Research Paper

Reflections on Urban Livability in the Context of GCC:

Lessons from Dubai

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Abstract

As cities of the GCC continue to grow in scale, population, and global appeal, Urban Livability (UL) has become an important agenda item for policymakers and urban planners. Using Dubai as a case study, this paper proposes an understanding of urban livability suitable for GCC cities. Through an extensive literature review, engagement with policy-makers, examination of Dubai's unique patterns of development, and geospatial analysis at the neighborhood level, the paper proposes a framework for livability in Dubai and identifies certain 'pillars' that are potentially generalizable for the wider region. Responding to Track 1, the paper argues that context-specific urban indicators could have a significant impact on a city like Dubai and the broader GCC. The project on which this paper is based is funded by the Dubai Future Foundation's RDI grant.

Keywords
Urban Livability, Framework, Transport Equity, GCC Urbanism, Dubai

1. Introduction

By 2050, nearly 68% of the global population is expected to reside in urban areas, highlighting the increasingly urban nature of the future (UN-Habitat, 2022). In this context, the concept of urban livability (UL) has received growing attention within urban studies discourse and practice, including among international organizations concerned with urban conditions (UN-Habitat, 2020). While not a new concept, livability has regained prominence within global urban agendas, driven by shifts in the global economy and heightened inter-urban competition, particularly in the aftermath of the COVID-19 pandemic. Public infrastructure investments, policy initiatives, and media narratives have collectively reinforced the centrality of livability within public and policy discussions (Giles-Corti et al., 2020; Jevtic et al., 2022).

At the same time, advances in geospatial technologies and the increasing use of performance 'dashboards' have encouraged city managers and planning authorities to adopt urban indicators as tools to support planning and decision-making, further contributing to the renewed focus on livability and related quality-of-life metrics (CIDI, 2022; EIU, 2022; Schindler and Dionisio, 2024). Dubai's 2040 Urban Master Plan provides a clear example of this trend, incorporating a range of livability-oriented interventions (RTA, 2021).

While widely used, UL remains difficult to define due to its inherently subjective nature. It is also strongly context-dependent, as each city presents distinct socio-economic, spatial, and environmental conditions that shape residents' lived experiences. Moreover, the different disciplines involved in the planning and management of cities conceptualize livability using varied sets of indicators, further complicating its definition (Kashef, 2016; Khorrami et al., 2021). Livability has also become closely linked to city branding

strategies campaigns (Bonakdar and Audirac, 2020), often associated with efforts to improve positions in global city rankings produced by organizations such as the Economist Intelligence Unit and the OECD (EIU, 2022; OECD, 2023).

In light of these complexities, this paper addresses the following questions: how can livability be conceptualized within the context of GCC cities, given their distinct urban development patterns, demographic compositions, and global ambitions? How can policymakers engage with these complexities in ways that meaningfully benefit their cities and populations? The study explores these questions through the case of Dubai. Methodologically, it identifies livability pillars and indicators relevant to the local context based on an extensive literature review. It then proposes a livability framework and conducts an initial GIS-based spatial analysis to examine variations across neighborhoods in Dubai. The paper responds well to the conference call and is particularly relevant to Track 1, as it advocates for a balanced approach to development in the region. It also contributes to the literature surrounding urban livability and resilient cities in Dubai and the wider GCC.

2. Background

2.1 Livability as a Concept

The specific meaning of livability remains rather ambiguous, varying from context to context and across various knowledge domains, particularly those related to the health and well-being of cities (Kashef, 2016; Lowe et al., 2020; Mouratidis, 2018). For example, livability could be examined through the lens of urban health (Badland et al., 2014; Lowe et al., 2015), housing satisfaction (Mittal et al., 2021; Mouratidis, 2020), accessibility to services (Higgs et al., 2019; Mouratidis, 2020), and user subjective well-being (Mouratidis, 2021; OECD, 2013). It is a term that includes both objective measures related to physical characteristics of the lived environment (Kashef, 2016; Mouratidis, 2020), and subjective perceptions of those experiencing these environments (Mouratidis, 2021; Pacione, 2003; Ruth and Franklin, 2014).

Historically, livability (or *liveability* in British-English spelling) has been used interchangeably with other terms, such as *well-being*, *standard of living*, and *Quality of Life (QoL),* to describe satisfaction with living conditions (Bovkir et al., 2023; Ruth and Franklin, 2014; Sheikh and van Ameijde, 2022). Quality of life, in particular, is a term that preceded the concept of livability, and has been referenced even earlier than the modern planning profession, and is understood to encompass both subjective and objective aspects related to how individuals perceive their living conditions (Sheikh and van Ameijde, 2022; Veenhoven, 2013). Veenhoven (2014) views livability as one of four components contributing to the overall concept of quality of life, where the livability of the environment is the 'vessel' where this quality is experienced.

Livability as an urban-focused term appears to have gained importance in the American context, with an emphasis on the planning of North American cities, represented by the works of Jane Jacobs, Appleyard, and Kevin Lynch (Kashef, 2016; Sheikh and van Ameijde, 2022; Szibbo, 2016). Logically, and in its simplest form, a livable city is a "desirable city" (Ruth and Franklin, 2014), or a city where residents are satisfied with their living conditions. To expand this notion further, most scholars appear to agree that a livable city could be one that is supportive of human basic needs while balancing various economic, social, and environmental aspects (Fu et al., 2019; Mouratidis, 2020; Schindler and Dionisio, 2024; Zhan et al., 2018). For example, Balsas (2004) defines a livable neighborhood as *"safe, clean, beautiful, economically vital, affordable to a diverse population, and efficiently administered, with functional infrastructure, interesting cultural activities and institutions, ample parks, effective public transportation, and broad opportunities for employment. It also connotes a sense of community." P 103.*

Badland et al. (2015) reflect similar ideas, and define livable communities as those that are *"safe, attractive, socially cohesive and inclusive, and environmentally sustainable, with affordable and diverse housing linked by convenient public transport, walking and cycling infrastructure to employment, education, public open space, local shops, health and community services, and leisure and cultural opportunities", P.6.* These definitions and many others imply that the perceived livability of a place is a result of its physical characteristics and the subjective experience of its users (Kashef, 2016; Marans and Stimson, 2011; Ruth and Franklin, 2014; Veenhoven, 2014)

2.2 Theoretical Frameworks for Livability Studies

In addition to the little inconsistency in definitions, the theory(ies) behind the measurement of livability seem to have various conceptual underpinnings. Today, the 'gold standard' for the measurement of livability appears to be represented by the annual indices published by international think tanks such as the Economist Intelligence Unit (EIA) global livability rankings, the Mercer Quality of Life index, and the OECD Better Life Index, among many more (EIU, 2022; Mercer, 2024; OECD, 2023). These rankings, which involve various Key Performance Indicators (KPIs), are primarily designed to guide global corporations and expatriate workforces in their search for competitive markets, while also ranking cities based on their perceived livability.

While popular, the indices are routinely criticized for their inconsistency and subjective methodologies, including their somewhat narrow focus on the global elite and economic aspects, so they are not necessarily a reflection of the situation on the ground (Ruth and Franklin, 2014; Sheikh and van Ameijde, 2022). Mittal et al. (2020) highlight one of the main weaknesses of these indices – that populations are assumed to be homogeneous across the cities. The authors also argue that such top-down studies do not necessarily help inform policymakers (Mittal et al., 2020). In a study by Okulicz-Kozaryn (2013), the authors highlighted the little correlation between some of these indicators (in this case, Mercer's Quality of Life Index) and several highly ranked European cities. They also found a weak correlation between these rankings and residents' perceptions of livability. Still, these indicators often contribute to city branding campaigns, and usually could offer an indication of livability at the city-wide or regional scale, covering domains such as housing, infrastructure, transport, and health, amongst other categories (Dsouza et al., 2023; Kashef, 2016).

Various international agencies and regional bodies develop their own livability and quality of life measures. Notably, for example, is the ESPON-QoL project funded by the European Union (Insee - Eurostat, 2018) . The project measures the quality of life across various EU territories and districts in Europe. The team adopted a *three-sphere* conceptual approach to quality of life and livability, which includes a personal sphere, a socio-economic sphere, and an ecological sphere. These domains are further broken down into livability sub-variables grouped into categories of good *Life-enablers* , *Life maintenance* variables, and *Life flourishing* variables. The UN-Habitat also proposed *CPI Prosperity Index* to measure the performance of cities and regions (UN-Habitat, 2016). Similar to the EIU and OCD, it defined various domains that measure the livability of cities from a prosperity perspective primarily.

The City of New York developed a Well-Being Index to measure urban performance across the city's various neighborhoods and boroughs (CIDI, 2022) . The index adopts domains of livability such as economic security and urban infrastructure measures, but also contextually specific domains related to governance and equity, reflecting the planning conditions within the city. The availability of open public data in New York allowed for a detailed examination of various economic and social aspects as part of the well-being index (CIDI, 2022) – Data availability/unavailability is considered one of the main elements creating inconsistency

across the various livability and quality of life indexes, especially in developing countries (Mittal et al., 2021, 2020; Ruth and Franklin, 2014). A full survey of such global and regional indices is beyond the scope of this paper, but the works of (Dsouza et al., 2023; Khorrami et al., 2021; Mittal et al., 2020) provide an important overview.

3. Methodology

Considering the complexities associated with understanding urban livability, the various theoretical concepts behind it, and its sensitivity to context, it is necessary to define a set of livability indicators and 'pillars' suitable for Dubai and potentially the wider region. These pillars and subsequent indicators should help public sector agencies better understand and operationalize livability in the city and the wider region. To address this, the paper adopts a mixed-methods approach, which includes the following steps:

1- **Literature review:** A scoping literature review was conducted, which examined the definition and theoretical underpinnings of livability studies. The review identified 130 documents ranging from academic journal articles to policy documents and white papers. The keywords included in the search focused mainly on Livability (and Liveability), Urban Livability (UL), and Quality of Life (QoL) studies, as the principles overlap considerably. The literature was evaluated based on relevance, merit, methodologies, and theoretical approaches to achieve a clearer understanding of livability studies. A partial summary of the most relevant articles and main KPIs can be seen in Tables 1, 2 below

2- **Case Study:** Dubai was the case study explored for the purposes of this research. As a GCC city, Dubai has distinct patterns of urban development and socio-economic conditions. Some of these could be potentially generalized to the wider region.

3- **Framework conceptualization:** Based on the literature review and the specifics of Dubai, a theoretical framework for livability is developed. This framework is based on several pillars that represent traits of GCC urbanism, and a number of KPIs that could be used for the measurement of livability were identified.

4- **GIS Study**: An initial, exploratory GIS study was conducted with the aim of finding the most suitable methodological approaches useful in the context, taking into consideration data availability, quality, and the complexity of the KPIs. Expanding this into a full analysis of livability in Dubai will be part of future research efforts.

4. Discussion

4.1 Understanding the literature

Within the various surveyed literature, there was no clear singular approach or methodology for measuring urban livability. Various studies have highlighted multiple main categories for measurement, ultimately leading to individual indicators. This appeared to be highly context and discipline-sensitive, as alluded to earlier, and highlights the difficulty in arriving at a concise definition for livability. While most international entities and some public sector entities appeared to have variations in their methodologies, owing to their target audiences, some patterns emerge that indicate certain core urban areas, as can be seen in Table 1. It is important to note that for the indices listed in the table, the measurement takes place at various scales

ranging from a regional scale (i.e, OECD, UN-Habitat), to a more specific district, or neighborhood scale (i.e INSEE, CIDI)

Name of Index	Main Catagories and Pillars - Livability and Quality of Life Indicators / Professional and International Bodies									
OECD Better Life Index	Housing	Income and Wealth	Work and Job Quality	Social Connections	Knowledge and Skills	Environmental Quality	Civic Engagement	Healthcare	Subjective well-being	Safety
Mercer	Political and social Env,	Medical and Health	Public service and transport	Consumer Goods	Recreation and socio-cultural	Natural Env	Housing	Economy	Schools and education	
CIDI-New York	Economic	Security	Health	Education	Housing	Safety	Core Infrastructure	Community vitality	Equity	
INSEE-Eurostat	Shelter	Education	Health	Mobility	Connectivity	Work and consumption	Social and cultural	Green infra	Env. Protection	
Economist Intelligence Unit (EIA)	Stability	Healthcare	Culture	Education	Infrastructure	Environmental	Transport	Housing		
Un Habitat	Productivity	Infrastructure	Quality of Life	Equity and Social Inclusion	Env. Sustainability	Governance				

Table 1 Summary of main categories for investigating livability. Source: Authors

Within academic literature, the situation is similar, with various conceptual and theoretical approaches being considered, as well as various technical methodological approaches. Most of the literature we focused on in our study looks at the methodologies adopted to measure UL at the finer neighborhood scale, as it reflects our research focus. Some of the key studies we investigated show various categories focusing on built-environment conditions, social conditions, and environmental and natural conditions as the main 'pillars' of livability measurements, with various identified measurement units also highlighted. Table two below identifies some studies that we believe are relevant methodologically and conceptually to the questions of Livability within Dubai and the wider GCC.

Study (samples)	Authors	Main Pillars	Example KPI of measurment
Spatial analysis and ranking of urban districts based on a comprehensive livability approach: the case of Tehran	Hedayatnezhad et al, 2025	Cultural-educational, Physical, Economic, Housing, Social, Transportation, Environmental	Number of libraries, schools, cultural centers cinemas per 1000 people. Land use diversity, bakeries, markets, parking, parks, income levels, housing prices,...
A GIS-based Evaluation of Urban Livability using Factor Analysis and a Combination of Environmental and Socio-economic Indicators	Najafi et al, 2024	Social-Economic Physical (includes environment), Accessibility	Physical: Air Quality (AQI), NDVI, Surface Temp, Buildup density, Population Density, literacy Rates, Student Population percentages.....
The livable urban landscape: GIS and remote sensing extracted land use assessment for urban livability in Changchun Proper, China	Fu et al, 2019	Convenience, Amenity, Health, Safety	Distance to urban transit stations (negative); Density of urban transit lines (positive), Distance to urban center (negative), Distance to commercial facilities (negative) .....
The Urban Liveability Index: Developing a policy-relevant urban liveability composite measure and evaluating associations with transport mode choice	Higgs et al, 2019	Transport, Social Infrastructure, employment, walkability, housing, and green infrastructure	Train Stations, bus stops, sport facilities, open spaces, affordable housing, air pollution levels, walkable neighborhoods.....
Assessment of Urban Quality of Life Index at Local Scale with Different Weighting Approaches	Bovkir et al 2023	Housing Quality, urban service level, emergency, local environment, economy, demographics, transport	average building areas, housing ratio, distance to shopping, distance to cultural facilities, distance to schools, emergency services.....
Evaluation of QoL in cities of diverse neighborhood typologies: A scientific study of New Delhi	Mittal et al, 2020	Physical, social, governance, environmental, mobility, economic, physiological (nature)	Housing Conditions, urban design, infrastructure access, educational access, recreational areas, security, access to nature....
Extraction of Urban Quality of Life Indicators Using Remote Sensing and Machine Learning: The Case of Al Ain City, United Arab Emirates (UAE)	Yagoub et al, 2022	Biophysical, ecological, infrastructure	LST, NDBI, NDVI, NDWI, SAVI, ENDISI, LULC. Ecological: Aerosol (AI). Infrastructure: Built Area, Green Area Ratio,.....
Evaluation of the Livability of Wuhan under Ecological Construction and Analysis of its Spatial Pattern	Cui et al, 2022	Economic, social, ecological	Residential Income, consumption structure, and residence level. Social Environment: Commuting Efficiency, Public Transport, Health Care, Public Safety, Convenience Services. .....
Urban livability across disciplinary and professional boundaries	Kashef, 2016	Environment, Society, Economy	Housing, urban design, access to green spaces, community facilities, roads, public transport stops.....

Table 2 Sample of relevant academic articles with main pillars and measurement mechanisms. Source: Authors.

4.2 Context Dubai: Unique Urban Challenges

Dubai is a city that has become a well-recognized global brand, and one that has managed to put GCC urbanism on the global map (Alawadi, 2017; Bagaeen, 2007; Elsheshtawy, 2004). Along with similar cities in the Arabian Gulf, the city boomed in the post-oil era, coinciding with modernist city planning ideals, and housing government programs which pushed a suburban development pattern, and glorified the car (Elsheshtawy, 2004; Khalaf, 2006). Today, the city is a sprawling metropolis, home to nearly 4 million people

(Ata, 2025). Dubai today stands at a great distance from its humble beginnings as a fishing town, and has become a global destination for corporations and individuals alike seeking increased economic opportunities and a higher standard of living.

Despite this, the urban form of Dubai leaves much to be desired and remains predominantly automobile-focused, similar to other cities in this desert region (Qamhaieh and Chakravarty, 2020). Various development patterns reflecting distinct economic, social, and political forces have managed to shape the city into what it is today (Alawadi, 2017; Alawadi et al., 2018; Bagaeen, 2007; Pacione, 2005). Since the early 2000s, large-scale and developer-driven projects have sculpted the urban form of the city, further entrenching automobile dependence and creating what Graham and Marvin (2002) refer to as 'splintered urbanism'. While Dubai was the first city in the region to introduce a metro system in 2009 (Figure 1) and with great results (Elsheshtawy and Bastaki, 2011). Still, automobile dependence remains the de facto mode of transport, and massive traffic jams are suffocating the city, owing to a rapid increase in population, as described earlier (Husain, 2025). And while transport authorities are trying to respond to this 'perfect storm', questions about the impact of these conditions on urban livability and quality of life are becoming increasingly important and prevalent.

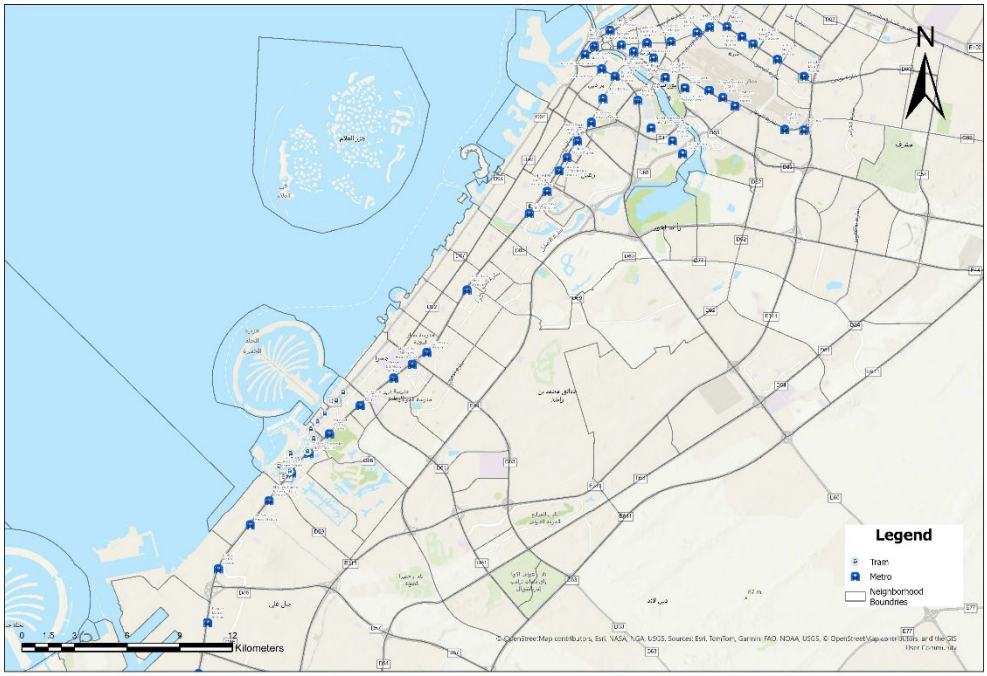


Figure 1 Metro Station location in Dubai. Source: Authors.

4.3 Defining a Livability Framework for Dubai

Considering the literature review and various examples of livability studies, such as those in the figures earlier. It is natural for most livability studies to examine the performance of cities, focusing on several pillars, and covering areas such as *transportation infrastructure*, *housing conditions*, *social and cultural infrastructure*, *health*, *and environmental factors*. While these general categories, as seen in Tables 1,2, could cover most aspects of the city and provide a good starting point for policy makers, local specifics require a more 'nuanced' understanding of the context to boost the effectiveness of such investigations. In the case of Dubai, considered as a model for a wider GCC understanding, various existing pull factors, which are particularly economically focused, add more pressure on cities, and potentially reduce its overall

livability. Figure 2 provides an overview of our proposed framework for conceptualizing livability in Dubai, highlighting the main pillars.

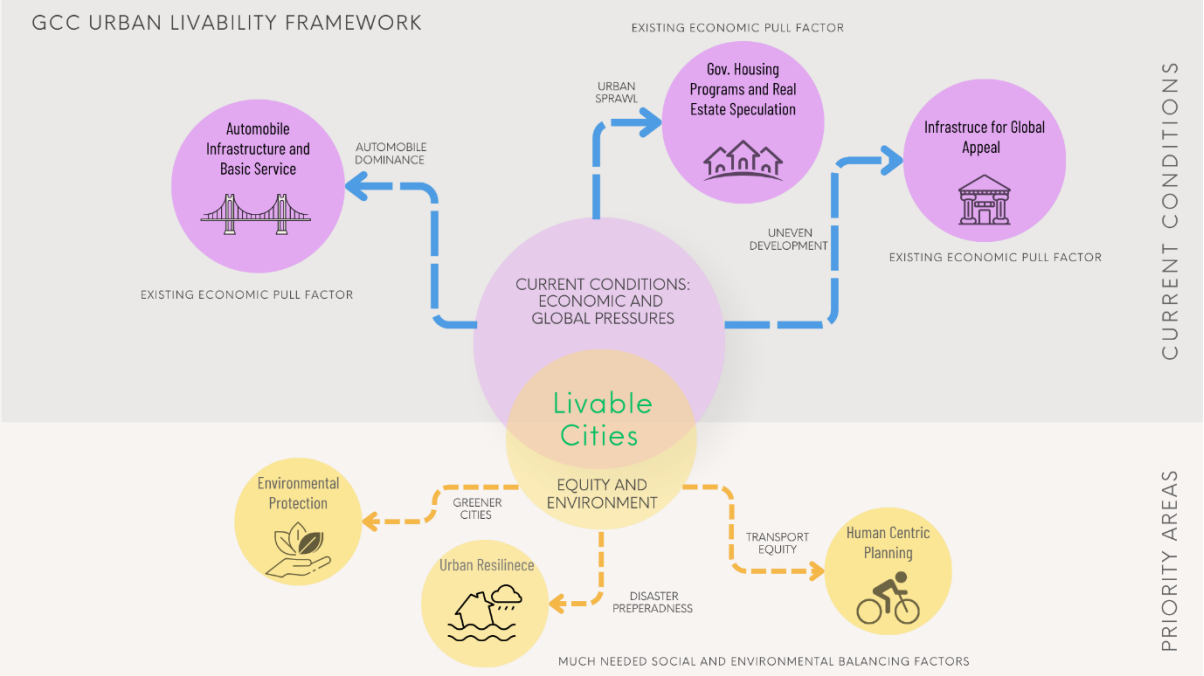


Figure 2 Proposed Livability Framework and Conceptualization in Dubai. Source: Authors

With the massive automobile dependence and supporting infrastructure, the severe urban sprawl and *splintered urbanism* resulting from suburban housing projects, and the focus on high-end, signature developments targeting international audiences, which create 'pockets' of varying quality, all these, mostly economic factors, collectively create a city that is livable for some, and not necessarily livable for all. These traits can also be observed in other globalizing cities in the region, beyond Dubai – hence the GCC focus of this paper. Considering these factors, this paper argues that to counter this narrow economic focus, any study of urban livability should pay attention to other balancing factors, thereby creating a more accurate understanding of the overall conditions. These factors include:

A- **Transport equity:** In response to the automobile focus, how does the city provide for those without access to cars, such as visitors, lower-income segments, and those incapable of owning or driving a car? Does the city have opportunities for alternative transportation, including effective public transportation, micromobility systems, cycling, and walking infrastructure? Does the city provide meaningful options to all its residents?

B- **Urban Resilience:** Rapid urbanization often has severe environmental consequences, including poor supporting basic infrastructure, and vulnerability to natural and man-made disasters. How does a city like Dubai handle flooding, extreme climatic conditions, and the urban heat island? How do vital city services function under extreme pressures, such as in the case of response time for emergency services, or the proximity of police/ fire stations to maintain safety and security? Do residents have access to health care and basic services within reasonable distances, particularly during disruptive events?

C- **Environmental protection:** the same rapid urbanization patterns have severe consequences on the natural environment, and the residents' experience of this natural environment. Reasonable

access to green spaces (and/or blue spaces) and the protection of water resources and ecosystems are important ingredients of livable and inclusive cities. This access to nature and its protection, especially in extreme climatic conditions, should be important priorities for the cities of the region.

4.4 Preliminary GIS explorations, suitable methods, and data

While a complete GIS analysis of livability is beyond the scope of this paper, we set out to test certain best methodologies to be applied in our analysis of Dubai. As proposed in our framework, we view transport equity as an important focal area of livability studies, particularly in this context. This is also corroborated by several academic studies, which weigh non-motorized accessibility heavily (Dsouza et al., 2023; Mouratidis, 2018; Najafi et al., 2024). Therefore, a focus on transport equity indicates the need to evaluate accessibility to various city functions at walkable distances of 400m, 800m, and 1200m. As a demonstration of this method, Figure (3) rates neighborhood-level plots according to their proximity to a metro stop in Dubai. While we provide this as a sample due to paper space limitations, our full investigation will adopt this approach as we examine the various indicators that represent overall livability within Dubai.

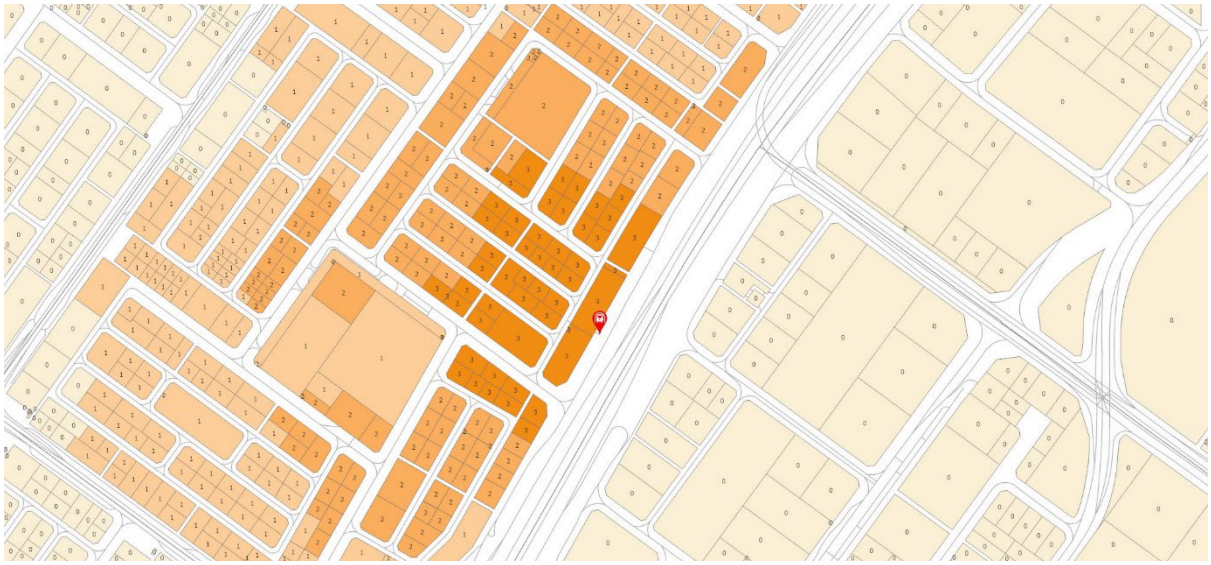


Figure 3 Plot Ranking at the neighborhood level - Sample Metro Station. Source Authors

5. Conclusion

Urban Livability, despite its rather ambiguous nature, is a valuable concept for policymakers and urban planners aiming to improve the living conditions within cities, particularly in the region. The ease of access to open-source geospatial data and aerial photography, and, as of lately, artificial intelligence applications in city planning and management, make explorations in city performance logical and essential.

Within Dubai and similar GCC cities, business as usual when it comes to developing sprawling, car-centric cities is no longer an option. As these cities have become significant players in the global arena, people worldwide are moving to the region in search of better economic opportunities and improved living conditions. These pull factors are creating immense pressures on infrastructure, and therefore, a realignment and an ‘adjustment’ are necessary and much needed, especially as earlier development patterns are no longer relevant or sustainable.

A focus on livability, as discussed in this paper, highlights the importance of balancing economic drivers with human-centric and environmentally sensitive development. While our proposed livability framework recognizes the importance of economic growth factors, a balance still needs to be achieved to reduce the negative effects of this rapid growth. And a focus on urban livability could be a step in the right direction.

Using geospatial methods to understand and visualize livability at a finer scale is crucial, especially since neighborhood conditions are never uniform across the city, and contextual factors are of great importance. Furthermore, focusing on measurement using walking distances helps paint a more accurate picture of urban livability. This approach could help the cities of the region become more inclusive and human-centric in their planning. Future research in this area remains necessary.

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