Extended Abstract

This study investigates the relationship between socioeconomic status (SES) and the utilization of municipal tax discounts, conceptualized as an outcome of financial and health literacy, across 28 settlements in northern Israel between 2011 and 2023. Drawing on 349 settlement-year observations, the analysis explores whether the socioeconomic ranking of a municipality influences the volume and proportion of applications for municipal property tax discounts. While conventional wisdom might predict a monotonic relationship—where higher SES corresponds to greater utilization of benefits due to superior literacy and institutional capacity—the findings reveal a more nuanced, non-linear association. Using quadratic regression models within both Poisson and linear frameworks, the study identifies a robust U-shaped relationship between SES and discount application rates, suggesting the simultaneous operation of opposing structural and behavioral forces.

Health literacy and financial literacy are critical determinants of individual well-being and access to social rights. Extensive literature demonstrates that individuals with higher income and education levels are better equipped to navigate bureaucratic systems, interpret eligibility criteria, and claim public benefits. Conversely, disadvantaged populations often face informational and procedural barriers that prevent them from accessing rights to which they are legally entitled. In the context of municipal taxation, this dynamic is particularly salient. Property tax discounts and exemptions are frequently tied to income thresholds, disability status, age, or other socio-medical conditions. Applying for such benefits typically requires awareness of eligibility, completion of formal documentation, and, in some cases, the ability to challenge administrative rejections. Thus, application rates for municipal tax discounts may serve as a proxy for the effective exercise of financial and medical literacy at the local level.

The empirical setting of this study is Mate Asher municipality and its surrounding settlements in northern Israel. The dataset includes, on average, 336 real estate assets per settlement and 73 discount applications annually. Approximately 22.15% of asset owners apply for municipal discounts, though this proportion varies substantially across settlements, ranging from 2.33% to 44.64%. Socioeconomic rankings (CLUSTER2021) range from 3 to 9 on a national scale of 1 (lowest) to 10 (highest), with a mean of 6.91 and a left-tailed distribution, indicating a concentration of settlements in higher SES categories. This variation provides a suitable empirical basis for testing whether SES influences discount utilization in a linear or non-linear manner.

The methodological contribution of this study lies in its explicit modeling of potential non-monotonicity. Rather than assuming a constant marginal effect of SES, the analysis incorporates both linear and squared SES terms. In the count model, Poisson regression is employed to account for the discrete and non-negative nature of application counts. The baseline specification includes the number of real estate assets as a scale control and a time trend to capture longitudinal dynamics. An alternative specification replaces the linear time trend with year-specific dummy variables to allow for non-linear temporal fluctuations, including potential pandemic-related effects. A second set of regressions uses the percentage of applicants relative to total assets as the dependent variable, eliminating the need to control for property stock.

The results consistently demonstrate a statistically significant U-shaped relationship between SES and both the number and percentage of discount applications. In the Poisson framework, the squared SES coefficient is positive and significant, while the linear SES coefficient is

negative and significant, confirming convexity. Predicted values show that the number of applications declines from approximately 71 at SES level 3 to a minimum of 67 at SES level 5, before rising sharply to 88 at SES level 9. When scaled by property stock, the proportion of applicants decreases from 22.42% at SES 3 to roughly 20% at SES 5, then increases to over 26% at SES 9. The minimum point consistently occurs around SES level 5, representing mid-range municipalities.

This U-shaped pattern reflects two countervailing mechanisms. In low-SES settlements, economic need is substantial, generating strong incentives to seek financial relief. However, these municipalities often face institutional constraints, including limited administrative capacity and fewer social workers available to assist residents with complex application procedures. Despite these barriers, the acute need for financial relief may still drive relatively high application rates. In high-SES settlements, by contrast, residents benefit from greater financial and medical literacy. They are more likely to be aware of their eligibility, understand procedural requirements, and possess the confidence and skills to navigate bureaucratic systems effectively. Even if municipal support is less proactive in these areas, residents' individual capabilities compensate for any institutional gaps.

Mid-SES settlements, however, appear to fall into an "institutional-literacy gap." In these municipalities, residents may not experience the same acute financial pressure as those in lower-SES areas, reducing the urgency of applying. At the same time, they may lack the advanced literacy skills characteristic of higher-SES communities. Additionally, municipal administrations in these areas may not prioritize outreach or assistance to the same extent as in poorer municipalities. The combined result is a relative trough in application rates. This finding challenges simplistic assumptions that disadvantage monotonically predicts underutilization and suggests that both structural capacity and individual capability must be considered simultaneously.

Temporal analysis reveals modest annual growth in application rates, with statistically significant increases observed in 2021 and 2022. These years correspond to the tail end of the COVID-19 pandemic, suggesting that economic shocks and heightened financial vulnerability may increase demand for municipal relief. The robustness checks using the percentage specification confirm the persistence of the U-shaped SES effect even when controlling for time non-linearly and removing insignificant covariates through stepwise estimation.

The study situates these empirical findings within broader theoretical and policy debates. Previous research on Jerusalem documented disparities in municipal tax discount utilization between West and East Jerusalem, potentially reflecting informational inequalities and differential access to administrative support. The present analysis extends this perspective by demonstrating that disparities may also emerge within a relatively homogeneous regional context, depending on SES composition. Moreover, the findings resonate with international discussions on equitable access to public benefits, including the U.S. Affirmative Fair Housing Marketing Plan and debates over the effectiveness of fair housing enforcement in reducing discrimination.

Beyond individual literacy, municipal tax discount patterns may also intersect with territorial and legal dynamics. Scholars of Israeli planning and land policy have emphasized how municipal governance structures can reproduce spatial and ethno-national inequalities through land allocation, zoning, and public resource distribution. Although the current study focuses primarily on socioeconomic variation rather than ethnic differentiation, it acknowledges that tax policy operates within a broader institutional landscape shaped by historical and political factors. Municipal tax relief may therefore function not only as a social safety net but also as a mechanism embedded in wider territorial governance frameworks.

From a policy standpoint, the results suggest differentiated interventions. In low-SES settlements (levels 3–5), the primary challenge appears to be institutional capacity. Municipalities in these areas may lack sufficient staff or resources to assist residents in completing applications. Government-level intervention could help bridge this gap, for example by funding additional social workers or deploying structured volunteer programs. The authors propose engaging university students as part of community service or practicum programs to assist residents with documentation and procedural requirements. Such initiatives could simultaneously enhance civic engagement and reduce administrative barriers.

In mid-SES settlements, targeted awareness campaigns may be particularly valuable. Residents in these areas may qualify for benefits but fail to apply due to limited knowledge or perceived stigma. Simplifying application procedures, expanding digital access, and conducting outreach through community organizations could improve utilization rates. In high-SES settlements, maintaining transparent and efficient administrative processes remains important, though the primary driver of high application rates appears to be individual literacy rather than institutional intervention.

The implications of this research extend beyond Israel. Rapid urbanization and the expansion of informal settlements worldwide have heightened concerns about equitable access to municipal services. In contexts where legal status, documentation, or infrastructure are fragile, barriers to claiming tax relief or social benefits may be even more pronounced. The U-shaped relationship identified here invites comparative research to determine whether similar patterns arise in other national settings or whether institutional design can mitigate mid-range utilization gaps.

Methodologically, the study demonstrates the importance of relaxing linearity assumptions in socioeconomic research. A purely linear specification would have obscured the turning point at mid-SES levels and potentially led to misleading policy conclusions. By incorporating quadratic terms and validating results across alternative specifications, the analysis provides a more refined understanding of how SES interacts with administrative behavior and individual capability.

In conclusion, this study reveals that the relationship between socioeconomic status and municipal tax discount applications is neither strictly positive nor strictly negative, but convex. Both the number and proportion of applications decline from low to mid SES and then increase significantly at higher SES levels. This U-shaped pattern reflects the interplay between economic need, institutional capacity, and financial and medical literacy. Policy responses should therefore be calibrated to the specific constraints faced by different SES groups. Strengthening municipal assistance in disadvantaged areas, enhancing awareness and outreach in mid-range communities, and ensuring procedural fairness across all settlements are essential steps toward improving equitable access to municipal benefits. By highlighting the complex and non-linear dynamics underlying benefit utilization, this study contributes to the literature on urban economics, public finance, and social equity, and offers actionable insights for policymakers seeking to close gaps in the effective exercise of social rights.