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## Journal of Environmental Management and Tourism

**Journal of Environmental Management and Tourism** is an open access, peer-reviewed interdisciplinary research journal, aimed to publish articles and original research papers that contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences. The Journal publishes original research and seeks to cover a wide range of topics regarding environmental management and engineering, environmental management and health, environmental chemistry, environmental protection technologies (water, air, soil), pollution reduction at source and waste minimization, energy and environment, modelling, simulation and optimization for environmental protection; environmental biotechnology, environmental education and sustainable development, environmental strategies and policies.

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## Managing Urban Environment: Assessing the Role of Planning and Governance in Controlling Urbanization in the City of Amman, Jordan

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**Abstract:** The aim of this paper is to explore gaps in the spatial planning and governance systems that affect the ability of local authorities to manage urbanization in Amman, the capital of Jordan. A qualitative method using in-depth interviews with top managers was adopted to understand urbanization challenges and their relationship with spatial planning and governance systems. Findings reveal that spatial planning and governance systems are unable to manage urbanization effectively. Several planning gaps, such as the inability of the spatial planning system to align with the socio-economic context, the lack of policy instruments that provide practical solutions to urbanization challenges, the mismatch between planning and natural resources, the inefficiency of the land subdivision system, the ineffectiveness of urban growth boundary policy, and the poor performance of the public transportation system, have contributed to this lack of inability. The findings reveal a number of governance gaps, such as lack of coordination and overlapping roles between public authorities, centralization, lack of public participation, and insufficient information, have hindered the ability of public authorities to manage urbanization efficiently. To enhance the urban environment, this study provides important insights for policymakers to improve the overall performance of spatial planning and governance.

**Keywords:** urban environment; urbanization; spatial planning; governance; Amman; Jordan.

**JEL Classification:** R58; R38; P41.

### Introduction

Urbanization, as a human and physical phenomenon, is one of the fundamental driving forces of socio-economic, cultural, and environmental changes worldwide. Urbanization creates changes in the size and density of cities due to the concentration of population in urban areas more extensively than in rural areas. According to the World Urbanization Prospects Report, developed by the World Bank (2018), 55% of the world's population is currently

living in urban areas; 68% of the world's population will be living in urban areas by the year 2050, with approximately 90% of this mass urbanization will take place in developing countries. Urbanization is a vital instrument for modernization and economic development; it is considered an inevitable trend of human social development (World Bank, 2021; Lu *et al.* 2019; Wu *et al.* 2019).

Over the past decades, urbanization has been increasing rapidly in Middle East countries. According to the World Bank (2022), most of the Middle East countries have the highest rates of urban population worldwide; for example, the urban population percent in Jordan is 91.8%, Saudi Arabia 84.7%, Kuwait 100%, and Qatar 99.3%. Such rapid urbanization has created urban challenges in terms of transport, housing, environment, land cover, water, energy, services quality, and agricultural land (Fang & Wang 2021; World Bank 2019; Xu *et al.* 2016; Alnsour, 2014). It has been widely discussed that the urbanization process is unable to achieve sustainable development and improve the quality of life in Middle East countries (Alnsour 2016). In this context, spatial planning is the primary instrument to achieve sustainable development through adopting appropriate technical policy means and controlling urbanization efficiently (Korah *et al.* 2024; Hussain *et al.* 2024; Alnsour & Meaton 2015). However, several international initiatives have emerged to guide countries to which planning policy should be adopted to respond effectively to the urbanization challenges, such as the Sustainable Development Goals (UNSDG, 2015), the Sendai Framework for Disaster Risk Reduction (UNISDR, 2015), the New Urban Agenda (UN-Habitat III, 2016), and the COP21 (UNFCCC, 2015).

Aldegheishem (2023) considers planning a governance activity influenced by socio-economic and environmental dimensions. However, governance can produce new spatial planning models to meet urbanization's complexity (Korah *et al.* 2024). It, instead, implies that the governance system provides practical solutions to the implementations of plans, meaning the continuous need for the improvement of both spatial planning and governance systems to be able to meet urbanization challenges (Nelson 2015; McGill 2020; Salaj & Lindkvist 2021; Menzori, *et al.* 2021).

The inability of spatial planning and governance systems to improve the quality of life effectively and the growing urbanization challenges increasingly in Middle East countries (Alnsour 2016; Al-Hathloul 2017) raises the question of why planning and governance systems have not controlled urbanization effectively and associated challenges. Therefore, this study uses the city of Amman in Jordan to contribute to urban research and reveal the gaps and constraints of governance and planning systems regarding rapid urbanization. Amman has experienced rapid urbanization associated with socio-economic and environmental challenges. Jordanian local authorities are concerned with improving quality of life; thus, a better understanding of how gaps in governance and planning systems affect the management of urbanization, decrease the ability to meet urbanization challenges, and propose implications to overcome gaps in spatial planning and governance systems. The empirical results of this paper will provide useful insights to improve the performance of local authorities in Jordan. Although the literature has widely discussed the environmental and socio-economic aspects of urbanization, there has been limited research on the nexus between the spatial planning, governance, and urbanization in the context of the Middle East region (Cengiz *et al.* 2022; Jaad & Abdelghany 2021; Salimi & Al-Ghamdi 2020; Aina *et al.* 2019). Therefore, an empirical investigation into the role of governance and planning systems in managing urbanization could significantly improve knowledge.

## 1. Urbanization, Planning and Governance in Amman

Amman started its development in the early 1900s by establishing the Hashemite Kingdom of Jordan as a state. In 1918, the population of Amman was less than 5,000, covering an area of less than 0.321 km<sup>2</sup> (Alnsour 2016). Moreover, the inhabitants of Amman were living a traditional lifestyle, with economic life dependent mainly on agriculture. Therefore, the most crucial challenge was improving the quality of life in Amman, which had become the capital (Al-Hadidi *et al.* 2023). Hence, several institutions were established during the 1920s to provide public services, such as the Department of Public Health, the Department of Mail and Telephones, the Department of Public Affairs, and the Departments of Education and Antiquities (Robins 2004).

From 1930 to the early 1940s, the population number was 10,500 inhabitants, and the city had grown to cover an area of 2.5 km<sup>2</sup> (Potter *et al.* 2009). In 1948, the city increased to reach 4.132 km<sup>2</sup> due to the first Palestinian refugee migration to Jordan, and the number of the city's residents was estimated to be 104,000 inhabitants (Al Rawashdeh & Saleh, 2006). The city needed more infrastructure, services, and planning frameworks to guide urbanization. Most departments were turned into ministries, including the Ministry of Health, the Ministry of National Economy, and the Ministry of Education. As a result, the period from the establishment of Jordan in 1921 to 1948 was characterized by the development of guidelines for planning through the creation of planning and service institutions and the establishment of several laws to manage urbanization.

Between 1950 and 1980, Amman's population had increased to outstrip 400,000 inhabitants in 1969, with an urban area of 56 km<sup>2</sup>, as a result of a natural increase in population and the second forced migration of Palestinian refugees to Jordan due to the occupation of the West Bank by Israel. In the early 1980s, Amman's population was estimated to be 777,800 inhabitants, with an urban area of 101 km<sup>2</sup> (Alnsour 2016). The general framework of spatial planning for Amman was established in 1950 by extending the tasks of Amman Municipality. The framework focused on guiding urbanization and service provision at different spatial scales (Alnsour 2016); hence, the first development plan for the city of Amman was settled in 1955 by foreign consultants (Greater Amman Municipality (GAM), 2005). The objective of the plan was to improve services and control urban expansion. Despite the plan having considered several subjects, it was not able to adequately expect the accelerated demand for housing, infrastructure, and services, leading to a lack of other services, such as commercial areas, transportation facilities, and green areas.

In 1966, Jordan enacted the Town and Country Planning Act, No. 79, in collaboration with foreign consultants (GAM, 2005). The primary aim of this legislation was to foster the sustainable development of both urban and rural environments. The act delineated the urban planning procedure into three levels: national, regional, and local. At the national level, Jordan instituted the Higher Planning Council, responsible for formulating public policies related to urban planning and land use. Additionally, it played a role in approving local and regional plans. At the regional level, the planning process focused on implementing the suggestions outlined in public policy, considering the spatial aspects of socio-economic development. At the local level, the act served as a framework to enable authorities, granting them the capacity to carry out different functions. The planning authorities' capabilities were explicitly outlined in the act itself. In fulfilling these duties, a local authority was required to formulate a two-tiered development plan aimed at planning its specified area. Moreover, the responsibilities of local committees extended to the approval or denial of planning applications within their jurisdiction. These decisions were instrumental in enhancing the effectiveness and adaptability of urban planning at the national, regional, and local levels.

As a result of the plan's inability to cope efficiently with urbanization, the Master Plan of 1968 was developed by foreign consultants. The Master Plan focused mainly on services to support the expansion of Amman and control urbanization. Nevertheless, the plan was designed without conducting comprehensive surveys (Alnsour 2016). It was a technical policy instrument to guide spatial planning in the city, rather than a scenario for future land use. Although the Master Plan was characterized by flexibility, challenges continued to increase, including the expansion of irregular housing, decreasing agricultural land, low-quality services, and over-centralization of commercial and administrative activities (Alnsour 2016). In conclusion, most challenges were not encountered adequately, and the Master Plan was not executed generally because of a lack of financial resources (GAM 2005).

Amman's population had increased rapidly to outstrip 1.5 million inhabitants at the beginning of the 1990s, with an urban area coverage of 150 Km<sup>2</sup> by the end of the 1990s (Al Rawashdeh & Saleh 2006). To enhance the capacity of urban development, Jordan has considered the Urban Management Program (UMP), developed by the United Nations Centre for Human Settlements (UNCHS), the United Nations Development Programme (UNDP), and the World Bank in 1986, to improve the capacity of municipalities, infrastructure management, land management, environment management, and poverty alleviation. In response to urban challenges, in 1988, the GAM developed the second Master Plan to control urbanization and enhance future development in the city (GAM, 2005). The plan suggests a gradual spatial change in the organization of Amman by creating concentrations in the new development areas while keeping all primary services and employment sectors in the centre of the city.

In 1990, due to the first Gulf War, approximately 400,000 Jordanians were returned to Jordan from the Gulf States to settle in Amman (Potter *et al.* 2009). These returners had created additional pressure on services, infrastructure, housing, and jobs. The matter became more complicated due to severe economic conditions and a lack of natural resources such as energy and water. In response to these challenges, Jordan established the Housing and Urban Development Corporation (HUDC) in 1992 to provide housing for low-income people (Alnsour 2016).

By the early 2000s, the urban area was estimated to be 162,924 km<sup>2</sup> (Al Rawashdeh & Saleh 2006) and increased to 640 km<sup>2</sup> by 2013 (Alnsour, 2016). In response to rapid urbanization, the GAM developed the Master Plan of 2008 to meet urban challenges and design the future development of Amman. In anticipation of the 2008 Master Plan, the preparatory process encompassed several elements. These included formulating policies and strategies and conducting reviews of land policy, laws, and institutional frameworks. However, the Master Plan has unexpectedly met a new challenge, which is Syrian refugees' migration to Jordan in 2011 during the Arab

Spring period. There were estimated to be 1.4 million refugees at that time, creating barriers to implementing the Master Plan adequately, with increasing pressure on infrastructure, services, housing, water, and energy (Alnsour 2014). Accordingly, rapid urbanization has increased socio-economic and environmental challenges. In response to these challenges, current spatial planning practices have observed several changes in the transformation of urban governance. These changes include the revision of institutional frameworks, the establishment of the Decentralization Council of Amman (DCA) and other Jordanian cities, the relative autonomy of municipalities in decision-making, and the modification of spatial planning guidelines. Such transformations have contributed to improving the socio-economic and environmental conditions in Amman. In addition, Jordan Vision 2030, took spatial planning practice into account by focusing on urban development, climate change, and quality of life.

Urban growth in Amman is still sprawling dramatically due to leap-frog development, in which the cost of service provision is increasing and efficiency in their usage is reducing. Currently, the population of Amman exceeds 4 million inhabitants, with an urban area of 800 km<sup>2</sup> (GAM, 2022). As different institutions are concerned with urban development, the fundamental challenge is unifying action between various actors, considering the current transformation toward the governance system and the evolution of spatial planning instruments. Urban challenges continue to occur within such an institutional framework, with the need for modification in spatial planning instruments. Therefore, searching for gaps in planning and governance systems and setting reasonable recommendations for dealing with these gaps would improve the ability of urban authorities to respond effectively to urban challenges.

## 2. Research Methodology

This study aims to explore gaps in the spatial planning and governance systems that affect the ability of local authorities to manage urbanization in Amman, Jordan. We use a qualitative method utilizing in-depth interviews with top managers to understand urbanization challenges and their relationship with spatial planning and governance systems. Top managers were selected depending on their technical experience, knowledge of spatial planning and urbanization, and executive practices in urban governance. Twenty-two interviews, face-to-face, were conducted with top managers from different urban authorities in Amman. The target was thirty interviews, but eight managers did not participate in this study. Table 1 presents more details on interviews.

Table 1. Profile of interviewee

Urban Organizations	Target number of interviewees	Actual number of interviewees
GAM	19	15
HUDC	6	4
DCA	5	3
Total	30	22

The interview consists of the following sections:

- The first part establishes how urban authorities understand urbanization, governance, and spatial planning. Questions in this section aim to explore and identify a practical understanding and perception of urbanization, governance, and spatial planning.
- The second section aims to diagnose gaps in planning and governance systems that hinder the ability of urban authorities to control urbanization.
- The third part focuses on reaching practical solutions to current gaps in planning and governance systems and urbanization challenges.

## 3. Results and Discussion

The following subsections present gaps in planning and governance systems based on qualitative results.

### 3.1 Planning Gaps

The interviewees declared that the spatial planning system in Jordan stemmed from Western planning models and master plans developed by foreign consultants. Western models were established depending on the free market, open economics, good governance, and extensive public participation. The differentiation of socio-economic, political, cultural, and environmental contexts between Jordan and Western countries has made the Jordanian planning system unable to effectively improve quality of life and control urbanization. One of the interviewees said:

*The current spatial planning system cannot solve urban challenges effectively; thus, problems will continue unless the planning system is revised to be consistent with local socio-economic and cultural contexts. The government has spent millions on the current planning system without achieving sustainable urbanization.*

The results show that 82% of the interviewees observed that adopting foreign experts to develop master plans has led to several disadvantages. On the one hand, foreign experts are affected by their Western planning perceptions when designing master plans. On the other hand, foreign experts usually need more inclusive knowledge of socio-cultural priorities. Additionally, these experts could not predict the future urban growth of Amman. For example, master plans witnessed numerous changes during a short period; these changes did not create sustainable development. Therefore, master plans developed by foreign experts have not improved sustainable development adequately.

According to the interviewees, spatial policy instruments did not provide effective planning interventions for urbanization management. Spatial policy instruments refer to regulations, master plans, building codes, urban growth boundaries, land subdivision systems, local plans, detailed plans, and strategies. However, 75% of the interviewees showed that these instruments could have provided practical interventions to the gaps in spatial planning systems, where many urban problems are growing. For instance, interviewees revealed that the policy of urban growth boundaries did not overcome the sprawl of urban growth outside formal boundaries set by municipalities. The problem is related to undeveloped vacant land lying in serviced locations.

73% of the interviewees stressed that spatial policy instruments were not subject to inclusive review. Policy instruments focus on the physical aspect and must provide an inclusive framework for natural resources and sustainable development. For example, the building regulations have identified a set of building standards, such as land area, ventilation spaces, percentage of the building, the height of the building, and the frontage of the plot. However, it did not identify urban design standards such as the overall house area, meaning people can build in any design and space they like; thus, the building standards policy does not preserve natural resources such as water and energy.

Building regulations have specified several standards at a minimum level, including land area, ventilation spaces, and the frontage of the plot; others, such as the number of floors, are specified at a maximum level with high flexibility in increasing the number of floors. These standards have failed to increase residential density or reduce the overall service delivery, transport, and infrastructure costs. One of the interviewees commented by saying:

*The outcomes of a low-density policy are horizontal urban expansion, more burden on services and infrastructure, and increased distance travelled. These outcomes have created economic, spatial, and environmental problems in the context of sustainable development.*

Land subdivision using the downzoning approach is dividing residential land into large plots, such as a minimum area of 1000 m<sup>2</sup> for category A, 750 m<sup>2</sup> for category B, and 2000 m<sup>2</sup> for the private category; at the same time, the system allows to merge several plots, and the area of construction is undetermined. These subdivisions do not allow vertical expansion and create more pressure on infrastructure and transport. Interviewees declared that many people built their houses in areas more than they needed, meaning exhaustion of water and energy.

91% of the interviewees declared that Amman has an ineffective public transportation system because master plans have not highlighted public transportation. Instead, they argued that plans considered the private automobile as Amman's only mode of transportation. Therefore, interviewees observed the need to establish a public transportation network for Amman. This public transportation network should include Metro lines with Bus Rapid Transit, community bus lines, feeder buses, and park-and-ride facilities at the city's gates.

68% of the interviewees pointed out that spatial planning systems still need to provide a more effective framework for economic implications since the economic benefits of urbanization still need to be improved. The spatial policies that most significantly impact city economies often come from the higher scale of the residents (*i.e.*, wealthy group), meaning the inability of middle- and low-income people to affect urban economics. It also explains why agglomeration economies and the beneficial effects of urban size and local diversity are unclear. Moreover, current policies do not provide complete planning intervention towards technological change, where attempts to transfer into smart cities meet several challenges, such as a lack of spatial databases.

The last gap mentioned by 64% of interviewees is that 45% of Jordan's population lives in Amman. The main driver of this urban variation is the concentration of most services and commercial activities in Amman. Interviewees declared that Jordanian cities are unlinked developmentally to each other because master plans and



spatial policies did not establish development epicentres between cities. As a result, the economic role of the whole city is still limited, and urban sprawl in Amman tends to be accelerated.

### 3.2 Governance Gaps

The primary idea for establishing an urban governance system is to approve plans and manage cities through appropriate policy and technical instruments. According to 64% of interviewees, the central government approved several master plans and strategies to steer future development and cope with the urban challenges. For instance, the strategic plan for Amman development developed by GAM in 2022 was one of the most significant attempts to restructure Amman city; it is concerned with (1) establishing new metropolitan sub-centres with organizing services, (2) improving public transportation, and (3) establishing the green building. The strategy asked for more coordination between public authorities and emphasized the significance of a single, unifying policy for coordination. However, 77% of the interviewees declared that public authorities could not coordinate their work with each other. They observed that the management of urbanization could not effectively deal with multi-sectoral actions and plans, which may appear simultaneously, indicating a lack of coordination. This situation is aggravated negatively by overlapping roles since each public authority has laws and regulations that differ from those of other authorities. One of the interviewees provided an example:

*The Municipality of Amman (Amana) has urban transportation policies, and so do the Ministry of Transportation, Land Transport Regulatory Commission, and Traffic Department/Police. Unfortunately, these four distinct authorities, guided by the same community, need to be more coordinated, while positive coordination can enhance the performance of urban governance.*

Centralization is an essential factor affecting the coordination level between urban authorities. 75% of the interviewees revealed that centralization and multi-organizations concerned with spatial planning and management of urbanization had created obstacles to the current decision-making process and restricted the realization of executive plans. Interviewees argue that there are no fixed technical and managerial links between public authorities in Amman, such as ministries, GAM, and the other local councils and commissions, which leads to carrying out different strategies. Numerous conflicts in existing plans and strategies challenge governance's structural and functional performance. Empirical findings show a need for coordination across various public authorities and sectoral departments.

Qualitative results show that several issues in the context of urban governance need to be addressed, including sustainable development, transportation systems, general environmental systems, and legislative frameworks. 64% of the interviewees revealed that numerous changes in the urban governance system are still in the suggestion phase, leading to ambiguous procedural policy in managing urbanization. Interviewees discussed that the main challenge is the implementation of plans, where the nature of the decision-making process creates obstacles and delays in implementing spatial plans and strategies. Moreover, time-consuming and bureaucratic procedures have led to inflexibility in implementing plans. One of the managers provided a good example:

*The implementation of the first phase of the Bus Rapid Transit Project took more than ten years, and the overall project has not been accomplished yet.*

According to 53% of the interviewees, Jordan uses a centralized approach to manage urbanization. Centralization refers to a lack of administrative and financial autonomy. The knowledge of managers and experts in urbanization challenges is restricted by providing proposals in line with a centralized system. Hence, a more centralized system is likely to affect the performance of urban authorities in facing urbanization challenges. 82% of the interviewees revealed that issues such as uniformity of action, improving motivation, and effective communication are essential in reducing centralization. Empirical results show that 64% of the interviewees believe that a centralized system results in low-quality services, wrong decisions, and an absence of real needs and priorities of people. However, 36% of the interviewees believe that a centralized system helps control financial resources and distributes fairly the economic benefits of the urbanization process between urban areas. In addition, all the interviewees confirmed that Jordan had already started the transformation into a decentralized system, enhancing the norms of accountability and transparency. However, the transformation process into governance is still in the development phase.

82% of the interviewees declared that public participation could have contributed more clearly to effectively enhancing the planning and governance systems. The objectives of public participation need to be more adequately transparent, and the level of participation tends to be low. Although the government has already

taken several necessary steps to promote public participation, such as establishing the Independent Election Commission, these steps are insufficient to determine goals and instruments to enhance public participation.

Qualitative results pointed out that participants' knowledge level in planning and governance affects the success of community participation. 68% of the respondents commented that the complexity of urbanization problems requires stakeholders' technical knowledge. Managers noted that several factors influence available knowledge, such as experience, education, training, and technical capacity. However, a lack of effective communication with stakeholders could hinder the benefit of knowledge and create an unwillingness to participate. Despite recent positive transformations toward urban governance in Jordan, the influence of effective communication remains essential in promoting community participation. Mistakes could have happened in preparing and implementing plans, but effective communication contributes to overcoming such mistakes.

91% of the interviewees discussed the importance of social media in improving public participation. On current social media sites such as Facebook, Twitter, Instagram, etc., public authorities do not interact with people because authorities do not prefer to publish information on social media, leading to a lack of responsiveness to citizens' perceptions and opinions. According to interviewees, laws and regulations do not encourage sharing information with the public. However, many interviewees see that published information and facts can positively affect the performance of urban authorities. One of the interviewees believes:

*Providing information and facts on social media could lead to solutions to urban problems.*

Urban authorities' inability to benefit from social media networking has led to weak interaction between the public and authorities. Thus, embedding social media in laws and regulations is necessary. In addition, the non-existence of a unified account of all public authorities makes people unable to follow urban issues, creating communication obstacles between authorities. Empirical findings reveal the need for unified legislation for social media usage among public authorities.

According to 68% of the interviewees, urban data at detailed levels need to be more comprehensive, with a need for shared databases between public authorities. Thus, the non-existence of spatial databases at all planning levels is one of the main challenges to controlling urbanization and guiding future development. For example, one of the interviewees said:

*An unavailable spatial database that embraces detailed information at all planning levels has hindered the performance of governance.*

## **Conclusion and Policy Implications**

This paper provides significant insights into spatial planning and governance's theoretical and practical aspects. Theoretically, it contributes to the literature on urbanization, spatial planning, and governance systems by providing empirical evidence of how planning and governance gaps affect the ability of public authorities to control rapid urbanization. Although spatial planning and governance are considered practices adopted by world countries, investigating spatial planning and governance theory in the context of urbanization is vital for researchers and managers; thus, this paper extends the research conducted on planning and governance. Furthermore, this study provides empirical evidence that could contribute to conducting comparative studies in the context of Middle Eastern countries, as comparative research enriches knowledge widely. Finally, this study explores the gaps in spatial planning and governance in the context of Middle Eastern countries, as studies on spatial planning and governance in Jordan are very limited.

Over the past hundred years, Amman has experienced both positive and negative transformations in managing urban growth. Positive changes have included the establishment of planning institutions, the formulation of various plans, and the enactment of laws and regulations, all contributing to sustainable urban development. However, negative transformations have also occurred as a result of urban growth, manifesting in unorganized urbanization, traffic congestion, and environmental problems. This study presents empirical evidence on the factors influencing planning and governance in managing urbanization.

The study concludes that Amman's urban authorities need help to effectively meet the challenges of rapid urbanization due to gaps in the spatial planning and governance systems. The significant planning gaps include the spatial planning system not being aligned with the local socio-economic context. Master plans developed by foreign experts who have no inclusive knowledge of the socio-cultural dimensions and people priorities; urban policy instruments are unable to provide practical solutions to the inherent gaps in spatial planning systems, and the spatial planning system has not succeeded in establishing a realistic framework related to natural resources and sustainable development, and land subdivision increased pressure on infrastructure, services, transport, water, and energy consumption, the policy of urban growth boundaries did not overcome the sprawl of urban

growth outside formal boundaries, Amman city has no comprehensive public transportation because master plans have not highlighted the public transportation and extensive concentration of services in Amman.

Governance gaps include a lack of coordination between public authorities, overlapping roles since several public authorities have similar tasks and plans, centralization has created obstacles to the current decision-making process and restricted the realization of executive plans, procedural ambiguity in managing urbanization, a lack of public participation, the ineffectiveness of social media in urban authorities for improving public participation, and insufficient urban data at a detailed level with a lack of shared databases between public organizations.

In conclusion, several implications should be considered, including a comprehensive revision of spatial planning laws to become more appropriate for the local socio-economic context. Conducting a cost-benefit analysis of current policy instruments could maximize the economic benefits of spatial planning. Creation of a national framework to link spatial planning to the governance system. Establishment of a unified urban policy to remove overlapping roles between urban authorities for improved coordination. Foster information exchange across urban authorities to raise the level of coordination. Enablement of local authorities by giving them appropriate space for administrative and financial autonomy to enhance the decision-making process and encourage public participation by raising awareness among stakeholders and people directly and indirectly. Improvement of information quality by mapping data against the different stages of the information lifecycle and improving information content at all spatial planning levels.

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### Credit Authorship Contribution Statement

**Abdullah Radwan Arabeyyat:** developed the concept and plan for this project research, and reviewed and edited the manuscript.

**Jamal Ahmad Alnsour:** carried out the project administration, collected the data, carried out the analysis, wrote the manuscript.

**Sakher A. I. Al-Bazaiah:** developed the concept and plan for this project research, carried out the project administration.

**Mahmoud A. Al-Habees:** collected the data, conducted a literature review, and wrote the manuscript.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Declaration of Use of Generative AI and AI-assisted Technologies

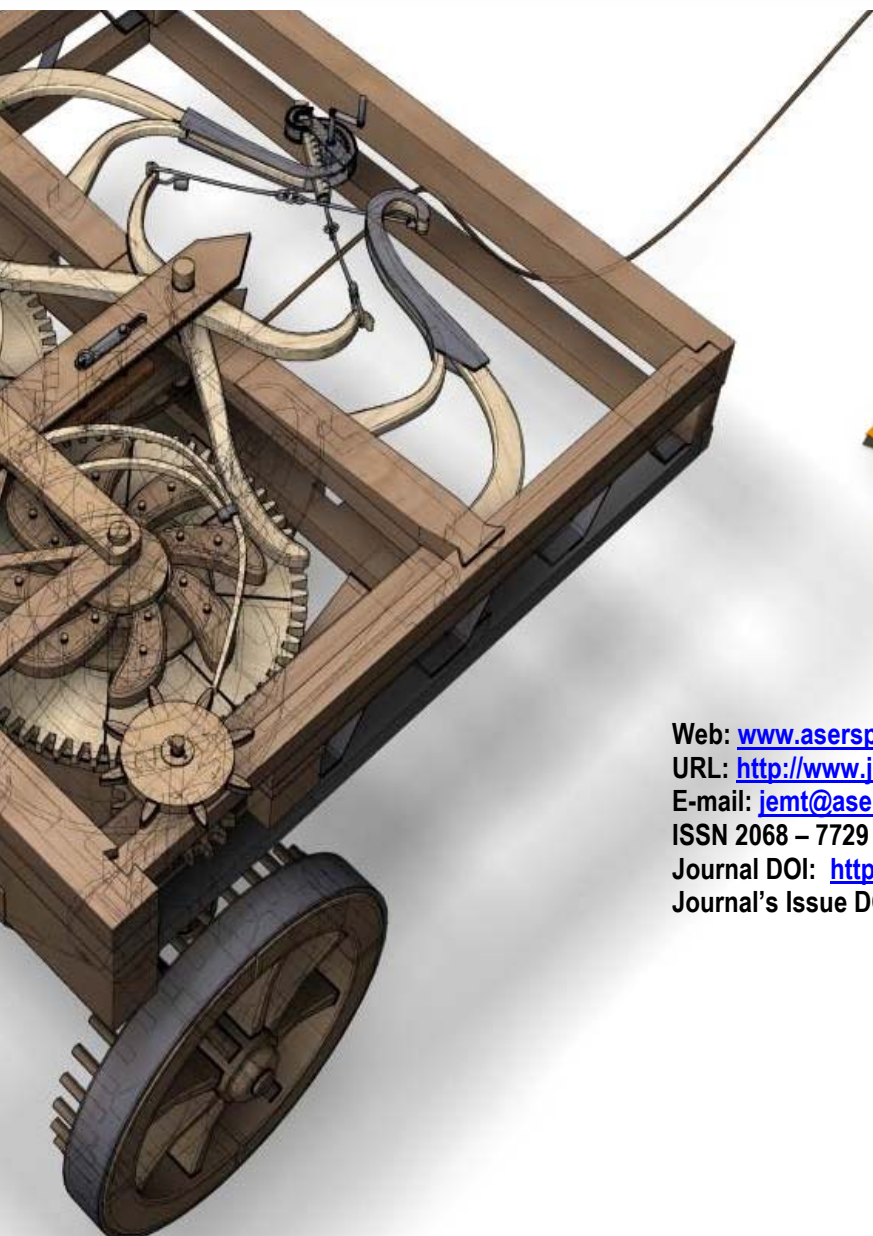
The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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