

# A STUDY ON IMPACT OF PLANNING FOR WALKABLE CITIES FOR SUSTAINABLE DEVELOPMENT IN SULTANATE OF OMAN

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**Abstract** *This paper aims to study the economic impacts that walkable cities would have in the future, with a special focus on Muscat city in the Sultanate of Oman. It further explains how urban walkability will increase business opportunities and local property values while improving public health. This includes comprehensive planning guidelines and investment in public transportation. The methodology of the research includes both quantitative and qualitative data analysis. A detailed focused interview was conducted with an architect with urban planning experience and an employee working in Yiti sustainable city project. Respondents also included select convenient sample of 25 residents of Muscat to obtain their feedback on the impact of a walkable city on economic growth and urban liveability in the region. The paper emphasises that walkability not only enhances economic growth and environmental sustainability but also improves the quality of urban life. It means that in a city like Muscat, proactivity in urban planning and community engagement is important in order to transform Muscat into a more walkable, vibrant, and sustainable city.*

**Keywords** *Walkable Cities, Oman, Environment Sustainability, Urban Development*

**JEL** *D83, I0, I2, O53, P46*

## INTRODUCTION

The relationships among urban planning, walkability, and the economic activities of a city are increasingly becoming important issues for scholars and policymakers. Unlike the benefits experienced in walkable urban destinations, the current car-dependent urban set-ups in Omani cities experience various challenges. The majority of the urban population lives in single-detached houses found in mono-functional zones that are highly prone to automobile dependency. This has been a significant factor in many socio-economic conflicts (De Siqueira & Al Balushi, 2020). Due to their exhibited sedentary behaviours, the current urban infrastructures present a huge threat to public health among the urban population. Public health dangers associated with the cities include obesity and cardiovascular diseases, which account for the leading causes of premature mortality in the region (WHO, 2017; Mabry, 2018). Alternatively, Oman is rated among the top 30 nations in the world with high diabetes prevalence, a medical condition that raises the cost of medical care significantly as a result (Al-Lawati, 2017). Such health problems not only pressure the economy in terms of health spending but also undermine economic growth potential due to reduced productivity from an unhealthy and highly sedentary urban population.

The inefficiency of car-dependent cities is also expressed more vividly by the high opportunity costs of car ownership. For a regular car owner, the American Automobile Association estimates a convenience value of owning a car amounting to about \$10,728 spent annually. This is a significant contrast to the potential savings and local economic benefits that can be realised in walkable setups (*Average Annual Cost of New Vehicle Ownership*, n.d.). Overall, these plans would reduce health and transportation costs, both individually and for the general population, with the money saved being redirected to further support within local businesses and services, hence strengthening economic and social well-being. This close interaction between urban planning and economic considerations underlines the paramount role of walkable cities toward sustainable economic development and in enhancing quality of life for people.

Evidently, research into the impact of implementing walkable cities into the urban planning of Oman is necessary for several compelling reasons, particularly in the context of the rapid urbanisation and economic diversification efforts that the nation has undertaken. The importance of this research lies in its possible contribution to sustainable urban development, economic resilience, and better public health outcomes. Evidence from walkable cities suggests that they

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enhances economic activities, with more visibility and a larger customer base for local businesses. Easier passage to commercial areas can enhance retail and hospitality sectors, which are integral components in the diversification strategy of Oman from oil dependence. This increases the importance of pedestrian-friendly environments for Oman, as it develops new urban areas, especially in its current projects such as Sultan Haitham City and The Sustainable City Yiti.

The direct correlation of walkability with public health improvements has been a well-established fact. Countries where the diseases and vehicles is less exhibit less obesity rates, lesser prevalence of cardiovascular diseases, and thereby have lesser healthcare costs. In a country like Oman, where lifestyle-related illnesses, especially diabetes, are prevalent, promoting walking could significantly reduce the financial burden attributable to the healthcare system and also improve the overall well-being of the people. Walkable cities create social interaction among the residents, providing a sense of community and belonging. Social cohesion is the key to well-being and may foster increased safety, more civic participation, and livelier public life. As Oman builds new urban developments, the walking community is best put to use as a laboratory for current and future projects at home and throughout the region. This study may offer much-needed information about the struggles and gains such efforts bring about, informing policy and planning choices currently made.

## Research Objectives

- To assess the impact of walkable cities on the Omani economy.
- To determine the feasibility of implementing walkable cities in Oman.
- To identify the risks of implementing a walkable city model in Oman.
- To establish the relationship of walkable cities in relation to health and well-being.

## LITERATURE REVIEW

Walkable cities have garnered increasing attention as a vital aspect of urban development, combining sustainability with enhanced quality of life. The concept of a walkable city is intricately linked to how urban infrastructure can support and promote walking through the design of safe, comfortable, and visually appealing pedestrian pathways (Kumalasari et al., 2023). This not only makes walking a viable and pleasant option but also ensures that people can access a broad range of services efficiently and effortlessly. Pioneering efforts in this field, such as the

Neighbourhood Environment Walkability Survey (NEWS) and various walkability indices, have significantly advanced our understanding of how built environments influence pedestrian behaviour. Moreover, metrics like the Walk Score provide straightforward, quantitative insights into walkability, measuring the ease with which residents can accomplish daily errands without relying on a car. Studies consistently show that walkable cities boost local businesses through increased foot traffic, enhance public health, and contribute to economic development by creating more engaging and accessible urban spaces. The paramount economic benefits of walkable cities are irrefutable and have been substantiated through multiple studies, offering undeniable evidence of their superior economic advantages. Walkability not only enhances accessibility and reduces costs for individuals and communities, but it also maximises land use efficiency and fosters improved liveability. Moreover, significant economic returns from better public health and sustained economic growth are a direct result of increased walkability (Refaat et al., 2014).

Moreover, in recent years, significant advancements have been made in identifying how features of the built environment affect walkability. Key contributions include: (a) the NEWS, which gathers data on pedestrian infrastructure, residential density, land use mix and access, street connectivity, traffic safety, crime rates, and aesthetics; (b) the GIS Walkability Index by Frank et al., widely replicated and used as a combined measure of land use mix, street connectivity, and residential density; (c) the 5D model by Ewing and Cervero, which considers density, diversity, design, destination accessibility, and distance to public transport as essential factors influencing travel behaviour; and (d) the 5C model by the Greater London Authority, outlining connectivity, convenience, comfort, conviviality, and conspicuousness as vital aspects that enhance the quality of pedestrian experiences, (e) A “Walk Score” which is a numerical measure from 0 to 100 that indicates the walkability of an address based on how easily one can reach amenities like stores and schools on foot. A score of 0 means the area requires a car for most errands, while 100 indicates a location where daily errands do not require a car.

These foundational studies support the notion that a pedestrian network should be convenient, comfortable, connected, safe, and visually appealing (Fonseca et al., 2022). Crucially, businesses thrive in walkable environments due to increased foot traffic, which is a major benefit for small businesses in these areas, according to the Transport for London’s Town Centre Study, pedestrians spend about 65% more than drivers; this amounts to an additional £147 per month (Transport for London, 2014). The development of walkable neighbourhoods and streetscapes directly correlates with substantial economic

benefits for commercial properties, as higher pedestrian traffic invariably boosts commercial sales (Shin & Woo, 2024). This increase in sales not only allows businesses to expand and hire more staff but also significantly contributes to national economic prosperity.

Walkable cities foster the rapid increase and expansion of small local shops and street markets, enriching the diversity of available goods and services, supporting independent retailers, increasing local employment, and paving the way for new entrepreneurial ventures (Oberklaid, 2015). The implementation of pedestrianisation of streets can result in annual increases in office rentals of \$9 per square foot, retail rents of \$7 per square foot, residential values of \$82 per square foot, and over \$300 per month in rent for an apartment (Rodriguez & Leinberger, 2023).

## METHODS

This research project explores the economic impacts of walkable cities with a focus on Muscat, Oman, employing a mixed-methods approach to integrate both quantitative and qualitative data. Quantitative analyses have compared economic indicators such as employment rates and GDP growth from established walkable cities worldwide, while qualitative insights have been drawn from interviews with local experts and perceptions gathered from young Omanis. The study includes insights from an architect with extensive urban planning experience and an employee involved in the Yiti sustainable city project, as well as feedback from a targeted survey of 25 young residents, aiming to provide a comprehensive overview of how walkability influences economic growth and urban liveability in the region. This dual approach has allowed for a nuanced understanding of the potential for walkable urban environments to drive sustainable economic development in Muscat. An in-depth interview was conducted with two experts one is an architect graduated from UK university and former employee of the ministry of housing and urban planning. Another is an employee of Oman Tourism Development Company, who worked in projects like the Yiti sustainable city project. Questionnaires were distributed to 25 Omanis aged 18–30 to examine how young people felt about walkable and sustainable cities serving as a base for economic growth.

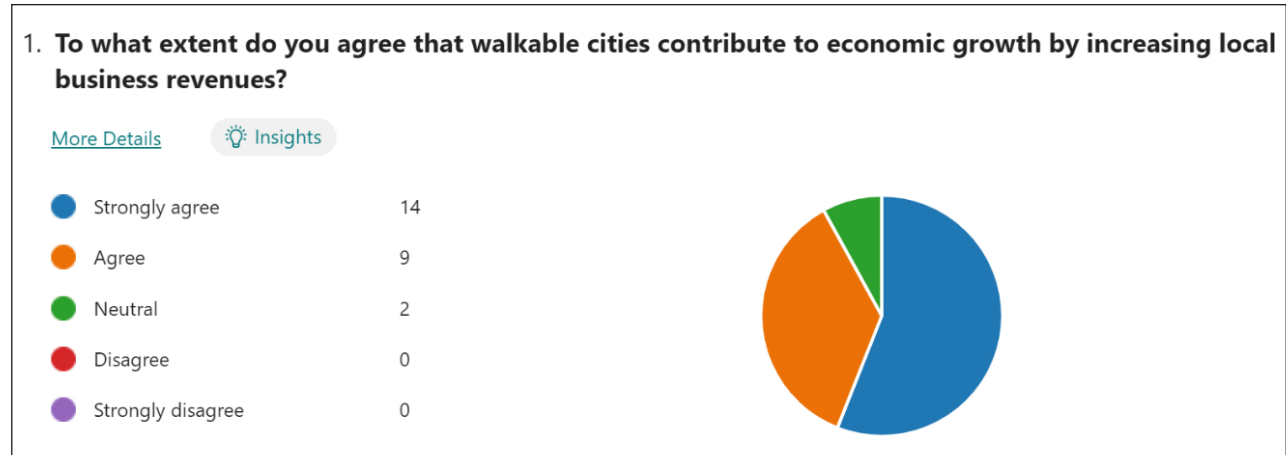
## RESULTS AND DISCUSSIONS

### Objective 1: To Assess the Economic Benefits of Walkable Cities on the Oman

According to Kawther Saeed, one of the respondents, implementing walkable city principles can catalyse

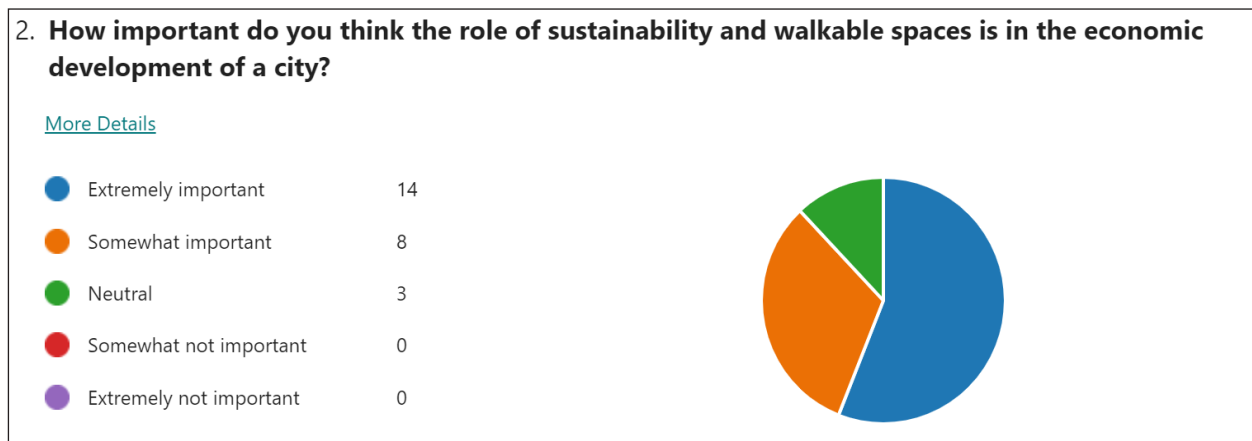
economic growth by attracting businesses, increasing property values, and reducing transportation costs. She adds, “Walkable cities contribute directly to economic growth by enhancing property values, attracting investments, and stimulating economic activity”. Walkable areas draw more businesses due to increased foot traffic and reduced operational costs, leading to higher consumer spending and economic activity. Additionally, properties in these areas typically increase in value because of their desirability and accessibility, which in turn attracts further investments. According to Abrar Al-Hadabi, “A local example is Al Mouj in Muscat, a carefully planned community with a central shopping area that hosts essential services and leisure activities, which promotes social interaction among residents. There’s also a network of sidewalks in the neighbourhoods, where the walkways are shaded and green.” Al Mouj is one of the most expensive residential areas in Muscat due to this design. In addition, Al-Hadabi states “walkable environments often host public events and gatherings, which can stimulate economic activity by drawing in more visitors and increasing exposure for local businesses. As a result, investing in pedestrian-friendly infrastructure can help foster thriving commercial districts and stimulate economic growth. This shows that walkable environments increase social interaction between residents which leads to higher well-being and helps simulate the economy.”

Furthermore, as dependence on personal vehicles decreases, both residents and the city can enjoy significant savings on transportation costs (Pueblo Biciclero, 2025). Overall, the principles of a walkable city not only enhance the urban living experience but also drive substantial economic development by creating a more dynamic, attractive, and sustainable environment (Turoñ et al., 2017). This is also the opinion of the Omani people surveyed 56% said they strongly agree and 36% said they agree that walkable cities contribute to economic growth by increasing local business revenues (Fig. 1). In addition, 56% said they strongly agree and 32% agree that the role of sustainability and walkable spaces in the economic development of a city is important (Fig. 2). The data from a survey among Omani people reveals a strong consensus on the economic and sustainable benefits of walkable cities. Specifically, 92% of respondents either agree or strongly agree that walkable cities enhance economic growth by boosting local business revenues. Additionally, 88% acknowledge the importance of sustainability and walkable spaces in urban economic development. These results highlight a significant public endorsement for sustainable urban planning that not only prioritises economic growth but also considers environmental sustainability, reflecting a cultural shift towards more sustainable and pedestrian-friendly urban environments.



Source: Authors calculation.

**Fig. 1: Walkable Cities Contribution to Economic Growth**

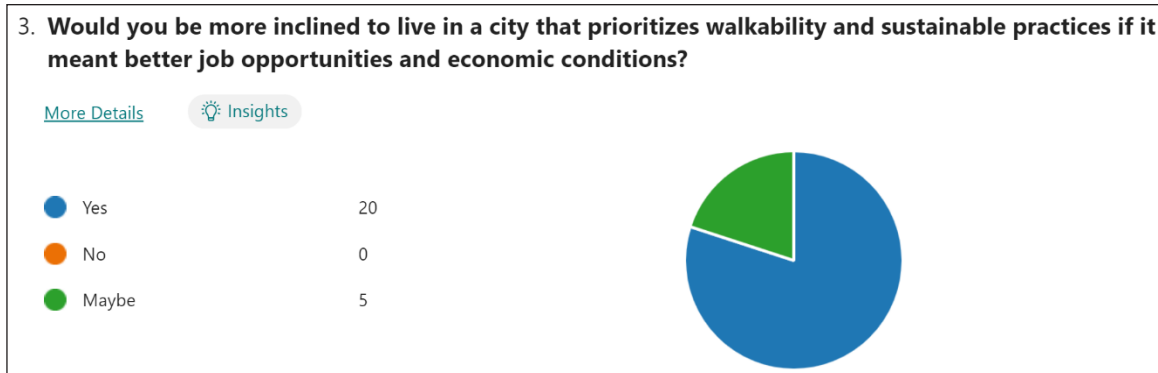


Source: Authors calculation.

**Fig. 2: Importance of Sustainability and Walkability in City Development**

Moreover, 80% of respondents said that they are inclined to live in a city that prioritises walkability and sustainable practices if it means better job opportunities and economic conditions (Fig. 3). This is in line with various data and research mentioned in the literature review, it suggests that a significant public preference for urban environments that integrate sustainability with economic benefits, pointing to a potential shift in what people value in urban planning and development (Nair, 2022). The high percentage underscores the importance that respondents place on having both a sustainable lifestyle and economic stability, which could

drive urban policy towards more comprehensive, green-focused urban planning strategies that also aim to improve economic prospects for residents. Furthermore, research indicates that a significant portion of an individual’s personal income is allocated towards automobile-related expenses, including fuel, repairs, and maintenance. In addition to financial costs, considerable time is lost due to traffic congestion. Encouraging the use of public transport and promoting walking as alternative commuting methods could significantly reduce the number of cars on the road, thereby alleviating traffic congestion.

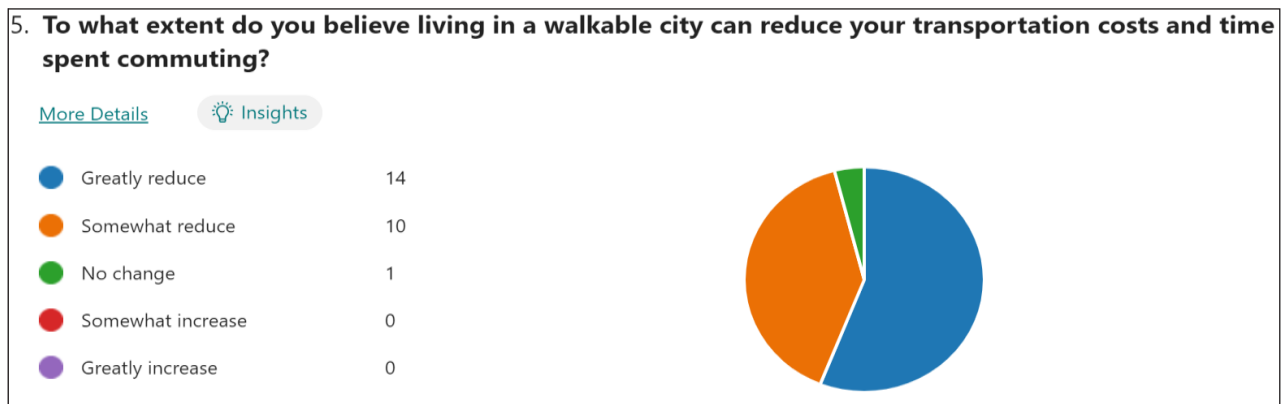


Source: Authors calculation.

**Fig. 3: Inclination to Migrate to a Walkable City**

When surveyed on the opinions of respondents on the impact of living in a walkable city on transportation costs and commuting time (Fig. 4), out of the total respondents, fourteen people (56%) believed that living in a walkable city would “greatly reduce” their transportation costs and time spent commuting. This indicates a strong belief in the substantial benefits of walkability. Ten respondents (40%) thought that it would “somewhat reduce” their costs and commuting time, suggesting that they see benefits, but perhaps to a lesser extent than the first group. One person (4%) felt that there would be “no change” to their costs and

commuting time, indicating scepticism about the impact of walkability on reducing these factors. No respondents believe that walkability would “somewhat increase” or “greatly increase” their costs and time spent commuting, showing a consensus that walkable cities are perceived to improve commuting efficiency and reduce associated costs. This data suggests that most of the surveyed individuals recognised the potential for walkable cities to contribute positively to personal economics and time management in daily commutes.



Source: Authors calculation.

**Fig. 4: Walkable City Reduction on Transport Costs and Commuting Time**

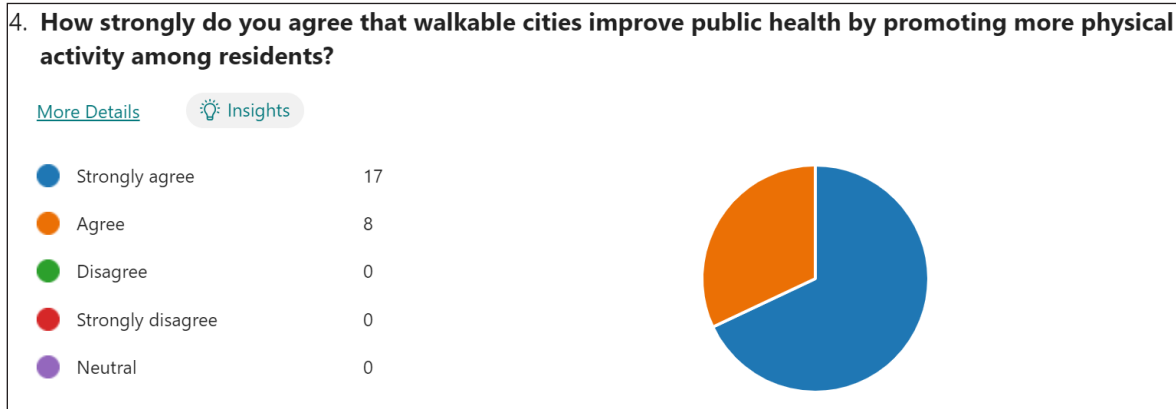
### Objective 2: To Establish the Relationship of Walkable Cities in Relation to Health and Well-being

The data from the Omanis surveyed present the opinions on whether walkable cities improve public health by

promoting more physical activity (Fig. 5). The results are overwhelmingly positive. A majority of 17 respondents (68%) “strongly agree” that walkable cities contribute to better public health through increased physical activity. Another 8 respondents (32%) “agree” with the statement, showing support but with less intensity than those who

strongly agree. Notably, there are no respondents who “disagree” or “strongly disagree,” and no one is “neutral” on the topic. This unanimity among respondents underscores a widespread belief in the health benefits of walkable cities. The lack of dissenting or neutral opinions suggests that the

concept of walkability as a means to enhance public health is widely accepted among this group, reflecting confidence in urban design as a tool for improving physical well-being (Helgesen, n.d.).



Source: Authors calculation.

**Fig. 5: Walkable Cities Promotion of Physical Activity**

### Objective 3: To Determine the Feasibility of Implementing Walkable Cities in Oman

According to the expert Kawther Saeed, “Transforming urban areas into walkable cities in Oman faces challenges such as car-centric urban planning, inadequate infrastructure, and cultural preferences for automobile usage. However, successful strategies from countries that I have visited recently such as Denmark and the Netherlands offer valuable lessons. These include prioritising pedestrian infrastructure, implementing traffic calming measures, and promoting mixed land uses. In Oman, adopting zoning regulations that prioritise pedestrian needs and incentivise mixed-use developments can pave the way for walkable cities.” Kawther Saeed acknowledges the substantial barriers to creating walkable cities in Oman, such as the prevailing preference for cars, the existing car-focused urban planning, and the lack of suitable infrastructure. Yet, she is optimistic, drawing from successful models in countries like Denmark and the Netherlands. Saeed suggests that by prioritising pedestrian infrastructure, adopting traffic calming strategies, and encouraging mixed-use developments, Oman can overcome these challenges. She emphasises the need for zoning regulations that cater to pedestrians and promote mixed-use spaces, implying that regulatory change is the key to urban transformation. Her insights indicate that while the shift toward walkability requires significant changes in

urban design and cultural attitudes, it is feasible through deliberate policy actions inspired by global best practices.

Moreover, according to Abrar Al-Hadabi, “One strategy is to develop the Mwasalat public transportation system further and provide a light rail or metro. This can encourage a shift from private car use to more sustainable modes of transport and make walking more feasible for short trips”. She proposes an integrated approach to urban transit by expanding the Mwasalat public transportation system and introducing light rail or metro services. This strategy is grounded in the belief that enhancing public transport options will incentivise the use of sustainable transport over private cars. The expected outcome is a cultural and behavioural shift towards public transit for longer journeys and walking for shorter distances, effectively reducing reliance on personal vehicles and promoting a healthier, more sustainable urban mobility pattern.

### Objective 4: To Identify the Risks of Implementing a Walkable City Model in Oman

In addition, when asked about the risks and costs of implementing walkable infrastructure in Oman she said, “Transitioning to walkable cities in Oman entails risks such as resistance to change, infrastructure retrofitting costs, and potential disruptions to traffic flow”. We faced all of

those when we first started building the sustainable city of Yiti. However, these risks can be mitigated through phased implementation, stakeholder engagement, and innovative funding mechanisms like public-private partnerships. Saeed's approach to transitioning Oman's cities to be more walkable is strategic and pragmatic, focusing on gradual change to manage risks such as cultural inertia and financial constraints. Her experience with the Yiti's sustainable city project serves as a case study in overcoming initial barriers. Saeed's advocacy for stakeholder engagement and innovative funding suggests a comprehensive understanding of the socio-economic factors at play. The emphasis on early contractor involvement highlights the practical side of her strategy, aiming to align construction realities with the project's sustainable goals. By framing walkability as an investment with substantial long-term benefits, she effectively argues for its feasibility and potential to significantly improve urban life. Her analysis suggests that with careful planning and community buy-in, the challenges of urban transformation can be navigated successfully.

## THE FUTURE OF URBAN PLANNING IN OMAN

Under the Vision 2040 initiative, the Omani government is making tangible advancements in sustainable urban development, as evidenced by significant projects such as Yiti, the sustainable city, and Sultan Haitham City. These initiatives underscore the nation's commitment to eco-friendly urban planning and mark substantive progress in its transformative journey. Kawther Saeed states, "In the future, I envision walkable cities in Oman evolving to become more integrated, sustainable, and inclusive. Urban planners and policymakers should prioritise creating compact, mixed-use developments, enhancing pedestrian infrastructure, and promoting active transportation modes. Embracing emerging technologies and innovative urban design strategies will be key to fostering the development of pedestrian-friendly environments in Oman."

Saeed emphasises that adopting innovative technologies and urban design will be crucial for developing these pedestrian-friendly environments. Abrar adds, "Policymakers should improve pedestrian infrastructure: Develop high-quality sidewalks, crosswalks, and other facilities that cater to the needs of pedestrians and individuals with disabilities and engage the public: Conduct outreach and education initiatives to raise awareness of the benefits of walkability and gather community input to ensure that planning efforts reflect local needs and aspirations." Al-Hadabi's statements indicate a strategic focus on both the physical and the community-oriented aspects of enhancing walkability in urban areas. Her advocacy for improved

infrastructure specifically addresses the accessibility concerns that are often neglected, pointing towards a holistic approach to urban design. By emphasising the need for public engagement, she underscores the importance of a participatory planning process that aligns with the preferences and requirements of the local population, ensuring that the development of pedestrian spaces is both inclusive and beneficial to the community's well-being (Zapata-Diomedes et al., 2019). This approach suggests that she believes informed and involved citizens are key to the successful implementation and sustainability of walkable urban environments.

## LIMITATIONS

The results can mainly be generalised to the city of Muscat. Therefore, it may not apply to other regions in Oman or the world, where the layout of the urban system, cultural preferences, and economic settings differ. That is, the generalisation of the findings depends on the specificity of the geo-socioeconomic context in Muscat, which limits their generalisability to other settings without further localised research. In addition, while comparing economies, the use of secondary data might induce bias if the data are outdated or has few comparative points on account of the use of different methodologies in collecting data points across studies. Thirdly, the variables that are used to quantify these direct economic effects of walkable cities—property values, business revenues, and public health outcomes—represent a complex set of variables. There can be many other urban development initiatives that may impact these variables, making it difficult to isolate the effect of walkability. Therefore, to claim economic benefit only from walkability is an oversimplification may not prove the real dynamics. Moreover, walkable city initiatives are as good as the policy and regulatory environment that supports them. The proposed walkable urbanism policies may not be compatible with the current policy and regulatory framework in Oman. Constraints on policy adaptation and enforcement may work to limit the success of the recommended interventions. More importantly, walkable city strategies are dependent upon a shift in public behaviour and cultural attitudes in favour of walking and public transportation. This situation could face resistance due to lifestyle change and deeply embedded car-centric cultures in many parts of Oman, thereby affecting the expected economic outcomes. Last but not least, extremely limited resources make the prioritisation of walkability projects over other critical urban needs quite contentious.

## CONCLUSION

The report above regarding the economic impacts that walkable cities can have, particularly in Muscat,

Oman, points to some of the greatest advantages and the transformational potential that this increase in urban walkability could offer. Walkable cities stimulate local business growth, increase property values, and improve social and environmental health through the reduction of car dependency. Additional benefits include healthier lifestyles, reduced pollution, and the enhanced attractiveness of urban areas. With its unique cultural and architectural heritage, the city of Muscat faces particular opportunities and problems in the realisation of increased walkability, for which this attempt seeks to capitalise on the potential through strategic planning, inclusive community engagement, and sustainable practices. Realising this vision will demand that the government authorities work with business owners, city planners, and the community. The transition to a walkable city must be seen as a process characterised by a continuum of changes that need to be introduced as needs and technologies keep changing. Our study shows the importance of active monitoring and necessary adjustments in order to ensure initiatives realise their intended results and respond to new challenges and opportunities.

As global trends continue to adapt to sustainable urban development, the walkability of Muscat will increase its global competitiveness. A vibrant, accessible, and sustainable urban space could attract tourists, expatriates, international businesses, and investors, creating further economic and cultural growth. Therefore, it has to be realised that improvements in walkability involve much more than just improvement in pedestrian paths—it is an all-encompassing change toward sustainability and a better quality of life. These findings add to the burgeoning evidence that walkable cities have economic, health, and environmental value. For Muscat, applying the principles is a step toward the future, a place where urban development meets people's needs and fosters a lively, dynamic, and inclusive city.

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