifically less than the consumption of the adults. In this context, number of adults for each household size is calculated by using the constants which are called as equivalence scale. In this survey(SILC), OECD measure which is 1 for the reference person of the household, 0.5 for household members aged 14 and over, 0.3 for household members less than age 14 is used. By using these coefficients, equivalized household size is calculated.

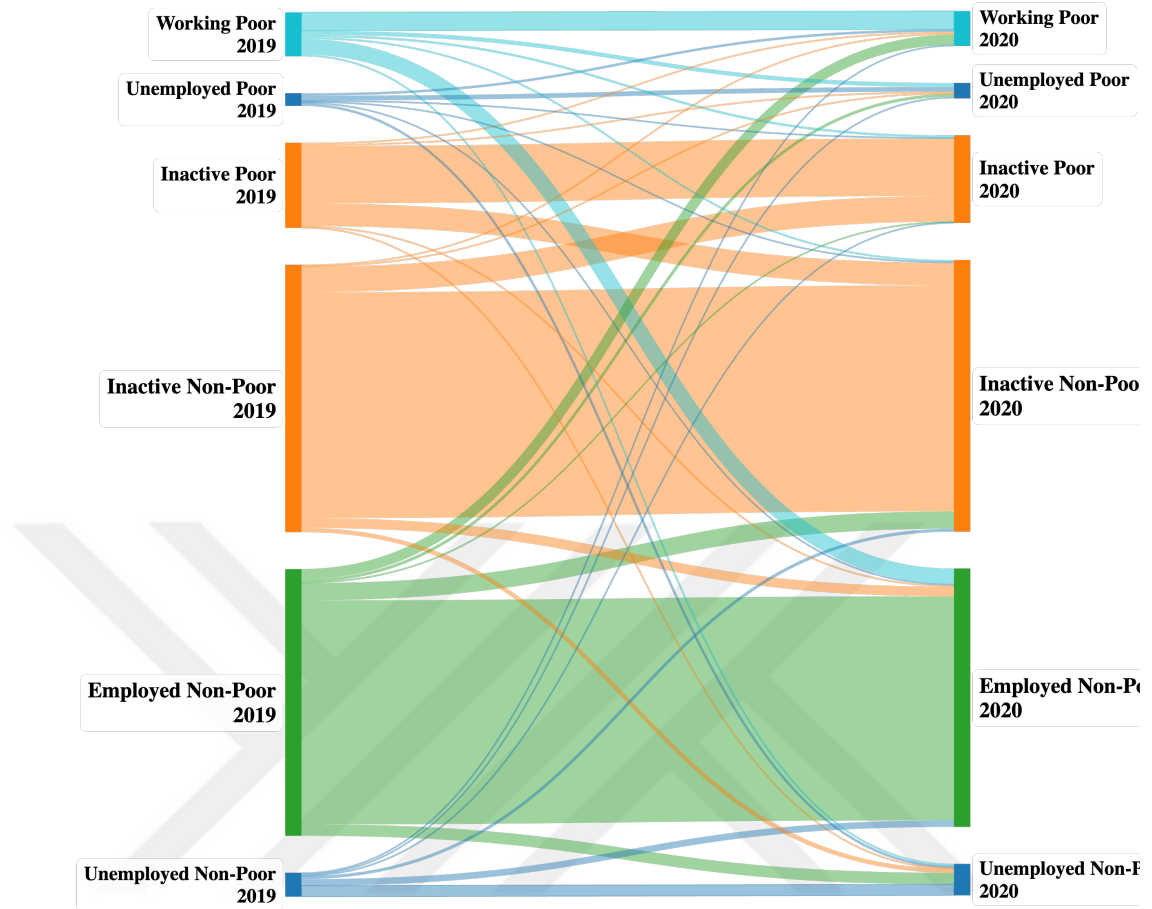
X.C. Equivalized household disposable income

Equivalized household disposable income is calculated total of household income divided by equivalized household size.

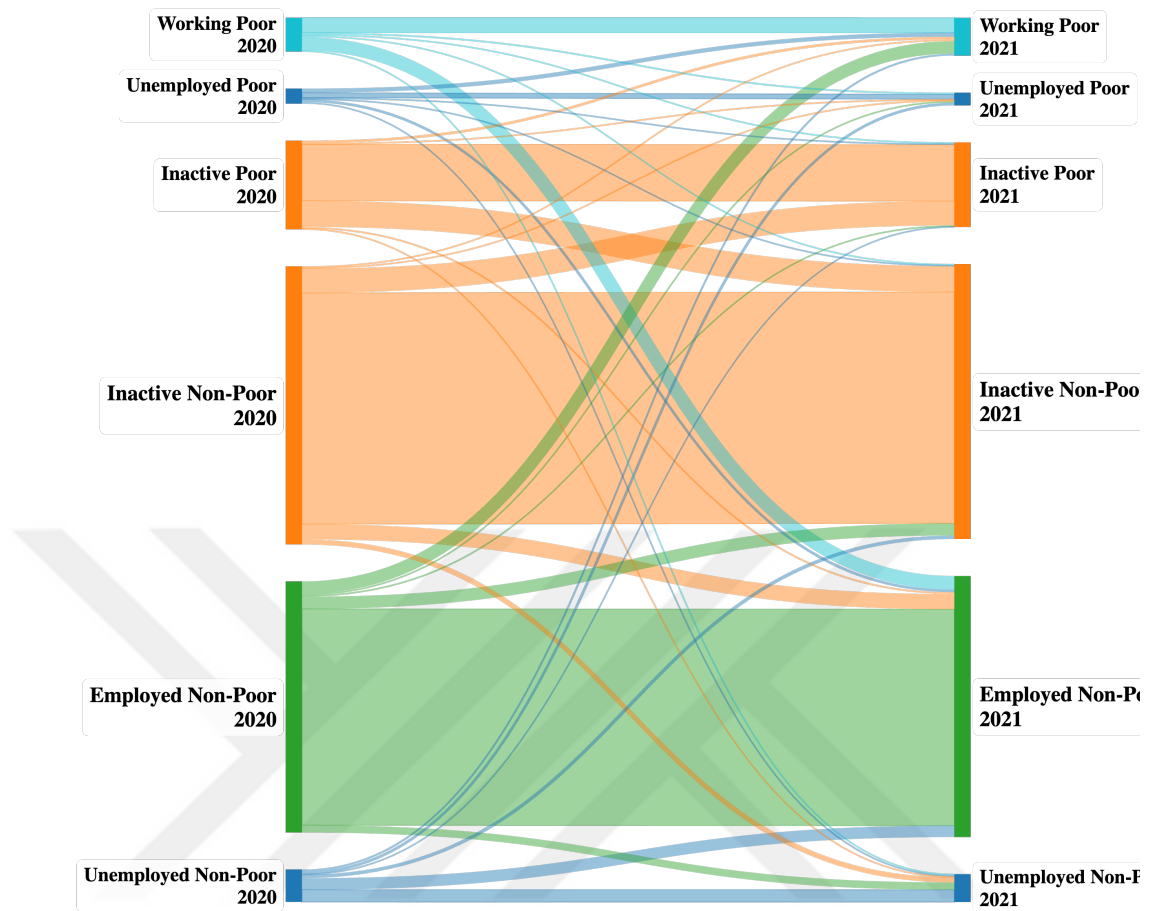
X.D. Poverty rate

It is defined as the proportion of population at-risk-of-poverty within the total population.

Figure 12A. Sankey Diagram For 2019-2020



Source: Author's own calculations SILC, 2019-2022

Figure 13A. Sankey Diagram For 2020-2021

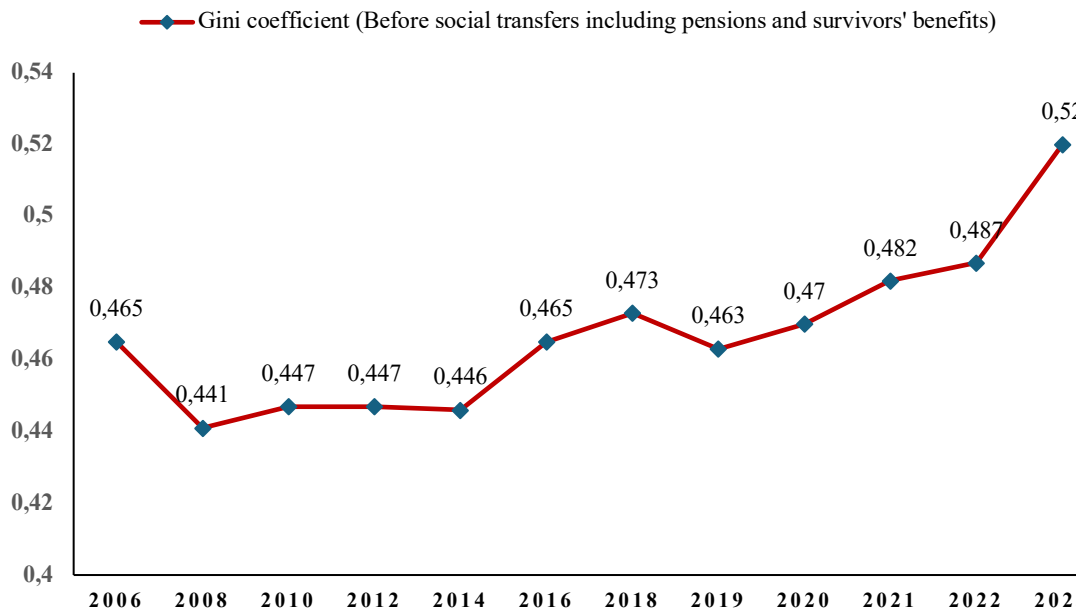
Source: Author's own calculations SILC, 2019-2022

Table 35A. Income Distribution (raw %)

<i>Decile Rank</i>	<i>Percentile(%)</i>	2019	2020	2021	2022
1	10	2,7	2,4	2,6	2,5
2	10	4,3	4,1	4,2	4
3	10	5,2	5,1	5,2	4,9
4	10	6,3	6,1	6,2	5,9
5	10	7,4	7,2	7,3	7
6	10	8,7	8,6	8,5	8,2
7	10	10,1	10,1	9,9	9,7
8	10	12	12	12	11,7
9	10	15,2	15,2	15,2	14,8
10	10	28,2	29,3	29	31,2

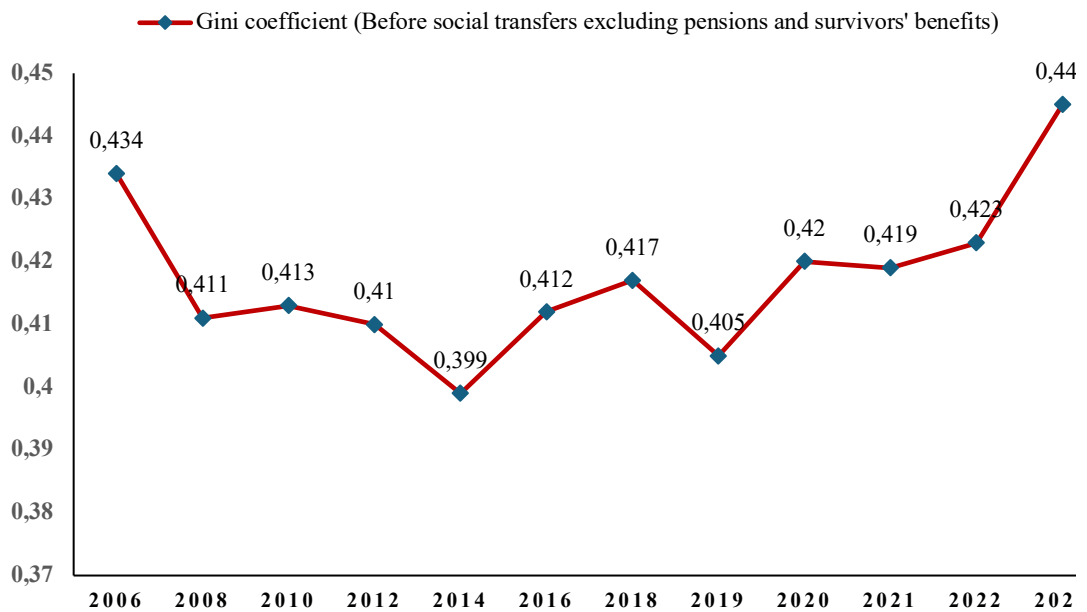
Source: Author's own calculations SILC, 2019-2022

Figure 14.A Gini Coefficient Before Social Transfers Including Pensions & Benefits



Source: TurkStat

Figure 15.A Gini Coefficient Before Social Transfers Excluding Pensions & Benefits



Source: TurkStat

Table 36A. Social Assistance Rate

2019	2020	2021	2022
83,8%	84,8%	75,9%	80,0%
16,2%	15,2%	24,1%	20,0%

Source: Author's own calculations SILC, 2019-2022

Here, the impact of sample attrition on poverty transition rates shows the methodological hardships in longitudinal poverty studies. This observation emphasizes the importance of solving potential non-random attrition in panel data analyses to ensure robust conclusions about poverty dynamics.

Table 37A. The Distribution of Attrition By Year & Status

	2019	2020	2021
<i>The percentage of attrition</i>	2,98	2,88	5,04
Employed Non Poor	25,20	17,58	19,16
Inactive Non Poor	44,06	42,58	50,59
Unemployed Non Poor	7,99	7,73	6,50
Inactive Poor	15,78	20,66	15,79
Working Poor	5,12	5,51	4,91
Unemployed Poor	1,84	5,93	3,05

Source: Author's own calculations SILC, 2019-2022

For instance, the sample attrition patterns from Table 39A denotes the key methodological problems. According to table, the attrition rate increased from 2,98% in 2019 to 5,04% in 2021. It can be seen that volatile economic conditions during the COVID-19 pandemic are reflected in fluctuating poor attrition rates, particularly among Unemployed Poor. The stable attrition rate Working Poor suggests consistent representation, but overall shifts raise concerns about sample representativeness.

Table 38A. Heckman Selection Model Estimation Results for Working Poor

$y_j = poverty$	Coef.	St. Err.	z-value	p-value	[95%Conf.	Interval]	Sig
Individual Characteristics							
Age	-.003	.001	2.18	.029	0	.005	**
Age Square	0	0	-3.81	0	0	0	***
Marital Status	.015	.005	2.87	.004	.005	.026	***
Health Conditions	-.052	.01	-5.43	0	-.07	-.033	***
Gender (Male)	.051	.007	7.45	0	.038	.065	***
Education	-.086	.004	-19.25	0	-.095	-.078	***
Employment Variables							
Regular Employee	-.024	.01	-2.43	.015	-.043	-.005	**
Casual Employee	.023	.008	2.71	.007	.006	.04	***
Employer	-.167	.011	-15.72	0	-.188	-.146	***
Self-employed	-.069	.007	-9.84	0	-.083	-.055	***
Registration to SGK	-.092	.005	-18.10	0	-.102	-.082	***
Private Sector	-.002	.005	-0.44	.662	-.011	.007	
Permanent Job	-.111	.008	-13.91	0	-.126	-.095	***
Household Variables							
Property Type	-.007	.003	-1.88	.06	-.013	0	*
Household Type	.014	.009	1.49	.137	-.004	.032	
Child Dependent	.093	.004	23.91	0	.085	.1	***
Elderly Dependent	-.006	.005	-1.20	.231	-.016	.004	
Social Assistance	.216	.005	47.87	0	.208	.225	***
Triggering Events							
Main Job Changing	.013	.009	1.47	.142	-.004	.031	
For Better Pay	-.031	.011	-2.68	.007	-.053	-.008	***
Marital Status Changing	.015	.02	0.72	.471	-.025	.054	
Constant	.254	.039	6.55	0	.178	.33	***
$s_j = working$							
Individual Characteristics							
Age	.166	.002	80.57	0	.162	.17	***
Age Square	-.002	0	-86.31	0	-.002	-.002	***
Marital Status	.211	.015	14.09	0	.182	.24	***
Health Conditions	.523	.02	26.35	0	.484	.562	***
Gender (Male)	1.084	.01	111.67	0	1.065	1.103	***
Education	.469	.011	41.74	0	.447	.491	***
Household Variables							
Property Type	.033	.01	3.26	.001	.013	.053	***
Household Type	.327	.028	11.67	0	.272	.382	***
Child Dependent	.039	.011	3.45	.001	.017	.06	***
Elderly Dependent	.098	.014	6.97	0	.071	.126	***
Social Assistance	-.118	.012	-9.76	0	-.141	-.094	***
Marital Status Changing	.183	.061	3.02	.002	.064	.302	***
Real Estate & Int. Inc.	.121	.01	12.65	0	.103	.14	***
Woman Responsible H.	.011	.014	0.78	.437	-.016	.038	
Constant	-4.532	.046	-98.54	0	-4.623	-4.442	***
athrho	-.018	.028	-0.62	.532	-.072	.037	
ln sigma	-1.138	.004	-318.75	0	-1.145	-1.131	***
rho	-.0175	.0280			-.07236	.0374	
sigma	.3203	.0011			.3180	.3225	
lambda	-.0323	.0225	-1.43	0.152	-.076	.0119	
Mean dependent var		0.423	SD dependent var			0.494	
Number of obs		93291	Chi-square			11226.521	
Prob > chi2		0.000	Akaike crit. (AIC)			116223.660	

Source: Author's own calculations. *** $p < .01$, ** $p < .05$, * $p < .1$

Table 39A. Random-effects Probit Regression Results for All Poor Statuses

Variables	Working Poor	Unemployed Poor	Inactive Poor
Age	.033*** (.008)	.085*** (.009)	-.066*** (.004)
Age Squared	-.001*** (0)	-.001*** (0)	.001*** (0)
Marital Status	.215*** (.051)	-.582*** (.053)	.067* (.036)
Health Condition	-.133** (.061)	.054 (.07)	-.537*** (.034)
Gender (Being Male)	.634*** (.04)	1.153*** (.047)	-.748*** (.032)
Education	-.911*** (.048)	-.138*** (.043)	-.963*** (.045)
Regular Employee	6.677 (107.447)	.106** (.052)	-1.405*** (.039)
Casual Employee	6.947 (107.447)	.965*** (.058)	-.624*** (.044)
Self-employed	5.652 (107.447)	-.602*** (.182)	-2.113*** (.187)
Employer	6.737 (107.447)	-.335*** (.082)	-1.177*** (.056)
Unpaid Family W.	7.313 (107.447)	-1.058*** (.153)	-1.008*** (.044)
Registration to SGK	-.252*** (.041)		
Private Sector	2.476*** (.061)		
Permanent Job	-.314*** (.056)		
Property Type	-.055* (.033)	-.177*** (.035)	-.19*** (.026)
Household Type	-.258** (.126)	-.653*** (.126)	-.116* (.067)
Child Dependent	.792*** (.038)	.22*** (.04)	.554*** (.029)
Elderly Dependent	-.039 (.046)	-.019 (.054)	.021 (.037)
Social Assistance	.857*** (.032)	.795*** (.036)	1.151*** (.026)
Main Job Changing	.239*** (.064)	-1.814*** (.191)	-3.037*** (.542)
Better Pay	-.227*** (.084)	-.649* (.385)	-.134 (.79)
Marital Changing	.034 (.186)	-.186 (.234)	-.104 (.131)
Real Estate & Interest			-.026 (.021)
Constant	-11.84 (107.447)	-4.967*** (.192)	.249*** (.09)

Continued			
/lnsig2u	.469*** (.052)	.184** (.073)	.728*** (.037)
Sigma_u	1.264 (.032)	1.096 (.040)	1.4391 (.026)
rho	.615 (.0123)	.5458 (.0181)	.6743 (.0080)
Observations	93291	93291	93291
Number of groups	48,531	48,531	48,531
Pseudo R ²	.z	.z	.z
LR test of rho=0:	chibar2(01) = 1785.46	chibar2(01) = 724.20	chibar2(01) = 4448.56
Prob >= chibar2	0.000	0.000	0.000
Log likelihood	-13042.428	-7744.0651	-23588.6
Wald chi2(22)	2906.46 (0.0000)	1579.45 (0.0000)	4806.77 (0.0000)

Source: Author's own calculations. *Standard errors are in parentheses* *** $p < .01$, ** $p < .05$, * $p < .1$

Table 40. Random Effects Model Estimation Results for Working Poor

Working Poor	Coef.	St. Err.	t-value	p-value	[95%Conf	Interval]	Sig
Individual							
Age	.001	0	2.03	.042	0	.001	**
Age Square	0	0	-3.52	0	0	0	***
Marital Status	.021	.003	8.37	0	.016	.026	***
Health Conditions	-.001	.003	-0.48	.628	-.007	.004	
Gender	.038	.002	18.66	0	.034	.042	***
Education	-.029	.002	-12.89	0	-.034	-.025	***
Employment							
Regular Employee	.018	.003	6.45	0	.012	.023	***
Casual Employee	.042	.004	11.79	0	.035	.049	***
Employer	-.097	.007	-14.06	0	-.11	-.083	***
Self-employed	.007	.004	1.87	.061	0	.015	*
Unpaid Family	.055	.003	15.87	0	.048	.062	***
Registration to SGK	-.032	.003	-9.85	0	-.039	-.026	***
Private Sector	.194	.002	82.70	0	.19	.199	***
Permanent Job	-.047	.004	-12.83	0	-.054	-.04	***
Household							
Property Type	.001	.002	0.66	.512	-.002	.005	
Household Type	.02	.004	4.58	0	.011	.028	***
Child Dependent	.049	.002	25.20	0	.045	.052	***
Elderly Dependent	.002	.003	0.86	.391	-.003	.007	
Social Assistance	.063	.002	31.41	0	.059	.066	***
Triggering Events							
Main Job Changing	.056	.006	9.72	0	.044	.067	***
For Better Pay	-.055	.007	-7.49	0	-.069	-.04	***
Marital Changing	.004	.009	0.47	.642	-.013	.021	
Constant	-.061	.007	-9.02	0	-.075	-.048	***
Mean dependent var		0.066	SD dependent var			0.249	
Overall r-squared		0.188	Number of obs			93291	
Chi-square		17483.796	Prob > chi2			0.000	
R-squared within		0.075	R-squared between			0.217	
Hausman (1978) specification test		1503.128	Prob > chi2			0	

Source: Author's own calculations. *** $p < .01$, ** $p < .05$, * $p < .1$

Table 41. Random Effects Model Estimation Results for Inactive Poor

Inactive Poor	Coef.	St.Err.	t-value	p-value	[95%Conf	Interval]	Sig
Individual							
Age	-.007	0	-15.54	0	-.008	-.006	***
Age Square	0	0	16.69	0	0	0	***
Marital Status	.005	.003	1.43	.153	-.002	.012	
Health Conditions	-.059	.004	-16.40	0	-.066	-.052	***
Gender	-.064	.003	-23.39	0	-.069	-.058	***
Education	-.047	.003	-15.50	0	-.053	-.041	***
Employment							
Regular Employee	-.163	.003	-47.92	0	-.169	-.156	***
Casual Employee	-.114	.005	-24.37	0	-.123	-.105	***
Self-employed	-.167	.009	-19.01	0	-.184	-.15	***
Employer	-.153	.005	-32.14	0	-.163	-.144	***
Unpaid Family W.	-.14	.004	-31.48	0	-.149	-.131	***
Household							
Property Type	-.016	.002	-6.43	0	-.021	-.011	***
Household Type	0	.006	0.08	.94	-.011	.012	
Child Dependent	.058	.003	22.41	0	.053	.063	***
Elderly Dependent	-.001	.003	-0.36	.716	-.008	.005	
Social Assistance	.138	.003	53.31	0	.133	.143	***
Triggering Events							
Main Job Changing	-.053	.007	-7.46	0	-.067	-.039	***
Better Pay	.014	.009	1.57	.117	-.004	.032	
Marital Changing	-.012	.011	-1.12	.261	-.033	.009	
Real Estate & Int. Inc.	0	.002	-0.23	.819	-.004	.003	
Constant	.408	.009	44.21	0	.39	.426	***
Mean dependent var		0.122	SD dependent var			0.327	
Overall r-squared		0.185	Number of obs			93291	
Chi-square		13205.402	Prob > chi2			0.000	
R-squared within		0.003	R-squared between			0.223	
Hausman specification test		2098.382	Prob > chi2			0	

Source: Author's own calculations. *** $p < .01$, ** $p < .05$, * $p < .1$

Table 42. Random Effects Model Estimation Results for Unemployed Poor

Unemployed Poor	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Individual							
Age	.001	0	2.72	.006	0	.001	***
Age Square	-.00	0	-4.84	0	0	0	***
Marital Status	-.014	.002	-8.12	0	-.017	-.01	***
Health Conditions	.001	.002	0.63	.528	-.002	.005	
Gender	.039	.001	30.16	0	.036	.041	***
Education	-.005	.001	-3.52	0	-.008	-.002	***
Employment							
Regular Employee	.002	.002	0.93	.35	-.002	.005	
Casual Employee	.068	.002	29.50	0	.064	.073	***
Self-employed	-.018	.004	-4.31	0	-.027	-.01	***
Employer	-.016	.002	-7.01	0	-.021	-.012	***
Unpaid Family W.	-.002	.002	-0.85	.397	-.006	.002	
Household							
Property Type	-.006	.001	-5.20	0	-.008	-.004	***
Household Type	-.011	.003	-3.91	0	-.017	-.006	***
Child Dependent	.007	.001	5.73	0	.005	.01	***
Elderly Dependent	.003	.002	1.93	.054	0	.006	*
Social Assistance	.033	.001	25.08	0	.031	.036	***
Triggering Events							
Main Job Changing	-.063	.004	-16.28	0	-.071	-.055	***
Better Pay	.014	.005	2.74	.006	.004	.024	***
Marital Status Changing	-.005	.006	-0.85	.398	-.017	.007	
Constant	.004	.004	0.81	.42	-.005	.012	
Mean dependent var		0.024	SD dependent var			0.154	
Overall r-squared		0.061	Number of obs			93291	
Chi-square		4457.227	Prob > chi2			0.000	
R-squared within		0.006	R-squared between			0.074	
Hausman specification test		683.018	Prob > chi2			0	

Source: Author's own calculations. *** $p < .01$, ** $p < .05$, * $p < .1$

Université : Université Galatasaray
Institut : Institut des Sciences Sociales
Département : Économie
Programme : Économie
Directeur de recherche : Doç. Dr. Mustafa ULUS
Diplôme sollicité- Date : DEA - Juillet 2024

RÉSUMÉ

DIMENSIONS MULTIFORMES DE LA PAUVRETÉ ET DE LA DYNAMIQUE DU BIEN-ÊTRE EN TURQUIE

Duran ÇEKİCİ

L'objectif de cette thèse est de révéler les dimensions et dynamiques à multiples facettes de la pauvreté relative, de la distribution des revenus et du bien-être en Turquie, en mettant l'accent sur la pauvreté des travailleurs. La pauvreté des travailleurs est devenue l'une des questions économiques importantes dans le contexte des politiques sociales et fiscales, tant dans le monde qu'en Turquie. L'augmentation des taux d'emploi, qui est considérée comme l'une des principales stratégies d'atténuation de la pauvreté absolue, entre autres, ne suffit pas comme politique de lutte contre la pauvreté relative. À cet égard, cette nouvelle pauvreté doit être mieux comprise afin d'élaborer les bonnes politiques. Cette étude utilise le micro panel SILC de TurkStat pour révéler les principales dimensions et dynamiques de cette nouvelle pauvreté en Turquie entre 2019 et 2022 dans le contexte de la transitivité du marché du travail, de la transitivité des groupes de revenus et de la transitivité de la pauvreté. En se concentrant sur les flux d'entrée et de sortie de la pauvreté des travailleurs et de la pauvreté en dehors du marché du travail, on constate qu'il existe en fait une boucle.

Mots-Clés : Pauvreté relative, bien-être, distribution des revenus, marché du travail, pauvreté des travailleurs
Code d'enregistrement : 112102

University : Galatasaray University
Institute : Institute of Social Sciences
Science Programme : Economics
Programme : Economics
Supervisor : Assoc. Prof. Dr. Mustafa ULUS
Degree Awarded and date : MA-July 2024

ABSTRACT

THE MULTI-FACETED DIMENSIONS OF POVERTY AND WELFARE DYNAMICS IN TÜRKİYE

Duran ÇEKİCİ

The aim of this thesis is to reveal the multi-faceted dimensions and dynamics of the relative poverty, income distribution and the welfare in Türkiye with a special focus on working poverty. Working poverty has become one of the significant economic issues in the context of social and fiscal policies both in the world and in Türkiye. Increasing employment rates, which is considered as one of the primary alleviation strategies to overcome absolute poverty, inter alia, does not suffice as a policy to address relative poverty. . In this respect, this new poverty needs to be better understood in order to develop the right policies. This study uses TurkStat's SILC micro panel dataset to reveal the main dimensions and dynamics of this new poverty in Türkiye between 2019 and 2022 in the context of labor market transitivity, income group transitivity and poverty transitivity. By focusing on the inflows and outflows of working poverty and poverty outside the labor market, it is revealed that there is in fact a loop.

Keywords : Relative poverty, Welfare, Labour market,
Working Poverty, Income Distribution
Science Code : 112102

Üniversite	: Galatasaray Üniversitesi
Enstitü	: Sosyal Bilimler Enstitüsü
Anabilim Dalı	: İktisat
Program	: İktisat
Tez Danışmanı	: Doç. Dr. Mustafa ULUS
Tez Türü ve Tarihi	: Yüksek Lisans-Temmuz 2024

ÖZET
TÜRKİYE’DE YOKSULLUK VE REFAH DİNAMİKLERİNİN ÇOK YÖNLÜ
BOYUTLARI

Duran ÇEKİCİ

Bu tezin amacı Türkiye’de nispi yoksulluğun, gelir dağılımının ve refahın çok yönlü boyutlarını ve dinamiklerini çalışan yoksulluğu özelinde ortaya çıkarmaktır. Çalışan yoksulluğu hem dünyada hem de Türkiye’de sosyal ve mali politikalar bağlamında önemli iktisadi meselelerden birisi haline gelmiştir. Mutlak yoksulluğun üstesinden gelmek için en temel iyileştirme stratejilerinden biri olarak kabul edilen istihdam oranlarını artırmak, bu meyanda, göreceli yoksulluğu ele almak için yeterli bir politika değildir. Bu çalışma, TÜİK’in Gelir ve Yaşam Koşulları mikro panel verisetini kullanarak 2019 ile 2022 yılları arasındaki Türkiye’deki bu yeni yoksulluğun temel boyutlarını ve dinamiklerini işgücü piyasası geçişliliği, gelir grubu geçişliliği ve yoksulluk geçişliliği bağlamında ortaya çıkarmaktadır. Çalışan yoksulluğu ile işgücü piyasası dışındaki yoksulluğa giriş ve çıkışlarına odaklanarak aslında bir loop olduğu ortaya konmaktadır.

Anahtar kelimeler	: Nispi Yoksulluk, Refah, Gelir Dağılımı, İşgücü Piyasası, Çalışan Yoksulluğu
Bilim Dalı Sayısal Kodu	: 112102

TEZ ONAY SAYFASI

Üniversite : T.C. GALATASARAY ÜNİVERSİTESİ
Enstitü : SOSYAL BİLİMLER ENSTİTÜSÜ
Hazırlayanın Adı Soyadı : DURAN ÇEKİCİ
Tez Başlığı : THE MULTI-FACETED DIMENSIONS OF
POVERTY AND WELFARE DYNAMICS IN TÜRKİYE
Savunma Tarihi : 31 / 07 / 2024
Danışman : Doç. Dr. Mustafa ULUS

JÜRİ ÜYELERİ:

Prof. Dr. Hasan TEKGÜÇ

Doç. Dr. Mustafa ULUS

Doç. Dr. Selin PELEK

Unvan, Ad-Soyadı

İmza

Prof. Dr. Ulun AKTURAN

Enstitü Müdürü