

New Egyptian Cities Urban Challenges: Galala City and New Cairo Case Studies

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ABSTRACT

This paper investigates new cities' diverse challenges, examining inherited issues from previous generations and emerging obstacles that demand innovative solutions. Focusing on the Egyptian cities of Galala and New Cairo, a comparative analysis explores challenges such as environmental concerns, population growth, infrastructure development, traffic congestion, social inclusion, climate resilience, economic diversification, tourism practices, cultural identity, employment opportunities, and community engagement. New Cairo confronts rapid growth and diverse population needs, requiring strategic urban planning, sustainable infrastructure investment, social inclusion initiatives, and technological innovation. Galala City, situated along the Gulf of Suez coast, aims for vibrancy and sustainability, necessitating comprehensive strategies encompassing economic diversification, responsible tourism, cultural preservation, community well-being, and sustainable resource management. The success of these cities depends on adaptive urban planning, effective governance, and continuous community engagement. The comparative analysis underscores interconnected urban challenges, emphasizing the necessity of a holistic approach. Success lies in strategies adopted by local authorities, stakeholder collaboration, and flexible urban planning policies. As urban challenges evolve with demographics, technology, and global dynamics, the paper advocates learning from existing cities, embracing innovative solutions, and adopting corrective planning approaches for sustainable and livable urban development.

KEYWORDS

new cities, urban challenges, comparative analysis, sustainable development, adaptive urban planning.

INTRODUCTION

Since Ebenezer Howard introduced the concept of satellite new towns, new cities are faced several challenges related to their environmental, economic, and sociocultural development. (Howard, 1902) While most of these challenges are old and experienced by early versions of new cities, some of them are new and require innovative corrective approaches. As indicated by Cervero, many of them were not planned as self-contained towns; they were more like dormitory villages, with the source of employment for residents usually in nearby cities. (Cervero, 1995) This paper explores the various challenges faced by new cities in Egypt, including inherited issues from previous generations and new obstacles that require innovative solutions. For example, New Cairo is experiencing rapid growth and diverse population needs, necessitating strategic urban planning, extensive infrastructure investment, social inclusion initiatives, and technological innovation. Alhowailly

argues that historical influences adversely affect contemporary approaches, inducing socio-economic impacts and that mono-institutional and sectoral development is rooted in Egypt's quasi-colonial history. He concluded the need for new municipally guided growth model, emphasizing indigenous and locally validated approaches. (Alhowaily, 2023)

Meanwhile, Galala New City, located on the Gulf of Suez west coast, is striving for vibrancy and sustainability, which requires comprehensive strategies for economic diversification, responsible tourism, cultural preservation, community well-being, and sustainable resource management. The success of these cities hinges on adaptive resilient urban planning, effective governance, and continuous community engagement. The comparative analysis between New Cairo and Galala City highlights interconnected urban challenges and the importance of a holistic planning approach. Success of new cities experiences depends on strategies adopted by local authorities, stakeholder collaboration, and flexible urban planning policies. As urban challenges evolve with changing demographics, technology, and global dynamics, the paper advocates for learning from existing cities, embracing innovative solutions, and adopting corrective planning approaches for sustainable and livable urban development.

1. LITERATURE REVIEW

The Egyptian government's ambitious initiative to redistribute its population from Cairo to newly constructed desert cities has faced significant challenges and limited success, as evidenced by a variety of studies spanning several decades. The new cities have struggled to attract residents, primarily due to a lack of amenities and the enduring allure of Cairo. Subsequent reviews have underscored the inconsistency and lack of evaluation in the implementation of the New Communities initiative, pointing out that the cities struggled to meet their core objectives, including achieving a viable resident population and socio-economic diversity. The influence of Western aid agencies and the Egyptian government's rigid practices on urban planning has further complicated matters. Issues of vacant housing and speculative development have also been significant. Despite ongoing construction and state investments into the third generation of new cities, critical problems related to resident population targets, connectivity, and safety persist. Recent studies continue to reveal structural and social integration issues, illustrating the complex dynamics and persistent hurdles in the quest to develop sustainable, livable desert cities in Egypt.

Stewart (1996) assessed Egypt's efforts to redistribute its population from Cairo to new desert cities. He concluded that, despite attracting businesses, the new cities struggled to gain a significant resident population due to a lack of amenities and the persistent appeal of Cairo. Economic success was closely linked to proximity to Cairo, highlighting the challenges of population redistribution. (Stewart, 1996)

The Egyptian New Communities initiative, launched in the mid-1970s to address urban challenges, aimed to combat encroachment on agricultural land, urban development limitations, and deteriorating infrastructure. A review by individuals

involved in the initiative, critically examined the conditions of New Communities, emphasizing urban form, growth, and deviations from the original vision revealed that despite initial comprehensive planning, the implementation, spanning two decades, has suffered from a lack of evaluation and consistency. (Abdel-Kader & Ettouni, 2009) In 2014, the authors examined the state of the New Communities, highlighting their constrained success in attaining core goals and fulfilling stated development plans. Challenges included securing a viable resident population, fostering a diverse socio-economic mix, facilitating access for lower-income groups, attaining relative independence and autonomy, and creating sustainable and quality living environments. (Abdel-Kader & Ettouney., 2014)

Dorman (2013) examined Western aid agencies' attempts since the late 1970s to assist the Egyptian government in planning Cairo's capital. Despite efforts to promote an administratively competent state, projects failed due to bureaucratic struggles and the authoritarian nature of Egypt's power structure. The study highlights the regime's exclusionary practices and the impact on Cairo's uncontrolled growth, revealing how authoritarian power dynamics shape Egyptian social space. (Dorman, 2013)

“The high rates of vacant housing in Egypt are, again, also primarily due to the lucrative speculation associated with housing, which since the 1990s has encouraged the housing boom in the desert around Cairo and the concomitant frenetic development of luxury buildings and exclusive gated communities. Analysts suggest that there is an oversupply of top-range dwellings that remain vacant and awaiting buyers. In addition, a freeze on rental prices in some areas where the old rental system is still in place, the administrative difficulties accompanying the sale of properties, and general urban decay can be added to the list of causes of the vacant home phenomenon in Egypt.” (P. 215) (Moreno & Blanco, 2014)

The concept of establishing new cities in the desert near Cairo was first introduced in the 1975 Master Plan. The government aimed to decentralize the population from Cairo, alleviate congestion in the Nile Valley settlements, and provide alternatives to informal and squatter communities. (Moreno & Blanco, 2014) During the second decade of the 20th century, the third generation of new cities was under construction in Egypt that expected to host 15 million persons by the end of the third decade. (Moreno & Blanco, 2014) “Although a minimal fraction of the target population has moved to these cities, building policies have been maintained and have even increased, with more new cities and more state investments in their construction.” (Moreno & Blanco, 2014)

“New Communities present scene, points-out their limited success in achieving underlying objectives and meeting declared development programs, in terms of: securing effective 'resident' population, accommodating a balanced socio-economic mix, enabling lower income groups, achieving relative independence and autonomy, and providing sustainable living and quality settings.” (Abdel-Kader & Ettouney., 2014) “In the last four decades, the newly built cities were targeted to home 23,833,000 inhabitants. Yet, they are home for only 4,042,000 inhabitants since the

establishment of the first generation in 1979.” (Ibrahim & Masoumi, 2016)
"Luxurious desert cities” have been built to house Cairo’s elite, with villas fetching millions of pounds in gated compounds" (Ibrahim & Masoumi, 2016)

Farid and El-Shafie indicated that the Egyptian government improvement of transportation, in the form of a subway network and motorcar ring road, led to the creation of planned urban concentration on the Eastern side of Greater Cairo Region (GCR) forming what is called the “New Cairo City,” the biggest-most suburb for Cairo in the recent history. (Farid & El Shafie, 2002) Abdeldayem and El-Khouly argued that New Cairo City requires changes to its physical structure to increase the pedestrian crossing routes because of the high number of accidents involving pedestrians crossing main roads. Their study concluded that there is a connectivity issue on the local/pedestrian scale. Due to the design of the road network structure, roads are acting more like barriers than connectors between the city boundaries. (Abdeldayem & El-Khouly, 2020) In Cairo’s new settlements, public spaces don’t seem to contribute to its public life. (Murshed, Ouf, & Zafarany, 2021)

“Many cities in Egypt have been built recently with spatial characteristics that differ structurally from the spatial configuration of the ancient Arab city. There is a growing interest in understanding how social and economic phenomena related to the community are transformed in new cities.” (El-Khouly, Eldiasty, & Kamel, 2023)

“. The study concluded that changes in the characteristics of the spatial configurations of the new Egyptian cities by increasing the flow of vehicular traffic via wide arterial roads do not reflect the requirements of the local community, but instead impede local movement within the city and reduce the integration of its neighborhoods, turning them into isolated islands.” (El-Khouly, Eldiasty, & Kamel, 2023)

2. METHOD

New Cairo and Galala City were chosen as representatives of two generations of new cities in Egypt to illustrate the distinct challenges each generation faces. New Cairo, an older new city, exemplifies the traditional urban development issues such as timely infrastructure development, rapid population growth, and traffic congestion. In contrast, Galala City, representing the newer generation, faces unique challenges related to sustainability and environmental conservation, smart city integration, and climate resilience. While Galala City is classified as a tourism center, it is also a city with emerging urban features. Studying a city in its development phase offers valuable insights into urban planning, infrastructure, and sustainability practices that can be applied to other developing urban areas. In contrast, New Cairo, with its more than 30 years of development, provides a benchmark for assessing the potential growth trajectory of Galala City.

The paper elected to use non-traditional method of comparison in order to highlight the different types of challenges instead of comparing cities using the same set of challenges. Th paper intended to highlight different types of challenges not compare between two cities. By examining these cities, the research aims to highlight the evolution of urban challenges and the need for tailored solutions to promote long-

term sustainability, resilience, and inclusivity in urban planning and development. This comparative approach provides valuable insights into the diverse factors that influence the sustainable growth of new urban areas in Egypt.

The study adopted a comparative analysis methodology between two new cities in Egypt—Galala City and New Cairo—to evaluate and compare urban challenges across different versions of new cities. This comprehensive analysis encompasses a range of critical factors, including environmental considerations, population growth, infrastructure development, traffic congestion, social inclusion, climate resilience, economic diversification, tourism practices, cultural identity, employment opportunities, and community engagement. Public opinions are raised in media and social networks indicating several problems related to numerous informal popular transportation such as minibuses and motorcycles, recurring frequent water shortage, and construction of shops and cafes under newly constructed bridges and green areas frustrating permanent residents. By examining these diverse aspects, the study aims to provide a holistic understanding of the successes and shortcomings of each city. Thus, the methodology, while non-traditional, is robust in its aim to reveal the diverse and distinct challenges that cities may face, rather than comparing them on a uniform scale. This approach enriches the discourse on urban challenges by providing a broader perspective on the various factors at play in different urban settings.

The paper hypothesizes that many of the challenges faced by these new cities are not novel but rather recurring issues that were not adequately addressed or lessons from previous experiences not implemented. For instance, problems related to infrastructure development, social inclusion, and traffic congestion have persisted despite the insights gained from earlier projects. However, the study also identifies new challenges that, while not present in earlier developments, were anticipated and can be effectively managed with proper planning and intervention. These new challenges may include adapting to climate change, integrating modern economic diversification strategies, and fostering community engagement in a rapidly changing urban environment. By contrasting the experiences of Galala City and New Cairo, the study seeks to draw valuable lessons that can inform future urban development initiatives in Egypt and similar contexts.



Figure (1): New Cairo and Galal City.
Source: Author adapted from Google Earth.

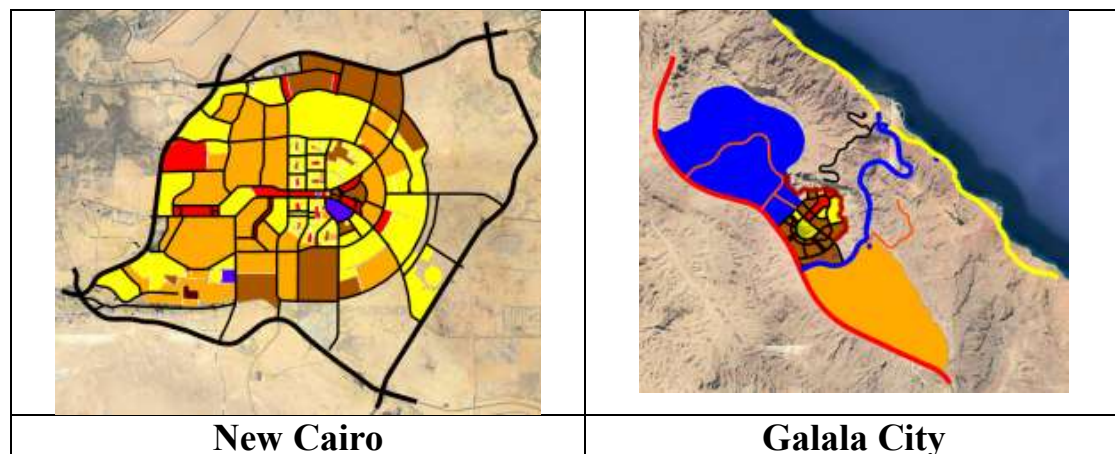


Figure (2): New Cairo and Galal City Maps.

Source: Author adapted from Google Earth.

3. RESULTS

3.1. Old Challenges

3.1.1. Infrastructure

New Cairo is facing challenges related to the timely development of infrastructure, including roads, public transportation, and utilities. Repeated shortage of fresh water supply and electricity in addition to repeated floodings of streets and properties during rain seasons is noticeable. The city of Shenzhen in China faced similar challenges during its rapid growth in the 1980s and 1990s. The city struggled with providing adequate roads, public transportation, and utilities to match its explosive population and economic growth. Initial infrastructure was often insufficient, leading to congestion and resource shortages. The city eventually invested heavily in modern infrastructure, including a comprehensive metro system, to support its development sustainably. It was later considered a model city for others to follow. (Liu, 2019) Like New Cairo, Galala City is facing challenges related to the timely development of infrastructure. With the increase of number of residents in Galala City, the efficiency of infrastructure systems remains to be assessed. Absence of public civil services; such as ambulance, firefighting, municipal services are noticeable. Timely development and maintenance of infrastructure are crucial for sustainable urban growth. Addressing the repeated shortages of water and electricity, as well as managing flooding, are essential for ensuring the resilience and reliability of urban services, which are fundamental to sustainable living conditions. Galala City's need for efficient infrastructure systems and public services highlights the necessity for sustainable infrastructure planning to support growing populations.

3.1.2. Population growth

During the first decades of the 21st century, New Cairo has experienced rapid population growth, driven by factors such as urban migration and economic opportunities. The challenge lies in managing this growth effectively to provide adequate housing, infrastructure, transportation, and public services for the rapidly increasing number of residents. Rapid population growth and migration to New Cairo

posed challenges in terms of providing adequate housing, services, and employment opportunities. Galala City is likely to experience population growth as it attracts residents and visitors. Managing this growth will be crucial for providing essential services, housing, and maintaining a balanced and sustainable urban environment. Managing rapid population growth sustainably involves providing adequate housing, infrastructure, and public services without depleting resources or causing environmental degradation. Effective urban planning that accommodates growth while minimizing ecological footprints is key to maintaining a balanced and sustainable urban environment. Alawadi et al (2015) recommended the implementation of a more transparent approach to planning to avoid negative impact of rapid population growth and physical transformation. (Alawadi & Dooling, 2015)

3.1.3. Education and healthcare

Ensuring quality education and healthcare facilities for the growing population is a major concern for new cities. For example, Brasilia faced the challenge of developing sufficient educational and healthcare facilities for its residents. Initially, these services lagged behind the population growth, but over time, the city expanded its educational institutions and healthcare services to meet the needs of its citizens, emphasizing the importance of accessibility and quality in these essential services. (Kelly, 2020) New Cairo has made strides in developing educational and healthcare facilities, attracting reputable universities, institutions, and hospitals. However, the challenge remains in ensuring accessibility, quality, and inclusivity in these services to meet the diverse needs of the growing population. The city would need to prioritize the development of educational and healthcare infrastructure to meet the needs of its growing population. Ensuring access to quality education and healthcare services will contribute to the overall well-being of residents. Galala City has started with Galala University modern facilities and state-of-the-art 600 bed hospital part of the medical campus. When operable, the hospital will serve the stretch between Suez and Hurghada in addition to the Gulf of Suez region. Quality education and healthcare are pillars of social sustainability. Ensuring accessibility, quality, and inclusivity in these services supports the overall well-being and productivity of residents, which is essential for a thriving, sustainable community.

3.1.4. Traffic congestion

With the rapid expansion of the New Cairo traffic congestion has become a significant concern. Addressing this challenge requires comprehensive urban planning, efficient public transportation systems, and the integration of smart city technologies to manage traffic flows more effectively. A new monorail system is under construction and is expected to facilitate and increase the traffic flow. As the city expanded, managing traffic congestion became a significant challenge. Informal public transportation systems; such as minibuses and motorcycles, are causing traffic problems and hazards. Elkhoully et al argue that “changes in the characteristics of the spatial configurations of the new Egyptian cities by increasing the flow of vehicular traffic via wide arterial roads do not reflect the requirements of the local community,

but instead impede local movement within the city and reduce the integration of its neighborhoods, turning them into isolated islands.” (El-Khouly, Eldiasty, & Kamel, 2023) As Galala City develops, attention must be given to providing efficient transportation systems to serve the future population. Implementing smart mobility solutions and sustainable transportation options can help mitigate potential traffic congestion issues. Reducing traffic congestion through comprehensive urban planning and efficient public transportation systems contributes to lower carbon emissions and improved air quality. Implementing smart city technologies and sustainable transportation options can mitigate traffic issues and promote environmental sustainability.







	
Traffic in New Cairo	Traffic in Galala City
	
American University in New Cairo	Galala University
	
Hospital in New Cairo	Galala University Hospital

Figure (3): New Cairo and Galal City Old Challenges.

Source: Author.

3.2.New Challenges

3.2.1. Sustainability and environment

As New Cairo continues to grow, sustainability and environmental considerations become crucial. Balancing development with environmental conservation,

implementing green infrastructure, and addressing water scarcity are key aspects for a sustainable future. Addressing environmental sustainability concerns and the impact of urbanization on natural habitats is of paramount importance. As with many new urban developments, Galala City should prioritize sustainability and climate change hazards. This includes incorporating green infrastructure, energy-efficient technologies, waste management systems, and water conservation measures to reduce the environmental impact of urbanization. Balancing development with environmental conservation is critical for sustainable urbanization. Implementing green infrastructure, addressing water scarcity, and incorporating energy-efficient technologies are essential for minimizing the environmental impact and promoting ecological sustainability. Integration of green infrastructure, energy-efficient technologies, and innovative waste management systems to minimize its environmental impact is demonstrated in the case of Masdar city, that is considered a model for sustainable urban development. (Randeree, 2018)

3.2.2. Social inclusion

Achieving social inclusion is essential in a diverse and rapidly growing city like New Cairo. Cities include different types of individuals with different backgrounds, abilities age, and socio-economic status. Especially new cities should avoid the pitfalls of older cities and all efforts should be directed towards reducing social disparities, ensuring equal access to opportunities, and promoting community engagement in decision-making processes. (Short, 2021) Balancing development with social inclusion and addressing potential disparities in access to resources and opportunities. Ensuring social inclusion in Galala City involves creating a diverse and inclusive community. Policies and initiatives should be implemented to address potential social inequalities, providing equal access to resources, amenities, and opportunities for all residents. Achieving social inclusion ensures that all residents have equal access to resources, opportunities, and decision-making processes, fostering social equity and cohesion. This is fundamental for creating a sustainable and resilient urban community.

3.2.3. Smart city integration

As indicated by Houbakht et al (2022) there is no ideal solution for the idea of an integrated smart city because of the relationship between smart cities and the difficulties that arise from their implementation, particularly when it comes to integration. (Houbakht, Kheibari, & Bahrepou, 2022) New Cairo has the potential to leverage smart city technologies to enhance urban services, improve efficiency, and foster innovation. Integrating IoT, data analytics, and digital platforms can contribute to a more connected and responsive urban environment. Integrating smart city technologies for efficient urban management and services. Implementing smart city technologies in Galala City can enhance urban management, efficiency, and the quality of life for residents. This may involve the use of IoT devices, data analytics, and connectivity to improve various aspects of city life, such as transportation, public services, and utilities. Leveraging smart city technologies enhances urban services'

efficiency and responsiveness, contributing to sustainable urban management. Integrating IoT, data analytics, and digital platforms can improve resource management, reduce waste, and enhance the quality of life for residents.

3.2.4. Climate resilience

Building climate resilience is vital given the potential impacts of climate change. New Cairo should focus on sustainable infrastructure, water management, and disaster preparedness to mitigate risks and ensure the city's long-term resilience in the face of changing climate patterns. Developing strategies to make the city more resilient to climate change, including extreme weather events and potential rain floodings. Given the potential impact of climate change, Galala City should incorporate climate-resilient infrastructure and urban planning strategies. This includes measures to adapt to extreme weather events, ensure water resilience, and minimize vulnerability to climate-related challenges.

Building climate resilience through sustainable infrastructure, water management, and disaster preparedness is vital for mitigating the risks associated with climate change. Ensuring cities can withstand and adapt to extreme weather events is crucial for their long-term sustainability. Governments, corporations, and the general public are becoming more aware of the hazards associated with climate change on timescales ranging from months to decades. Certain climate shifts may have previously unheard-of negative socioeconomic effects, while others may have advantages with sufficient preparation and notice. Therefore, in order to assist them make more informed judgments and policies, decision-makers—including policy-makers—must have access to and utilize high-quality, readily available, pertinent, and reliable climatic information on the past, present, and future. (Hewitt, et al., 2020)

3.2.5. Location

New Cairo is strategically located east of Cairo, Egypt. Its location was chosen to alleviate population pressure on the historic city and to encourage urban expansion. However, the location also posed challenges in terms of accessibility and connectivity, especially during the initial phases of development. The distance from the city center could impact commuting times and transportation infrastructure needs careful planning to support the city's growth effectively. The remote location of Galala City in a less developed area posed challenges in terms of accessibility and connectivity. Galala City is strategically located on the Red Sea coast, offering potential advantages and challenges. Its proximity to the Red Sea provides opportunities for coastal development, tourism, and trade. However, being situated in a less developed area may present challenges related to accessibility and infrastructure development. Strategic location planning can alleviate urban pressure and promote balanced regional development. Addressing accessibility and connectivity challenges ensures efficient transportation and resource distribution, which are essential for sustainable urban expansion.

3.2.6. Economy

New Cairo has seen significant economic development with the establishment of business districts, commercial centers, and educational institutions. The economic diversification in New Cairo is notable, contributing to the overall economic growth of the region. The city has attracted investments and has become a hub for various industries and businesses, fostering economic opportunities and employment. Diversifying the economy beyond tourism and addressing potential economic dependencies. The economic development of Galala City is likely linked to its potential for tourism, given its coastal location. Diversifying the economy beyond tourism might be a challenge, but it is essential for long-term sustainability.

Initiatives to attract investments and promote industries other than tourism could contribute to a more balanced and resilient economy. Knowledge-based economy is an excellent venue that Galala City should explore. As argued by Yigitcanlar (2010), its impact is without a doubt the center of today's global economy and a vital component of any global metropolis. (Yigitcanlar, 2010) Economic diversification and sustainable development practices contribute to long-term economic resilience. Attracting investments in various industries and promoting balanced economic growth are crucial for creating sustainable employment opportunities and reducing economic dependencies.

3.2.7. Tourism

While New Cairo is not traditionally known as a tourist destination, its modern infrastructure and amenities contribute indirectly to the tourism industry in Cairo. Tourists visiting Cairo may find New Cairo appealing for its contemporary offerings, such as shopping malls, entertainment complexes, and upscale residential areas. However, its primary role is as a residential and business district rather than a tourist destination.

Ensuring sustainable tourism development and managing the environmental impact of increased tourist activities. Galala City's coastal location and scenic surroundings make it a potential hub for tourism. The challenge lies in developing sustainable tourism practices to preserve the natural environment and cultural heritage. Balancing tourism growth with environmental conservation and responsible development is crucial for the long-term success of the tourism sector. Sustainable tourism development is essential for preserving natural environments and cultural heritage. Implementing responsible tourism practices ensures that the growth of the tourism sector does not compromise the ecological and cultural sustainability of the area. Galala City has immense potential to redefine tourism and emerge as a creative city and cultural space, a new perspective for tourism, leveraging the presence of Galala University within its boundaries. (Alvarez, 2010)

3.2.8. Culture

New Cairo, being a modern urban development, faces the challenge of balancing modernity with the preservation of cultural identity. Efforts are made to incorporate cultural elements in architectural design and public spaces. However, as a relatively

new city, it may lack the historical and cultural depth found in older parts of Cairo. Balancing cultural preservation with the demands of modern urban living is an ongoing challenge. Balancing modern development with the preservation of local culture and heritage. Preserving and promoting the local culture in Galala City is essential for maintaining a sense of identity and attracting visitors interested in authentic experiences. Integrating cultural elements into urban planning and development can contribute to the city's uniqueness and appeal. Preserving and promoting local culture enhances social sustainability by maintaining community identity and attracting cultural tourism. Integrating cultural elements into urban planning supports a city's uniqueness and long-term appeal.

3.2.9. Employment

New Cairo has been successful in creating employment opportunities through the establishment of business parks, educational institutions, and commercial zones. However, managing the demand for jobs, especially with the city's rapid growth, is crucial. Efforts to diversify the job market beyond specific sectors and to cater to a broad range of skills will contribute to the long-term sustainability of employment opportunities. Creating diverse employment opportunities beyond the initial construction phase. Creating diverse and sustainable employment opportunities is crucial for the socioeconomic development of Galala City. Beyond the initial construction phase, efforts should be made to attract industries, services, and businesses that can provide long-term employment for the local population.

3.2.10. Community

New Cairo is home to a diverse community, including both local residents and expatriates. Community engagement and social integration are vital aspects for the city's overall well-being. Creating spaces for cultural, recreational, and community activities, as well as fostering a sense of belonging, will contribute to the development of a vibrant and cohesive community. Fostering community engagement and participation in the planning and development process. Fostering a sense of community is vital for the well-being of Galala City residents. Community engagement in the planning process, provision of social amenities, and the development of public spaces contribute to a strong and cohesive community. Fostering community engagement and social integration strengthens social sustainability. Providing spaces for cultural, recreational, and community activities promotes a sense of belonging and enhances the overall well-being of residents.

3.2.11. Water and resources

Given Egypt's arid climate, water management is a critical issue for New Cairo. Sustainable water management practices, including water recycling and conservation measures, are essential. As the city grows, careful consideration must be given to the efficient use of resources and the environmental impact of urban development to ensure long-term ecological sustainability. Implementing effective water and resource management strategies in an arid environment is essential. Given the arid environment, effective water and resource management strategies are paramount for

Galala City's sustainability. Implementing water conservation measures, exploring alternative water sources, and promoting responsible resource use are essential considerations for the city's resilience. Sustainable water and resource management practices are critical for ensuring long-term ecological health in arid environments. Implementing water recycling, conservation measures, and responsible resource use are essential for maintaining the environmental sustainability of urban areas. Similar situations occurred in other cities around the world. For example, the City of Cape Town, South Africa, drought crisis reached its peak in of “Day Zero” in 2018. Many policies implemented to avoid this situation, some were found to be more effective and can be utilized long-term. (Calverley & Walther, 2022)

3.2.12. Topography

Despite New Cairo's relatively mild topography, the city has experienced significant water threats and urban flooding due to inadequate infrastructure design. The lack of proper drainage systems and the insufficient planning of water management have left New Cairo vulnerable to these issues, causing disruptions and damage during periods of heavy rainfall. On the other hand, the city of Galala presents a stark contrast with its more aggressive topography, characterized by steep slopes and rugged terrain. Unlike New Cairo, Galala's resilience to water-related threats and urban flooding remains largely untested. However, proactive measures have been taken to mitigate potential flooding risks. These precautions include implementing advanced drainage systems, such as underground gutters designed to channel water away efficiently and designated flooding paths that ensure excess water is directed safely away from urban areas.

While these measures indicate a forward-thinking approach to urban planning in Galala, the city's actual performance under extreme weather conditions will only become evident over time. A new hazard was introduced through the modifications applied to the topography of the mountains through grading and levelling that is spreading excavation debris on the sides of the mountains creating a new hazard if swept away by the rainwater. (Mahgoub Y. , 2023) The contrasting approaches to water management in New Cairo and Galala highlight the importance of tailored infrastructure solutions that consider each location's unique topographical and environmental challenges. Addressing topographical challenges through tailored infrastructure solutions is vital for sustainable urban development. Implementing advanced drainage systems and planning for water management reduces the risk of urban flooding and supports the resilience of cities to environmental threats.









	
New Cairo Hotel	Galala City Hotel
	
New Cairo Landscape	Galala City Landscape
	
New Cairo Business Area	Galala City Downtown
	
New Cairo surface runoff.	Galala City Topography

Figure (4): New Cairo and Galal City New Challenges.

Source: Author.

4. DISCUSSION

New Cairo has made significant strides in various aspects, but ongoing efforts are needed to address challenges related to location, cultural preservation, and sustainable resource management. The city's success in balancing economic growth

with social and environmental considerations will shape its future trajectory. New Cairo faces the complex challenge of managing its rapid growth while simultaneously addressing the diverse needs of its population. Solutions involve strategic urban planning, investment in sustainable infrastructure, fostering social inclusion, and embracing technological innovations to create a resilient and livable city for current and future generations.

Galala City has the potential to become a vibrant and sustainable urban center, particularly with its coastal location. Success will depend on comprehensive and well-managed development strategies that consider economic diversification, responsible tourism practices, cultural preservation, community well-being, and sustainable resource management. The success of Galala City in navigating these challenges will depend on adaptive urban planning, effective governance, and ongoing community engagement.

New Cairo faces the complex challenge of managing its rapid growth while simultaneously addressing the diverse needs of its population. The city's success in balancing economic growth with social and environmental considerations will shape its future trajectory. Solutions involve strategic urban planning, investment in sustainable infrastructure, fostering social inclusion, and embracing technological innovations to create a resilient and livable city for current and future generations.

Addressing the old and new challenges faced by New Cairo and Galala City is crucial for achieving long-term sustainability in urban development. The timely development of infrastructure, effective management of rapid population growth, and provision of quality education and healthcare are essential for social sustainability and the overall well-being of residents. Reducing traffic congestion through smart city technologies and sustainable transportation options helps lower carbon emissions and improve air quality.

Furthermore, balancing development with environmental conservation, promoting social inclusion, and building climate resilience are vital for minimizing the environmental impact and ensuring the cities can withstand and adapt to climate change. Strategic location planning, economic diversification, sustainable tourism development, and cultural preservation contribute to the economic and social sustainability of these cities. Additionally, fostering community engagement, implementing sustainable water and resource management practices, and addressing topographical challenges through tailored infrastructure solutions are critical for maintaining ecological health and resilience. By integrating these sustainable practices, New Cairo and Galala City can create vibrant, resilient, and inclusive urban environments.

5. Conclusions

New Cairo and Galala City in Egypt are examples of new urban developments facing a range of challenges. The comparative analysis revealed that urban challenges are interconnected, and addressing them often requires a holistic and integrated approach. When planning and developing new cities, several challenges need careful

consideration to ensure sustainable, efficient, and livable urban environments. The success of addressing challenges in new cities; such as New Cairo and Galala City, depends on the strategies implemented by local authorities, the collaboration of stakeholders, and the adaptability of urban planning policies. Corrective planning approaches should be implemented to face these challenges and provide adequate solutions.

For example, delay in selling residential units in Galala City resulted in absence of human activities and services around Galala University leaving it the sole occupied spot in the city. Absence of essential city services, such as police, ambulance, firefighting, local governance is paralyzing the city. Recent tragic road accident proved fatal due to delay in ambulatory response and lack of emergency services in the vicinity.

The success of addressing these challenges in New Cairo and Galala City depends on the strategies implemented by local authorities, the collaboration of stakeholders, and the adaptability of urban planning policies. Mahgoub (2024) indicated that a critical first move in the development of new cities should involve the establishment of robust governance structures and institutions. (Mahgoub Y. , 2024)

Urban challenges have evolved over time due to changes in demographics, technology, and global dynamics. Learning from the experiences of existing cities and staying informed about innovative solutions can help new cities navigate these challenges more effectively. Urban challenges are interconnected, and addressing them often requires a holistic and integrated approach.

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