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Examining the Influential Factors on Urban Growth and Population Attraction: A Case Study of Almere, Netherlands

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Abstract: This paper explores the intricate nature of population attraction and urban growth, which are influenced by a wide range of social, economic, and environmental factors. Through a case study of Almere, Netherlands, this study investigates the connection between population attraction, urban quality of life, livability, and sustainability. To assess the impact of these factors on urban growth, the study developed a measurable indicator matrix based on a theoretical framework. The study's results demonstrate that social life, urban economy, population standards, ease of access to services, transportation, and the quality of the built environment are significant factors in population attraction and urban growth. Additionally, the study revealed some previously unconsidered factors that play a crucial role in sustaining population attraction and urban growth. The study's findings offer insights for urban planners and policymakers to design effective strategies that promote population attraction and foster sustainable urban growth.

Keywords: Urban development; population attraction; sustainability; livability; quality of life; urban growth and new communities.

1 Introduction

The challenges of rapid urbanization have led to the emergence of new urban communities that aim to create sustainable and livable environments that prioritize residents' well-being. This paper investigates the relationship between attraction factors and urban development in these communities, focusing on quality of life, livability, and sustainability. Through a case study of Almere, Holland, the study develops measurable indicators that assess the impact of attraction factors on urban development and population attraction.

The study concludes that urban growth in new urban communities is inclusive of attraction elements from the matrix approach. However, previous studies have neglected the importance of public attraction and activity distribution in these communities, and the impact of quality of life and livability on population attraction is not well-understood. The objectives of this research paper are to investigate the impact of quality of life and livability factors on population attraction in new urban communities, to develop measurable indicators that assess this impact at different levels of the urban community, and to introduce an integrated approach that involves the target community in the development process.

The hypothesis is that quality of life and livability factors positively impact population attraction in new urban communities, and an integrated approach can enhance the relationship between attractions and urban development, leading to more sustainable and desirable urban growth. The research questions address the mechanisms controlling population attraction and urban growth, the impact of population growth on urban development, the feasibility of establishing new cities that prioritize quality of life, livability, and urban sustainability, and the development of measurable indicators to assess the impact of these factors on population growth rates.

The study's limitations include its focus on one city, which may not be representative of other cities or regions, and the lack of examination of external factors such as economic or political changes on population attraction and urban growth. The paper is structured as follows: The first section includes the introduction, objectives, research questions, and

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limitations. The following section presents the literature review. Section three outlines the work and methodology used in the study, followed by a case study of Almere, Netherlands and the study's findings. Finally, the conclusion is presented.

2 literature review

The aim of this theoretical study is to identify the factors influencing urban growth through a series of steps, including identifying concepts and indicators related to quality of urban life, livability, sustainable development, urban growth and attraction, and societal aspects. This study intends to provide a solid foundation for the research by synthesizing relevant literature and theories related to the subject matter, helping to establish a framework for analyzing and interpreting data collected in later stages of the research.

Urban expansion in communities can be described as a region exhibiting ongoing urban development, with population density fluctuating based on the specific urbanization patterns in various nations. In European cities, for instance, emerging urban communities often consist of a central city or primary urban hub, accompanied by neighboring cities and suburban areas [1]. The concept of urban growth involves a pre-planning stage followed by the construction process to bridge newly built areas near the main suburbs of the city, which is essential for expansion and growth in urban space [2].

The feeling of urban space is established by the specific characteristics of the urban environment and the activities that take place within it [3]. Thus, the term urban growth can be described as a framework that regulates the placement, caliber, magnitude, pace, and scheduling of development [4].

2.1 Urban growth

Urban growth is influenced by a variety of social, economic, environmental, and cultural factors, as well as a combination of human and material formations that interact with each other. To achieve urban growth, different tools such as development plans, infrastructure, taxes, and real estate development fees can be used to coordinate location, timing, and development of a new and attractive city [4].

1. The population growth and the shift of people from rural areas to cities has been a significant phenomenon of change in land use in developing countries in the second half of the twentieth century. This has resulted in the concentration of population in large cities, which may represent a significant percentage of a country's population, such as Dubai and Singapore [5].
2. The other factor that can affect urban growth is the transfer of the current population to the areas surrounding cities, which is a typical phenomenon in developed countries. This type of urban growth does not result from an increase in the population in the city itself [2].
3. Economic and social advancements have caused small urban clusters to transform into larger cities, leading to urban expansion and a rise in land usage, particularly in the last thirty years [6].
4. The emergence and popularity of automobiles, and the construction of highways led to a spread of urban areas, starting from developed countries and then in developing countries, resulting in high density on the borders and excessive urban expansion [2].

Numerous studies have demonstrated that urban growth and development can enhance the standard of living in cities (quality of urban life).

2.2 Urban expansion

Urban expansion can be defined as a process that involves both quantitative and qualitative concepts. The quantitative concept focuses on the process of spreading and expanding urban areas, followed by filling gaps in the built-up area to ensure continuity of the growth process. On the other hand, the qualitative concept is concerned with three basic patterns of expansion, namely expansion on the borders, infilling gaps in the built-up area, and the expansion of the boundaries of cities and their surrounding environment. Urban expansion is a phenomenon that occurs in both developed and developing countries, but the form it takes can vary depending on the context of development and urban expansion [2].

2.3 Quality of urban life

The quality of urban life is a complex and multidimensional concept that has been discussed by scholars from various fields. The objective dimension: which can be measured according to the level of physical and mental health enjoyed by the residents of the region, which can be determined by the extent of psychological disorders and social disintegration associated with long-term residence in the city or neighborhood [7]. Subjective dimension: such as happiness, satisfaction, and sense of community are also important components which can be measured by how people feel and what they experience when living, working, or visiting a city or neighborhood. It takes into account people's perceptions and judgments based on their experiences and how they feel about the region [7]. Some studies combine both objective and subjective measures of urban quality of life. This helps to provide a more comprehensive evaluation of the well-being of individuals living in urban areas, by taking into account both measurable data and personal experiences and perceptions [8]. Table (1) shows the foundations and indicators of urban quality of life according to various research. While [9] proposes a two-dimensional matrix that considers both qualitative and quantitative criteria. The qualitative dimension focuses on the individual's satisfaction with life and sense of happiness, as well as their ability to participate and affect the societal exchange between people and society. The quantitative dimension measures issues that directly concern individuals in the city, such as education, as well as the environmental, economic, and social situation at the societal level.

Table 1: Concepts and indicators of (the quality of urban life).

Reference	**Subjective Aspect Qualitative Standard**	**Objective Aspect Quantitative Standard**	**Behavioral Aspect**
[7]	The social indicators of both individuals and society can be ascertained through an examination of their culture, living conditions, psychological state, and level of satisfaction with their living situation.	The quality of life is a term used to describe the interplay between individuals and their urban surroundings, which they encounter on a regular basis.	N.A.
[10]	Acquire data through techniques of survey research and statistical analysis.	(Family income level - crime rates - pollution levels - housing costs -...)	N.A.
[9]	satisfaction with life and a sense of happiness on an individual level, as well as the ability to participate and be influenced by the community exchange between people and society.	occupational issues, such as education, at the individual level. At the societal level, the quality of life is measured by factors such as the environmental, economic, and social status of the community.	N.A.
[8]	It measures whether the quality of life of individuals conforms to implicit and explicit criteria	The quality of life in the city by measuring the joint effect between material factors and the well-being of human life.	N.A.
[11]	Satisfaction with the population and neighborhood - Desire to move from housing - Crime rates - Percentage of diversity and quality of schools - Percentage of health services - Feeling towards neighbors - Feeling about the way garbage is collected - Feeling overcrowded - Feeling the government's role - Satisfaction with health - Satisfaction with family, friends and job.	Employment rates - Educational attainment - Per capita income - Crime statistics - Domestic violence - Death rates - Incidence of chronic diseases - Air quality - Population density - Housing availability rate - Amount of entertainment and parks places - Number of public transport passengers - Travel distance to grocery and food stores	Using public transportation - Participating in sports -Walking and riding a bicycle- Frequent to cultural salons and events -Visiting parks -Visiting doctors -Health centers -Visits between neighbors -Participating in volunteer organizations - Participating in localities Population movement.

The importance of urban Quality of Life (QoL) is multi-dimensional, economic, social, environmental, and public health factors. Economic development is pursued to achieve social and human development outcomes, while environmental sustainability is crucial for promoting social sustainability, which ultimately contributes to improving the

QoL of urban inhabitants. Additionally, livability has become increasingly important as urbanization continues to impact the QoL of individuals and communities in urban areas. The connection between QoL and public health has also been noted, leading to the development of various indicators, such as disability-free life expectancy, that attempt to link longevity with the QoL experienced. Therefore, creating a balanced and harmonious urban community requires local authorities to plan and improve living standards, including housing, education, and recreational activities, to enhance the QoL [12].

2.4 Livable Community

In the 1970s, the concept of a ”livable community” emerged from research conducted by the American Academy of Planning to address the negative effects of urban sprawl in American cities. The built environment of cities can either enhance or hinder a sense of belonging to society, and the suitability of a community for life can be determined by evaluating its impact on social cohesion. Livability promotes healthy living and well-being for residents, visitors, and workers by achieving a balance between social, economic, health, and environmental factors. A livable community provides a favorable environment for individuals to thrive and enjoy a high quality of life [13].

Numerous references have identified Livability refers to the quality-of-life people experience in their living environment and includes social, economic, and environmental factors. Standards and indicators have been developed to measure livability in different areas.

One such set of standards and indicators is presented in [14] that provides general and special indications for livability, which include building regulations, municipalities, diversity and expansion, accessibility and openness, entrepreneurship, green areas, communication networks, luxury, site sustainability, and site effectiveness. In addition, education and training systems, public utilities, local community, voluntary sector, and small, medium, and large companies are identified as important factors that contribute to livability.

In [7] highlights urban planning, energy, water utilities supply, transportation, and noise pollution as key indicators of livability. These factors play an important role in ensuring that cities and communities are sustainable, efficient, and comfortable places to live in. Design, planning, coordination of buildings in neighborhoods and infrastructure are also important indicators of livability, as highlighted in [15]. By ensuring that buildings and infrastructure are designed and planned in a coordinated way, it is possible to create livable environments that meet the needs and preferences of individuals and communities.

Finally, [16] identifies social, economic, and environmental factors as key indicators of livability. These include education, social interaction, community participation, easy access to daily needs, culture, health, safety, sense of place, and public places. Housing, employment, infrastructure, means of transportation, and access to daily needs are important indicators of economic livability, while culture, health, safety, sense of place, and public places are key indicators of social and environmental livability.

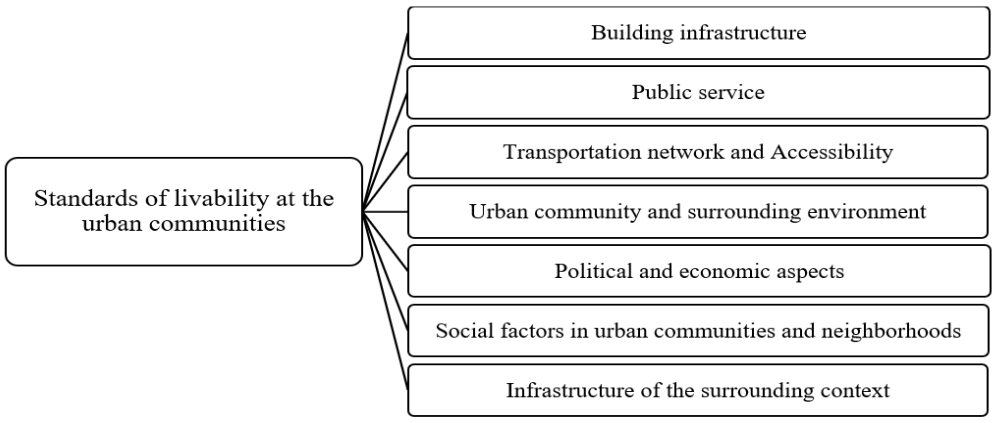

Fig. 1: Standards of Livability at the urban communities.

In general, as shown in Fig.1, the following points can be summarized:

1. **Building infrastructure:** Characteristics and factors related to the buildings themselves (facilities networks - dimensions - areas - building types - quality and diversity of buildings).
2. **Public service:** These services include education, healthcare, public safety, sanitation, and recreational facilities. A livable community prioritizes the equitable distribution of these public services, making them easily accessible to all residents, regardless of their socioeconomic status. By fostering a sense of inclusivity, safety, and well-being, effective public services contribute to the overall attractiveness and sustainability of a community [13].
3. **Transportation network and Accessibility:** It includes the development and implementation of sustainable, accessible, and efficient transportation systems that promote a high quality of life for residents. This includes encouraging diverse modes of transportation, such as walking, biking, public transit, and car-sharing, to reduce congestion, improve air quality, and enhance social interactions. By integrating these transportation options with thoughtful urban planning, communities can become more connected, vibrant, and environmentally friendly.
4. **Urban community and surrounding environment:** Refers to the integration between the characteristics of the environment in residential areas (site topography, climate and weather, population density).
5. **Political and economic aspects:** political aspects involve effective governance and policy-making, while economic aspects focus on promoting a vibrant local economy with diverse job opportunities. Both contribute to overall well-being and community resilience.
6. **Social factors in urban communities and neighborhoods:** Refers to the factors or situations that affect the city's livability (residential neighborhoods, community isolation, crime level, and safety).
7. **Infrastructure of the surrounding context:** It includes elements such as street lighting, parking facilities, green spaces, highways, and accessibility. Creating sustainable urban communities is a complex endeavor, as it requires addressing present needs without compromising the ability of future generations to meet their own demands. This challenge arises from the foundational principle of sustainability that guides this development approach [16,17].

2.5 Indicators of Sustainable Development and Urban Development

Livability is a crucial part of sustainability, comprising various dimensions and indicators. These factors must be met to enhance Livability and promote a sustainable environment. Planning processes have recognized the importance of integrating smart growth Livability, and placemaking factors to establish sustainable communities comprehensively, rather than piecemeal planning policies. Sustainable urban development requires a focus on specific indicators, including social interaction, essential services, green building design technology, sustainable transportation, recycling, renewable energy, waste management, social housing, community participation, cultural heritage, and water resource preservation. These indicators must be considered in the planning and implementation of urban development to create sustainable and livable communities [17,18].

Urban communities and residential neighborhoods undergo periods of economic growth or decline. Various theories exist to explain these changes and how economic and social activity can attract and retain people living in these areas [19]. In previous studies, the factors affecting population attraction were divided as shown in Table (2).

Table 2: Defining Features and Factors for Attracting Population to New Urban Communities: A Review of Related Studies.

Reference	Constants	variants
[20]	Geographical location, size and available natural resources (production resources - tourism resources)	They are those that were established as an attraction factor for the city to develop or maintain the quality of the living environment - infrastructure - employment - business sector (investments) - education - social and health services
[21]	The site and its related roads, buildings, activities and landscapes.	the infrastructure for living, entertainment, public utilities, and information and communication networks

Factors affecting population attraction in the residential neighbourhood : The concept of residential neighbourhoods involves studying the differences among residents in their way of living and interacting within the same environment, with the aim of promoting equality in the living conditions [22,23].

The effectiveness of a residential neighbourhood relies on equality and social engagement, as well as community oversight. Social coherence and community oversight can be achieved through shared values, collective activities, and addressing neighbourhood issues. Research suggests that increased individual participation and effectiveness positively impacts health and well-being and decreases crime rates. Engaging in social activities, such as home improvement, can

also promote housing stability and a sense of belonging. However, neighbourhood changes occur due to residents moving to neighbourhoods with higher economic value, which is correlated with individuals' income levels [24,25].

Through a theoretical study on population attraction, several factors have been identified that affect urban growth at the community and neighbourhood levels. These factors include social life, urban economy, population standards, accessibility to services, transportation network quality, and the quality of the built environment. The study highlights the importance of these factors in creating a sustainable and livable urban community.

3 Proposed Indicators for Urban Development and Population Attraction

Upon the theoretical study, a matrix was proposed to establish a correlation between the factors that influence population attraction and the corresponding indicators based on measurable aspects of sustainability, livability, and quality of urban life (QOUL) in order to achieve urban growth. This matrix is presented in Table (3). The purpose of this matrix is to identify the key factors that contribute to population attraction and growth and to develop corresponding indicators that can be used to measure the success of urban development initiatives. The matrix serves as a useful tool for urban planners and policymakers to make informed decisions about the allocation of resources and the implementation of strategies that promote sustainable and livable urban environments.

3.1 Almere, Holland: A Case Study on the Impact of Attraction Factors on Urban Growth

The study analyses the impact of attraction factors on urban growth using a case study approach of Almere, Holland. The researchers aims to identify key factors that contribute to population growth in Almere using a framework for indicators influencing urban growth in new communities. The study investigates the relationship between these factors and the quality of life, livability, and sustainability of the urban environment. Through analysis of the case study, the research will identify strengths and weaknesses of attraction factors in Almere and their impact on urban growth.

The city of Almere was designed with a focus on sustainability and sustainable urban growth, with planners and experts in spatial and cultural relations integrating planning concepts from garden cities to environmentally friendly cities. This involved coordination between housing, transportation, and green spaces, with low-density housing located near workplaces, schools, and recreational facilities. "There is a noticeable progress in the population ratio in the city of Almere, as shown in Fig.2." The city has a comprehensive road network infrastructure that includes a bicycle highway, and transportation modes are distributed as follows: 35% cars, 17% public transportation, 28% bicycles, and 20% walkways. The city also features vast open landscapes extending into residential areas to advance urban development while considering sustainability [26].

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The urban planning of Almere consists of three levels, with the first level underground and dedicated to traffic, bicycle paths, and parking. The ground level is used for commercial and recreational activities, while the upper level is reserved for residential units built on top of commercial and administrative buildings. The levels are connected through overhead bridges, and the ground level features open squares, fountains, cafes, and covered pedestrian walkways, providing a comfortable and enjoyable shopping experience [28].

The city of Almere focuses on achieving sustainability in its urban growth through seven identified principles of sustainable development, which include community participation, diverse land use, and innovative design. Almere's transportation network is planned with sustainable transportation in mind, making it easy to access neighborhoods. The city was built on reclaimed land and follows a linear layout surrounding three main centers. Planners integrated concepts of garden cities, environmentally friendly cities, and modern urban trends while preserving space for urban development and expanding green areas.

3.2 Urban growth in the city of Almere:

Urban growth in Almere is based on seven principles of sustainable development aimed at achieving environmental, social, and economic sustainability. These principles include enhancing diversity in land use, linking place with function,

Table 3: the proposed relationship matrix between factors influencing population attraction and general indicators of urban quality of life, Livability, Sustainability, and their impact on urban growth.

Urban development points and population attraction	**Indicators for evaluating the quality of urban life,**	**Indicators for evaluating the, livability**	**Indicators for evaluating sustainability**
Social Life	- Social interaction between individuals and the community. - Individuals' quality of life conforms to implicit and explicit standards. - Satisfaction with the residents and the neighborhood.	- Community participation	- Social interaction. - Community participation in city planning policy decisions.
Urban economy	- Household income level. - Employment rates. - Housing affordability. - Ability to participate in investment and be affected by the economic level of housing units. - Room crowding as an indicator of residents' economic level.	- Individuals' income levels. - Investment attractiveness. - Affordable housing cost.	- Sustainable economic development.
Population standards	- Desire to move residence. - Availability of entertainment and parks - Age of housing unit - Satisfaction with living conditions	- Intra-city mobility - Green spaces and natural landscapes	- Well-being
Accessibility of Services	- Satisfaction with health services - Diversity ratio and quality of schools - Distance of travel to grocery stores and food shops	- Diversity in healthcare services for all societal segments - Scientific institutions - Access to markets and proximity to them - Provision of infrastructure facilities (water, gas, electricity)	- Easy access to a wide range of services
Transportation network and Accessibility	- Number of public transportation passengers. - Use of public transportation.	- Transportation. - Diversity of transportation modes to serve all segments of society. - Parking facilities. - Roads.	- Efficient transportation system and continuous development efforts (sustainable transportation).
Quality of the built environment	- Reducing pollution levels - Availability of security - Satisfaction with waste collection methods - Avoidance of feeling crowded and congested	- Reducing noise pollution - Safety - Coordinating buildings in neighborhoods and adjacent areas	- Recycling and environmental protection - Preservation of public space - Well-being

combining the city and nature, anticipating change, continuing innovation, designing healthy systems, and empowering the community to participate in making the city. Community participation is regarded as a critical stage of strategic development, from design to implementation [26].

3.3 Population growth in the city of Almere:

Almere was established in 1996 as a new city with a population of 85,000 and a linear layout surrounding three main centers. The city was built on reclaimed land at Lake Issel and features a transportation network planned with sustainable

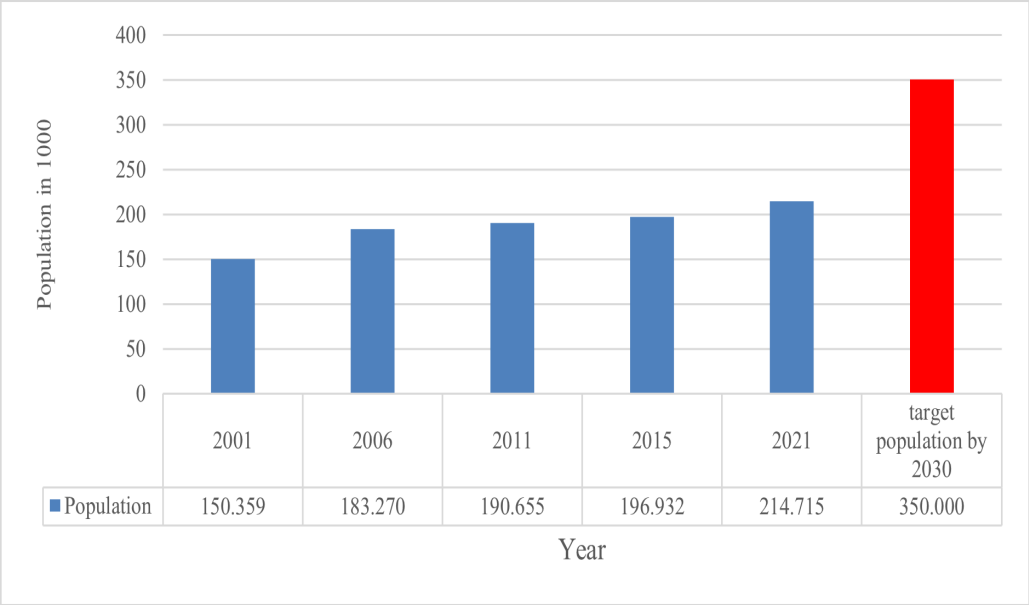

Fig. 2: Population Count of Almere City as of 2021 Almere (Municipality, Flevoland, Netherlands).

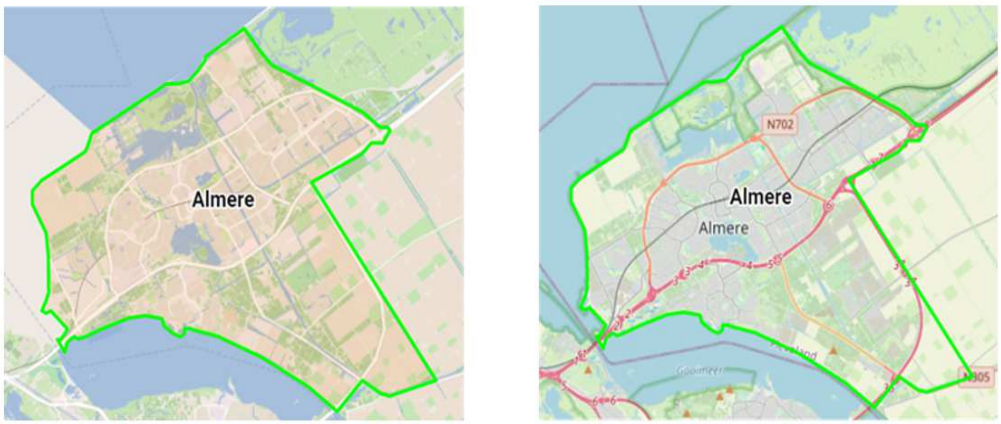

Fig. 3: Map of the city of Almere [27].

forms of transportation in mind, making it easy to access neighborhoods. Major business centers are situated within reachable railway stations, and bicycle and pedestrian paths are integrated into this network

3.4 Application of Sustainability in the City of Almere:

The planners of Almere aimed to integrate the concepts of garden cities, environmentally friendly cities, and modern urban trends while focusing on sustainability and urban growth. The original design of the city of Almere, serves as the best model for the application of garden cities. The city features large open landscapes and vegetation that extends into residential areas, integrating entertainment and transportation while considering ecological elements both within and outside of residential neighbourhoods. Despite the expansion of green areas, space for urban development is still preserved.

3.5 Factors of Urban Attraction and Growth in Almere, Netherlands: Applying Theoretical Study

In this section, we will elaborate on the methods used to achieve population attraction and urban growth in Almere City, using the six attraction factors identified in the theoretical study as a framework. These six factors are social life, urban economy, population criteria, accessibility of services, transportation network and accessibility, and quality of the built environment. The goal is to provide a comprehensive understanding of each of these factors and their key performance indicators.

To begin with, the first factor that influences population attraction is ***social life***. In Almere City, the community is empowered to participate in the development of the city from the initial planning phase to the final implementation phase. This population participation is considered a crucial aspect in shaping the urban character of the region. Additionally, the reconstruction of the self-built housing area within a short period of five years has significantly attracted the population to the city of Almere. As such, self-built housing and citizen participation in urban development projects are two crucial elements in the city's policy for urban growth and population attraction. It is imperative that these developments adhere to the city's plans and have a unified external appearance and formation. Furthermore, the residents' participation in shaping the urban character of the region is also taken into consideration to ensure that the city is attractive to its inhabitants.

The second factor is ***urban economy*** where the city of Almere has a central economic zone comprising 720 plots of land with various sizes and a central area featuring mixed-use and higher density. Buyers are given the freedom to construct administrative offices, residential complexes, or spaces for real estate marketing. Moreover, buyers are informed about infrastructure specifications and future building conditions, which stimulates community participation in city investments. The city's main commercial centers are situated in close proximity to accessible railway stations, thereby encouraging investors to increase their investments.

The third factor influencing population attraction and urban growth in Almere City is ***population criteria***. Almere's residential areas are divided into 26 zones, allowing for various styles of homes to be built with some restrictions to maintain the city's urban character. This approach aims to increase residents' sense of ownership and satisfaction. Additionally, the city has preserved green and blue spaces and integrated them into the urban expansion plan, offering residents access to a rich natural environment. The population is considered the main driver of the city's growth, with access to cultural, sports, and entertainment facilities, as well as employment opportunities. Almere is designed to accommodate high population density, with recreational areas surrounding the city and open spaces in each neighbourhood.

The fourth factor is the ***accessibility of services***, which is achieved by designing each neighborhood in the city with a specific set of services, utilities, and a primary school for easy access. The city's healthcare system is also given due attention to ensure long-term and sustainable growth. Additionally, commercial centers are strategically located near accessible railway stations to facilitate easy access to markets.

Almere City's fifth factor is ***transportation network and accessibility***, which is critical for the city's growth. The city is focused on developing its infrastructure and public transport system, including trains from neighboring cities and the capital, as well as expanding the highways. The transportation plan allocates resources effectively: 35% for cars, 17% for public transportation, 28% for bicycles, and 20% for pedestrian walkways. The road infrastructure is being developed, including the construction of a bicycle highway. Property owners are responsible for contributing to the street network and building their section of the public road, as well as the surrounding roads and paths leading to their property. The city encourages alternative modes of transportation, such as walking, as services and shops are located within walking distance.

Almere city's final attraction factor is the ***quality of the built environment***. The city has established principles for sustainability, including diversity in land use, and the integration of natural and urban environments. Owners are responsible for preserving rainwater, providing clean drinking water, and disposing of waste. Local and regional planning strategies should integrate environmental and ecological components with spatial, cultural, social, and economic components. Almere city is recognized as one of the most successful cities in achieving greener, more sustainable, and positive urban planning.

Table (4) presents the results of a comprehensive study of Almere city against our proposed relationship matrix that considers factors influencing population attraction, urban quality of life, livability, sustainability, and their impact on urban growth. The study identified the six attraction factors and additional elements that sustain population attraction and facilitate urban growth. The table illustrates how the city's indicators align with the proposed matrix and how the attraction elements are incorporated into its urban growth. Note: the solid dot (●) in table (4) indicates that the indicator is achieved while the empty dot (○) indicates the absence of this indicator for Almere city.

Table 4: Evaluation of population attraction indicators in the city of Almere – Holland, based on the attraction matrix.

Social life				
Satisfaction with the residents and the neighborhood	Community participation in decisions related to city planning policies	Social interaction	Community exchange between people and society	
●	●	●	●	
Urban economy				
sustainable economic development	investment attractiveness	Economical housing cost	employment rates	
●	●	○	●	
Population standards				
satisfaction with living and well-being	The date the house was built	The amount of entertainment and parks	Residential mobility	
●	●	●	○	
Accessibility of Services				
Facilitate access to a wide range of services	Infrastructure facilities supplies (water - gas - electricity)	Percentage of diversity and quality of schools	the health	
●	●	●	●	
Transportation network and Accessibility				
Efficiency of the transport system and continuously develop (sustainable transport)		Diversity between transportation) serve all segments of society(		
●		●		
Quality of the built environment				
Recycling and environmental protection	Coordination of buildings in neighborhoods	Not feeling crowded	Reduce pollution	security
●	●	○	●	●

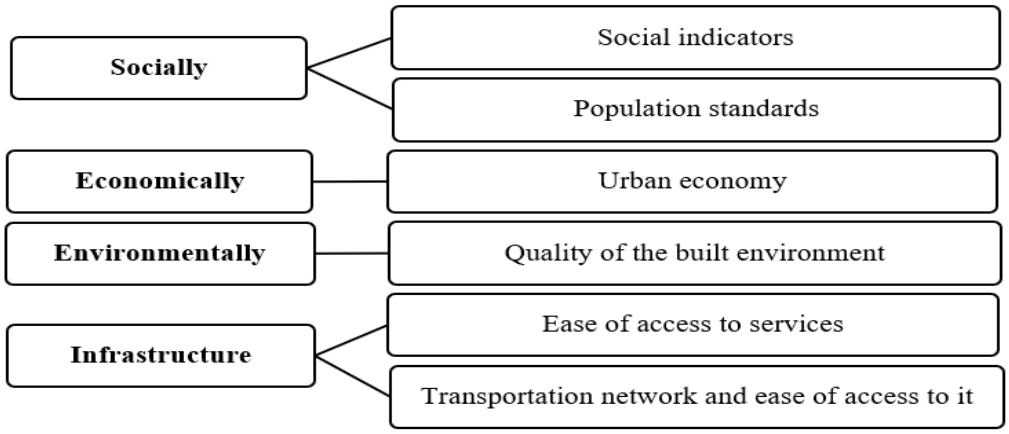

Fig. 4: The final four indicators of population attraction.

4 Finding: Identifying Measurable Indicators for Population Attraction

The practical study conducted aims to identify measurable indicators that contribute to the success of new urban communities in attracting and retaining populations. The study seeks to provide a comprehensive understanding of these factors and recommends measurable indicators to evaluate the success of future new urban community development projects. The study's findings are presented in Fig.4.

Consequently, it became possible to reach final measurable indicators by achieving them, which verifies the sequential and sustainable population attraction of new cities. Table (5) illustrates the elements used to infer the measurement of the quality of life according to final characteristics.

Table 5: Measurable final indicators of population attraction.

Socially					
Social indicators					
Population satisfaction with housing and neighborhood			Community participation in urban development in housing and investments		
Population standards					
Average housing construction date		Ratio of recreational areas and parks to housing		Housing growth rate	
Economically					
Urban economy					
Investment growth rate		Affordable housing cost	Employment rates	Evaluation of housing costs vs. services provided	Household income level
Infrastructure					
Ease of access to services					
Average distance to grocery stores and food services	Coverage ratio of infrastructure facilities (water, gas, electricity)	Number of available universities for all segments of society	Proportions of schools (public, private, international)	Rates of growth and diversity of healthcare services	
Transportation network and ease of access to it					
Growth rate of transportation system and continuous development (sustainable transportation)		Measuring the availability of transportation to serve all segments of society		Number of parking lots and their diversity ratios	Rates of maintenance and paving of roads
Environmentally					
Quality of the built environment					
Flexibility in land use	Coordination of buildings in neighborhoods and adjacent areas (general character)	Measuring residents' satisfaction with feelings of congestion and crowding	Methods of preserving public space	Pollution rates	Safety rates

5 Conclusions

The aim of this study is to identify the factors that affect urban attraction, develop a set of indicators to reformulate the concept of urban attraction, and propose an approach to assess the sequence of factors in the development of new urban communities. By establishing a base of measurable indicators for the development of new urban communities, the study contributes to urban growth and sustainability without affecting the balance of the measurement method. Additionally, the study highlights the importance of the choice of urban assessment and measurement method in obtaining accurate results.

Based on the theoretical and practical study conducted in this paper, it was found that the factors affecting population attraction in urban communities and residential neighborhoods are complex and interrelated. The study sheds light on the relationship between indicators and factors of attraction and urban growth, highlighting the importance of considering these factors and their relationship to indicators of urban livability, quality of urban life, and urban sustainability. Applying the matrix proposed in this study to the case of Almere, it was found that urban growth in the city was inclusive of the elements of attraction identified in the theoretical study.

Conflict of Interest

The authors declare that there is no conflict regarding the publication of this paper.

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