The Impact of Unemployment on Material Deprivation and the Incurred Extra Costs in Turkiye

Türkiye'de İşsizliğin Maddi Yoksunluk Üzerindeki Etkisi ve Katlanılan Ekstra Maliyetler

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ABSTRACT

This study aims to investigate the impact of unemployment on deprivation among individuals in Turkey and the additional costs unemployed individuals must bear to compensate for deprivation. The analyses in this study were conducted using panel data from the 2018-2021 Income and Living Conditions Survey of the Turkish Statistical Institute (TURKSTAT) and employed a fixed effects model. First, the deprivation index, an unobserved variable in the dataset, was estimated using the latent variable estimation method. The analysis revealed that unemployed individuals are more likely to experience material deprivation compared to employed individuals. According to the analysis, the estimated additional cost that unemployed individuals need to bear to achieve the living standards of employed individuals is 3560 TL per month. Moreover, the results indicate that age, marital status, education level, household type, and homeownership are other variables that significantly affect the deprivation index.

KEYWORDS

Unemployment, Material Deprivation, Living Standards, Extra Costs, Fixed Effects Model

ÖZ

Bu çalışma, Türkiye'deki bireyler arasında işsizliğin yoksunluk üzerindeki etkisini ve işsiz bireylerin yoksunluğu telafi etmek için katlanmaları gereken ek maliyetleri araştırmayı amaçlamaktadır. Bu çalışmada, analizler, Türkiye İstatistik Kurumu'nun (TÜİK) 2018-2021 Gelir ve Yaşam Koşulları Araştırması'ndan elde edilen panel verileri temel alınarak sabit etkiler modeli kullanılarak gerçekleştirilmiştir. İlk olarak, veri setinde gözlemlenmeyen bir değişken olan yoksunluk endeksi, gizli değişkenlerin (gözlemlenmeyen değişkenlerin) tahmini yöntemi kullanılarak tahmin edilmiştir. Analiz, işsiz bireylerin, çalışan bireylere göre daha fazla maddi yoksunluk yaşama olasılıklarının yüksek olduğunu ortaya koymuştur. Analize göre, işsiz bireylerin çalışan bireylerin yaşam standartlarına ulaşabilmek için katlanmaları gereken tahmini ek maliyet aylık 3560 TL'dir. Ayrıca, analiz sonuçları yaş ve medeni durum, eğitim durumu, hane tipi ve konut sahipliğinin de yoksunluk endeksini etkileyen diğer değişkenler olduğunu göstermektedir.

ANAHTAR KELİMELER

İşsizlik, Maddi Yoksunluk, Yaşam Standartları, Ekstra Maliyetler, Sabit Etkiler Modeli

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INTRODUCTION

The world unemployment rate was 5.36% in 2019, increasing by 1.22% to 6.57% in 2020. With the impact of COVID-19, there has been a noticeable increase in unemployment rates worldwide. The World unemployment rate for 2021 was 6.18%. (WorldBank.org, 2022).

As of 2021, South Africa faced significant challenges with its unemployment rate, which was reported to be 34%, making it one of the highest in the world. Notably, among the ten countries with the highest unemployment rates, eight were located in Sub-Saharan Africa, indicating a broader regional concern with unemployment in the African continent.

As for Turkey, in August 2022, the estimated unemployment rate was 9.6%. Interestingly, the rate for men and women differed, with the unemployment rate being 8.2% for men and 12.5% for women. Additionally, the youth unemployment rate for the 15-24 age group was estimated to be 18.0%, with a higher rate for women at 23.3% compared to men at 15.2% (TurkStat, 2022). Although unemployment benefits and family assistance can somewhat alleviate the economic impact of youth unemployment, its social and psychological effects can have lasting consequences on individuals. Moreover, the problem of youth unemployment today can create future social issues that can affect individuals and society more profoundly and manifest as material deprivation. These issues can cause long-term harm to the well-being and development of young people, making it crucial for governments and organizations to address youth unemployment as a serious concern. To ensure that unemployed individuals can achieve the same standard of living as those who are employed, it is essential to address material deprivation. However, this requires additional costs that must be borne by the employed individuals and society as a whole. Governments and organizations must address the issue of material deprivation and work towards creating policies that can help bridge the gap between employed and unemployed individuals and ensure that everyone has access to the necessities of life. In this context, unemployed individuals need additional funding to eliminate the extra costs or material deprivation they face to achieve the same standard of living as employed individuals. This study analyzed the impact of unemployment on material deprivation using the Turkish Statistical Institute's (TURKSTAT) “Income and Living Conditions Survey (ILCS)” (2018-2021) panel dataset. When examining the national literature, it can be seen that not many studies investigate the impact of unemployment on material deprivation, especially using micro data sets. Therefore, this study will contribute to the literature with up-to-date data. The calculated value of the extra cost that unemployed individuals have to bear to achieve a similar quality of life as employed individuals is one of the objectives of this study. There is no variable in the dataset representing the poverty approach. The material deprivation variable is a latent variable. A material deprivation index was created by factor analysis of the measures to represent the latent variable.

With the development of technology and globalization, the widespread adoption of technology in the industry and service sectors has contributed to unemployment becoming a common problem for both developed and developing. In developed countries, unemployment policies are typically designed with a focus on addressing the root causes of the problem and implementing long-term solutions. In contrast, developing countries generally adopt policies that prioritize short-term solutions over long-term ones. In these countries, the focus is on alleviating the negative consequences of unemployment and increasing employment potential through measures such as enhancing production capacity or improving existing structures. It is believed that the employment problem in our country can be solved by shifting away from long-term industrialization and increasing the service sector. Factors such as rapid population growth, insufficient capital accumulation, a shortage of qualified workforce, and the ongoing technological development process are considered to contribute to the magnitude of the employment problem(Kanca,2012).

The strategies employed by different countries to tackle the issue of unemployment depend on their perspective on the problem and their economic and social conditions. Two types of policies are implemented: passive and active labor market policies. Active employment policies include incentives for the unemployed to find jobs, acquire new job skills, and create new employment opportunities for employers to increase or maintain employment. Passive employment policies, on the other hand, provide essential unemployment benefits, which provide financial support and protection to individuals to alleviate the financial problems arising from loss of income due to unemployment. (Mahiroğları and Korkmaz, 2013). Active employment policies are also implemented in Turkiye. The main programs include vocational training programs, community work programs, on-the-job training programs, and entrepreneurship programs provided by the Turkish Employment Agency (İŞKUR). In addition, active employment policies also cover insurance premiums and income tax withholding support aimed at increasing investments and employment. Turkiye's most common form of passive employment policy is monetary unemployment benefits, such as unemployment

insurance. The study analyzed the extra costs that unemployed individuals would need to bear to have the same living standards as employed. In the current study, the material deprivation approach has been utilized in calculating the extra costs. The financial losses caused by unemployment are usually estimated in the literature by considering factors such as disability, old age, and number of children. This study is thought to enhance the current state of knowledge by analyzing the extra costs of unemployment individually. The second section provides a literature review examining unemployment's impact on material deprivation The third section of the study includes a description of the fixed effects model used in the analysis and provides descriptive statistics for the variables employed in the analysis. The fixed effects model emphasizes the impact of unemployment on material deprivation. Additionally, the econometric method used to measure the additional costs incurred by unemployed individuals to achieve the same living standard as employed individuals is described in the study. In the fourth section, It is analyzed in this section. Discussion takes place in the conclusion or after the analysis.

1. LITERATURE REVIEW

Unemployment can lead to a decrease in social interaction for individuals due to loss of income, which can result in health problems such as mental depression (Helliwell and Putnam, 2004). Studies that examine the economic or material effects of unemployment show that the economic losses that come with unemployment increase even more as the duration of unemployment increases. Brand's (2015) study mainly showed that the likelihood of finding a job decreases when an individual changes their industry. If they cannot demonstrate their skills sufficiently when changing industries, they may end up working in low-paying jobs and experiencing economic losses. Brand also pointed out that their material deprivation may last a lifetime.

Saunders (2002) conducted a study comparing unemployed individuals with employed Australians and found significant differences between the two groups. The study revealed that the unemployed were less satisfied with life and felt greater disappointment in the direction of economic and social events. Although initial findings suggest that unemployment decreases well-being and living standards, some studies argue that unemployment can positively affect well-being if the increased free time is used to engage in activities that improve life satisfaction. There is relatively limited research examining the impact of unemployment on living standards. Bentolila and Ichino's (2008) study suggests that unemployment reduces essential consumption, such as food expenditure, and causes a decrease in individuals' living standards. Similarly, Browning and Crossley (2000) stated in their studies that the unemployed reduced their durable goods consumption during periods of unemployment. Gagan and Gagan's (1990) and Bradbury's (1993) studies indicate that employment is the most important determinant of living standards. These studies emphasize that for households to have a good standard of living, individuals in the household should be employed. Carroll’s (2007) study finds that unemployed individuals in Australia have lower life satisfaction compared to their employed counterparts (holding current income constant). Being unemployed is estimated to be equivalent to an annual income loss of AUD 42,100 for men and even higher for women. The extra cost of unemployment is found to be higher for women compared to men. The number of studies investigating the influence of unemployment benefits on living standards is even fewer than those examining their impacts on health. Gallie and Paugam (2000) have pointed out that individuals' living standards are closely related to how the unemployment benefit system operates. Pissarides (1998) has stated that in a long-term equilibrium with real wage increases, unemployed individuals will experience a continuous decline in their living standards if unemployment benefits are not sufficiently increased.

In studies conducted on unemployment in Turkiye, it has been emphasized that unemployment is a significant determinant of material deprivation. Many studies exist on the socioeconomic determinants of income poverty in Turkiye. Indeed, it can be said that one of the variables that have the greatest impact on income poverty in the studies is the employment status indicator, indicating the importance of employment in income poverty. Guloğlu et al. (2012) concluded that temporary workers and self-employed individuals have a higher probability of experiencing income poverty. They also highlighted that individuals residing in rural regions face a greater risk of income poverty when compared to their urban counterparts. These findings are corroborated by other studies such as Aran et al. (2010), Canbay and Selim (2010), and Kızılgöl and Üçdoğruk (2011).

The studies examining the socio-economic determinants of material deprivation in Turkiye are relatively few, and almost all of these studies have utilized data sets from the ILCS of the Turkish Statistical Institute (TURKSTAT) from different years. Karcı and Arlı (2018) surveyed the determinants of material deprivation in Turkiye, which included a regional breakdown and applied logistic regression analysis. Their study found that deteriorating health status, low education levels, and fewer rooms in the household increased the risk of

material deprivation. Additionally, they concluded that the risk of material deprivation decreased with advancing age.

The number of studies that analyze the effect of unemployment on living standards using microdata at the national level is limited. For example,Ozdamar et al. 2019 investigates how unemployment benefits impact health and living standards in Turkey. The research employs advanced methodologies such as Structural Equation Modelling (SEM) and Regression Discontinuity Design (RDD) to assess causal relationships. This study concludes that unemployment benefits play an important role in mitigating some of the negative effects of unemployment, such as health deterioration and lower living standards. In the 2003 study by Kutal, a material deprivation index was created to analyze the cost of unemployment and the impact of unemployment benefits. The findings of the study revealed that unemployment insurance is being implemented successfully in Turkey. Additionally, considering that the unemployment issue remains serious, it is stated that unemployment insurance fund resources will continue to be used for active employment policies in the future.

While unemployment in Turkiye is an individual and societal issue, its transformation into a social problem is mainly due to the material and psychological losses it imposes on individuals. The varying socio-economic and demographic characteristics of individuals and households create different effects of unemployment for each individual. The study by Ozdamar et al. (2021) is a pioneering work in the national literature. The study calculated the impact of unemployment on the living standard and the additional costs incurred due to unemployment between 2013 and 2017. The research results suggest that unemployed individuals, compared to employed individuals, gather less frequently with relatives and family members for social activities due to financial constraints. They also allocate less money for cinema, theater, and concert activities. This study aims to fill the gap by investigating the impact of unemployment material depravation using current microdata in the national literature.

It has been demonstrated in the literature that unemployment leads to not only economic but also moral losses. Empirical studies in this field often focus on non-economic consequences, such as health, physical, and psychological effects. Catalano et al. (2011) conducted studies on how economic decline, negative job experiences, and financial difficulties can increase the risk of psychological and behavioral disorders in individuals. Saunders (2002), Saunders and Taylor (2002), McLean et al. (2005), and Marmot and Wilkinson (2006) are prominent publications in the literature showing the relationship between individuals' employment status and health conditions.

2. DATA AND METHODS

The analysis utilized the "ILCS" conducted by TURKSTAT as a panel dataset covering 2018-2021. Panel data methods were deemed essential to control for individual heterogeneity. After conducting preliminary tests, the decision was made to use the "fixed effects method" within the panel data framework.

The data set includes income, poverty, social exclusion, other living conditions, and questions regarding individuals' demographic characteristics, health status, employment status, housing, and environment.

The dataset has no specific questions about living standards or material deprivation. Therefore, to measure poverty, an index has been created using questions related to material deprivation under the relevant category in the dataset. In other words, since poverty is not directly observable, an index has been created using the variables listed in Table 1 to produce a latent variable. This index has been used as a proxy for the material deprivation data in the analysis.

Table 1 The variables used to construct the material deprivation index include

Variables	Translation
The availability of a bathroom or shower in the inhabited residence.	1- Yes* 2- No
The availability of a toilet in the inhabited residence.	1- Yes * 2- No
A separate kitchen is available in the inhabited residence.	1- Yes * 2- No
The availability of a piped water system in the inhabited residence.	1- Yes * 2- No
A hot water system (central hot water, water heater, boiler, solar energy, etc.) is available in the inhabited residence.	1- Yes * 2- No

The availability of a landline telephone connection for the household.	1- Yes * 2- No, financial constraints. 3- No, other reasons.
The ownership of a mobile phone by the household members.	1- Yes * 2- No, financial constraints. 3- No, other reasons
The availability of a color television	1- Yes * 2- No, financial constraints. 3- No, other reasons
The ownership of a Computer by the household	1- Yes * 2- No, financial constraints. 3- No, other reasons
The availability of the internet	1- Yes * 2- No, financial constraints. 3- No, other reasons
The ownership of an automatic washing machine by the household	1- Yes * 2- No, financial constraints. 3- No, other reasons
The ownership of a refrigerator by the household	1- Yes * 2- No, financial constraints. 3- No, other reasons
The ownership of a dishwasher by the household	1- Yes * 2- No, financial constraints. 3- No, other reasons
The ownership of an air conditioner by the household	1- Yes * 2- No, financial constraints. 3- No, other reasons
The ownership status of a passenger car (excluding for business purposes) by the household.	1- Yes * 2- No, financial constraints. 3- No, other reasons
Considering all the expenses related to housing, this is what kind of a burden the costs put on the household (For homeowners, home loan interest repayments, including rent paid for tenants including water, electricity, heating, bill fines, apartment dues, regular repair and maintenance costs are covered)	1- It brings a lot of burden 2- It brings some burden 3- It does not load

Note: Besides yes and no answers to some questions, there are no answers due to financial inadequacies. The data set does not contain/include these variables.* For personal use only

The study followed Guio's (2009) approach in calculating the material deprivation index and selecting the variables to be used. Guio (2009) categorized the indicators or variables that can be utilized in constructing the living standards or material deprivation variable into three categories. The first category consists of financial sufficiency indicators, such as the ability to make payments for mortgage, bills, or rent; being able to take at least one week of vacation each year; being able to cope with unexpected expenses; being able to consume essential food items like meat and fish; and being able to cover heating expenses to keep the home warm. The second category is related to the possession of durable goods necessary in daily life. These include color TVs, telephones, washing machines, personal cars, computers, internet, kitchens, hot water systems, piped water systems, mobile phones, refrigerators, dishwashers, and air conditioning. The third category encompasses the living conditions related to the household's dwelling. It includes issues such as leaks, damp walls, or decay problems in the housing unit, rooms being dark or lacking natural light, limited space in the dwelling, absence of a bathroom or shower, lack of a private toilet for personal use, and exceeding 40% of net income on housing costs. Based on the study conducted by Guio (2009) and using the questions that fall into these categories in the Turkstat Income and Living Conditions Survey, an index was created using the variables listed in Table 1.

In the survey, these variables were asked to determine their presence or absence in households, and the response "yes" was coded as 1 and "no" as 2. However, in some cases, besides "no," there are instances where the response is "no" due to material deprivation. When constructing the material deprivation index, observations coded as "no" for other reasons were excluded from the dataset. To understand that the negative coefficients of the explanatory variables in the regression indicate a decrease in material deprivation and the positive coefficients indicate an increase, the codes have been rearranged to "yes" as 0 and "no" as 1. The

quality of the material deprivation index has been calculated using factor analysis. Factor analysis has been used to create unobserved variables (such as quality of life) using directly observed variables in the dataset.

In studies applying the concept of quality of life, researchers have specifically investigated the additional costs borne by disadvantaged groups compared to non-disadvantaged groups. For example, Zaidi and Burchardt (2005) and Morciano et al. (2015) have used the living standards or material deprivation approach for disabled and non-disabled individuals. In Sen's (1985) study, it was emphasized that not only disabled individuals but also groups such as the unemployed, the poor, and women are among the disadvantaged groups. This research investigated the impact of social disadvantage on various aspects and populations regarding living standards.

Within this framework, the current study examines the impact of unemployment on the material deprivation of one of the disadvantaged groups in Turkiye, namely unemployed individuals. Additionally, the study calculates the extra costs that unemployed individuals need to bear to attain the same living standards as those employed or to overcome material deprivation. By analyzing the additional financial burden the unemployed face, the research seeks to illuminate their difficulties in attaining comparable living standards and breaking free from economic problems. These types of studies help us understand how social policies can effectively improve the living standards of disadvantaged groups.

STATA 15 software was used for data analysis and data merging in this study. The panel fixed effects model used in the analysis is represented below.

$$MDI_{it} = \beta_0 + \beta_1 EMS_{it} + \delta Ln\, HI_{it} + \beta_2 MS_{it} + \beta_3 EDS_{it} + \beta_4 HHT_{it} + \beta_5 OSD_{it} + \upsilon_i + \mu_t + e_{it} \quad (1)$$

In the model, the dependent variable is the material deprivation index (MPI). As previously mentioned, questions about the presence of goods that individuals possess and use daily have been used to create the material deprivation index. The model controlled for factors such as employment status (EMS), logarithmic household income (LnHI), gender (G), marital status (MS), education status (EDS), household type (HHT) and homeownership status of the residence (OSD) , which could potentially influence individuals' quality of life. The term "υ_i" represents unit effects, "μ_t" represents time effects, and "e_{it}" represents identical and independent error terms.

Until this study stage, unemployment's impact on material deprivation has been measured. To calculate the extra cost that unemployed individuals need to bear to have the same living standards as employed individuals, one of the essential objectives of the study is to use the following formula (Zaidi and Burchardt,2005).

$$Extra\ cost = -\frac{\beta_1}{\delta} * average\ individual\ income \quad (2)$$

The β_1 and δ coefficients mentioned in "Equation 2" represent the coefficients of employment status and logarithmic household income specified in "Equation 1.

The summary statistics of the quantitative variables used in the model are provided in Table 2. The table contains the number of data points, averages, and minimum and maximum values for the variables.

Table 2 Summary statistics for the variables in the analysis

	Frequencies	Percent Weight	Cumulative Percent
Employment Status			
Employee	62.524	41,62	41,62
Unemployment	87.709	58,38	100
Total	150.233	100	
Gender			
Male	72.805	48,57	48,57
Female	77.083	51,43	100
Total	149.888	100	
Marital Status			
Single			65,41
	98.264	65,41	
Married	37.350	24,86	90,27
Widowed	4.425	2,95	93,21
Divorce	10.194	6,79	100
Total	150.233	100	
Education Status			
Illiterate	14.578	9,7	9,7
Literate, not Finishing a School	9.534	6,35	16,05

Primary School	44.051	29,32	45,37
Secondary school, vocational secondary	29.708	19,77	65,15
General high school	16.956	11,29	76,43
Vocational or technical high school	11.886	7,91	84,34
University, College, and higher	23.520	15,66	100
Total	150.233	100	
Household Type			
Single person household	7.068	4,7	4,7
A household consisting of at least one nuclear family and other individuals.	25.555	17,01	21,71
A household composed of multiple individuals where there is no nuclear family.	2.019	1,34	23,06
A nuclear family consists only of spouses.	22.500	14,98	38,04
A nuclear family consisting of spouses and children.	83.636	55,67	93,71
A single-parent family consists of a parent and children.	9.455	6,29	100
Total	150.233	100	
Ownership status of the dwelling.			
Owner	93.286	62,09	62,09
Tenant	34.017	22,64	84,74
Lodging	1.865	1,24	85,98
Others(Non-paying tenant)	21.065	14,02	100
Total	150.233	100	
	Mean	**Min.**	**Max.**
Ln(Income)	10,0638 (0,962)	3,222	14,706
Age	42,171 (17,749)	15	108
Age square	2093,393 (1658, 528)	225	11664
Material Deprivation index (MPI)	-0,00022 (0.880)	-0,912632	8,321245

Note: The value in parentheses represents the standard deviation. The total data instances in income is 90.857. The total data instances in age is 149.890.

The dataset comprises 48,57 % male individuals and 51,43 % female individuals. Regarding marital status, 65,41% of the dataset consists of single individuals, 24,86% is married, 2,95% is widowed, and 6,79% consists of divorced individuals. Based on this data, we can conclude that most individuals in Turkiye are elementary school graduates. Elementary school graduates make up 29.32% of the dataset. The second largest group consists of secondary school vocational secondary graduates, with a percentage of 19.77. Individuals with university and higher education levels account for a cumulative rate 34.86 in the dataset. According to the dataset, 62.09% of individuals are homeowners. According to the dataset, individuals who are part of a nuclear family consisting of spouses and children represent 55.67% of the dataset.

3. FINDINGS

Before proceeding with the model analysis in Equation 1, a Hausman test has been conducted to determine whether to estimate using the fixed or random effects estimator. Hausman's test compares the fixed effects estimator and the random effects estimator by assuming that there is a correlation between them. The fixed effects estimator is preferred if this correlation does not exist (the null hypothesis is rejected). The random effects estimator is preferred if there is a correlation (the null hypothesis is accepted). The results of the Hausman test rejected[1] the null hypothesis that fixed impacts should be used, indicating a correlation between the explanatory variables and unit and time effects. Therefore, it was concluded that using the Fixed Effects Model would be more appropriate. Table 3 displays the estimated results using the fixed effects model. In the study, the Breusch-Pagan test was applied to test for homogeneity. The test statistic was calculated as chi-square 162.41 with a p-value of 0.00. This result indicates the presence of heteroskedasticity. To correct for

[1] $\chi 2$: 2077,95 $prob$: 0.00

heteroskedasticity, robust standard errors are used in the fixed effects model. This approach accounts for differences in the variance of the error terms, providing more reliable estimates. Thus, for model predictions, more resilient standard errors were obtained by using the "robust" command, considering the scenario where there is varying variance across units. Due to the nature of the dataset, where data is collected from the same households over different years and the dataset has short time series (e.g., only a few years for each household), unit root tests may not be applicable or may not yield meaningful results. This is especially true when the time dimension (T) of the dataset is very short. Since our current dataset covers only 4 years, a unit root test has not been applied. Baltagi (2021) notes that unit root tests may not provide reliable results, particularly in panel datasets with short time series (e.g., only a few years for each household).

Table 3 The Impact of Unemployment on the Material Deprivation Index

Dependent variable: Quality of life index. Frequencies	**Coefficients**	**Robust Standard Error**
Constant	2.378*	0.0907
Employment Status	0.0139*	0.0046
Gender	.	.
Age	-0.048*	0.0033
Age Square	0.0016*	0.0003
Ln(income)	-0.0215*	0.0028
Marital Status (Base categories: Single)		
Married	0.0439*	0.0155
Widowed	-0.0296	0.0211
Divorce	-0.0721*	0.0179
Education Status (Base categories: Illiterate)		
Literate, not finishing a school	-0.1199*	0.0398
Primary School	-0.1074*	0.0429
Secondary school, vocational secondary	-0.1113**	0.0473
General high school	-0.0442	0.0506
Vocational or technical high school	-0.0791	0.0526
University, College, and higher	-0.0550	0.0549
Household Type (Base categories: Single person household)		
A household consisting of at least one nuclear family and other individuals.	-0.3501*	0.0156
A household composed of multiple individuals where there is no nuclear family.	-0.1413*	0.0205
A nuclear family consists only of spouses.	-0.2275*	0.0157
A nuclear family consisting of spouses and children.	-0.3305*	0.0149
A single-parent family consists of a parent and children.	-0.2564*	0.0154
Ownership status of the dwelling (Base categories: Owner)		
Tenant	0.0186**	0.0084
Lodging	0.1416*	0.0243
Others(Non-paying tenant)	0.1572*	0.0109
Number of observations	90.628	
R^2	0.1190	
Extra cost	3560	

Note: *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.

The gender variable has been omitted from the model because of multicollinearity. Therefore, the gender variable row has been left blank in Table 3. The research aims to investigate the influence of unemployment on material deprivation. The study has concluded that unemployed individuals are more impoverished than those employed. The extra cost that unemployed individuals need to bear for material deprivation has been calculated as 3560 TL per month[2] (utilizing Equation 2).

The number of studies in this area is limited in Turkey. When comparing the results of the current study with the Turkish literature, both similarities and differences are observed. For instance, in the study by

[2] the value of 3560 TRY, adjusted for inflation between 2018-2021, is equivalent to 548.00 USD in 2024

Ozdamar et al. (2019), the positive relationship found between employment status, marital status, household type, and material deprivation is consistent with the current study. Similarly, the findings on the relationship between age, employment status, marital status, and material deprivation in the study by Ozdamar et al. (2021) align with the results of the current study.

When looking at the control variables, it is observed that material deprivation decreases as individuals age. As individuals age, they generally have more work experience and professional skills. This increases their access to better employment opportunities. Indeed, old age is typically associated with retirement from the workforce. Retirement benefits, social security, and similar programs provide economic support to elderly individuals, reducing the risk of material deprivation. Additionally, as individuals age, they have the opportunity to accumulate savings.

The negative coefficient of the income variable indicates that it increases the standard of living and decreases material deprivation. Individuals with higher incomes generally face fewer difficulties meeting their basic needs, such as housing, nutrition, and clothing.

According to the analysis results, we observe a decrease in material deprivation across all educational levels as reported by illiterate individuals. In other words, each educational category has a lower numerical value and a negative coefficient compared to the category representing the preceding education level. This also indicates that education levels contribute to the reduction of material deprivation. The relevant literature supports the results obtained (see Peet et al., 2015; Ashenfelter et al., 1999; Card, 1999). The reason for education levels reducing material deprivation can be attributed to individuals with higher education levels having better employment opportunities, higher income levels, and more developed skills and abilities.

When the marital status variable is examined, it has been found that material deprivation increases among married individuals compared to single individuals. Indeed, this situation can be explained by the household having a low income or one of the spouses not being employed. The conclusion reached is that divorced individuals have lower material deprivation rates compared to single individuals. This situation can have several reasons. After a divorce, individuals may have two separate income sources, which can reduce the risk of material deprivation. Additionally, in the case of divorce, assistance such as alimony or child support payments for children can support the income of divorced individuals and reduce the risk of material deprivation. The relevant literature supports the results obtained (Bedard and Deschenes, 2005; Datt et al., 1998).

When the variable of property ownership is examined among other control variables, it has been found that being a tenant increases material deprivation compared to being a homeowner. Indeed, high rental costs can make it difficult for individuals to save their income or meet other needs. When household type is examined among other control variables, it has been found that material deprivation decreases in households other than single-person households. Especially in nuclear families, material deprivation is lower compared to single-person households. The reason for this can be attributed to multiple sources of income in nuclear families, which increase the total household income.

RESULTS

The factors that influence material deprivation vary from individual to individual. Fighting unemployment is among the primary objectives of all countries, and in our country, significant efforts are being made to increase employment and reduce unemployment. The analyses conducted using the panel data set obtained from the ILCS by TURKSTAT between 2018 and 2021, employing the fixed effects method, have shown that unemployed individuals need to bear additional costs to achieve the same living standards as employed individuals or to compensate for material deprivation.

The impact of unemployed individuals on material deprivation in Turkiye has been addressed in the current study, and the research is expected to add to both domestic and global literature. In the ILCS, since the variable for material deprivation is not directly included, a latent variable has been created. A material deprivation index has been constructed using the questions listed in Table 1 to create the latent variable.

In the model where the material deprivation index is considered an independent variable and other factors are controlled, it was discovered that unemployed individuals are more likely to be in material deprivation than employed individuals. According to the analysis, it has been calculated that unemployed individuals need to incur an additional cost of 3560 TL per month to compensate for their maternal material deprivation. This finding suggests that for unemployed individuals to meet their basic needs and overcome the financial challenges associated with material deprivation, they would require an extra amount of 3560 TL monthly (the value of 3560 TRY, adjusted for inflation between 2018-2021, is equivalent to 548.00 USD in 2024). We can say that unemployment benefits and allowances are essential for the financial support unemployed individuals

need to achieve the same living standards as the employed. These benefits can play a significant role in alleviating material deprivation. According to the results of the analysis, age and marital status, education status, household type, and dwelling ownership are other variables that affect the material deprivation index. The recommended aspect to explore in future research is to examine the efficacy of unemployment benefits and allowances in Turkiye concerning diminishing additional expenses and mitigating material deprivation.

Conflict of Interest Statement

The authors declare no conflict of interest regarding this study. Throughout the research process, including data collection, analysis, and interpretation, impartiality and adherence to scientific ethical standards were maintained. The authors state that they have no financial, commercial, or personal relationships that could influence the results of the study. No financial support was received from any institution or organization during the preparation and publication of this study.

Ethics Committee Statement

This study does not involve research on human or animal subjects; therefore, ethical approval from an ethics committee was not required. All data used in the research process were obtained from publicly accessible sources provided by the Turkish Statistical Institute and do not contain any individual-specific information. Scientific ethical standards were adhered to throughout the execution of this study.

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