THE EFFECT OF ADMINISTRATIVE CAPACITY ON URBAN LIVABILITY IN TÜRKİYE: A GEOGRAPHICALLY WEIGHTED REGRESSION

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Abstract: In an era of urbanization, urban livability is a critical concern. This study explores the relationship between administrative capacity and urban livability in Türkiye's 81 provinces. Recent global attention to administrative capacity highlights its role in governance and societal progress. The research emphasizes the importance of enhancing administrative capacity for positive outcomes, including improved urban livability, and examines the impact of provincial administrative capacity on urban livability geographically. A robust administrative capacity is crucial for effective public institutions, from local to international levels. Recent research shows it fosters better institution performance, economic growth, democracy, policy effectiveness, conflict prevention, counterterrorism, and local democracy. Among such contributions administrative capacity is also key to a city's success, attracting residents and businesses, enhancing urban livability. In order to reveal such dynamic, the study covers all 81 Turkish provinces, testing geographic variations in the impact of administrative capacity on livability. It uses provincial administrative capacity and Forbes Magazine's livability index in global and geographical regression models. The results confirm a strong relationship between provincial administrative capacity and urban livability. Geographically, this impact varies across regions. In conclusion, the research reveals the importance of administrative capacity in shaping urban livability. Policymakers and urban planners should focus on enhancing administrative competence to improve residents' quality of life, fostering informed decision-making and policy formulation for livable cities.

Keywords: *Administrative Capacity, Urban Livability, Geographically Weighted Regression, Quality of Life, Turkish Provinces*

Türkiye'de İdari Kapasitenin Kentsel Yaşanabilirlik Üzerindeki Etkisi: Coğrafi Ağırlıklı Regresyon

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Özet: Kentleşme çağında, kentsel yaşanabilirlik kritik bir konudur. Bu çalışma, Türkiye'nin 81 ilinde idari kapasite ile kentsel yaşanabilirlik arasındaki ilişkiyi araştırmaktadır. Son dönemde idari kapasiteye yönelik küresel ilgi, idari kapasitenin yönetişim ve toplumsal ilerlemedeki rolünü vurgulamaktadır. Çalışma, kentsel yaşanabilirliğin iyileştirilmesi de dahil olmak üzere olumlu sonuçlar için idari

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kapasitenin geliştirilmesinin önemini vurgulamakta ve il idari kapasitesinin kentsel yaşanabilirlik üzerindeki etkisini coğrafi olarak incelemektedir. Güçlü bir idari kapasite, yerel düzeyden uluslararası düzeye kadar etkili kamu kurumları için çok önemlidir. Yakın zamanda yapılan araştırmalar, idari kapasitenin daha iyi kurum performansı, ekonomik büyüme, demokrasi, politika etkinliği, çatışmaların önlenmesi, terörle mücadele ve yerel demokrasiyi desteklediğini göstermektedir. Bu katkıların yanı sıra idari kapasite bir kentin başarısı için de oldukça önemlidir, kent sakinlerini ve işletmeleri çekmekte, kentsel yaşanabilirliği artırmaktadır. Bu etkiyi ortaya çıkarmak adına çalışma Türkiye'nin 81 ilini kapsamakta ve idari kapasitenin yaşanabilirlik üzerindeki etkisinde coğrafi farklılıkları test etmektedir. Küresel ve coğrafi regresyon modellerinde il idari kapasitesi ve Forbes Dergisi'nin yaşanabilirlik endeksi kullanılmıştır. Sonuçlar, il idari kapasitesi ile kentsel yaşanabilirlik arasında güçlü bir ilişki olduğunu doğrulamaktadır. Coğrafi olarak bu etki bölgeler arasında farklılık göstermektedir. Sonuç olarak, bu araştırma idari kapasitenin kentsel yaşanabilirliği şekillendirmedeki öneminin altını çizmektedir. Politika yapıcılar ve şehir planlamacıları, kent sakinlerinin yaşam kalitesini artırmak için idari yeterliliği geliştirmeye odaklanmalı, yaşanabilir kentler için bilinçli karar alma ve politika oluşturma süreçlerini teşvik etmelidir.

Anahtar Kelimeler: *İdari Kapasite, Kentsel Yaşanabilirlik, Coğrafi Ağırlıklı Regresyon, Yaşam Kalitesi, Türk İller*

1. INTRODUCTION

From the past to the present, the public administration competencies of the countries, whether at the global, national or local level, in solving public problems and meeting common needs have been the subject of examination in all aspects. For this purpose, there are some research initiatives that focus on administrative capacity and similar topics. In recent years, there have been attempts to address the current state of administrative capacity in Türkiye, as well as in other countries in the world, in terms of its development and the results it has produced or can produce. In particular, the European Union's initiatives on this issue paved the way for a comparative analysis of the standards and characteristics of public administration in Türkiye. There is a need not only for Türkiye but also for all other countries to question their current administrative capacities and to take steps to improve them. In particular, emphasizing the importance of administrative capacity, it is stated that these efforts are conducive to some positive externalities one of which could be livability of a locality.

Urban livability, which is an implicit concept like administrative capacity, is a subject of investigation, in which more than one dynamic is discussed, especially at the local level. Regardless of society, people expect their basic rights and needs to be met in the most desirable way and associate this situation with the spatial area they live in. Naturally, it is thought that the competence of the local public administration will positively affect the livability in the spatial area where service delivery takes place. In this respect, the main purpose of this study is to reveal the possible effects of the administrative capacity of the provinces on urban livability in the geographical sense in Türkiye. Such endeavor will contribute the understandings of capacity literature in terms of how it can be an essential point especially for policy designs. First of all, the conceptual framework of administrative capacity and urban livability, which are the main subjects of the study, will be included. Afterwards, the information about the method and data will be detailed and the findings of the study will be presented.

2. CONCEPTUAL FRAMEWORK

The level of administrative capacity within a government plays a crucial role in effectively utilizing its resources, personnel, and processes to achieve its objectives. In turn, this has a direct impact

on the overall success and livability of a city for its residents. By effectively managing and delivering essential services such as water, sanitation, waste management, public transportation, housing, and healthcare, a well-functioning administrative system can greatly enhance a city's livability. When citizens have access to these services in a timely and efficient manner, it contributes to their sense of security and well-being in their city. Strong administrative capacity is also important for effective city governance. It involves supplying the essential resources and personnel to enforce laws and regulations, as well as swiftly and efficiently addressing any arising concerns. A well-governed city with these capabilities can decrease crime rates and promote public safety i.e., ultimately making it a desirable location for both individuals and companies.

Additionally, having administrative capabilities is significant in promoting effective city planning and maintaining its infrastructure. By allocating sufficient resources and personnel, the city can ensure the proper upkeep of its roads, bridges, and other structural elements, as well as plan new developments that will benefit the entire community. As a result, this can alleviate traffic congestion and enhance air quality etc., making the city a more appealing place for potential residents and businesses. Moreover, investing in administrative capacity can greatly contribute to the financial stability of a city. By allocating adequate resources and personnel, the city can maintain a balanced budget and responsibly handle its finances. It will be equipped with the necessary means to provide essential services and build infrastructure that enhance the citizens' quality of life.

In order for cities to thrive, it is also key to have strong administrative capacity. This includes allocating sufficient resources and employing competent personnel to establish connections with other cities and regions on both a national and international scale. This connectivity serves as a key factor in attracting vital business and investment opportunities, ultimately leading to job growth and a stronger local economy. The administrative capacity of a city plays a significant role in determining its prosperity and the well-being of its inhabitants. These essential elements contribute to the desirability of a city for both potential residents and businesses, ultimately elevating its livability.

2.1. Administrative Capacity

Administrative capacity is a dynamic, multifaceted, and multidimensional notion (Rozen, 2013), and inextricably linked to the organizational structure of a public or private organization, which contributes to institutional management and performance (Mihaescu and Tapardel, 2013, p. 672), and the most fundamental component of a nation's ability to administer its crucial (economic, military, civil i.e.) institutions (Farazmand, 2009, pp. 1016-1017; Jreisat , 2012, pp. 142-143). There are definitions of administrative capacity made by some important international organizations. Administrative capacity, according to the United Nations Development Program (UNDP), is the process through which individuals, organizations, and societies acquire, strengthen, and sustain their ability to create and accomplish their own development objectives over time (UNDP, 2008). According to the World Bank Administrative capacity is the ability to manage the complex relationships and processes that comprise a functional political and economic system (Mihaescu and Tapardel, 2013). The European Union, on the other hand, defines administrative capacity as “institutions and organizations established to fully and effectively implement the EU acquis and adapt to new formations in time, and the personnel to be employed here and the economic elements that will enable these institutions and organizations to work” (Uçar-Kocaoğlu, 2013). Finally, administrative capacity is described by the OECD as the total of

organizational, structural, and technical systems, as well as person abilities, that design and implement policies to fulfill the demands of the public (OECD and Sigma, 2014).

Scholars also make definitions about the concept in different perspectives. Administrative ability is defined by Lodge and Weigrich (2014) as the collection of abilities and competences expected of public bureaucracies that enable and contribute to issue solutions. Administrative capacity refers to the structural and organizational characteristics that allow for the essential alignment to accomplish efficiency, openness, and comprehensiveness (Cingolani and Fazekas, 2017). Administrative capacity is conceptualized by Polidano (2000, p.805) as the ability of the state's permanent mechanisms to implement policies, deliver services, and give policy advice to decision makers (Hlynsdottir, 2016, p.241). Hou et al. (2003) define administrative capacity as formal regulations that limit the discretion and direct conduct of both political and managerial actors in order to accomplish the performance objective. Administrative capacity is characterized as a dynamic process consisting of a collection of administrative and political activities aimed at achieving policy objectives, and it is regarded as a critical variable in public policy literature. As a result, it is believed that administrative ability has a considerable impact on policy implementation procedures. Administrative capacity is described by Goggin et al. (1990, p. 38) as an institution's capability to take deliberate action; it is modeled as a mediating variable between political motives and policy goals (Addison, 2009). Finally, Arnold Howitt defines a municipal government's administrative capacity as the ability to recognize issues, create and assess policy solutions to address them, and manage government programs (Honadle, 1981, p. 577).

Evaluation of administrative capacity in terms of its results is of great importance. The basic condition for the effective and efficient functioning of public institutions on a local, national and international scale is the existence of a strong administrative capacity at every institutional level. In recent years, there has been a lot of work on what kind of changes can be caused in the institutional level of countries, whether the administrative capacity is sufficient or not. It is stated that many important dynamics such as the performance of public institutions, economic development, democratic progress, effective implementation of public policies, prevention of conflicts in society and fight against terrorism, and ensuring local democracy can emerge as a result of an improved administrative capacity (Sarıca, 2022, pp.314-318).

2.2. Urban Livability

The term "livability" develops as a multifaceted concept. To put it simply: quality of life, health, comfort, and life pleasure based on positive connections (Serag El Din et al., 2013; Baltutar and Artar, 2022, p.118). In the planning dimension, the concepts of livability and quality of urban life have the same meaning. Many diverse components combine to generate the phenomena of livability. As a result, numerous viewpoints on the issue have been considered in terms of both the original worth of this phenomena and the goal of broad research. Since the mid-1970s, livability has been an essential aspect of regional planning across the world, with the goal of reducing resource waste and making a place pleasant today and in the future (Salzano, 1997). Recently, livability offers a place for people to play, socialize, and communicate (Metcalf, 2002), as well as pleasant and appealing public areas (Timmer and Seymoar, 2005; Elshater et al., 2022, p.99).

Urban livability stands as a fundamental cornerstone in the vitality of cities, recognized by influential organizations and institutions worldwide. The United Nations Human Settlements Programme underscores its significance by emphasizing that livability is not just a luxury but an

essential component for the well-being and health of urban residents, while also fostering economic and social progress. Echoing this sentiment, the World Bank highlights how urban livability serves as a catalyst for economic growth, social inclusion, and environmental sustainability, underscoring its multi-faceted benefits. The Organisation for Economic Co-operation and Development further reinforces its importance by framing urban livability as a critical factor in enhancing a city's competitiveness and overall appeal. Additionally, the International Council for Local Environmental Initiatives underscores how livability contributes to the creation of vibrant and resilient cities, reflecting the need for sustainable urban environments. Lastly, the World Health Organization recognizes that urban livability is not only essential for residents' safety, health, and prosperity but also integral to the overall success of a city. These collective perspectives emphasize the pivotal role of urban livability in shaping thriving, sustainable, and attractive cities, further emphasizing its holistic significance.

Numerous academic studies have delved into the concept of urban livability, aiming to understand what makes a city truly livable. To define urban livability, it's crucial to take into account various aspects, including accessibility, equality, justice, and participation, as well as the ongoing development of residents' social, economic, cultural, and environmental well-being (Kayır, 2007, p.561). Different researchers have explored this concept from diverse angles. For instance, Goldberg et al. (2012) focused on emotional atmospheres, subjective well-being, and happiness in livable cities. Okulicz-Kozaryn (2011) considered both objective data like per capita income and subjective data like personal life satisfaction to define urban quality of life. Mousavi (2013) examined livability concerning the environment, individual well-being, and community relationships. Some studies have even quantified aspects of livability, suggesting that cities with 8-18 square meters of green space and 0.5 square meters of water surface per person, where social and cultural aspects encompass two-thirds of the city, are deemed more livable. According to Eke and Fitöz (2006), livability is a complex interplay of factors related to people's well-being. It hinges on meeting both fundamental and higher-level needs, fostering human development possibilities, and considering social, cultural, recreational, economic, and political factors. Livability encompasses elements like comfort, safety, accessibility, mobility, walkability, coexistence, participation, social equity, well-being in various dimensions, affordability, user satisfaction, economic competitiveness, and resilience – all of which collectively contribute to enhancing the quality of life in a city (Baltutar and Artar, 2022, pp. 118-119).

Creating a livable and enjoyable city for urban residents involves adhering to certain fundamental principles. Cities aspiring to enhance their livability should embrace these principles, which revolve around meeting essential societal needs and providing public amenities, spaces, safety, economic opportunities, social and cultural activities, and environmental cleanliness. The concept of a livable city is anchored in four key elements: expanding living options to promote societal well-being, generating employment opportunities, fostering a secure and clean environment conducive to both health and economic growth, and establishing effective governance. Livability, considered the most valuable aspect of modern urbanism, encompasses harmonizing urban design with economic considerations to manage growth-related conflicts effectively. Key aspects of a livable city encompass security, housing, education, income, healthcare, transportation, public spaces, community involvement, cultural vibrancy, local products, and the natural environment (Iskandar and Prasetyo, 2022, p.2).

In discussing the concept of livability, Sarı and Kındap (2018) emphasize that achieving it hinges on sustainable economic growth, widespread prosperity, and improving people's quality of life

while responsibly considering ecological factors in the areas they live. Recognizing the importance of evaluating the quality of life in cities, it's clear that our country is currently ill-equipped to assess city livability levels and lacks preparedness for effective policy development. While various global standards for livability exist, Şolt (2018) links the assessment of local governments and local development to the idea of livable cities, emphasizing that livability is closely tied to a city's unique population composition. This connection arises from the fact that the level of livability, particularly concerning urban services, varies depending on factors like gender, age, education, income, and cultural characteristics of a city's residents. Nevertheless, overall livability encompasses ensuring essential urban functions meet the needs of different age groups, ultimately contributing to enjoyable living conditions (Baltutar and Artar, 2022, p.118).

3. DATA AND METHODOLOGY

The scope of the study consists of 81 provinces in Türkiye. The hypothesis that the effect of administrative capacity levels of provinces on livability differs geographically will be tested. For the analysis, arcGIS and SPSS package programs (trial version) will be used. In this section, information on methodology and variables will be provided.

3.1. Geographically Weighted Regression

The research on regionally weighted regression, pioneered by A. Fotheringham, D. Brunsdon, and M. Charlton in the late 1990s and early 2000s, led to the development of the "Geographically Weighted Regression" (GWR) method, initially established in 2002 and refined in 2007, as detailed in the book "Geography, Perspectives on Spatial Data Analysis." GWR connects regression analysis with geography and finds applications in various fields, including regional studies, environmental research, transportation planning, political geography, and real estate studies. Scholars in Türkiye (Işık and Pinarcıoğlu, 2007; Öcal and Yıldırım, 2010; Yazgı, 2012; Zeren and Yurtkur, 2012; Yakar, 2013) have recently employed GWR in diverse studies, from fertility rates to the economic impact of terrorism. GWR distinguishes itself from traditional regression by introducing the concepts of "geographical" and "weighted," allowing for localized regression values that consider spatial variation and recognizing the interconnectedness of geographical data, aligning with Tobler (1970)'s first law of geography. "everything is connected to everything else, but those who are close are more related than those who are far away". This shift from traditional regression to spatial regression enhances the accuracy of analyses in the context of varying geographic units (Sakarya and İbişoğlu, 2015, pp.223-224).

The OLS (Ordinary Least Squares) method typically produces a single result for all observations, failing to account for varying influences of independent variables on the dependent variable across different geographic units due to spatial interaction or diffusion. Global regression models cannot capture this variation. In contrast, the Geographical Weighted Regression (GWR) model calculates individualized models for each location, considering local variations. This means that it estimates regression parameters separately for each province. To do this, it assigns weights to values from neighboring provinces based on their proximity to the province in question, representing spatial similarities and differences in province attributes. This sets the GWR model apart from other regression models. The OLS approach is also used for GWR model parameter estimation. Compared to OLS, GWR provides more accurate results by considering local differences. GWR offers several advantages over global models like OLS, as it allows unique regression coefficients for each province and enables the mapping of results, which can identify spatial distribution

heterogeneity—something not accounted for by global models like OLS. (Zeren and Yurtkur, 2012; Yakar, 2013, pp.30-32).

In the described model, data points are weighted based on their distance from a chosen reference point, and this process is repeated for all data points, ultimately yielding a map of these weighted values. This approach, known as geographically weighted regression, allows for a more nuanced analysis by considering the varying influences of geographic factors on regression outcomes. The GWR model relies on spatial statistics tools within Geographic Information Systems (GIS) software to compute and map values between dependent and independent variables. Key considerations in this process include selecting the appropriate kernel type and bandwidth technique. The kernel, responsible for weighing data points, can be fixed or adaptive, with the adaptive approach being preferred when dealing with unevenly distributed data points. Determining the bandwidth, which defines the kernel's capacity, is a crucial step and can be achieved through methods such as Akaike information criterion (AICc), cross-validation (CV), or bandwidth factor. The choice of bandwidth technique can significantly impact the accuracy of the GWR model, with the AIC approach in CV often yielding the best results, especially when dealing with the model's complex structure. Consequently, the adaptive kernel and AICc band selection methods are often employed in GIS applications to generate GWR values that account for spatial variations and produce more accurate findings compared to global regression models. (Sakarya and İbişoğlu, 2015, p.225). In practice, it's often a good idea to try multiple kernel and bandwidth selection methods and compare the results. This sensitivity analysis can help understand how different kernel and bandwidth choices affect the GWR model's performance and provide confidence in the final selection. In this study, different kernel and bandwith selection methods seem to provide almost no difference in the model performance.

3.2. Data

In this study, provincial administrative capacity index (Sarıca, 2021) will be used as an independent variable while Forbes Magazine’s liveability index (Demirci, 2022) will be used as a dependent variable in the geographically weighted regression model. Provinces population (2020) will be controlling factor in both OLS and GWR models.

Forbes, a prominent U.S. economic magazine, has recently published a comprehensive list of Türkiye 's most livable cities for the year 2022. The report, which encompasses a broad range of 94 criteria, has unveiled the rankings for the most desirable cities to reside and work in within Türkiye. In this study of livable cities conducted by Forbes, various factors such as innovation, access to essential services, economic potential, and trade capacity were carefully evaluated to determine the rankings (Demirci, 2022).

The provincial administrative capacity component consists of a total of twelve indicators under four dimensions: extractive capacity, policy implementation capacity, regulatory capacity and institutional legitimacy. Extractive capacity consists of the tax level and tax collection rate indicators, which are also frequently used in the capacity literature. Policy implementation capacity consists of the indicators of education and health policies, which citizens consider to be the most important functions of the provincial administration. Regulatory capacity is evaluated through the outcome indicators of public security as a human domain and environmental regulations as a physical domain. Finally, the dimension of institutional legitimacy is addressed through citizens' satisfaction with public services and their complaint applications. As a result,

12 basic indicators have been identified within the framework of extractive, policy implementation, regulation and institutional legitimacy dimensions (Sarıca, 2021, p.1758).

First of all, it is necessary to look at how the variables used in the study are distributed across the country. When we look at the 2022 urban livability values, it is observed that the average is relatively higher in the west of the country compared to the eastern provinces. Metropolitan cities such as Istanbul, Ankara, Izmir, Antalya, Tekirdağ, Eskişehir, Bursa, Kocaeli, are leading the way in terms of livability index values. On the other hand, this value is quite low in the Eastern and Southeastern provinces and in some provinces of the Central Anatolia region (See Figure 1).

When we look at the provincial administrative capacity index, which constitutes the independent variable of the GWR model, we can observe that, with a few exceptions, the index values increase towards the northwest of the country, and on the contrary, the figures decrease when we move towards the southeast (See Figure 2).

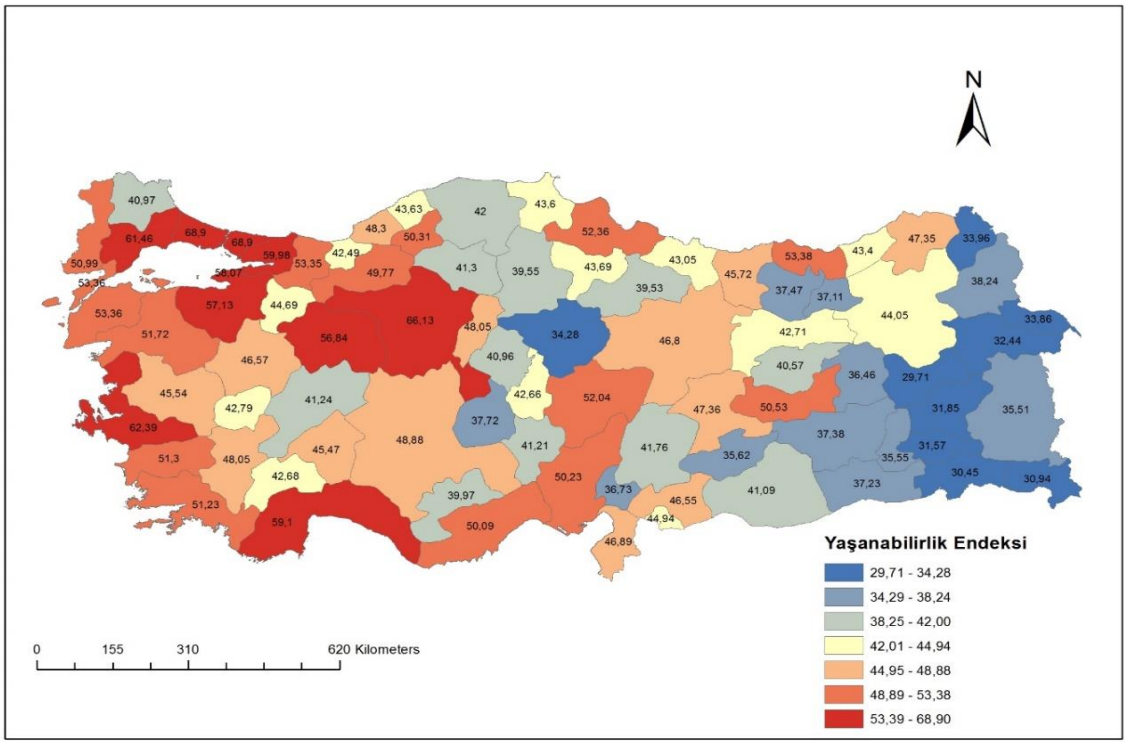

Figure 1. Most Livable Cities in Türkiye

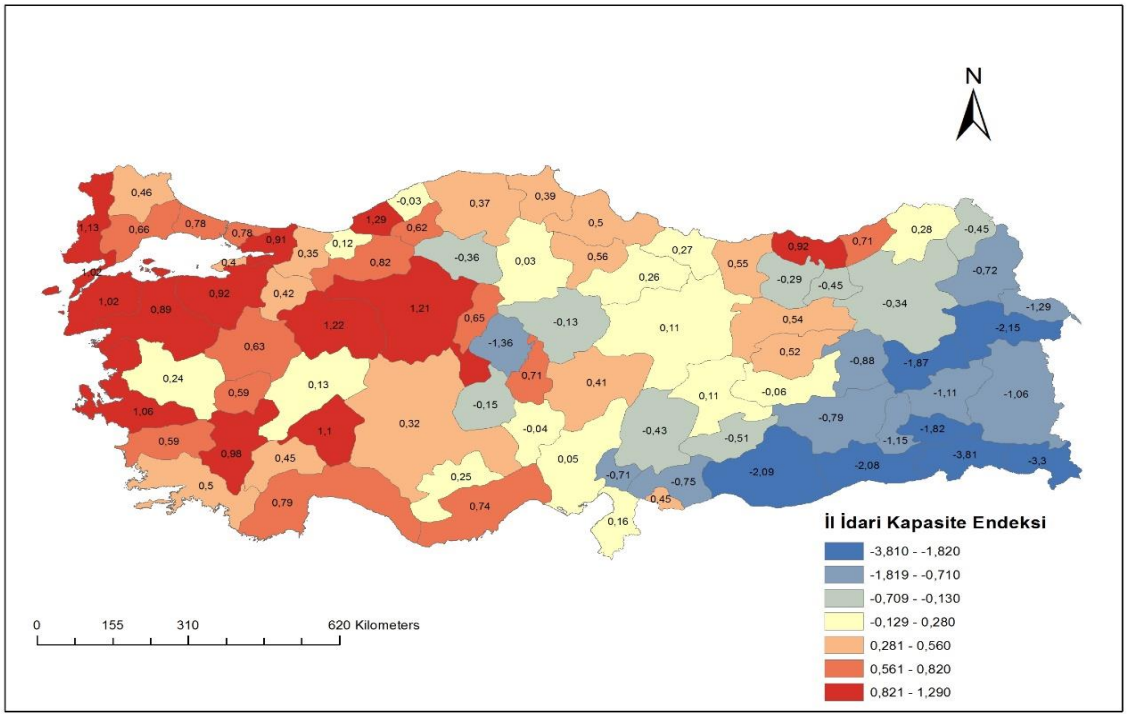

Figure 2. Provincial Administrative Capacity

4. FINDINGS

OLS method is used in modeling the relationship between provincial administrative capacity index values and urban livability. It is important to compare the OLS results with the GWR findings at the first stage. According to the OLS results, the coefficient value of provincial administrative capacity (5.43) is statistically significant at p=0.01 level. When the R^2 value is analyzed, it is seen that the administrative capacity value of the provinces explains 71% of the urban livability (See Table 1 and Figure 3).

Table 1. OLS Results

Variable	Coefficients	T-statistics	p-value	R^2-Adjusted R^2
Constant	42.787	73.503	0.000	
Provincial Administrative Capacity	5.432	10.474	0.000	0.710 – 0.706
Population	1.977E-6	7.137	0.000	

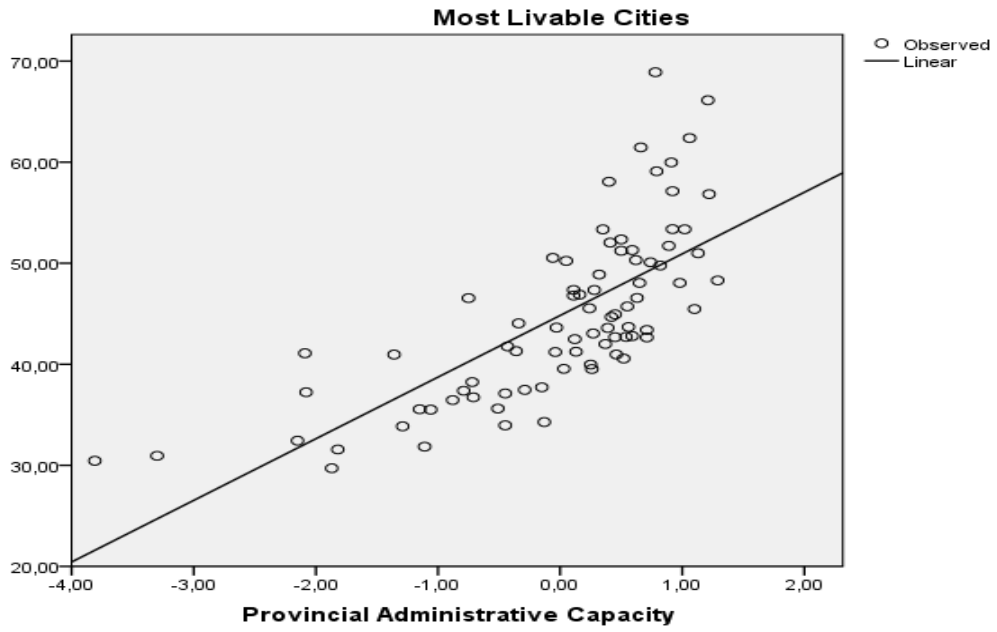

Figure 3. OLS Model of Provincial Administrative Capacity and Urban Livability

The study employed Geographically Weighted Regression (GWR) analysis to examine and model the connection between provincial administrative capacity and urban livability. In contrast to global regression models, the GWR model stands out because it considers both local similarities and differences. Using the weight matrix derived from GWR analysis, it's possible to create a unique regression model for each geographical unit at the local level. While the Ordinary Least Squares (OLS) model offers location-independent predictions by disregarding spatial factors, GWR analysis yields more precise outcomes by acknowledging spatial clustering effects. Consequently, this regression model helps establish relationships that are more applicable to specific provinces and identifies where predictions hold greater validity in a spatial context. This approach allows for a finer understanding of how administrative capacity relates to urban livability at a localized scale.

In geographically weighted regression (GWR), Moran's I index and its associated p-value are used to assess the spatial autocorrelation of residuals (errors) from the regression model. These values provide insights into whether there are spatial patterns or dependencies remaining in the model's residuals. In GWR, the expected value of Moran's I for residuals should ideally be close to 0. A value of 0 indicates that there is no significant spatial autocorrelation remaining in the residuals, meaning that the model has successfully accounted for and explained the spatial patterns in the data. When Moran's I for residuals is close to 0, it suggests that the model has effectively captured the spatial relationships between the dependent variable and the independent variables.

Since Moran's I ranges from -1 (perfect negative spatial autocorrelation) to +1 (perfect positive spatial autocorrelation), a value of -0.18 suggests that there is some level of negative spatial autocorrelation in the residuals. This means that neighboring locations have more dissimilar residuals than would be expected under spatial randomness. There is still some level of statistically significant spatial structure or clustering that cannot be attributed to randomness (p=0.03) (See Table 2). This low p-value may result from the presence of outliers or extreme values in the dataset which can sometimes lead to low p-values, even if spatial autocorrelation is weak.

When the control variable (population) discarded from the model, weak spatial autocorrelation is not statistically significant at 0.05 level. Spatial autocorrelation can also be checked visually by analyzing the map of standard residual distribution in the model (See Figure 4).

Table 2. GWR Results

GWR Results				
Method	**Neighbors**	**Residual Squares**	**Effective Number**	**Sigma**
AICc-Adaptive	67	1302	7.15	4.19
AICc	**R^2**	**Adjusted R^2**	**Moran's I**	**p-value**
470	0.769	0.75	-0.18	0.03

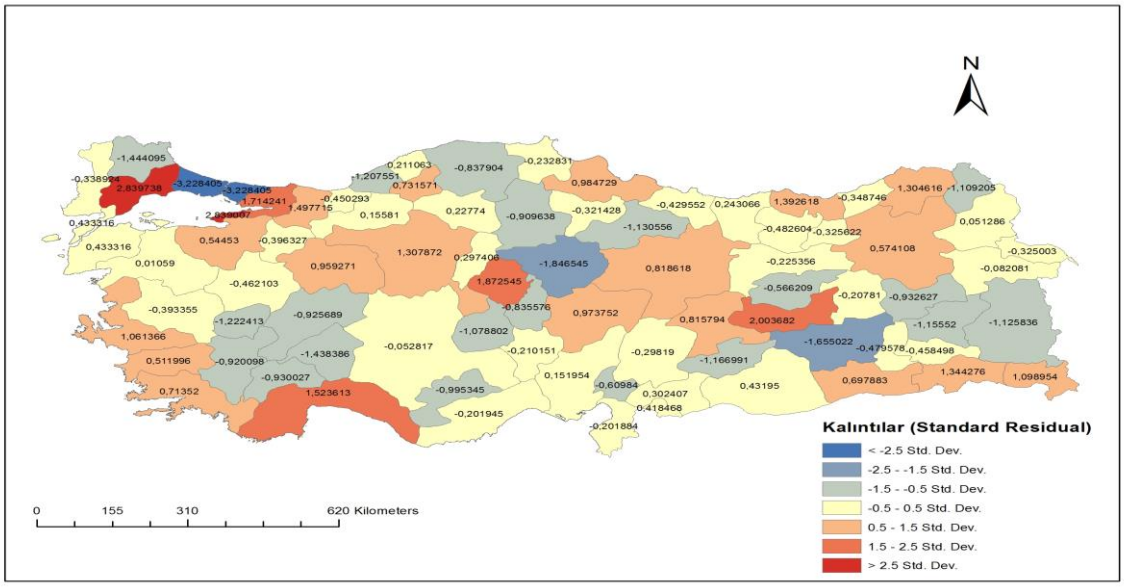

Figure 4. Distribution of Standard Residuals

These results show the outcomes of a geographically weighted regression model, highlighting the relationship between administrative capacity and livability while considering spatial variations. The model's fit statistics, such as R^2=0.76 and AICc=470, provide insights into how well the model explains the data

Local R^2 values in GWR analysis is important for understanding how well your model fits the data at different locations within the study area. In GWR, R^2 is calculated locally, meaning that there is a separate R^2 value for each location or spatial unit. Analyzing the spatial distribution of local R^2 values can reveal spatial patterns in the data. Clusters of high or low local R^2 values may indicate areas where the GWR model performs particularly well or poorly.

When the local R2 values of the provinces are analyzed according to the GWR analysis, it is seen that high R2 values are clustered in the east of Türkiye. The highest local R2 values were obtained in Şanlıurfa, Mardin, Şırnak, Batman and Siirt (> 0.72) in the Southeastern Anatolia region. The gradual decrease in local R2 values when moving towards the west of the country reveals that while administrative capacity better explains the effect of administrative capacity on urban

livability in the eastern provinces of Türkiye, this relationship weakens in the west. Therefore, it would not be wrong to conclude that some explanatory factors other than the effect of administrative capacity may be more prominent in terms of the livability of the western provinces (See Figure 5).

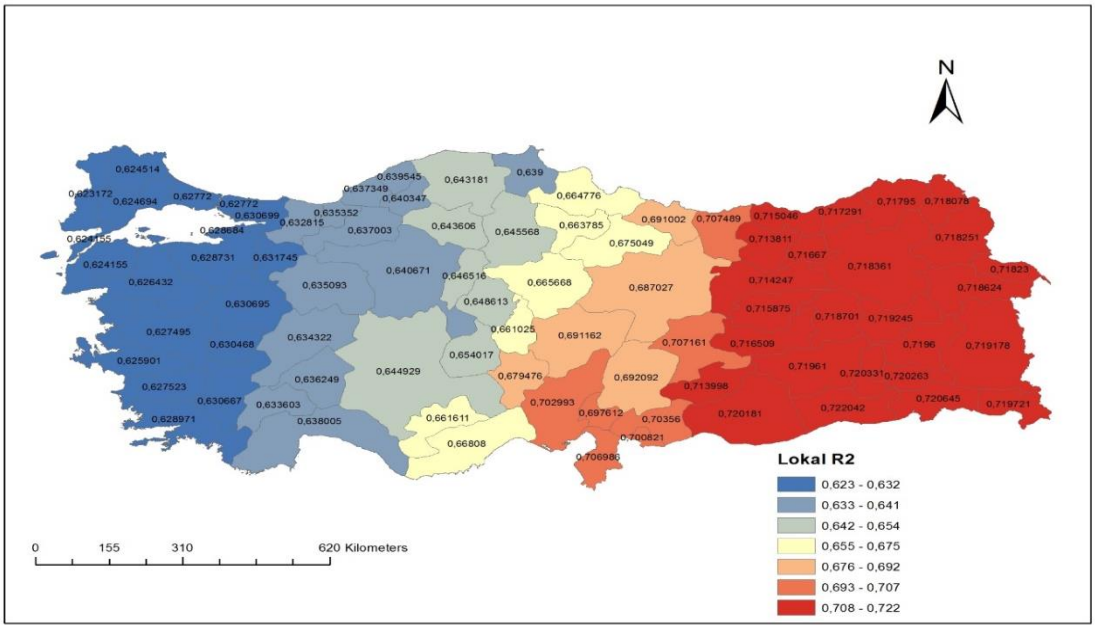

Figure 5. Distribution of Local R2

Interpreting the coefficients in Geographically Weighted Regression (GWR) analysis requires considering the context of the study and understanding how they vary spatially. GWR estimates a separate set of coefficients for each location within the study area. Unlike in traditional linear regression, where there is a single set of coefficients for the entire dataset, GWR provides location-specific coefficients. Each coefficient represents the local relationship between the dependent variable and the independent variable(s) at a specific location. In this study, the results of the GWR model suggests that there is a spatial heterogeneity in the relationship between administrative capacity and urban livability (See Figure 6). According to the OLS results, the effect of administrative capacity on urban livability is 5.43 in terms of coefficient (global), while according to the GWR results, this coefficient decreases in the east and gradually increases towards the west. These results suggest that provincial administrative capacity has relatively more influence on urban livability in the western parts.

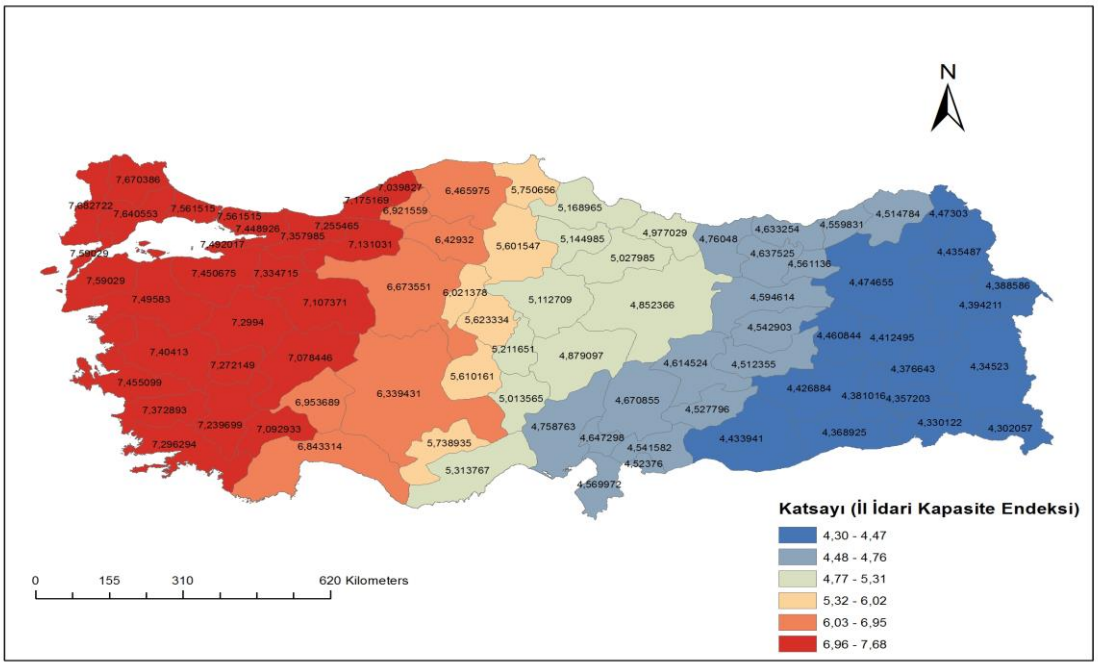

Figure 5. Distribution of Coefficients (Provincial Administrative Capacity)

5. CONCLUSION

This study has shed light on the critical relationship between administrative capacity and urban livability in Türkiye's 81 provinces. The research journey embarked upon by examining the administrative capacity of these provinces and its potential impact on the quality of life experienced by their residents has yielded valuable insights. Firstly, it is evident that administrative capacity is not a mere administrative concern; rather, it plays a pivotal role in shaping various aspects of society and governance. As highlighted throughout this study, a robust administrative capacity is indispensable for the effective functioning of public institutions, economic development, democratic progress, efficient implementation of public policies, social cohesion, and even national security. It is a linchpin for ensuring local democracy and preventing conflicts within society. Therefore, the imperative for nations, including Türkiye, to assess and enhance their administrative capacities cannot be overstated.

One of the notable conclusion of this study is the positive correlation between administrative capacity and urban livability. The administrative capacity of provinces, as measured by the provincial administrative capacity index, significantly influences urban livability. This correlation holds true at both the global and geographically varying levels, as demonstrated by the OLS and GWR models, respectively. The 71% explanatory power of administrative capacity on urban livability, as indicated by the R^2 value, underpins the importance of this factor.

The spatial distribution of this relationship reveals an interesting pattern. While administrative capacity has a relatively uniform influence on urban livability in the western provinces of Türkiye, it exhibits a decreasing effect as one moves eastward. This regional variation emphasizes the need for tailored policy interventions and governance strategies to address the administrative capacity issues faced by different areas. It is crucial for policymakers to consider this geographical aspect

when formulating strategies for improving administrative capacity and, consequently, enhancing urban livability.

The study indicates the critical role of administrative capacity in shaping the quality of urban life in Türkiye's provinces. It provides empirical evidence of the positive relationship between administrative capacity and urban livability, while also highlighting the regional variations in this relationship. For the future research, the study urges for comparing the outcomes with different nations, promoting lengthy studies to track patterns over time, and stressing the importance of qualitative perspectives, policy interventions, and exploration of socioeconomic influences. Furthermore, conducting dynamic analyses of individual aspects of livability and investigating citizen engagement could enhance our understanding of the intricate connection between administrative capability and urban livability. The findings also offer valuable insights for policymakers seeking to improve governance, promote livability, and ensure the well-being of citizens across different regions of Türkiye. Increasing the level of provincial administrative capacity should be at the top of their agenda so that policy programs such as security or economic programs will result with more livable localities. As the country and other nations continue to address the challenges of the 21st century, it is imperative to recognize administrative capacity as a key driver of progress and a catalyst for building better, more livable communities.

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Hakem Değerlendirmesi	Çift taraflı kör hakemlik
Etik Onay	Bu makale, insan veya hayvanlar ile ilgili etik onay gerektiren herhangi bir araştırma içermemektedir.
Çıkar Çatışması	Yazar çıkar çatışması bildirmemiştir.
Finansal Destek	Yazar bu çalışma için finansal destek almadığını beyan etmiştir
Telif Hakkı & Lisans	Yazar dergide yayınlanan çalışmalarının telif hakkına sahiptirler ve çalışmaları CC BY-NC 4.0 lisansı altında yayımlanır. https://creativecommons.org/licenses/by-nc/4.0/deed.tr
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GENİŞLETİLMİŞ ÖZET

Son yıllarda, idari kapasitenin incelenmesi, ülkelerin kalkınma çabalarını şekillendirmedeki önemli rolüne vurgu yaparak küresel çapta önem kazanmıştır. Avrupa Birliği'nin kamu yönetimi standartlarını karşılaştırma girişimleri dikkate alındığında, diğer ülkelerin yanı sıra Türkiye'nin de idari kapasitesini değerlendirmesi ve geliştirmesi stratejik hale gelmiştir. Bununla birlikte idari kapasiteye benzer şekilde örtük ancak çok önemli bir kavram olan kentsel yaşanabilirlik, özellikle yerel düzeyde kapsamlı araştırmaların odağı haline gelmiştir. Toplumsal farklılıklar ne olursa olsun, insanlar evrensel olarak temel hak ve ihtiyaçlarının en iyi şekilde karşılanmasını arzulamakta ve bu beklentilerini mekânsal alanlarla ilişkilendirmektedir. Kamu yönetimlerinin yetkinliğinin, hizmet sundukları alanların yaşanabilirliğini şekillendirmede önemli bir rol oynadığı kabul edilmektedir. Bu çerçevede, bu çalışmanın temel amacı, il idari kapasitesinin Türkiye'de kentsel yaşanabilirliğin coğrafi boyutları üzerindeki potansiyel etkisini ortaya çıkarmaktır.

İdari kapasitenin sonuçlarına göre değerlendirilmesi büyük önem taşımaktadır. İster yerel, ister ulusal veya uluslararası düzeyde olsun, kamu kurumlarının etkili ve verimli işleyişi temelde tüm kurumsal kademelerde güçlü bir idari kapasitenin varlığına bağlıdır. Son yıllarda, idari kapasitenin artırılması yoluyla ülkelerin kurumsal düzeyinde gerçekleştirilebilecek potansiyel dönüşümlere ilişkin kapsamlı araştırmalara tanık olunmuştur. Bu iyileştirmelerin, kamu kurumlarının performansının artırılması, ekonomik kalkınmanın desteklenmesi, demokratik ilerlemenin teşvik edilmesi, kamu politikalarının etkili bir şekilde uygulanması, toplumsal çatışmaların azaltılması, terörle mücadele ve yerel demokrasinin canlılığının sağlanması gibi temel dinamikleri katalize edebileceği ileri sürülmektedir. Özellikle idari kapasite, kentlerin başarısını ve kent sakinlerine yüksek bir yaşam kalitesi sunma kabiliyetini belirlemede temel bir dayanak noktasıdır. Bu faktörler toplu olarak bir kentin potansiyel sakinleri ve işletmeleri için daha cazip hale gelmesine katkıda bulunmakta ve böylece kentsel yaşanabilirliği zenginleştirmektedir.

Bu çalışma Türkiye'deki 81 ili kapsamaktadır. Temel hipotez, idari kapasite düzeylerinin yaşanabilirlik üzerindeki etkisinin coğrafi olarak farklılık gösterdiğine yöneliktir. Bu hipotezi doğrulamak için çalışmada bağımsız değişken olarak il idari kapasite endeksi, bağımlı değişken olarak da Forbes Dergisi'nin yaşanabilirlik endeksi (2022) coğrafi ağırlıklı regresyon modelinde kullanılmıştır. Ayrıca, 2020 yılına ait nüfus verileri hem Global (OLS) hem de Coğrafi Ağırlıklı Regresyon (GWR) modellerine kontrol faktörü olarak dâhil edilmiştir. Araştırma bulguları, il idari kapasitesi ile kentsel yaşanabilirlik arasındaki ilişkiye dair dikkat çekici bilgiler ortaya koymaktadır. OLS analizi, il idari kapasitesi için katsayı değerinin (5,43) p=0,01 düzeyinde istatistiksel olarak anlamlı olduğunu göstermektedir. Ayrıca, R^2 değerine bakıldığında, il idari kapasitesi, kentsel yaşanabilirlikteki varyansın %71'ini açıklamaktadır.

Diğer yandan coğrafi ağırlıklı regresyon modeli, mekansal farklılıkları göz önünde bulundurarak idari kapasite ile kentsel yaşanabilirlik arasındaki ilişkiye dair kapsamlı bilgiler sunmaktadır. Öncelikle mekânsal otokorelasyon (p=0,03) model açısından düşük bir sonuç vermektedir. Bu durum p-değerlerini etkilediği bilinen uç değerlere atfedilebilir ancak nüfus kontrol değişkeni modelden çıkarıldığında, zayıf mekansal otokorelasyon 0.05 düzeyinde istatistiksel anlamlılığını yitirmektedir. Modelin 0,76'lık R^2 değeri ve 470'lik AICc değeri de dahil olmak üzere uyum istatistikleri, modelin verileri açıklamadaki etkinliğini ortaya koymaktadır. Modelin bulguları incelendiğinde katsayılarda coğrafi farklılıklar göze çarpmaktadır. OLS sonuçlarına göre, idari kapasitenin kentsel yaşanabilirlik üzerindeki etkisi 5,43'lük küresel bir katsayı sergilemektedir.

Ancak GWR analizi, doğu bölgelerinde katsayının azaldığını ve batıya doğru artan bir eğilim olduğunu ortaya koymaktadır. Bu sonuçlar, Türkiye'nin batı bölgelerinde idari kapasitenin kentsel yaşanabilirlik üzerinde göreceli olarak daha büyük bir etkiye sahip olduğunu göstermektedir. Özetle, bu çalışma Türkiye'de kentsel yaşanabilirliğin oluşumunda idari kapasitenin önemini desteklemektedir. Bulgular idari yetkinlik ile kent sakinlerinin deneyimlediği yaşam kalitesi arasındaki kritik bağı doğrulamakta, politika karar vericileri için idari kapasiteyi geliştiren hedefe yönelik stratejilere olan ihtiyacın önemini vurgulamaktadır.