



REGIONAL DIFFERENCES IN THE DETERMINANTS OF MATERIAL AND SOCIAL DEPRIVATION: THE CASES OF ISTANBUL AND ANKARA

Maddi ve Sosyal Yoksunluğun Belirleyicilerinde Bölgesel Farklılıklar: İstanbul ve Ankara Örnekleri

İsmail ÇAKMAK

Ordu Üniversitesi, ismailcakmak@odu.edu.tr, Ordu, Türkiye
<https://orcid.org/0000-0002-8083-5256>

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ABSTRACT

This study aims to analyze the factors influencing material and social deprivation in Istanbul and Ankara, the two largest cities in Turkey. In this context, the study utilizes the 2022 Income and Living Conditions Survey (ILCS) household microdata provided by TURKSTAT, and the data were analyzed using the logit method. The findings reveal that there may be region-specific differences in the factors contributing to material and social deprivation. The analyses indicate that, in Ankara, being a tenant—compared to being a homeowner—increases the likelihood of experiencing material deprivation. The results also show that, while housing expenditures in Istanbul do not have a direct and statistically significant relationship with deprivation, in Ankara, higher spending on housing is associated with a lower probability of deprivation. In addition to these regional disparities, the study also identifies factors that exhibit similar patterns in both cities. Specifically, individuals who are unable to pay their loans, credit card debts, or utility bills on time are more likely to experience material and social deprivation, whereas higher household income is found to reduce the likelihood of deprivation. By revealing both common and differing mechanisms of material and social deprivation in Istanbul and Ankara, the study contributes to the development of need-based policies in the fight against deprivation.

Keywords: Material and Social Deprivation, Income and Living Conditions, Logit Model

ÖZ

Bu çalışma, Türkiye'nin en büyük iki şehri olan İstanbul ve Ankara'daki maddi ve sosyal yoksunlukta etkili faktörleri analiz etmeyi hedeflemektedir. Bu bağlamda çalışma, TÜİK 2022 gelir ve yaşam koşulları araştırması hane mikro veri setini kullanmış ve veriler logit yöntemi ile analiz edilmiştir. Çalışmanın bulguları, maddi ve sosyal yoksunlukta etkili bölgesel farklılıkların olabileceğini göstermiştir. Yapılan analizler, Ankara'da ev sahipliğine kıyasla kiracı olmanın maddi yoksunluk yaşama olasılığını arttırdığını göstermektedir. Çalışmanın sonuçları, İstanbul'da konut harcamalarının yoksunlukla doğrudan ve istatistiksel olarak anlamlı bir ilişkisi olmadığını buna karşın Ankara'da konut için yapılan harcamalar arttıkça yoksunluk yaşama olasılığının azaldığını göstermektedir. Söz konusu bölgesel farklılıkların yanında çalışmanın sonuçları İstanbul ve Ankara özelinde benzer örüntü sergileyen faktörlerin de olduğunu göstermiştir. Buna göre kredi, kredi kartı ya da faturalarını zamanında ödeyemeyenlerin diğerlerine kıyasla maddi ve sosyal yoksunluk yaşama olasılıkları artmakta iken yüksek hane gelirinin ise yoksunluğu azalttığı tespit edilmiştir. Çalışmada her iki ilde de, maddi ve sosyal yoksunlukta benzeyen ve farklılaşan mekanizmaların ortaya konulmuş olması, maddi ve sosyal yoksunlukla mücadeledeki politikalarda ihtiyaç eksenli politikaların belirlenmesine faydalı olacaktır.

Anahtar Kelimeler: Maddi ve Sosyal Yoksunluk, Gelir ve Yaşam Koşulları, Logit Model

INTRODUCTION

Poverty is a multidimensional concept that should be addressed not only in terms of economic resource insufficiency but also through its social and cultural dimensions (Sen, 1999). Material deprivation is defined by individuals' inability to meet basic needs, low income, and lack of economic resources (Townsend, 1979), whereas social deprivation refers to inadequacies in individuals' access to social networks and participation in societal activities (Kearns & Whitley, 2019; Ivaldi & Ciacci, 2025). Social deprivation arises from factors such as isolation, exclusion, and weakened support systems, which can significantly affect individuals' quality of life (Levitas, 2005). Material and social deprivation are distinct yet interrelated concepts that describe observable disadvantages within society. As previously mentioned, material deprivation focuses on physical and environmental conditions, while social deprivation emphasizes the insufficiency and quality of social relationships (Ivaldi, 2016).

Research on material deprivation began in the 1970s (Townsend, 1979) and increased towards the end of the twentieth century. Notably, European countries have utilized concepts of poverty and social exclusion in their measurements of material deprivation (Ünver & Alkan, 2020), indicating the necessity of considering material and social deprivation together. For an individual or household to overcome deprivation broadly, securing both material resources and social relationships is essential. In this context, material and social deprivation are complementary concepts and hold critical importance in advancing social justice and equality objectives within societies (Silver, 1994).

In Turkey, the phenomena of poverty and deprivation are measured by the Turkish Statistical Institute (TurkStat). In the TurkStat Income and Living Conditions (ILC) datasets, material deprivation is defined as the proportion of individuals experiencing severe financial difficulties. In subsequent years, to align with literature and following revisions to the definition of material

deprivation by Eurostat, social deprivation criteria were also incorporated into this definition. Consequently, TurkStat is now able to measure material and social deprivation in Turkey in a comprehensive manner. Figure 1 illustrates the rates of material and social deprivation in recent years in Turkey, along with their changes compared to the previous year.

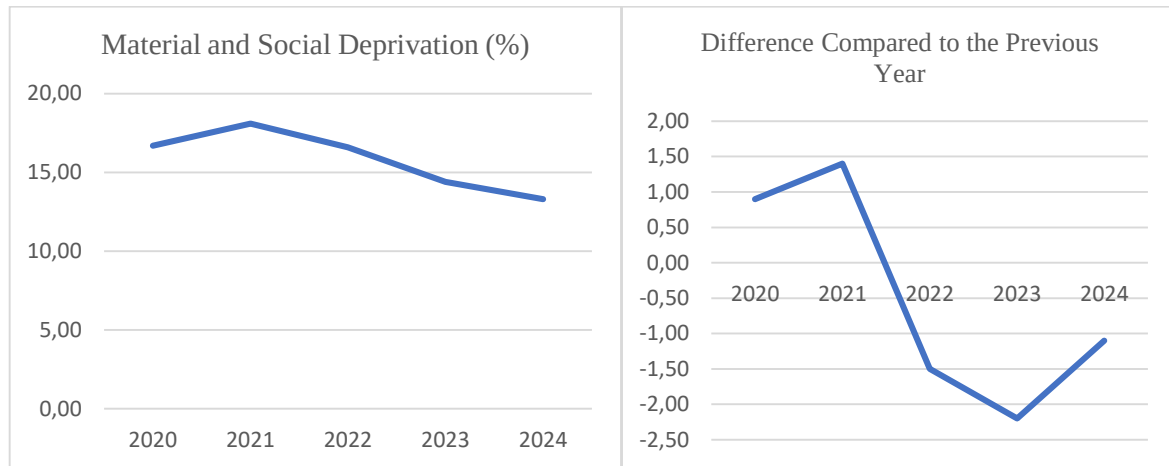


Figure 1. Information about Material and Social Deprivation in Turkey
Source: TurkStat, Income and Living Conditions Survey

Figure 1 clearly shows that material and social deprivation in Turkey has experienced a dramatic decline since 2021. Specifically, while approximately 18.1% of households in Turkey were experiencing material and social deprivation in 2021, this rate decreased by about 27% to 13.3% by 2024. Despite this positive trend, it is noteworthy that the rate of decline in material and social deprivation slowed between 2023 and 2024.

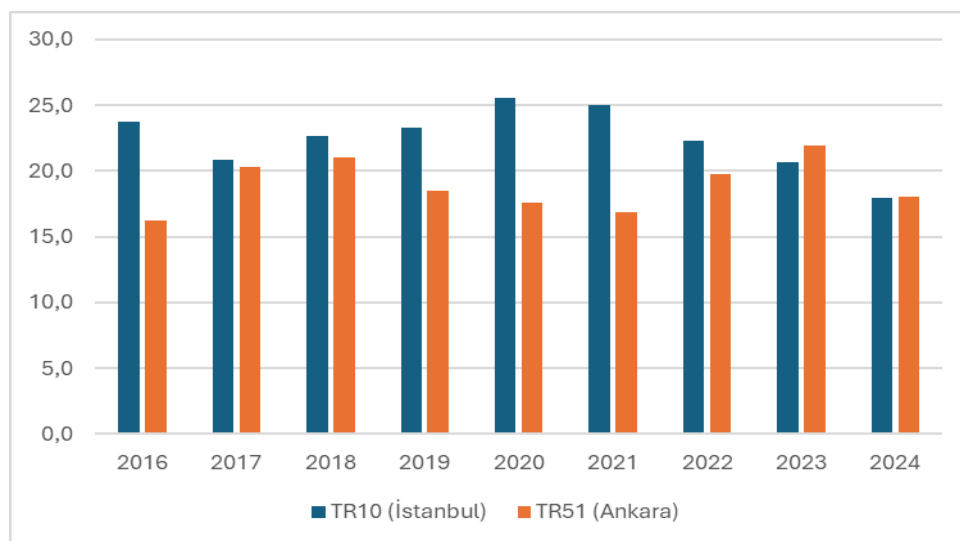


Figure 2. At-risk-of-poverty or social exclusion rate (AROPE) by region, 2016-2024**Source:** TurkStat, Income and Living Conditions Survey

Figure 2 illustrates the proportion of individuals at risk of poverty or social exclusion in Ankara and Istanbul, based on the statistical regional classification in Turkey, between 2016 and 2024. As seen in Figure 2, the initial years show a higher proportion of at-risk individuals in Istanbul; however, particularly from 2023 onwards, the share of at-risk individuals residing in Ankara surpasses that of Istanbul. The sharp increase in Ankara after 2022 and the decline in Istanbul post-2019 are noteworthy. Both Figures 1 and 2 highlight not only the presence of material and social deprivation in Turkey but also the significant influence of regional disparities on these conditions. In this context, the present study focuses on Ankara and Istanbul to analyze the factors influencing the likelihood of households experiencing material and social deprivation in these cities. The study is organized into five sections. The second section presents a review of the literature on material and social deprivation. The third section outlines the data and methodology employed in the study. The fourth section shares the findings, and the final section discusses the results.

RELATED LITERATURE

Material and social deprivation are inherently influenced by a variety of socioeconomic, demographic, and environmental parameters. Research indicates that income is a significant factor affecting material and social deprivation, as low household income is directly associated with material deprivation due to individuals' inability to meet basic needs. Nolan and Whelan (2011), in their Europe-wide study, demonstrated a strong correlation between insufficient household income and material deprivation, highlighting a marked increase in material deprivation particularly among households falling below the income threshold. This situation adversely affects individuals' participation in social life, thereby leading to social deprivation (Atkinson, 1998). Similarly, Burchardt et al. (2002) emphasized that social deprivation depends

both on the lack of material resources and the weakening of social networks, underscoring that low-income households are more vulnerable to social exclusion. Social deprivation restricts individuals' participation in friendships, education, and cultural activities, fostering a sense of disconnection from society.

There exists an extensive body of literature examining the effects of housing type, location, and environmental factors on material and social exclusion. These studies emphasize that housing conditions and environmental factors are important determinants of individuals' experiences of both material and social deprivation. Households experiencing material deprivation often reside in unhealthy, inadequate, or overcrowded housing (Baker et al., 2016). Such housing conditions diminish quality of life while increasing the risk of health problems, psychological stress, and social exclusion (Evans et al., 2003). The physical state of housing and environmental quality are also closely related to social deprivation. Adverse environmental factors such as insufficient infrastructure, security issues, and lack of green spaces limit residents' social interactions and weaken social networks (Marvi et al., 2025). Particularly, individuals living in low-income neighborhoods face restrictions in participating in social activities, which exacerbates social exclusion (Wacquant, 2008). Furthermore, improvements in housing and environmental conditions are regarded as effective tools in combating poverty. Krieger and Higgins (2002) demonstrated that adequate housing policies have positive effects on health and social integration.

The relationship between housing tenure and material and social exclusion is similarly debated in literature. Homeownership is perceived as a positive factor in terms of economic security, social status, and social participation. Arundel and Ronald (2021) highlight that the economic stability provided by homeownership exacerbates social inequalities, especially in the context of declining homeownership rates among young adults. In this regard, homeownership emerges as an important factor in reducing the risk of social exclusion. Related

literature notes that individuals living in rental housing are at higher risk of social exclusion compared to homeowners. Cohen Raviv and Lewin-Epstein (2021) also draw attention to how renting reinforces social and economic inequalities among young adults. In the dimension of social exclusion, McCabe (2012) states that homeowners possess stronger social ties and trust within local communities, which enhances social capital. Conversely, renters face risks of social isolation and exclusion due to frequent relocations and housing insecurity.

Studies conducted specifically in Turkey have also aimed to identify the determinants of material and social deprivation. These studies indicate that Turkey ranks among the highest European countries in terms of social exclusion and deprivation rates (Kapar, 2023). Education and income levels are identified as critical determinants in reducing material deprivation, with higher education and income levels associated with lower material deprivation (Ünver & Alkan, 2020; Uğur, 2023). Additionally, Turgut and Çakmak (2025), addressing working material deprivation, emphasize that it varies according to various socioeconomic and demographic parameters, further highlighting the differentiating effect of the sector and job position on material deprivation. Although a substantial literature on material and social deprivation exists specifically for Turkey, few studies address regional disparities. In this context, the present study focuses on Istanbul and Ankara, the two largest cities in Turkey, aiming to analyze the factors influencing material and social deprivation in these urban centers.

DATA & METHODOLOGY

The primary objective of this study is to analyze whether the factors influencing material and social deprivation among households differ between Istanbul and Ankara, the two largest cities in Turkey. In this context, the study utilizes microdata from the 2022 Income and Living Conditions Survey (household-level) conducted by the Turkish Statistical Institute (TurkStat). In line with the aim of the research, the dataset has been disaggregated specifically for Istanbul

and Ankara in order to test city-specific effects. Descriptive statistics for the variables used in the study are presented in Tables 1 and 2.

Table 1. Summary Statistics (Ankara)

Variables (Ankara)	(1) N	(2) mean	(3) sd	(4) min	(5) max
Material and social deprivation	343	0.230	0.422	0	1
Housing expenditure	343	1,797	958.4	396.8	8,198
Total household income	343	11.42	0.767	8.700	13.83
Residential & environmental challenges	343	0.0641	0.245	0	1
Inability to pay bills	343	0.128	0.335	0	1
Homeownership	343	0.673	0.470	0	1

Table 2. Summary Statistics (İstanbul)

Variables (İstanbul)	(1) N	(2) mean	(3) sd	(4) min	(5) max
Material and social deprivation	654	0.327	0.470	0	1
Housing expenditure	654	2,674	1,900	528.4	22,900
Total household income	654	11.46	0.811	8.700	16.11
Residential & environmental challenges	654	0.232	0.423	0	1
Inability to pay bills	654	0.217	0.413	0	1
Homeownership	654	0.818	0.386	0	1

As can be observed in Tables 1 and 2, the analysis in this study is based on data collected from 343 households in Ankara and 654 households in Istanbul. Table 3, presented below, provides detailed information on how the variables mentioned in Tables 1 and 2 were constructed.

Table 3. Variables and the Methods of Their Derivation

Variables	Sub-section	Definition	Scale
1. Material and social deprivation			
	1.1.	<i>Whether the household has any cars for private purposes</i>	1.no (cannot afford) 0. yes
	1.2.	<i>Can your household afford an unexpected expense</i>	
	1.3.	<i>Can your household afford to pay for a week's annual holiday away from home for all household members together or separately?</i>	1.no 0.yes

	1.4.	<i>Can your household afford to cost of meal with meat, chicken or fish every second day?</i>	
	1.5.	<i>Can your household afford to keep its home adequately warm?</i>	
	1.6.	<i>Do you renew your worn-out or old furniture</i>	
	1.7.	<i>Arrears on mortgage, loan repayments or rent payments in the last 12 months</i>	1.yes (twice or more) 0.other
2.Housing expenditure		Lowest monthly income of household to make ends meet?	Value in Turkish Lira (TL) Logarithmic equivalent of the Turkish lira
3.Total household income		Total disposable housing income	
4.Residential & environmental challenges	4.1.	<i>Leaking roof, damp walls or rot in window frames problem</i>	
	4.2.	<i>Heating problems because of insulation</i>	
	4.3.	<i>Problems such as darkness of rooms of lack of day light</i>	1.yes 0. no
	4.4.	<i>Noise from neighbors or from street</i>	
	4.5.	<i>Shortage of space in the dwelling</i>	
	4.6.	<i>Pollution, grime or other environmental problems</i>	
	4.7.	<i>Crime, violence or vandalism in the area</i>	
5.Inability to pay bills		Arrears on utility bills in the last 12 months	1.yes (twice or more) 0.other
6.Homeownership		Tenure status	1.tenant 0.owner

"Material and social deprivation" is the dependent variable of the study. This variable was derived from responses to seven distinct sub-dimensions outlined in the table. Households that reported "no" in at least four out of the seven relevant items were classified as materially and socially deprived in the study. In the calculation of material and social deprivation, TurkStat monitors a total of 13 indicators. Of these, 7 are household-level questions, while the remaining 6 are directed at individuals. TurkStat considers individuals to be materially and socially deprived if they are unable to meet at least 7 out of these 13 indicators. The household-level questions posed by TurkStat correspond to indicators 1.1 through 1.7 in Table 1. This study focuses on the phenomenon of material and social deprivation at the household level. In order to align with TurkStat's methodology, households that are unable to meet at least 4 of the 7 indicators examined in this study are classified as materially and socially deprived. In this way,

similar to the TurkStat approach, those who fail to meet more than half of the selected indicators are identified as materially and socially deprived within the scope of this research.

A similar method was applied in the "Residential and Environmental Challenges" section. In the relevant sub-dimensions, households were asked seven questions. Individuals who reported deprivation in at least four out of these seven items were classified in the study as experiencing residential and environmental problems. In the study, individuals residing in public housing and those who do not own a home but do not pay rent were excluded from the dataset. Furthermore, households that had no rent, housing loan, or utility bill payments in the past 12 months were excluded from the analysis.

Since the dependent variable *material and social deprivation* in the study is binary structure, and the primary objective is to identify the probabilities of factors influencing material and social deprivation, a logit analysis was conducted.

The econometric specification of the logit analysis can be briefly represented as follows:

$$P(Y_i = 1|X_i) = \Lambda(X_i\beta) = \frac{e^{X_i\beta}}{1 + e^{X_i\beta}} \quad (1)$$

Where $\Lambda(.)$ denotes the logistic cumulative distribution function (CDF), the marginal effect of an independent variable X_{ji} on the probability that $Y_i = 1$ is given by the partial derivative;

$$\frac{\partial P(Y_i = 1|X_i)}{\partial X_{ji}} = \beta_j \Lambda(X_i\beta) \cdot [1 - \Lambda(X_i\beta)] \quad (2)$$

Where β_j is the coefficient corresponding to the j^{th} independent variable, $\Lambda(X_i\beta)$ is the predicted probability at observation i . Marginal effects measure the instantaneous rate of change in the probability of the outcome with respect to a small change in the independent variable. Because the logit model is nonlinear, the marginal effect depends on the values of all independent variables through $\Lambda(X_i\beta)$. Marginal effects are often evaluated at the mean values of the independent variables (average marginal effects) or for each observation individually (individual marginal effects).

The results of the logit analysis conducted to identify the factors affecting material and social deprivation of households in Istanbul and Ankara are presented in Table 5.

Table 5. Logit Analyses Results

Variables	(1) Logit_Ankara	(2) Margeff_Ankara	(3) Logit_Istanbul	(4) Margeff_Istanbul
Homeownership	1.086** (0.454)	0.11** (0.043)	0.179 (0.359)	0.023 (0.0471)
Housing expenditure	-0.000931*** (0.000347)	-0.00009** (0.00003)	-0.000214 (0.000133)	-0.00002 (0.00001)
Res & env challenges	0.901 (0.581)	0.109 (0.079)	0.603** (0.239)	0.084** (0.0345)
Total household income	-1.162*** (0.327)	-0.121*** (0.0324)	-1.869*** (0.250)	-0.250*** (0.028)
Inability to pay bills	2.350*** (0.465)	0.366*** (0.083)	2.084*** (0.248)	0.348*** (0.041)
Constant	11.97*** (3.633)		20.01*** (2.850)	
Observations	343	343	654	654

Note: Standard errors are in parentheses, *** p<.01, ** p<.05, * p<.1

The logit analysis results indicate that, in Ankara, tenants exhibit a statistically significant higher probability of experiencing material deprivation compared to homeowners. Conversely, housing tenure type does not demonstrate a statistically significant impact on material and social deprivation in Istanbul. Furthermore, the findings reveal that, in Ankara, an increase in monthly housing expenditure is associated with a decreased likelihood of material and social deprivation among households. In comparison, this relationship is not observed in Istanbul, where monthly housing costs do not exert a direct statistically significant effect on deprivation. On the other hand, in Istanbul, individuals experiencing housing and environmental problems were found to be more likely to suffer from material and social deprivation compared to others; however, in Ankara, no statistically significant effect was observed on such deprivation. In addition to the divergent effects observed specifically in Istanbul and Ankara, the study's findings also reveal common factors influencing material and social deprivation across both cities. Specifically, individuals who have difficulty paying their utility bills at least twice a year,

exhibit a higher likelihood of material and social deprivation compared to others. Conversely, individuals with higher total household income are less likely to experience deprivation relative to their counterparts. Focusing on the results of the marginal effects analysis, unpaid utility bills emerge as the most influential factor contributing to material and social deprivation in both Istanbul and Ankara. Accordingly, individuals who are unable to pay at least two utility bills on time per year are approximately 37% more likely to experience material deprivation in Ankara, and about 35% more likely in Istanbul, compared to those without such payment difficulties. Total household income emerges as the most prominent mitigating factor for material and social deprivation in both Istanbul and Ankara.

DISCUSSION & CONCLUSION

The findings of this study demonstrate that housing-related variables and economic conditions can have spatially differentiated effects on material and social deprivation at the household level. Specifically in Ankara, being a tenant significantly increases the probability of experiencing material deprivation compared to being a homeowner. This aligns with existing literature that addresses the relationship between housing insecurity and deprivation (see Elsinga & Hoekstra, 2005; Dewilde, 2018). In contrast, in Istanbul, the type of housing tenure does not appear to have a statistically significant effect on deprivation, which may be attributable to different dynamics in the housing market and the presence of social support networks in urban contexts. Furthermore, considering that Istanbul has a relatively higher cost of living compared to other provinces, even homeownership may not guarantee protection against material and social deprivation.

In Ankara, the finding that an increase in housing expenditures is associated with a lower likelihood of deprivation suggests that housing-related costs may serve not only as financial burdens but also as indicators of household welfare capacity. In this study, housing expenditures

include a range of items such as rent, water and electricity bills, heating costs, maintenance fees, property taxes, housing services, and service charges. The ability of households to afford these various expenses can be interpreted as a proxy for access to both material and social resources. Indeed, the literature emphasizes that housing expenditures should not be viewed merely as shelter costs, but also as investments linked to housing quality, sustainable living conditions, and social inclusion (Stone, 2006; Muianga et al., 2021). Conversely, the absence of a statistically significant relationship between housing expenditures and deprivation in Istanbul may be explained by the fact that housing-related costs in the city remain disproportionately high, regardless of income levels. Accordingly, high housing expenditure does not necessarily imply a higher standard of living; rather, in large metropolitan areas such as Istanbul, these expenditures may represent a compulsory and oppressive financial burden for many households. This situation has been addressed in the literature through the concepts of “housing poverty” and “hidden poverty,” underscoring the need to evaluate the effects of housing costs on household well-being within a contextual framework (Dewilde, 2018; Haffner & Boumeester, 2010).

The findings of the study further reveal that, specifically in Istanbul, individuals experiencing housing and environmental problems are more likely to suffer from material deprivation compared to others. These results align with the existing literature emphasizing that physical housing conditions and access to basic services are fundamental determinants of quality of life and deprivation (Eurofound, 2022). Furthermore, the significance of living conditions is clearly highlighted in Alkire and Foster’s Multidimensional Poverty Index. The seven sub-dimensions examined under the category of “Housing and Environmental Problems” in this study largely overlap with the indicators used within Alkire and Foster’s framework, thereby reinforcing the consistency of the findings with the multidimensional poverty literature. In addition to the differentiated effects observed between the two cities, the study also identifies

common determinants of deprivation in both Istanbul and Ankara. It demonstrates that individuals who struggle to pay their bills at least twice a year are significantly more likely to experience material and social deprivation compared to others, a finding that holds true for both cities. Difficulties in paying bills on time as expected and planned not only increase material and social deprivation but may also lead to problems related to electricity, water, and heating, thereby contributing to energy poverty.

The marginal effects analysis identifies unpaid utility bills as the most influential factor contributing to deprivation in both cities. In this context, households that are unable to maintain consistent access to basic utilities (such as electricity, water, and natural gas) are more vulnerable to social exclusion and deprivation (Atkinson et al., 2002). Notably, this situation increases the probability of deprivation by approximately 37% in Ankara and 35% in Istanbul. Finally, the finding that total household income is the most significant factor against deprivation in both Istanbul and Ankara confirms that income-enhancing policies remain essential tools in addressing deprivation. This result is consistent with traditional welfare economics approaches, which emphasize the pivotal role of income in studies on deprivation (Sen, 1992; Nolan & Whelan, 2011).

The primary objective of this study was to identify the factors affecting material and social deprivation among households living in Turkey's two most populous and socioeconomically significant cities. The results reveal that the dynamics influencing deprivation vary across cities, indicating the need for place-based policy approaches. Furthermore, as the findings highlight the role of residential and environmental quality in reducing deprivation, it would be beneficial to broaden the policy focus to include these aspects. Future studies on material and social deprivation could explore different cities or statistical regions, and/or investigate whether the determinants of deprivation vary across different time periods.

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