



## Satisfaction and Socio-Spatial Segregation in Urban Transformation: The Case of Mamak-Ankara

Seyedhadi HAGHRAHMANI<sup>1,\*</sup>, Özge YALÇINER ERCOŞKUN<sup>2</sup>

<sup>1</sup> 0000-0003-4928-5185, Department of Remote Sensing and Geographic Information Systems Eskişehir

<sup>2</sup> 0000-0003-2734-0374, Faculty of Architecture, Department of City and Regional Planning, Gazi University, Ankara, Türkiye

### Article Info

Received: 22/12/2024

Accepted: 28/09/2025

### Keywords

*Socio-Spatial  
Segregation,  
Urban Regeneration,  
Mass Housing (TOKİ),  
Mamak Housing Project,*

### Abstract

The aim of this study is to measure satisfaction with the urban regeneration project in the Altınoğuz (Yatıkmusluk) neighborhood, Mamak, Ankara, with respect to decreasing socio-spatial segregation and to ascertain whether it was successful or not in enhancing the living conditions and fostering social cohesion of residents. A mixed-method approach was adopted; in addition to qualitative data collection techniques, a survey was conducted in the TOKİ Yatıkmusluk Altınevler area, and the data were analyzed using SPSS. The data were acquired from the questionnaire applied to a total of 161 neighbors. Results have shown that 59.6% of the residents are satisfied with the urban regeneration project. In addition, there was a high rate of satisfaction relating to educational services at 71.4%, healthcare services at 62.1%, children's playgrounds at 55.9%, and social facilities at 46%. However, limitations include a shortage in parking spaces and small-sized residential units. In addition, while satisfaction increased with age and education, no substantial association existed between residents' satisfaction and their employment or income. This can be considered evidence that cultural and social issues outweigh the economic issues regarding the resident's satisfaction in this poor neighborhood, while some still prefer the house they lived in earlier in other settlements as that gives them more social contacts and a traditional way of life. The study concludes that urban regeneration projects would have more significant success if residents' socio-cultural dimensions received more attention and strategies were developed to better adapt them to apartment living.

## 1. INTRODUCTION

Within the last couple of decades, urban regeneration projects have emerged as a key strategy in addressing social and physical challenges in cities. Most urban regeneration projects around the world seek to enhance the quality of life, reduce socio-spatial segregation, and develop sustainable residential environments in many developing countries [1]. However, when the social and cultural results of such interventions are investigated, it has often been seen that a lack of congruence with the cultural preferences and needs of the residents resulted in dissatisfaction and social problems arising [2]. This problem is most evident in low-income and peripheral areas, as the population here has diverse cultural and social attributes.

In Türkiye, urban regeneration has been a cornerstone of the country's urban development policies since the early 2000s. However, previous studies have shown that the success of these projects depends on various factors, including the socio-cultural characteristics of residents, community participation in the planning process, and the provision of public services [3]. In this context, the present study focuses on the Yatıkmusluk-Altınoluk project to investigate these factors in one of Ankara's largest and most significant informal settlement areas. In 2007, in the Mamak district of Ankara, there was started an urban regeneration project called Yatıkmusluk-Altınoğuz, part of a much larger initiative to improve the urban fabric of the area and provide modern residential infrastructure [4]. This 22-hectare area project has completed 2,000 housing units so far, which were allocated to beneficiaries. The acquisition and construction of the remaining 500 units are continuing along with the completion of cultural, social, and

\* Corresponding author: Arc.rahmany@gmail.com

commercial facilities [4]. Unlike ordinary residential areas, Mamak's urban regeneration involves transitioning informal settlements (gecekondu) into formal housing, which inherently disrupts existing social networks and spatial hierarchies. This study's focus on such dynamics distinguishes it from analyses of conventional neighborhoods. The above case has been selected for this study as it is one of the projects that have greatly impacted the social and physical transformation of the neighborhood. Once regarded as peripheral settlement, substantial parts of the area were being redeveloped; thus, the assessment of residents' satisfaction was an urgent necessity along with the investigation of socio-spatial changes caused by the regeneration efforts [4].

The Mamak district has been equipped with all facilities and social services that would contribute to improving the standard of living for the citizens of Ankara. It also consists of 3 children's playgrounds within an area of 2,500 square meters, and this means that per capita comes at 1.5 square meters per child, below the national urban planning standards. Besides, Mamak has two healthcare centers that have been established for providing primary healthcare services. The capacity for providing the service is one center per 30,000 residents, and this caters to the basic health needs of the community. Educational facilities are made up of five primary and secondary schools, accommodating about 3,200 students and have a per capita provision of 1.2 square meters of educational space per student, which is a moderate provision. For parking, there is a total of four parking facilities in the neighborhood, able to hold 500 vehicles at one time, and this accounts for 0.8 parking spaces per household, which is highly insufficient due to the growing demand in this area [4].

For the past few decades, Mamak has become an area of informal settlement due to great migration streams between the years 1970-1990; about 90% of the district is unplanned and settlement-like structures [5]. Such conditions and along with structural inadequacies and deficient public services created the need for early urban redevelopment. The formation of Mamak as an independent district in 1983 was a solution to these problems. Since then, large-scaled development projects have been done in this area. So, by 2008, 65 neighborhoods were counted within the district boundaries. It officially became the largest district of Ankara with 607,878 residents according to the 2015 census [4].

The purpose of this research is to explore the satisfaction among residents who have occupied their dwellings in mass housing (TOKİ) projects located in the Mamak district, while also analyzing the influence of those projects on the arguments regarding reducing socio-spatial segregation. This study will specifically focus on the TOKİ projects in the Altınöğüz (Yatıkmusluk) neighborhood, aiming to examine their social and spatial impacts and provide a general picture of how these interventions affect urban life [6]. While resident satisfaction measures the immediate perceived benefits of the regeneration project, socio-spatial segregation captures its broader societal impact. This study looks at whether better living conditions like easier access to services also help bring down social divides, which is one of the main goals of urban regeneration in neighborhoods like Mamak."

## **2. THEORETICAL FRAMEWORK**

### **2.1. Resident satisfaction with housing**

Housing satisfaction in urban regeneration contexts reflects both material conditions (e.g., unit size) and symbolic meanings (e.g., cultural displacement). This study focuses on TOKİ projects in the Altınöğüz (Yatıkmusluk) neighborhood, examining their social and spatial effects to provide an overall picture of how these interventions influence urban life [9]. Globally, urban regeneration has been criticized for displacing low-income residents [2] and eroding cultural ties [22]. Although mass evictions were avoided in Mamak, the project still produced socio-cultural consequences, notably the disruption of social networks, reflecting similar challenges observed in Latin America [23] and North Africa [21].

Resident satisfaction with housing and the residential environment is considered one of the most critical issues in urban studies and disciplines alike. It is recognized as a key indicator of the success of urban regeneration projects, and it refers to a multi-dimensional concept involving physical design, neighborhood facilities, quality of neighborly relations, and safety among others [7]. There are many

physical, social, and psychological factors affecting satisfaction, which was discussed extensively in the literature [8-9]. Amerigo and Aragonés [9] proposed a conceptual framework for the evaluation of housing satisfaction. The authors emphasized an interaction between individuals and their residential environments. This model involved cognitive and emotional evaluations through comparisons between actual and ideal characteristics of the environment. This model represents housing assessment as based on subjective and social factors that affect the overall satisfaction of an individual.

While TOKİ units are privately owned—unlike rental-based social housing abroad—this research focuses on how ownership models in regeneration affect satisfaction, a gap in existing comparisons. Table 1 contrasts global regeneration challenges (e.g., displacement, cultural erosion) with Ankara's TOKİ model, highlighting gaps in addressing socio-cultural needs—a focus of this study.

**Table 1.** Literature review

Author	Title	Research Approach	Analysis Method	Data Used	Finding
[21]	Cultural heritage tourism and urban regeneration: The case of Fez Medina	Mixed-method (Qualitative-Quantitative)	Content analysis, interviews	Field data, interviews with stakeholders	Urban regeneration without displacing local residents can balance economic and social sustainability.
[22]	The fading light of urban regeneration in a sewing neighborhood in Seoul	Urban anthropology	Ethnographic observations and historical analysis	Ethnographic and cultural analysis	Social and political conflicts between government administration and local cooperatives complicate urban regeneration projects.
[11]	Can financial transactions reveal the change in social fabric triggered by urban regeneration?	Socio-economic	Transaction data analysis and new metrics	Credit card and structural data	Urban regeneration in some areas leads to reduced social mobility and increased demographic segregation.
[23]	Lifestyle migration and socio-spatial segregation in urbanizing landscapes	Comparative-case study	Comparative and cross-sectional analysis	Social, demographic, and geographic data in two Latin American regions	Lifestyle migration to medium-sized cities intensifies socio-spatial segregation and inequality.
[24]	Exploring urban segregation dynamics: A hub-based agent model	Social agent modeling	Simulation and policy-based analysis	Survey data and residential preferences	Individual preferences and varying policies uniquely affect urban segregation and residents' satisfaction.
[25]	Urban transformations in intermediate cities under neoliberal urbanism	Urban analysis	Document analysis and cartography	Spatial data and neoliberal urban policies	Urban development under neoliberal policies exacerbates socio-spatial segregation.
[26]	Has urban expansion alleviated working-residential spaces segregation?	Multi-scalar	Spatial and social data analysis	Location-based social and spatial data	Urban expansion has failed to reduce work-residence segregation and, in some cases, has worsened it.
[27]	Road infrastructure expansion and socio-spatial fragmentation in peri-urban zones	Case study	Mixed methods (qualitative and spatial)	Combined data from infrastructure projects	Road expansion displaces low-income residents and reduces social interactions in peri-urban areas.
[28]	From walking to staying: The impact of spatial qualities on socio-spatial segregation	AI-based GeoAI framework	Deep learning models and spatial data analysis	Spatial data and deep learning models	Context-specific public space design can foster social interactions and reduce segregation.
[29]	Participatory governance for the temporary use of urban abandoned areas	Socio-spatial	Surveys and interviews	Local stakeholder opinions and participatory governance practices	Temporary use of abandoned urban areas with participatory governance enhances social capital.
[30]	Socio-spatial segregation in residents' daily life	Longitudinal	Time-series and spatial data analysis	Activity data of residents in Beijing	Physical environment changes have a greater impact on socio-spatial segregation than traditional policies.

## 2.2. Housing satisfaction and housing transformation

Improving people's housing satisfaction is a key concept in the context of housing transformation. It refers to how the decisions made by occupants regarding the arrangement of their housing over time

affect their overall satisfaction. This aspect is assessed through post-occupancy evaluation (POE), which contributes to future housing design and housing policy development. In this study, qualitative techniques such as field research, interviews with local headmen (muhtars), and photographic documentation were employed. In addition, a quantitative technique, a structured questionnaire survey, was conducted to evaluate residents' levels of satisfaction and their housing decisions. (Figure1) Previous studies have shown that standard public housing layouts were often restrictive and failed to accommodate residents' individual needs and preferences, which contributed to widespread dissatisfaction. The abovementioned was due to the poor attention given to the societal and economic factors in the layout of the housing. The studies indicate that a lack of identity in public housing design, coupled with the failure to accommodate residents' preferences, is a key factor contributing to dissatisfaction [7, 10]. Seyedkazemi et al. [11] reported that residents of Malaysian low-cost housing were generally satisfied with local amenities, yet they expressed dissatisfaction with the condition of their dwellings, a concern not evident in the present study area. Research conducted in Jordan highlights the importance of outdoor spaces in residential design, showing that daily use of these areas forms a fundamental aspect of residents' experiences. In contrast, the self-developed areas of Dhaka have consistently exhibited heterogeneous organization and layout of houses, even during transitions, a characteristic not observed in public housing sectors (Khan, 2014b). These findings reveal the potential link between housing satisfaction and the degree of user involvement or consideration in the housing process [12].

Several studies have been done about the satisfaction of residents in urban renewal activities. For example, a research study conducted by Mohit et al. [7] in Malaysia was an excellent example of demonstrating that the factors, such as the layout of houses, easy access to public transportation, social amenities, and the social environment, significantly determine residents' satisfaction. Waziri et al. [13] inspected the correlation among physical, social, and neighborhood services and residents' satisfaction in Nigeria and got identical findings as to visiting. Cultural differences were the main reasons of the changes in resident satisfaction being explored by Isah et al. [12] in public housing in Nigeria. The study revealed that aspects of family life and interactions within the neighborhood are key factors influencing residents' satisfaction and perceptions of their homes. To this end, the findings derive from the backdrop for cultural and social variables in public housing.

In Turkey, housing satisfaction depends largely on cultural adaptability [12]; however, TOKİ's standardized designs frequently fail to accommodate this [10]. This gap exacerbates socio-spatial divides, as seen in Ankara's peripheral neighborhoods [5].



**Figure 1.** Mamak Ankara before housing transformation [4]



**Figure 2.** Mamak Ankara after housing transformation [4]

### 2.3. Socio-spatial segregation

The problem of socio-spatial segregation poses a major challenge in post-socialist and developing cities. Kährlik [14] studied Tallinn, Estonia, and discovered that housing privatization and decreased government involvement have worsened socio-spatial segregation. In Lima, de Córdova et al. [15] highlighted the complexity of socio-spatial segregation patterns, noting that while some areas have developed into new urban centers, segregation at the macro level is still clearly visible.

In exploring the relationship between spatial structure and social segregation, Khan [16] concluded that urban decay is associated with increased social segregation. This study, conducted in Famagusta,

Northern Cyprus, demonstrated that cities with more deteriorated spatial patterns face greater social segregation. Similarly, Feldmane [17] analyzed the impact of demographic, economic, and migratory factors on residents' satisfaction in segregated urban environments in Latvia.

## 2.4. Urban regeneration projects in Ankara

Urban regeneration projects in Ankara, particularly in areas like Mamak, have been implemented to address issues arising from informal settlements and to improve residents' quality of life [18]. These projects have typically focused on areas with high rental values due to public-private partnerships, but there has been significant criticism regarding the prioritization of higher-income groups and the neglect of the needs of low-income classes [5, 19].

Topkaya [20] found that if housing projects focus only on how the area looks, they often miss important social and cultural issues, which can lead to the same problems appearing in other parts of the city. Similarly, in this study, there was no clear link between people's income or jobs and how satisfied they were, likely because TOKİ projects provide uniform housing that makes individual differences less noticeable. Overall, studies suggest that successful interventions require comprehensive approaches that address both the spatial and social dimensions of urban regeneration.

## 2.5. Research gap

While existing literature has extensively explored urban regeneration projects, including their impacts on socio-spatial segregation and residents' satisfaction, critical gaps remain unaddressed. Notably, much of the existing research has concentrated on urban renewal in large metropolitan centers or higher socio-economic areas, leaving the dynamics of informal and low-income neighborhoods relatively underexplored. This gap is particularly important, as neglecting these areas may overlook critical socio-spatial processes that differ from those observed in well-studied urban contexts. Additionally, recent studies highlight the socio-cultural complexities and unintended consequences of regeneration projects, such as displacement, inadequate community engagement, and cultural disconnection, but rarely examine these issues in peripheral areas like Mamak, Ankara.

Earlier research often focused on economic efficiency [5] or the risk of people being displaced [2], but this study looks at how satisfaction and segregation are linked in the outskirts of Ankara, responding to Topkaya's [20] call to study these issues with attention to local culture. Also, prior studies examine segregation [14] or satisfaction [10] in isolation, few explore their interplay in regeneration contexts (e.g., [17]). This study bridges that gap by asking: Does higher resident satisfaction correspond with lower levels of segregation, and if so, under what conditions does this relationship hold?

## 3. STUDY AND METHODOLOGY

This study employed a quantitative survey-based approach to examine resident satisfaction and the socio-spatial impacts of an urban regeneration project in the Altınoğuz (Yatıkmsluk) neighborhood of Mamak, Ankara. Data were collected through structured, face-to-face questionnaires administered to randomly selected household heads. The survey covered demographic information, satisfaction levels, and residents' perceptions of post-relocation changes. Statistical methods, including ANOVA, regression, and correlation analyses, were used to identify significant patterns and relationships among variables.

### 3.1 Study area

The study area was selected due to its critical urban and social challenges, which made it a priority for one of Ankara's largest urban regeneration projects. Altınoğuz (Yatıkmsluk) neighborhood is located in the Mamak district of Ankara Province (Figure 3). It was formerly one of the city's most extensive informal settlement areas, characterized by unplanned, unregistered, and unzoned housing. It also had one of the highest crime rates in Ankara. The neighborhood lacked basic infrastructure such as water supply, sewage systems, and emergency access routes, making it highly vulnerable in cases of fire or medical

emergencies. Illegal electricity and water usage were widespread, and the absence of public amenities such as parks, mosques, and community facilities further deepened social exclusion. The area presented a visually degraded landscape at the heart of the city, with severely deteriorated housing stock that posed a significant risk in the event of earthquakes or other natural disasters. These conditions not only created a disconnected and marginalized community but also prompted local authorities to implement a large-scale urban transformation initiative to improve living standards and integrate the area into the broader urban fabric.



**Figure 3.** Mamak located on Ankara [4]

### 3.2 Methodology

For the present study, a quantitative research method based on a survey was employed to assess resident satisfaction and the impact of the urban regeneration project on socio-spatial segregation in the Altınoğuz (Yatıkmusluk) neighborhood of Mamak. The target population of this research included all residents of this neighborhood. Data were collected using a structured questionnaire that was completed face-to-face with household heads. The questionnaires consisted of four main sections: (1) demographic information and housing ownership status; (2) level of satisfaction with the urban regeneration project; (3) assessment of positive and negative changes in life after moving to the apartments; and (4) residents' suggestions for improving the project.

Variables Analyzed:

- **Dependent:** Resident satisfaction (Likert scale).
- **Independent:** Age, education, income, ownership status, access to services.

To ensure accurate data collection, random sampling was conducted, and local village heads assisted the researchers in identifying completed houses. The surveys were conducted between September 1, 2015, and May 31, 2016. While data was collected in 2015–2016, recent work (e.g., Seyedkazemi et al., 2024) confirms TOKİ's ongoing affordability issues, suggesting our findings remain pertinent. Future studies should replicate this work with updated datasets. Out of the 170 households surveyed, 9 questionnaires were discarded due to incorrect information, resulting in a final sample of 161 valid questionnaires (equivalent to 94%). This sample size was considered sufficient based on established sampling principles for quantitative research, the population size of the Altınoğuz (Yatıkmusluk) neighborhood, and the expected margin of error, allowing for reliable statistical analysis, including ANOVA, regression, and correlation tests. Random sampling was used to enhance representativeness and reduce potential sampling bias. The demographic characteristics of the sample were thoroughly documented: the average age of

respondents was 49.3 years, with a gender composition of 52.8% female and 47.2% male. In terms of education, 36.6% of respondents had primary education, while 26.7% were illiterate. Additionally, 37.9% of respondents were employed, while 62.1% were unemployed. The average monthly income was reported to be 1,500 Turkish Lira.

For data analysis, several statistical methods were employed, including ANOVA to test differences between group means, regression analysis to examine relationships between dependent and independent variables, and correlation analysis to measure the strength and direction of linear relationships. These analyses were conducted using appropriate statistical software, and all data were recorded and maintained confidentially to ensure participant privacy. This research methodology aims to achieve reliable results in evaluating satisfaction and the socio-spatial effects of the urban regeneration project by considering demographic characteristics and employing statistical tools.

#### 4. RESULTS

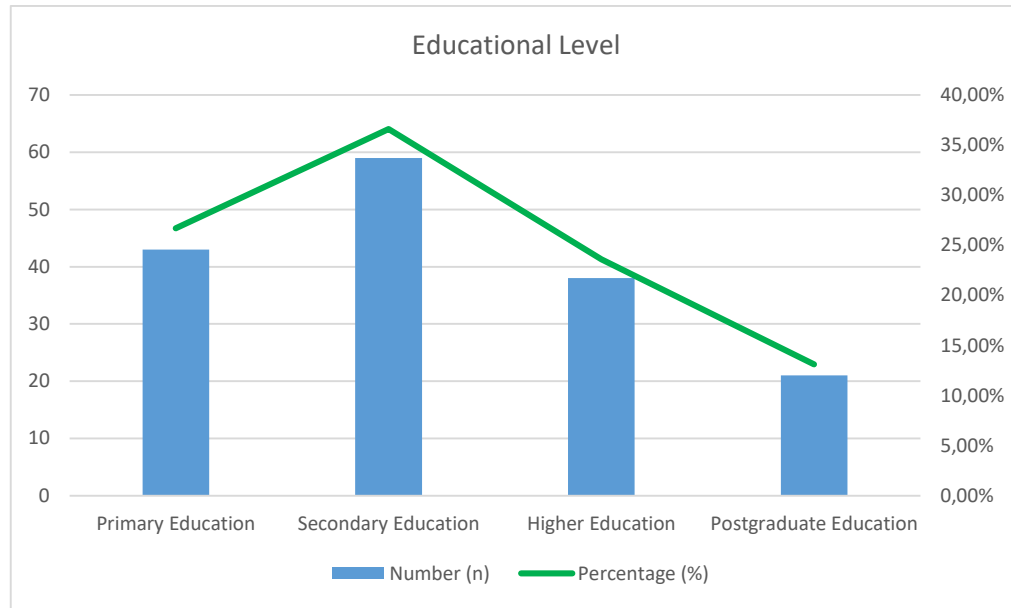
This section summarizes the main findings of the study, including both descriptive and statistical analyses. It presents the demographic profile of respondents and examines resident satisfaction with the urban regeneration project. Differences in satisfaction across ownership types and other variables were tested using ANOVA and Pearson correlation. The results highlight key factors affecting satisfaction and provide insights into the socio-spatial outcomes of the project.

The results of the resident satisfaction surveys conducted as part of this study are presented in the table below. These findings provide a quantitative overview of respondents' attitudes toward the urban regeneration project and form the basis for further statistical analysis (Table 2) and also in Figure 2 shows the distribution of respondents by educational level.

**Table 2.** Descriptive statistics

Characteristic	Number (n)	Percentage (%)
<b>Gender</b>		
Female	85	52.80%
Male	76	47.20%
<b>Average Age</b>	49.3 years	-
<b>Education Level</b>		
Primary Education	43	26.70%
Secondary Education	59	36.60%
Higher Education	38	23.60%
Postgraduate Education	21	13.10%
<b>Employment Status</b>		
Unemployed	61	37.90%
Employed	100	62.10%
<b>Ownership Status</b>		
Tenure Rights	81	50.30%
Owner	60	37.30%
Renter	20	12.40%
<b>Average Monthly Income</b>	1,500 Turkish Lira	-





**Figure 4.** Descriptive statistics, educational level

Among the respondents, 81 individuals (50.3%) had tenure rights, 60 individuals (37.3%) were owners, and 20 individuals (12.4%) were renters. Table 3 presents the overall satisfaction levels of residents based on their housing ownership status.

**Table 3.** Overall resident satisfaction with the urban regeneration project

Ownership Status	Satisfied	Dissatisfied	Total
Tenure Rights	48 (59.3%)	33 (40.7%)	81 (100%)
Owner	34 (56.7%)	26 (43.3%)	60 (100%)
Renter	14 (70.0%)	6 (30.0%)	20 (100%)
Total	96 (59.6%)	65 (40.4%)	161 (100%)

Overall, 59.6% of residents (96 individuals) expressed satisfaction with the urban regeneration project, while 40.4% (65 individuals) were dissatisfied. A higher percentage of renters (70.0%) reported satisfaction compared to owners (56.7%) and those with tenure rights (59.3%). While 59.6% satisfaction exceeds Istanbul's rates (Ozüekren & Berköz, 2003), this may reflect Mamak's baseline deprivation. Open-ended responses reveal underlying tensions (e.g., 35.4% criticized unit sizes), aligning with Ibem & Amole's (2013) findings on unmet cultural needs in standardized housing.

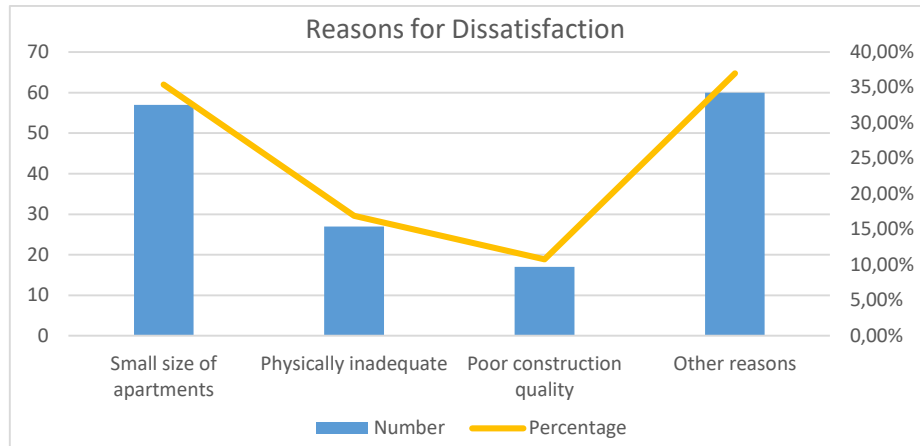
An analysis of the reasons for dissatisfaction revealed that 35.4% of residents were dissatisfied with the small size (50m<sup>2</sup> and less) of the residential units. Additionally, 16.9% considered the units physically inadequate, and 10.8% rated the construction quality of the apartments as poor. Approximately 37% expressed dissatisfaction for various reasons, including social issues and high maintenance costs (Table 4 and Figure 5).

Open-ended responses cited 'loss of communal spaces' (12%) and 'high utility costs' (9%) as key concerns, aligning with cultural and economic critiques of TOKİ housing.

**Table 4.** Reasons for resident dissatisfaction with the urban regeneration project

Reasons for Dissatisfaction	Number	Percentage
Small size of apartments	57	35.40%
Physically inadequate	27	16.90%
Poor construction quality	17	10.80%
Other reasons	60	37.00%
Total	161	100%





**Figure 5.** Reasons for resident dissatisfaction with the urban regeneration project

More than half of the respondents (61.7%) preferred living in the settlements over living in the new apartments, citing reasons such as greater comfort (18.5%) and stronger social relationships (18.5%). Additionally, 14.8% mentioned more freedom in their previous living situation. On the other hand, the advantages of living in the new apartments included being more modern (25.9%) and having a more orderly environment (17.3%). However, 24.7% of residents mentioned increased costs, and 23.5% cited increased debts as negative consequences.

To examine satisfaction differences among the three ownership groups (tenure rights, owners, renters), a One-Way ANOVA test was employed. The results indicated that there was no significant difference in the mean satisfaction levels among the different groups ( $F=1.225$ ,  $p=0.297$ ), suggesting that ownership status did not have a significant impact on overall resident satisfaction (Table 5).

**Table 5.** Comparison of resident satisfaction by ownership status

Ownership Status	Mean Satisfaction	Standard Deviation	F	Sig.
Tenure Rights	3.58	1.01	1.225	0.297
Owner	3.43	1.1		
Renter	3.8	0.89		
Overall	3.54	1.03		

Pearson correlation analysis was conducted to investigate the relationship between satisfaction and demographic variables. The results revealed a positive and significant correlation between satisfaction and age ( $r=0.189$ ,  $p<0.05$ ) as well as education level ( $r=0.223$ ,  $p<0.01$ ). However, no significant correlation was found with employment status ( $r=-0.092$ ,  $p>0.05$ ) and monthly income ( $r=0.071$ ,  $p>0.05$ ) (Table 6).

**Table 6.** Correlation coefficients of satisfaction with demographic variables

Variable	Pearson Correlation Coefficient (r)	Significance Level (Sig.)
Age	0.189*	0.016
Education Level	0.223**	0.005
Employment Status	-0.092	0.246
Monthly Income	0.071	0.375

Note:  $p < 0.05$  indicates statistical significance.  $p < 0.01$  indicates high statistical significance.

## 5. DISCUSSION

Satisfaction disparities (e.g., 71.4% for education vs. 46% for social facilities) reveal persistent spatial inequities. Even though the area is physically integrated, cultural separation continues, as 18.5% of people missed the strong social bonds of their old neighborhoods, similar to what was found in Lima [15]. These results indicate that as age and education increase, resident satisfaction with the urban regeneration project also increases. However, economic factors such as employment status and income do not have a significant impact on the level of satisfaction. These findings highlight the importance of individual characteristics such as age and education in influencing residents' attitudes toward urban regeneration projects.

The project reduced physical segregation by integrating services (e.g., schools, clinics), yet cultural preferences for informal settlements (18.5% cited stronger social ties) reveal lingering socio-spatial divides. This underscores the need for culturally sensitive planning.

The findings of this study revealed that more than half (59.6%) of the residents of the Altınoğuz (Yatıkmusluk) neighborhood were satisfied with the urban regeneration project. This satisfaction level is somewhat higher compared to previous findings in Türkiye. For instance, Ozüekren and Berköz [31] reported approximately 50% satisfaction in their studies on urban regeneration projects in Istanbul. Similarly, Yıldız [32] found a satisfaction rate of 44% in his assessment of an urban regeneration project in Ankara. The difference in satisfaction levels may be related to the unique characteristics of the project examined in this study. While previous research often focused on urban regeneration in major Turkish cities, this study concentrated on a project in a low-income, peripheral area of Ankara. In this neighborhood, the former residents were predominantly from low-income, less-educated backgrounds and had migrated from rural areas, living in settlements -like conditions. Therefore, relocating these individuals to new apartment units significantly improved their quality of life, contributing to a higher level of satisfaction.

Additionally, the analysis indicated that resident satisfaction increased with age and education level. This finding aligns with previous studies that suggest individual characteristics such as age, education, and income can have a substantial impact on housing and residential environment satisfaction [7, 13]. However, unlike previous studies, this research found no significant association between employment status, monthly income, and satisfaction. This may be due to the relative economic homogeneity in this low-income neighborhood, which limited the influence of these variables. It appears that cultural and social characteristics of the residents had a greater impact on their satisfaction levels than economic factors. A recent study in Ankara [11] confirms that post-regeneration financial strains persist, suggesting our 2016 findings on cost-related dissatisfaction remain relevant. Future work should revisit Mamak to assess long-term trends.

Additionally, the results also showed that some people prefer to live in settlements. Topkaya's [20] study on urban regeneration projects in Ankara has demonstrated that social and cultural reasons often encouraged some residents to prefer something about settlements life.. Observations at the site showed that the neighborhood, mostly made up of former rural migrants, had strong neighborly connections and a familiar social atmosphere carried over from informal settlements. The transition to new apartment housing represented not only a physical relocation but also a significant psychological adjustment, as residents were confronted with the challenges of adapting to a contrasting urban lifestyle. The importance of taking account of the social and cultural dimensions when designing and carrying out urban regeneration projects is highlighted in this finding. In sum, the major contribution of this study was to gain more insight into the factors influencing resident satisfaction and to show the differences with similar projects in large urban centers (in Türkiye). The results of this study may provide urban planners and policymakers a guide in their design and implementation of regeneration projects to enhance the quality of urban residents' lives.

## 6. CONCLUSION

This study studied the achievement of urban regeneration project in Mamak, in the Altınoğuz (Yatıkmusluk) neighborhood, Ankara, through the assessment of the project and its impact on the decrease of socio spatial segregation among residents. Our findings showed that 59.6 percent of the residents were satisfied with the project. Particularly elevated were satisfaction levels regarding educational services (71.4%), health care (62.1%), children's play areas (55.9%) and social facilities (46%). In spite of this, it was reported that some deficiencies, namely, the absence of parking and the size of the housing units were poor.

The paradox of high satisfaction amid cultural estrangement underscores regeneration's dual nature: physical improvements may mask unresolved socio-spatial divides. This aligns with [16] assertion that housing policies must prioritize 'living with transformation' over mere infrastructure delivery.

The results suggest that urban regeneration can help enhance the quality of life while reducing the socio-spatial segregation. However, some residents still preferred to live in settlements because of cultural and social differences as well as a difference in lifestyle of residents living in settlements in contrast with life in an apartment. Moreover, the analysis showed that satisfaction increased with age and education attainment, but was not correlated with employment status or income. The finding indicates that in this low-income and peripheral neighborhood, economic factors have a lesser impact on satisfaction than cultural and social factors.

The study area, formerly known as a high-crime zone referred to as 'Çinçin', has undergone a clean-up process. However, it is common for former squatter residents to eventually leave the area in favor of detached housing with gardens, as this lifestyle better aligns with their preferences.

The results suggest overall that urban regeneration projects indeed raise residents' quality of life, thus creating successful projects; however, a more thorough consideration of the social and cultural aspects and residents' adaptation to the new environment is necessary to improve the success rate of urban regeneration projects. These differences need to be understood by urban planners who then have to develop strategies to increase satisfaction and reduce socio-spatial segregation within local communities.

To increase user satisfaction, it is necessary to improve green spaces, bicycle paths, playgrounds, education and health services, public transportation, and the material quality of the housing units. Residential environments can be planned to meet residents' needs and preferences by offering necessary services or through educational and cultural programs which will help residents to adapt to this new lifestyle.

For instance, urban regeneration areas such as Hulme in the UK and Freiburg in Germany feature insulated, energy-efficient, and child-friendly housing. These international examples provide valuable insights for designing more inclusive and sustainable regeneration models.

Although the study included renters and tenure-right holders to capture diverse perspectives, future research could isolate homeowners to assess whether satisfaction trends remain consistent across ownership types, thereby refining policy recommendations.

### 4.1. Research recommendations

Given residents' dissatisfaction with unit sizes (35.4%) and cultural attachment to settlements, we recommend:

- Prioritizing larger units in future TOKİ projects.
- Community programs to ease transitions into apartment living, as 18.5% valued ancestral social ties.

Future research in the area of urban regeneration projects in low income and peripheral zones of Türkiye ought to deepen its understanding through comparative studies developed at the regional levels. The

studies of such kind can analyze how the locals meet with the regeneration attempts paying attention to the existence and the importance of local socio-economic and cultural features. Also, it is crucial to study the social and cultural responses of regeneration projects. Most informed insights on the structural aspects of cultural difference and on the importance of getting cultural policy right could be provided by understanding how residents adapt to their new environments, including how they cope with lifestyle adjustments and social integration.

Beyond this, the capacity of institutional actors (governmental and non-governmental) should also be considered in order to determine their contribution to enhancing resident participation, and enable the regeneration process. These dimensions may be explored in order to identify mechanisms of building community interaction and promoting equitable benefits distribution. Future studies should focus on the long-term effects of regeneration projects to see how they impact people's quality of life and whether they help reduce social and spatial divides. These evaluations can be useful to build the frameworks of more sustainable and inclusive urban regeneration initiatives.

#### **4.2. Practical recommendations**

Some basic measures should be taken so as to better the urban regeneration projects to improve residents' quality of life in a practical manner. Having suitable play areas for children of all ages in regenerated neighborhoods can greatly support their wellbeing and growth. Moreover, because it enhances the quality and capacity of social and welfare matters, they become able to give the needs of their society and quality of life. It encourages social cohesion and a feeling of belonging. The next important step is setting up shops and local markets for residents' daily needs, making life easier and boosting the local economy. And, additionally, green spaces and local gardens like can preserve traditional agricultural practices, continuing social life and preserving cultural heritage for the future.

Educational and cultural programs should then be formulated to help apartment residents to adapt to their new surroundings and to address the socio-cultural adjustments needed in apartment living. If we are to halt regeneration, we need to reduce the housing installment payment to correspond to that of low-income households, in order to prevent financial constraints from triumphing, where regeneration actually renders assistance. Finally, sharing the choice on who is to be residential complex managers with residents might enhance service quality and make communities participate in the processing of their living spaces. Finally, these recommendations provide a total framework for planners and developers designing urban regeneration initiatives that successfully dismantle socio-spatial segregation and foster.

#### **Acknowledgement**

We thank the respected reviewers for comments that greatly improved the manuscript.

## REFERENCES

- [1] Turok, I., & McGranahan, G, Urbanization and economic growth: The arguments and evidence for Africa and Asia. *Environment and Urbanization*, 25(2), 465–482, (2013).
- [2] Van Gent, W. P. C., Musterd, S., & Ostendorf, W, Disentangling neighbourhood problems: Area-based interventions in Western European cities. *Urban Studies*, 56(9), 1871–1889, (2019).
- [3] Erman, T, Urban transformation: A tale of two cities in Türkiye. *Urban Studies*, 49(14), 3127–3146, (2012).
- [4] Ankara Municipality, Meeting with municipal zoning and urbanization officials, (2017).
- [5] Dündar, Ö, Mass housing in Ankara: Problems and policies. *Cities*, 23(6), 462–474, (2006).
- [6] Haghrahmani, S, Kentsel dönüşümde memnuniyet ve sosyo-mekansal ayrışma: Ankara Mamak Örneği (Master's thesis, Fen Bilimleri Enstitüsü), (2017).
- [7] Mohit, M. A., Ibrahim, M., & Rashid, Y. R, Assessment of residential satisfaction in newly designed public low-cost housing in Kuala Lumpur, Malaysia. *Habitat International*, 34(1), 18-27, (2010).
- [8] Ukoha, O. M., & Beamish, J. O, Assessment of residents' satisfaction with public housing in Abuja, Nigeria. *Habitat International*, 21(4), 445-460, (1997).
- [9] Amerigo, M., & Aragones, J. I, A theoretical and methodological approach to the study of residential satisfaction. *Journal of environmental psychology*, 17(1), 47-57, (1997).
- [10] Ibem, E. O., & Amole, D, Residential satisfaction in public core housing in Abeokuta, Ogun State, Nigeria. *Social Indicators Research*, 113(1), 563-581, (2013).
- [11] Seyedkazemi, S., Daş, Z. Ö., Özbay, A. E. Ö., Bozkaya, B., & Balcisoy, S, can financial transactions reveal the change in social fabric triggered by urban regeneration? *Cities*, 153, 105292, (2024).
- [12] Isah, A. D., Khan, T. H., & Davis, H, identifying contextual socio-cultural attributes as predictors of user satisfaction: A study in transformed public housings in Nigeria. *Asian Social Science*, 11(25), 165, (2015).
- [13] Waziri, A. G., Yusof, N. A., & Salleh, A. G, Residential satisfaction in low-cost housing. *Procedia-Social and Behavioral Sciences*, 153, 359-368, (2014).
- [14] Kährrik, A, Socio-spatial residential segregation in post-socialist cities: the case of Tallinn, Estonia. Tartu: Tartu University Press, (2006).
- [15] de Córdova, G. F., Fernández-Maldonado, A. M., & del Pozo, J. M, Recent changes in the patterns of socio-spatial segregation in Metropolitan Lima. *Habitat International*, 54, 28-39, (2016).
- [16] Khan, T. H, Living with transformation: Self-built housing in the city of Dhaka. Cham Heidelberg New York Dordrecht London: Springer, (2014).
- [17] Feldmane, L, Socio-Spatial Differentiation of Residential Satisfaction in Jelgava (Doctoral dissertation, University of Latvia), (2020).
- [18] Dostoğru, Ö, Kentlerin tarihsel ve kültürel kimliklerinin korunmasında kentsel dönüşüm projeleri [Urban transformation projects in preserving the historical and cultural identity of cities]. *Planlama*, 2, 57-64, (2007).

- [19] Bayram, B, Ankara'da TOKİ projelerinin sosyo-ekonomik etkileri [Socio-economic impacts of TOKİ projects in Ankara]. *Planlama*, 2, 101-112, (2006).
- [20] Topkaya, Ö, Kentsel yenileme ve gecekondu dönüşüm politikaları: Ankara örneği [Urban renewal and squatter transformation policies: The case of Ankara]. *TMMOB Şehir Plancıları Odası Yayınları*, Ankara, Türkiye, (2014).
- [21] Boussaa, D., & Madandola, M, Cultural heritage tourism and urban regeneration: The case of Fez Medina in Morocco. *Frontiers of Architectural Research*, (2024).
- [22] Kim, J, The fading light of urban regeneration in a sewing neighbourhood in Seoul: Anthropological perspectives. *Cities*, 150, 105013, (2024).
- [23] Van Noorloos, F., & Steel, G, Lifestyle migration and socio-spatial segregation in the urban (izing) landscapes of Cuenca (Ecuador) and Guanacaste (Costa Rica). *Habitat International*, 54, 50-57, (2016).
- [24] Turgut, Y., & Lazarova-Molnar, S, Exploring urban segregation dynamics: A hub-based agent model integrating preferences, social interactions, and policy interventions. *Cities*, 156, 105576, (2025).
- [25] Martinez, U., Barbosa, V., & Thoene, U, Urban transformations in intermediate cities under the logic of neoliberal urbanism: The case of Monteria, Colombia. *Regional Science Policy & Practice*, (2024).
- [26] Luo, M., Zhang, S., & Deng, W, Has urban expansion alleviated working-residential spaces segregation across inner-outer cities? A multi-scale study with location-based social bigdata. *Habitat International*, 153, 103183, (2024).
- [27] Adugbila, E. J., Martinez, J. A., & Pfeffer, K, Road infrastructure expansion and socio-spatial fragmentation in the peri-urban zone in Accra, Ghana. *Cities*, 133, 104154, (2023).
- [28] Gao, T., Lim, S., Wong, D. K. H., & Schroepfer, T, from walking to staying: The impact of spatial qualities on socio-spatial segregation in innovation districts. *Sustainable Cities and Society*, 113, 105688, (2024).
- [29] Kostaki, E., Frangopoulos, Y., Makridou, A., & Kapitsinis, N, Participatory governance for the temporary use of urban abandoned areas. *Cities*, 154, 105378, (2024).
- [30] Chai, H, Socio-spatial segregation in residents' daily life: A longitudinal study in Beijing. *Applied Geography*, 171, 103395, (2024).
- [31] Ozüekren, A. S., & Berköz, L, Transformation of Istanbul's imperial legacy: private sector involvement in housing development. *European Planning Studies*, 11(4), 391-406, (2003).
- [32] Yıldız, D, Türkiye'de kentsel dönüşüm ve mekânsal adalet: Ankara Portakal Çiçeği Vadisi örneği [Urban transformation and spatial justice in Türkiye: The case of Ankara Portakal Çiçeği Valley]. *Journal of the Faculty of Engineering and Architecture of Gazi University*, 30(2), 289-301, (2015).