

Health and Financial Literacy: Does the socioeconomic status of the city affect the volume of requests for municipal tax discounts?

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Received: 31 December 2024/Accepted: 18 April 2026

Abstract. This study examines the correlation between municipal tax discount applications and the socio-economic status (SES) of 28 settlements in northern Israel, utilizing household data from 2011 to 2023. Employing quadratic regression to allow for non-linear relationships, the findings indicate that in settlements with low to medium SES rankings (3-5), municipalities should enhance support and education to improve residents' medical and financial literacy, addressing the underutilization of available benefits. However, these municipalities often face resource constraints that limit their capacity to assist. In contrast, higher SES settlements benefit from residents' increased literacy, facilitating successful applications. The study suggests government intervention, such as engaging student volunteers, to bolster medical literacy and support in lower SES areas, ensuring broader access to rights and services.

Key words: Financial Literacy; Medical Literacy; Municipal Tax Discounts; Socio Economics Status; Urban and Regional Economics

1 Introduction

Health and financial literacy, essential for informed decision-making, significantly affect life outcomes, particularly for marginalized populations. Socioeconomic status (SES) plays a key role, with higher education and income linked to better health and financial outcomes, while lower SES often creates barriers to accessing essential information (Brooks et al. 2012, Shaw et al. 2016, Cohen et al. 2023, CDC 2024). Individuals from lower-income backgrounds face challenges in health literacy, worsening disparities (Cohen et al. 2023, Hu, Morgan 2024), and often lack financial literacy, limiting their ability to navigate financial systems and access resources like municipal tax discounts¹.

In that context, Shemer (2017) found that in Jerusalem, a higher percentage of housing units in West Jerusalem, predominantly inhabited by the higher-SES Jewish population, received municipal tax discounts compared to East Jerusalem, home to the lower-SES Arab population (further discussion on municipal tax collection in Jerusalem can

¹Medical literacy is linked to the comprehension that individuals with chronic illnesses or health conditions may qualify for municipal tax exemptions or discounts.

Table 1: Descriptive Statistics

Variable	Description	Mean	Std.	Min	Max
Count Applicants	Number of Application for Municipal Tax Discounts	73	34	2	172
Count Real Estate	Number of Real Estate Assets	336	145	53	931
Percent	Count Applicants $\div$ Count Real Estate	0.2215	0.0815	0.0233	0.4464
CLUSTER 2021	SES Ranking of a settlement on a scale of between 1 (the lowest) to 10 (the highest)	6.91	1.30	3	9
(Year - 2011)	0, 1, 2, ..., 12 for Year = 2011, 2012, 2013, ..., 2023	6.21	3.68	0	12

Notes: The sample refers to 349 observations and 28 settlements in the northern part of Israel spanning from 2011 to 2023.

be found in [Arbel et al. 2017, 2018, 2019](#)). This disparity may stem from two opposing forces:

On the one hand, the lower a municipality's socioeconomic status, the fewer absolute resources it has per resident, resulting in greater harm to its residents. Specifically, in such situations, the municipality lacks adequate resources to assist with tasks like filling out application forms for municipal tax discounts or exemptions, by employing social workers for instance.

On the other hand, municipalities with higher socioeconomic status tend to have residents with higher levels of medical and financial literacy. This literacy encompasses a range of skills and knowledge, including a clear understanding of their rights, the ability to navigate complex bureaucratic systems, and the competence to apply for various benefits and services. Moreover, these individuals are often better equipped to advocate for themselves, effectively challenging decisions or rejections related to their applications. This enhanced capacity not only empowers them to access available resources but also contributes to a more equitable distribution of benefits within the community.

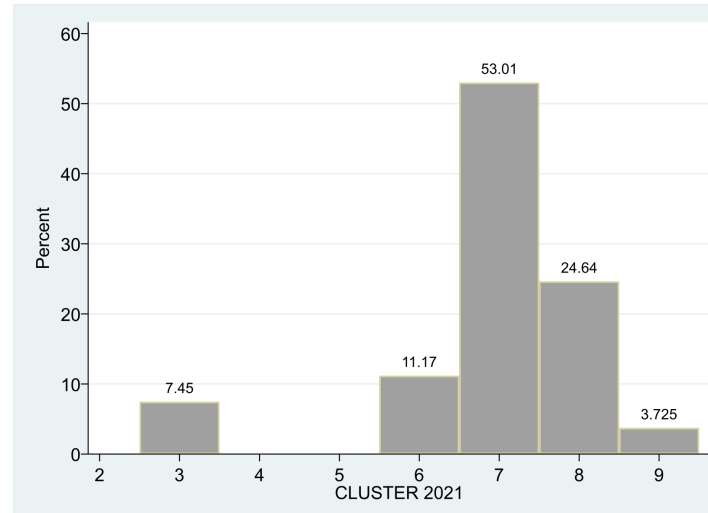
This study aims to examine the relationship between municipal tax discount applications and the socio-economic ranking of settlements. It hypothesizes that higher income and socio-economic status are associated with better utilization of information about health and financial benefits. A distinctive aspect of this research is its use of quadratic regression, which relaxes two assumptions of the linear model: monotonic change and constant slope. The quadratic structure of the model allows for an analysis of which of the two opposing forces prevail: the lack of resources to assist the disadvantaged population or the population's level of medical and financial literacy.

The analysis is based on data from 28 settlements in northern Israel, including household-level information collected from 2011 to 2023. On average, the study examines 336 assets and 73 discount applications per settlement. The findings reveal a U-shaped relationship between the number of discount applications and the settlements' SES. This trend is further supported by curve fitting, where the dependent variable is the percentage of discount applications relative to the number of real estate assets in each settlement.

The remainder of this article is structured as follows: Section 2 presents the descriptive statistics of the variables used in the empirical model. Section 3 outlines the methodology, including the empirical models, while Section 4 discusses the estimation results. Section 5 offers a robustness test, and the final section concludes with a summary.

2 Descriptive Statistics

Table 1 summarizes the descriptive statistics for the variables used in the empirical model. The dataset includes 349 observations from 28 settlements in northern Israel from Mate Asher Regional Council between 2011 and 2023. The dependent variable, "Count Applicants", indicates the number of applications for municipal tax discounts, with an average of 73 applications and a standard deviation of 34. The number of applications ranges from a minimum of 2 to a maximum of 172.



Notes: The graph displays the histogram of the SES rankings of the settlements. The median and modal is 7.00, while the mean is 6.91, with a skewness of -1.765844, indicating a left-tailed distribution. A normality test strongly rejects the null hypothesis of a normal distribution, as the calculated adjusted Chi-square value of 96.49 significantly exceeds the 1% critical Chi-square value of 9.21 for two degrees of freedom, considering both skewness and kurtosis.

Figure 1: Histogram of CLUSTER2021

The spatial description of Mate Asher Regional Council is given in the Appendix (Figures A.1-A.3). These Figures provide a spatial and temporal framework for the analysis, illustrating the geographic distribution of the case-study settlements and their historical development from 1950 to 2023, which is essential for interpreting the observed variation in socioeconomic status and municipal tax discount applications.

- Figure A.1:** Mate Asher – Location in Israel
 This map provides a national-level view of Mate Asher Regional Council’s geographic placement within Israel, helping contextualize its regional significance in the northern part of the country.
- Figure A.2:** 3D Topographical-style Map of Mate Asher Regional Council
 This map presents the terrain and elevation features of Mate Asher using a simulated 3D topographic style. It highlights the physical landscape that influences settlement patterns, infrastructure development, and municipal planning.
- Figure A.3:** 3D Historical Development Map of Mate Asher Regional Council with Integrated Geographic Coordinates
 This map illustrates the spatial expansion of settlements within Mate Asher from 1950 to 2023, overlaid on a simulated terrain. The geographic axes reflect the actual latitude (32.9963° N) and longitude (35.1511° E), providing spatial context relevant to the study’s analysis of socioeconomic patterns and municipal tax discount dynamics.

Returning to Table 1, regarding the total number of real estate assets (“Count Real Estate”), the sample mean is 336, with a standard deviation of 145. The minimum and maximum values are 53 and 931, respectively. Additionally, the ratio of “Count Applicants” to “Count Real Estate” reveals that, on average, 22.15% of asset owners applied for a municipal discount, with a standard deviation of 8.15%. This ratio ranges from a minimum of 2.33% to a maximum of 44.64%.

Figure 1 illustrates the histogram of “CLUSTER2021”, depicting the Socioeconomic Status (SES) ranking of a settlement on a scale from 1 (lowest) to 10 (highest). The median and modal is 7.00, while the mean is 6.91, with a skewness of -1.765844, indicating a left-tailed distribution. A normality test strongly rejects the null hypothesis of a normal

distribution, as the calculated adjusted Chi-square value of 96.49 significantly exceeds the 1% critical Chi-square value of 9.21 for two degrees of freedom, considering both skewness and kurtosis.

3 Methodology

Consider the following model:

$$E(\text{Count Applicants}) = \exp(\alpha_1 \text{CLUSTER2021_sq} + \alpha_2 \text{CLUSTER2021} + \alpha_3 \text{Count Real Estate} + \alpha_4 (\text{Year} - 2011) + \alpha_5) \quad (1)$$

where “Count Applicants” is the dependent variable, “CLUSTER2021_sq”, “CLUSTER2021”, “Count Real Estate” and “(Year - 2011)” are the independent variables, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ are parameters.

Poisson regression is employed to model the counts of an event’s occurrences (e.g. Wooldridge 2009, pp. 595–600). Applications of the Poisson distribution include diverse events such as the pattern of hits by buzz bombs launched on London during World War II (Clarke 1946), the number of soldiers killed by horse kicks in the Prussian army (von Bortkiewicz 1898), and telephone calls resulting in a wrong number (Thorndike 1926). It has also been used to model disease incidence, most commonly over time but sometimes in spatial contexts.

An alternative form of the empirical model is represented by the following equation:

$$\text{Percent} = \beta_1 \text{CLUSTER2021_sq} + \beta_2 \text{CLUSTER2021} + \beta_3 (\text{Year} - 2011) + \beta_4 + \mu \quad (2)$$

In this equation, “Percent” serves as the dependent variable, while “CLUSTER2021_sq”, “CLUSTER2021”, and “(Year - 2011)” are the independent variables. The coefficients $\beta_1, \beta_2, \beta_3, \beta_4$ are parameters, and μ represents the random disturbance term. Since “Percent” is defined as the ratio of “Count Applicants” to “Count Real Estate”, incorporating “Count Real Estate” as an independent variable becomes unnecessary, unlike in equation (1).

According to Chiang, Wainwright (2005, pp. 229-231), the general form of a quadratic function is $y = ax^2 + bx + c$, where $a \neq 0$. Its second derivative is $2a$. Since this second derivative always has the same sign as the coefficient a , the function forms a U-shaped curve with a global minimum at $x = \frac{-b}{2a}$, $y = \frac{-b^2+4ac}{4a}$ when $a > 0$, and an inverted U-shaped curve with a global maximum at the same point when $a < 0$.

In this study, y represents the number of discount applicants (“Count Applicants”) in equation (1) and “Percent” in equation (2); x^2 corresponds to “CLUSTER2021_sq”, and x represents “CLUSTER2021”, with coefficients $a = \alpha_1$; $b = \alpha_2$ and $c = \alpha_5$ (eq. 1) and $a = \beta_1$; $b = \beta_2$ and $c = \beta_4$ (eq. 2). Compared to the linear model, the quadratic model captures more complex relationships. Since an increase in applications is expected with the socioeconomic status (SES) of the settlement, the quadratic model offers flexibility by not assuming a strictly monotonic relationship between SES and the number of applications.

Finally, note that the variable “(Year - 2011)” = 0, 1, 2, ..., 12 in equations (1) and (2) captures the linear time trend of the discount applications. To relax the linearity assumption and permit non-linear relationships, an alternative version of the empirical models replaces “(Year - 2011)” with dummy variables “DUM Year 2011”, “DUM Year 2012”, ..., “DUM Year 2023”, where each dummy variable equals 1 if (Year - 2011) = 0, 1, 2, ..., 12 and zero otherwise.

4 Results

Table 2 presents the outcomes derived from Poisson regression analyses. Column (1) displays the outcomes based on equation (1), while Column (2) presents the results when

Table 2: Poisson Regressions

Variables	(1) count applicants	(2) count applicants
CLUSTER 2021 square	1.016*** (0.00951)	1.016*** (0.00832)
CLUSTER 2021	0.851** (0.0324)	0.852** (0.0298)
count real-estate properties	1.002*** (<0.01)	1.002*** (<0.01)
(Year-2011)	1.012** (0.0146)	- -
Dum Year 2012	-	1.002 (0.986)
Dum Year 2013	-	1.048 (0.605)
Dum Year 2014	-	1.079 (0.403)
Dum Year 2015	-	1.110 (0.265)
Dum Year 2016	-	1.112 (0.262)
Dum Year 2017	-	1.114 (0.254)
Dum Year 2018	-	1.061 (0.529)
Dum Year 2019	-	1.094 (0.342)
Dum Year 2020	-	1.135 (0.174)
Dum Year 2021	-	1.250** (0.0146)
Dum Year 2022	-	1.191* (0.0654)
Dum Year 2023	-	1.100 (0.350)
Constant	41.45*** (<0.01)	40.03*** (<0.01)
Observations	349	349
Pseudo R-Square	0.384	0.389
LR-Chi2	251	327.1
d.f.	4	15

Notes: The coefficients of the variables are presented in their exponentiated form. Robust P-Values are given in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

the variable (Year - 2011) is substituted with dummy variables “DUM Year 2011”, “DUM Year 2012”, ..., “DUM Year 2023”. All coefficients have been exponentiated, and robust p -values are provided in parentheses.

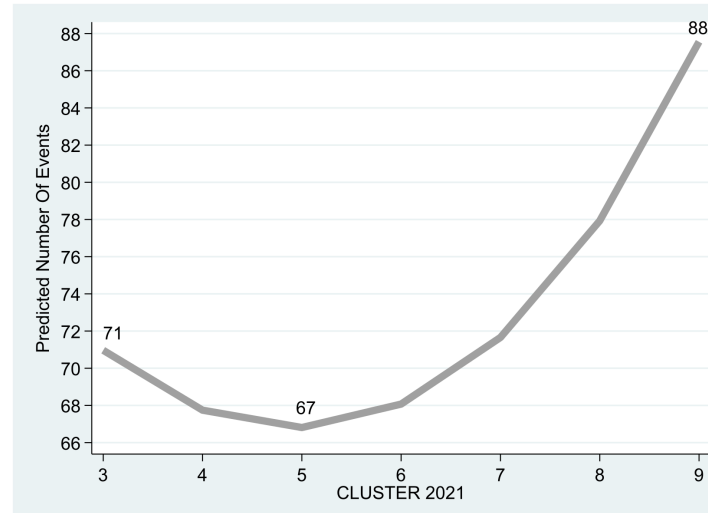
As is evident from Table 2, the baseline number of projected discount applications is 40-41, where each additional real-estate property is expected to raise the number of discount applications by 0.2% ($p < 0.01$). Consequently, with the sample mean of 336 real estate properties, the anticipated growth rate with respect to the baseline is 95.68% and the anticipated number of discount applications is 80². Moreover, based on the estimation outcomes derived from equation (1), the number of applications is projected to increase annually by 1.2% ($p = 0.0146$). Given the sample mean duration of 6.21 years, this suggests a cumulative increase over the period by 7.689%.³ Combining the two effects, namely the average number yields an expected number of 86 discount applications.⁴

Figure 2 illustrates the projected number of discount applications relative to the socio-economic status (SES) of the settlement. This visualization is derived from the data presented in column (2) of Table 2. The graph reveals a U-shaped trend, with the expected number of applications decreasing from 71 at SES 3 to a low of 67 at SES 5,

²The calculation is $1.002^{336} - 1 = 95.68\%$ and $41 \times 1.002^{336} = 80.23$.

³The calculation is $1.012^{6.21} - 1 = 7.689\%$

⁴The calculation is $41 \times 1.002^{336} \times 1.012^{6.21} = 86.4$



Notes: Based on the outcomes obtained from Column (2) in Table 2 at the sample mean. Clusters 4 and 5 are out of sample.

Figure 2: Anticipated number of discount applicants vs. socio-economic ranking

and then increasing to a peak of 88 at SES 9. The U-shaped curve fit is corroborated by the data presented in Table 2, where the p -values for the coefficients of “CLUSTER2021_sq” and “CLUSTER2021” range from 0.00832 to 0.00951 and from 0.0298 to 0.0324, respectively.

The findings can be seen as the result of two opposing forces. On one hand, as socioeconomic status (SES) rankings rise, municipalities show a declining willingness to assist individuals – whether by informing them of their rights or helping with application processes. On the other hand, higher SES levels are associated with improved medical and financial literacy. The latter force encompasses three key components: 1) awareness of one’s rights (e.g., eligibility for property tax discounts), 2) the capability to exercise those rights (e.g., submitting an application), and 3) the ability to defend those rights if the municipality rejects the application for technical reasons.

Interestingly, Shemer (2017) revealed that 39% of housing units in West Jerusalem, predominantly inhabited by the Jewish population, received municipal tax discounts, compared to only 26% in East Jerusalem, predominantly inhabited by the Arab population⁵. This disparity may reflect information gaps between the two geographic areas. In that context, the Affirmative Fair Housing Marketing Plan (AFHMP) in the United States aims to ensure that individuals with similar income levels in a given housing market have equitable access to a comparable range of housing options, regardless of race, religion, color, national origin, sex, disability, or familial status. The primary responsibility of a real estate agent is to provide potential buyers with information about available properties and facilitate their physical access to those homes. However, Galster, Ross (2007) found no evidence linking reductions in sales market discrimination to fair housing enforcement activities, indicating that real estate agents may not have felt compelled to conceal discriminatory practices.

5 Robustness Test

To assess the robustness of the results, Table 3 presents findings where the dependent variable is substituted with “Percent” – defined as the ratio of the number of applications to the number of assets in each settlement. Column (1) utilizes the empirical model specified by equation (2), which incorporates a linear time variable. Column (2) applies

⁵For an analysis of the disparity between West and East Jerusalem, see, for example, Alperovich, Deutsch (1996). Further discussion on municipal taxation in Jerusalem can be found in Arbel et al. (2017, 2018, 2019).

Table 3: Regression Analysis

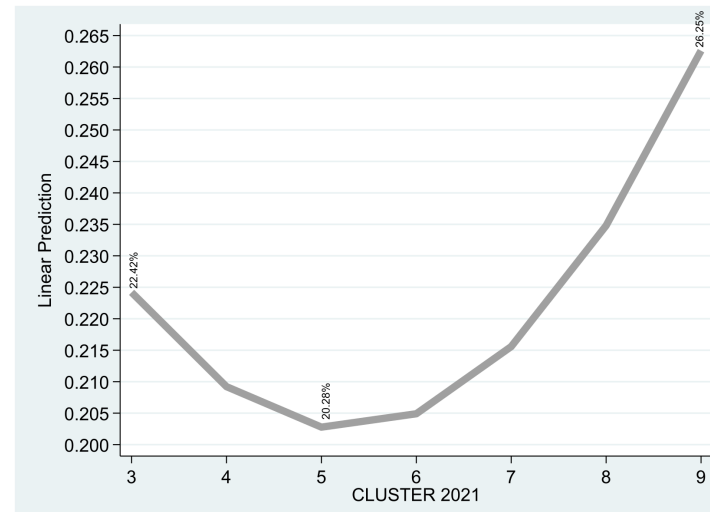
VARIABLES	(1) Full Model Percent	(2) Full Model Percent	(3) Stepwise Model Percent
CLUSTER 2021 square	0.00431*** (0.00362)	0.00433*** (0.00388)	0.00428*** (0.00371)
CLUSTER 2021 (Year-2011)	-0.0454*** (0.00814)	-0.0457*** (0.00856)	-0.0449*** (0.00905)
Dum Year 2012	0.00261** (0.0259)	-	-
Dum Year 2013	-	0.00691 (0.781)	-
Dum Year 2014	-	0.0170 (0.467)	-
Dum Year 2015	-	0.0195 (0.403)	-
Dum Year 2016	-	0.0225 (0.347)	-
Dum Year 2017	-	0.0185 (0.444)	-
Dum Year 2018	-	0.0181 (0.455)	-
Dum Year 2019	-	0.00799 (0.735)	-
Dum Year 2020	-	0.0154 (0.513)	-
Dum Year 2021	-	0.0260 (0.267)	-
Dum Year 2022	-	0.0497** (0.0327)	0.0306** (0.0436)
Dum Year 2023	-	0.0402* (0.0893)	-
Constant	0.306*** (7.15×10^{-10})	0.301*** (1.96×10^{-8})	0.318*** (1.75×10^{-10})
Minimum Point $\frac{-b}{2a}$ $\frac{-b^2+4ac}{4a}$	5.26 0.1864	5.277 0.1804	5.235 0.20
Observations	349	349	349
Cities	28	28	28
F-Value	5.303	1.468	4.942
d.f. numerator	3	14	3
d.f. denominator	345	334	345

Notes: Robust p -Values are given in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

the full model, which accounts for a non-linear time trend by including time dummy variables. Lastly, Column (3) provides the stepwise estimation of the full model from Column (2), systematically excluding variables with insignificant coefficients based on a 5% significance threshold (e.g., [Wooldridge 2009](#), p. 678).

According to Table 3, the baseline projected “Percent” variable ranges from 30.1% ($p=1.96 \times 10^{-8}$) to 31.8% ($p=1.75 \times 10^{-10}$). This suggests that, in the baseline year (2011), the expected percentage of discount applications relative to the total number of assets in a settlement with the lowest socio-economic status, graded as zero, falls between 30.1% and 31.8%. When a linear time trend is applied, the projected annual growth in discount applications is 0.261% ($p = 0.0259$). However, when time dummy variables are included, the findings indicate a projected increase of 3.06% ($p = 0.0436$) to 4.97% ($p = 0.0327$) in 2021 and 4.02% ($p = 0.0893$) in 2022 compared to the baseline year of 2011. This period coincides with the tail end of the COVID-19 pandemic, which may explain the rise in discount applications. Finally, as shown in the calculation at the bottom of Table 3, the minimum percentage of applications occurs at $SES = 5$, ranging from 18.04% to 20% of the total number of assets in 2011.

Figure 3 depicts the projected “Percent” variable, defined as the ratio of discount applications to the number of assets, in relation to the socio-economic status (SES) of



Notes: Based on the outcomes obtained from Column (3) in Table 2. Clusters 4 and 5 (the black dots) are out of sample.

Figure 3: Percentage of discount applicants in relation to the number of real-estate properties vs. socio-economic ranking

the settlement. Derived from the data in column (3) of Table 2, once again the graph demonstrates a U-shaped trend. The “Percent” variable decreases from 22.42% at SES 3 to a minimum of 20.28% at SES 5 before rising to a maximum of 26.26% at SES 9. This U-shaped relationship is further supported by the data in Table 3, where the p-values for the coefficients of “CLUSTER2021_sq” and “CLUSTER2021” range from 0.00362 to 0.00388 and from 0.00814 to 0.00905, respectively.

6 Discussion

The findings of this study reveal a nuanced, U-shaped relationship between the socioeconomic status (SES) of settlements and the volume of municipal tax discount applications. This pattern suggests that both low- and high-SES areas exhibit higher application rates, albeit for different reasons. In low-SES settlements, the need for financial relief is more acute, yet institutional support is often limited. In contrast, high-SES settlements benefit from residents’ greater financial and health literacy, enabling them to navigate bureaucratic systems more effectively.

This dual dynamic highlight a critical policy gap: mid-SES settlements may be underserved, lacking both sufficient municipal resources and resident capacity to access available benefits. These insights underscore the importance of targeted interventions that consider both structural and individual-level barriers to benefit utilization.

In the context of the northern Israeli settlements examined in this study, these dynamics are likely to operate in a more subtle and indirect manner. While the case studies do not involve large-scale informal housing or explicit land dispossession, they are situated in rural and peri-urban spaces where municipal institutions play a central role in mediating access to public resources. In this sense, the findings complement the work of Kedar, Yiftachel (2000) by suggesting that territorial governance may also shape everyday fiscal practices – such as tax relief – through differential institutional responsiveness rather than through formal planning decisions alone.

At the municipal level, the observed U-shaped relationship between SES and municipal tax discount applications reflects deeper institutional and governance dynamics. Municipalities differ substantially in their fiscal capacity, administrative infrastructure, and political priorities, all of which shape not only the formal availability of tax relief mechanisms but also residents’ effective access to them. In low-SES settlements, economic need is typically high, yet municipal capacity to assist residents – through out-

reach, administrative guidance, or social services – is often limited. This mismatch can lead to underutilization of tax discounts despite formal eligibility.

In contrast, higher-SES settlements benefit from both stronger municipal institutions and residents with greater bureaucratic competence. These residents are more likely to be aware of their entitlements, to navigate complex application procedures successfully, and to contest rejections when necessary. As a result, higher application rates in these settlements reflect not only need, but also an enhanced capacity to claim rights.

The relative decline in applications observed in mid-SES settlements suggests an institutional “missing middle.” These municipalities often lack both the extensive welfare-oriented support directed at low-SES areas and the administrative efficiency and resident capacity characteristic of high-SES localities. Residents in these settlements may therefore face compounded barriers: limited municipal assistance combined with only moderate levels of financial and health literacy. This distinction between formal eligibility and practical accessibility reinforces the argument that rights-based policies require active institutional mediation to be effective.

From a broader territorial perspective, municipal tax policies cannot be viewed as purely technocratic instruments. As demonstrated in the literature on legal geography and settler municipal governance (e.g., Kedar, Yiftachel 2000), planning, fiscal, and administrative tools often operate within wider regimes of spatial control and resource allocation. In the Israeli context, these dynamics have been shown to produce differentiated access to public resources across settlement types and population groups. While the present study focuses on socioeconomic status rather than explicit political or ethnic variables, the observed patterns are consistent with the notion that municipal tax relief may also be shaped by embedded territorial logics and governance priorities.

Importantly, the issue of equitable access to municipal services is not confined to Israel. Globally, urbanization is accelerating, and informal settlements are expanding, particularly in developing regions. These areas often lack formal infrastructure, legal recognition, and access to public services, including tax relief programs. The challenges identified in this study – limited literacy, bureaucratic complexity, and resource constraints – are magnified in informal contexts, underscoring the international relevance of the findings.

Future research should explore how these dynamics manifest in informal settlements, where the absence of formal governance structures may exacerbate disparities in access to financial and health-related benefits. Comparative studies across countries or regions could help determine whether the U-shaped relationship observed here is context-specific or indicative of broader socioeconomic patterns. Additionally, qualitative research could provide deeper insights into residents’ experiences and perceptions, complementing the quantitative findings presented in this study.

7 Summary and Conclusions

The objective of this study is to reveal the relationship between discount applications to municipal tax and the socio-economic ranking of the settlements. One would anticipate a better exploitation of information regarding health and financial benefits following a higher level of income and socio-economic status. A unique feature of this study is the use of the quadratic regression. This methodology relaxes two assumptions associated with the linear model: 1) the monotonic change and 2) constant slope.

The study is based on information collected from 28 settlements located in northern Israel, encompassing household-level information gathered between 2011 and 2023. On average, it analyses 336 assets and 73 discount applications. The findings indicate a U-shaped relationship between the number of discount applications and the settlement’s SES. This U-shaped trend is further corroborated by a curve fit where the dependent variable is the percentage of discount applications relative to the number of real estate assets in each settlement.

In conclusion, the findings highlight several key points: 1) In cities with low to medium socioeconomic status (SES) rankings (4 and 5), municipalities should actively provide support and education to enhance medical and financial literacy, thereby addressing the

market failure associated with un-utilised rights. 2) In cities with low SES rankings (3-5), municipalities face diminishing capacity to assist due to limited resources, such as a reduced need for social workers. Conversely, cities with higher SES rankings demonstrate that improved financial and medical literacy significantly enhances residents' ability to complete applications. Therefore, government intervention is essential to promote medical literacy in low-SES cities. One effective approach could be leveraging student volunteers to assist residents in completing applications, ensuring broader access to rights and services.

In this context, the urban economics literature highlights the conflict of interest between local and federal governments (White 1986, Mills, Hamilton 1994, McDonald, McMillen 2011). While local governments focus primarily on the residents within their jurisdictions, federal governments are expected to address the needs of the entire population at the state or national level.

Declarations

Ethical Approval: Not applicable. This research does not require an IRB approval since it does not involve any experiment or manipulation of subjects.

Consent to Participate: Not applicable. Each row in the dataset used in the study contains information about a different settlement.

Consent to Publish: Not applicable. Each row in the dataset used in the study contains information about a different settlement.

Funding: None of the authors received any direct or indirect funding for this manuscript.

Competing Interests: None of the authors have potential conflicts of interest, financially or non-financially, directly or indirectly related to this work.

Availability of data and materials: The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Authors' Contributions

All authors contributed to the study conception and design, data collection and analysis, the first draft and comments on previous versions of the manuscript.

Acknowledgements

The authors are grateful to Yifat Arbel and Amichai Kerner for helpful comments.

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A Appendix:

Figure A.1: Mate Asher: Location in Israel

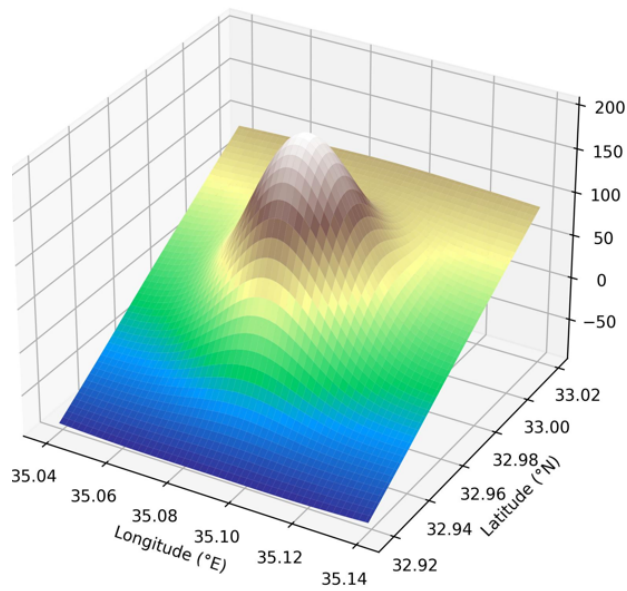
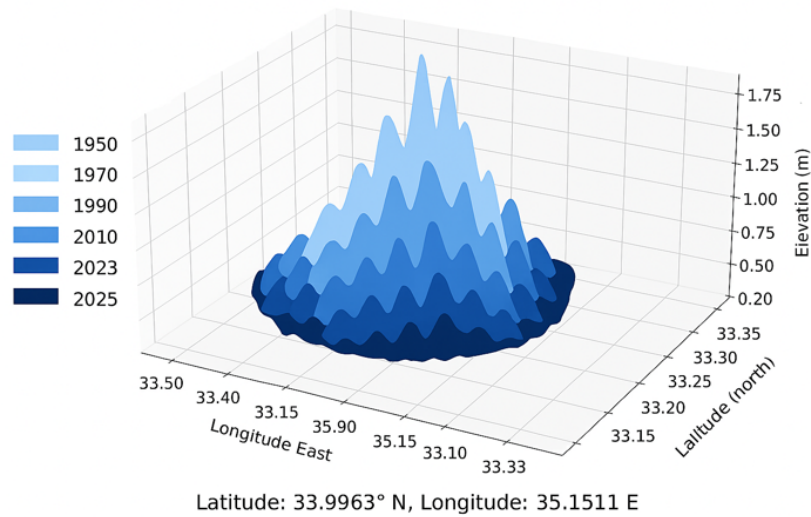


Figure A.2: 3D Topographical-style Map of Mate Asher



Note: This map illustrates the spatial expansion of settlements within Mate Asher from 1950 to 2023, overlaid on a simulated terrain. The geographic axes reflect the actual latitude (32.9963° N) and longitude (35.1511° E), providing spatial context relevant to the study's analysis of socioeconomic patterns.

Figure A.3: 3D Historical Development Map of Mate Asher Regional Council with Integrated Geographic Coordinates

