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Research Article

A Situated Framework for Examining Quality of Urban Life in Post-Industrial Cities

Eda Seyok^{1*}, Ashraf M. Salama¹, Lesley McIntyre¹

¹ School of Architecture and Built Environment, Northumbria University, Newcastle upon Tyne, United Kingdom

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* Correspondence: eda.seyok@northumbria.ac.uk

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Abstract

This study proposes a situated framework for examining Quality of Urban Life (QoUL) in post-industrial cities (PICs). The existing QoUL models are too generic to address the specific challenges in PICs derived from the ongoing transformations since the 1970s. The multi-dimensionality of the QoUL concept necessitates a context-sensitive approach grounded in these post-industrial challenges. A systematic literature review was conducted to identify gaps within QoUL discourse and characterise PICs. The review of 84 papers, identified through Web of Science and Scopus, revealed four theoretical approaches and eight QoUL models. Comparative analysis established seven key dimensions of QoUL utilised as assessment criteria, subsequently mapped to ten empirical studies to identify measurable indicators and key concerns in their operationalisation. Meanwhile, the review of 129 papers in PIC literature identified three overlapping concepts: post-industrialisation, post-Fordism, and post-modernism, to analyse the transformation from post-war industrial to post-industrial city. Eight themes and seventeen challenges were identified through conceptual analysis and verified through text-mining techniques. These were mapped against the measurable indicators to identify relevant QoUL indicators for PICs. The proposed framework integrates relevant indicators to address operationalisation challenges through explicit categorisation based on scalar differences and objective-subjective classification, offering a context-sensitive approach to QoUL studies. The framework is designed as a diagnostic tool for developing understanding of urban environments by integrating users' interactions, perceptions, and lived experiences. Primarily situated within UK PICs, it offers transferability to Western European and North American contexts through adaptation, with the aim of contributing to equitable and user-centric approaches to decision-making.

Keywords: Quality of Urban Life (QoUL); Post-Industrial Cities (PIC); Framework; Literature analysis; Text-mining

Highlights

- A Situated Framework for Examining QoUL in Post-Industrial Cities is developed.
- Behavioural attributes are explicitly identified alongside the objective and subjective attributes.
- Scalar differences between city, residential area, and public space levels are addressed.

1 Introduction

The prevailing impacts of the post-industrial transformation in Western industrial cities have resulted in growing concerns over quality of urban life (QoUL). To understand the effects of this transformation on inhabitants of post-industrial cities (PICs), it is necessary to identify relevant indicators addressing the specific post-industrial challenges. Nevertheless, the complexity and multi-dimensionality of urban life in today's PICs make it especially challenging to identify these indicators derived from the aspects of life that are important for individuals. These are not purely objective measures, such as employment and crime rate, which are used in indexes such as the English Deprivation Index (2019), but also behavioural and subjective attributes, such as individuals' behaviours, perceptions, and lived experiences, that aim to understand the relationship between individuals and their living environments. The diversity of PICs, as opposed to the close-knit communities of industrial cities, demands this integrative approach for selecting indicators. It also necessitates a smaller scale investigation to address the needs of diverse urban environments within PICs.

The uneven development in PICs often shadows the deep-rooted challenges that require attention. The existing QoUL studies are too generic for understanding these challenges. While there are studies that examined QoUL in PICs, such as Detroit, these are not grounded in the shared challenges derived from the societal, economic, and cultural transformations since the 1970s. Most QoUL studies focus on city and residential-area-level assessment frameworks, overlooking the significance of public open spaces for urban life. Therefore, this paper proposes a Situated QoUL Framework in PICs, addressing these gaps in the QoUL and PICs literature.

A systematic review of 84 papers on QoUL identified four theoretical perspectives, eight influential QoUL models, and ten empirical studies that utilised these models in real-life contexts. The synthesis of the literature established a list of QoUL indicators and revealed key concerns in operationalisation of QoUL models. Meanwhile, a systematic review of 129 papers on PICs identified three overlapping concepts, eight themes, and seventeen challenges of PICs. These themes and challenges were then mapped to the list of QoUL indicators, situating the indicators within post-industrial context. Building upon the key conceptual and methodological considerations within the QoUL discourse, a situated framework is proposed, encompassing relevant indicators, scalar differences, and objective, behavioural, and subjective attributes specific to PICs.

2 Methodology

This paper presents the first part of a three-phase mixed-methods research design examining QoUL in PICs. The first phase, presented here, focuses on the framework development as the theoretical contribution of this research. The subsequent phases address the contextualisation and implementation of the framework in Newcastle upon Tyne, presented in forthcoming publications. Figure 1 illustrates how the systematic literature review contributes to the framework development.

Systematic Literature Review

A systematic literature review was conducted on QoUL and PICs, independently, using a PRISMA approach. The search strings for the QoUL literature included 'quality of urban life models', 'quality of urban life indicators', and 'measuring quality of urban life'; and for the PICs literature included 'characteristics of post-industrial cities', 'challenges of post-industrial cities', 'urban regeneration in post-industrial cities', and 'restructuring urban space'. Based on the established inclusion/exclusion criteria, the screening process was conducted on Scopus and Web of Science. While 84 literature sources were included in the review of QoUL literature, 129 papers were included in the review of PICs literature. The included papers from QoUL literature represent a range of geographical contexts and have strong theory-based assessment tools. The included papers on PICs focused on Western and North American contexts that experienced post-industrial transformations in comparable manners and

timeframes. Both reviews included accessible papers in English and excluded the rural contexts. The included papers were imported to Nvivo to carry out the thematic analysis.

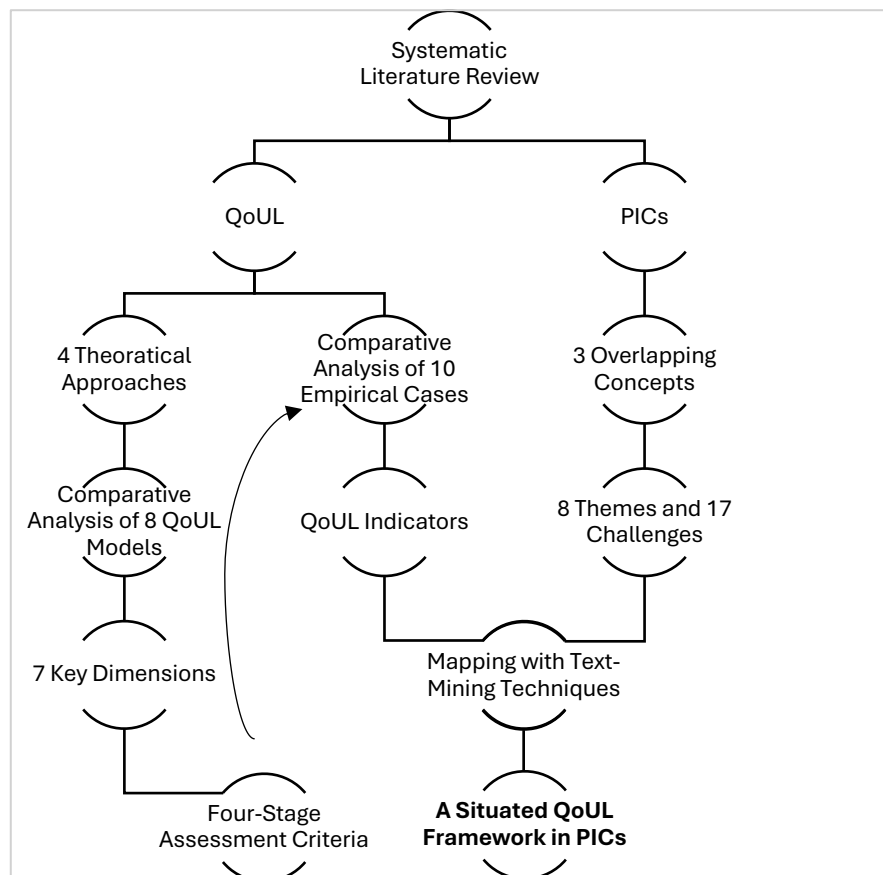


Figure 1. Diagram illustrating the methodological structure from the systematic review to framework development (Source: authors).

Comparative Analysis of the QoUL Models and the Rationale for Selecting Empirical Cases

The selected papers based upon QoUL were categorised under theoretical perspectives, QoUL models/frameworks, indicators, and empirical cases in Nvivo. Four theoretical perspectives were identified from various disciplines, and eight QoUL models were selected representing the diversity of the perspectives and models in the field. After conducting a comparative analysis, seven key dimensions were identified. These are presented in the form of four-stage assessment criteria to be able to analyse the existing empirical cases using the key dimensions of the QoUL models, systematically. Cases were selected based on their explicit use of QoUL models, theoretical grounding, and representation of diverse geographical contexts and scales, referencing key scholars within the QoUL discourse such as McCrea, Campbell, and Marans. In addition, two grey literature sources were included to represent practice-based approaches to improve QoUL, enabling critical examination of the weaknesses of current strategies in real-life contexts. The indicators used in the case studies were outlined and categorised based on their definitions, scale of analysis, assessment methods, and tools. This enabled the identification of theoretically grounded and practically applicable indicators for real-life contexts.

Characterising PICs with Thematic Analysis and Text-Mining Techniques

The selected sources on PICs were categorised under three overlapping concepts and their general characteristics. The review of the 129 sources revealed eight themes and seventeen challenges. To enhance the conceptual understanding of the literature analysis, text-mining techniques were employed. Term frequency analysis was conducted to report how often these themes and challenges

occur in the selected literature. To achieve this, a keyword manual was established derived from the identified themes and challenges, forming twenty-five term clusters. The terms that have similar meanings are clustered together, such as ‘post-modern’, ‘post-modernism’, ‘post-modern city’. The hyphenated and non-hyphenated versions were included such as ‘post-modern’ and ‘postmodern’. Both British and American English versions of the terms were included such as privatisation and privatization. A simple code was developed using pypdf and Textblob in Python 3. The code first converts the PDFs into readable format, excludes references, then searches the remaining text for term frequency, counts the occurrences, and converts the results into a table. The code generated a co-occurrence matrix, showing the links between term clusters based on their co-occurrences. The co-occurrence matrix was then converted into a network file to be inserted into VOSviewer to visualise the results. The process highlighted the interrelatedness of the term clusters within the PICs literature.

Mapping QoUL Indicators to the Themes and Challenges of PICs

The same procedure, term frequency and co-occurrence analysis, was repeated to evaluate QoUL indicators in the PICs literature. A second keyword manual was constructed based on the identified QoUL indicators, establishing thirty-seven term clusters. The same linguistic considerations were applied to the second keyword manual. The results from the term frequency informed the development of a frequency continuum, classifying each QoUL indicator based on its relative occurrence in PICs literature, as discussed in Section 7. The results from the co-occurrence analysis showed how the term clusters relate to one another, forming three clouds. These results, along with the seven QoUL dimensions, informed the development of a Situated QoUL Framework in PICs.

3 Quality of Urban Life: Perspectives, Models, and Dimensions

This section establishes the theoretical underpinnings of the concept of QoUL through identifying key perspectives, models, dimensions, and comparative analysis of their real-life applications.

3.1 Four Theoretical Perspectives

Quality of Life (QoL) is a multi-dimensional, complex, and relative term that is dependent on context, time, and the evaluator (Rezvani *et al.*, 2013). The growing scholarly interest in how QoL is experienced in urban environments set the foundation for QoUL studies. The multifaceted nature of the term resulted in the development of various approaches that share similar meanings around the concepts of QoL, happiness, well-being, human satisfaction, and human development (Marans and Stimson, 2011). As illustrated in Figure 2, these theoretical approaches can be discussed in four thematic categories: happiness and life satisfaction, needs satisfaction, capability, and human ecology.

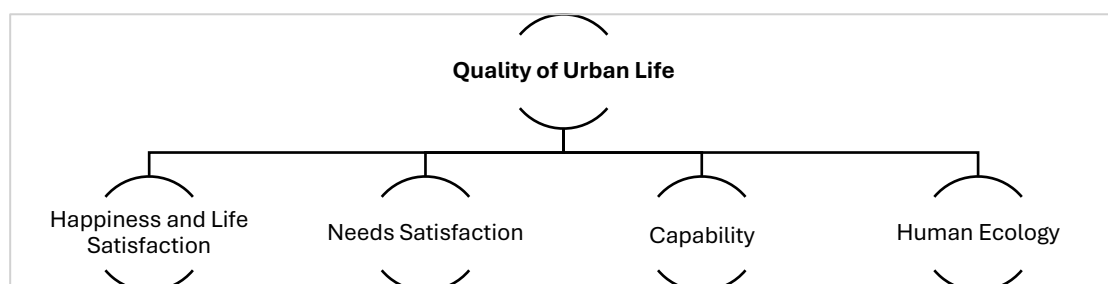


Figure 2. Diagram illustrating the four theoretical perspectives of QoUL (Source: authors).

Happiness and life satisfaction approaches relate to individual well-being (Marans and Stimson, 2011). Although the terms ‘happiness’ and ‘life-satisfaction’ are used interchangeably within QoL discourse, it is important to make a distinction between them to ensure accuracy and reliability (Al-Qawasmi, 2020). As one of the most cited scholars in QoL studies, Campbell *et al.* (1976) explored the concept of ‘life satisfaction’ as the term was more definable and realistic to be translated into policy. The life

satisfaction concept implied internal judgement and cognitive experience in aspects of life that matter for most people (Marans, 2003). ‘Happiness’ was viewed as a state of feeling derived from a short-term mood; thus, the research outcomes are harder to be used by policymakers (Marans and Stimson, 2011). Meanwhile, Kahneman (1999) argued that the purpose of policy should not be to measure satisfaction but to increase the incidence of happiness. Such a view arises from the concept of objective happiness (Abdrabo *et al.*, 2022). Kahneman (1999) contended that individuals are rarely, if ever, fully satisfied because their aspirations and expectations tend to adjust to the changing circumstances. Objective happiness can be assessed by recording positive and negative experiences in life, and the goal of policymakers should be increasing the number of positive experiences as opposed to the negative ones.

The needs satisfaction approach refers to Abraham Maslow’s theory of the ‘Hierarchy of Needs’, identifying five levels of human needs: physiological, safety, belonging, self-esteem, and self-actualization (Yadav and Gupta, 2021). The hierarchy of needs begins with basic physiological needs at the bottom and progresses toward more spiritual needs at the top of the pyramid. Higher-level needs were viewed as more difficult to achieve but were also believed to yield greater satisfaction (Sirgy, 2011). Many scholars criticised the simplicity and linearity of this type of understanding of the human needs as they overlook the contextual and personal factors (Sheikh and van Ameijde, 2022). Following the criticisms, Maslow amended his work in 1987, emphasising that the pyramid is not as rigid as it was interpreted by some scholars (Sheikh and van Ameijde, 2022). Despite the academic debates about the concept of needs satisfaction, key QoL scholars, such as Campbell *et al.* (1976), were inspired by it, drawing on it to formulate the concept of ‘domains of life’.

The capability approach, which was developed by Amartya Sen, argues that QoL should be assessed based on the capabilities of individuals (Sen, 1999). These refer to the opportunities that define what individuals can be and do in order to achieve the kind of life they aspire to (Biagi *et al.*, 2018). This approach therefore recognises the individual factors, as well as the social, economic, and environmental factors that may enhance or constrain people’s freedom to choose (Sen, 1999). In urban studies, capability approach aims to examine the capacity of cities to expand or restrict individuals’ opportunities, such as access to employment, education, and healthcare (Biagi *et al.*, 2018). This perspective suggests that QoUL not only encompasses the availability of resources but also the ability to translate them into meaningful outcomes. Despite the challenges in operationalising this concept empirically, the capability approach has made a significant contribution to the field by emphasising the role of opportunities, choice, and empowerment in examining QoUL.

The human-ecology approach derives from the relationship with people and their living environments (Insch and Florek, 2008). This approach views the environment as a broad concept, encompassing economic, social, and physical attributes (Das, 2008). The dynamic and reciprocal relationship between people and their living environments underpins the concepts of ‘sustainability’ and ‘livability’ (van Kamp *et al.*, 2003). In this context, Mouratidis (2020) defined livability as the quality of the person-environment relationship, drawing on urban movements such as New Urbanism and Sustainable Urbanism. Recently, liveable cities have become a global priority under the Sustainable Development Goals of the United Nations (Sheikh and van Ameijde, 2022).

The four theoretical approaches with their strengths and limitations establish the foundation of the QoUL models and frameworks in literature. Drawing on the strengths of these theoretical perspectives, there is a need for an integrated approach to QoUL.

3.2 Quality of Urban Life Models

The modelling approach remains the most appropriate method to examine QoUL due to its ability to incorporate a large number of components and perspectives (Marans and Stimson, 2011). Although it is challenging to model the complexity of urban life, QoUL models can effectively demonstrate how the components shaping the interaction between people and urban environments are interrelated. The eight selected QoUL models can be broadly classified into three categories: meta-theory models of

satisfaction, domain and indicator models, and multi-dimensional models, each offering distinct perspectives on this relationship (see Appendix A for figures of the eight QoUL models).

Meta-theory models incorporate a range of components and situate them in a theoretically sound framework. The most influential meta-theory models were developed by Marans and Rodgers (1975), Campbell et al. (1976), and McCrea (2007). These models explore the relationship between domains of life and satisfaction measures, rooted in the life satisfaction approach. The domain and indicator models take a different approach, identifying and categorising relevant domains, sub-domains, and indicators of QoUL in a hierarchical structure; the key examples are Felce and Perry (1995), Hancock et al. (1999), and Al-Qawasmi et al. (2021). Finally, the multi-dimensional models establish a holistic view of the key QoUL dimensions, guiding the QoUL studies based on an existing set of criteria. Two influential models were developed by Pacione (2003) and MacLean and Salama (2019).

Table 1. Comparative analysis of Quality of Urban Life Models (Source: authors).

	QoUL Models	Theoretical Perspectives	Main Purpose	Key Dimensions						
				D-1	D-2	D-3	D-4	D-5	D-6	D-7
Meta-Theory	Marans and Rodgers (1975)	Life Satisfaction	To explore levels of satisfaction with various scales of urban environments	✓		✓	✓		✓	
	Campbell et al. (1976)	Life Satisfaction	To examine overall life satisfaction based on the sum of all life domains	✓		✓			✓	
	McCrea (2007)	Life Satisfaction	To test the links between objective dimensions and subjective evaluations of QoUL	✓		✓			✓	✓
Domain and Indicator	Felce and Perry (1995)	Life Satisfaction	To identify QoUL domains	✓	✓					
	Hancock et al. (1999)	Human-Ecology	To modify the basic sustainability framework for indicator selection	✓	✓					
	Al-Qawasmi et al. (2021)	Human-Ecology	To identify and categorise QoUL domains, sub-domains, and indicators	✓	✓					
Multi-Dimensional	Pacione (2003)	Human-Ecology	To identify key dimensions of QoUL	✓		✓	✓	✓		✓
	MacLean and Salama (2019)	Human-Ecology	To identify key dimensions of QoUL	✓	✓	✓	✓	✓	✓	✓

NOTES: D-1: Domain Categorisation, D-2: Indicator Selection, D-3: Objective-Subjective Classification, D-4: The Scale of Urban Environments, D-5: Contextual, Cultural, and Social Group Characteristics, D-6: Personal Characteristics and Standards of Comparison, D-7: Time

Table 1 illustrates the comparative analysis of the eight QoUL models and their key dimensions, revealing the breadth of the QoUL discourse and the gaps that inform the development of a situated framework. The bold ticks show that the models address the recurring dimensions explicitly, while light ticks refer to them implicitly.

The strengths of meta-theory models are the explicit understanding of the relationship between objective and subjective attributes, as well as the role of personal characteristics and standards of comparison in assessing QoUL. These models elaborate on the subjectivity of the term ‘quality’, highlighting that objective conditions alone are inadequate to represent QoUL. While Marans and Rodgers’ (1975) and Campbell et al.’s (1976) models set the theoretical foundation of the field, McCrea’s

(2007) model tests a key dimension from these models, namely the links between objective and subjective attributes. McCrea's (2007) attempt to operationalise this relationship highlights an important gap within the QoUL discourse that other models often overlook.

The domain and indicator models are often generic, neglecting the other key dimensions of QoUL. Whilst these models identify specific domain headings, they do not explicitly outline their measurable indicators, simply stating that indicators cannot be identified without contextualisation. Although Felce and Perry's (1995) model identified specific indicators, the list remained generic due to lack of contextual underpinning.

The multi-dimensional models refer to key dimensions of QoUL explicitly, but these models often lack operational value. For instance, MacLean and Salama's (2019) model refers to all key dimensions of QoUL based on a critical review of literature, but the selection of indicators remains vague as they are represented under a broad category of "contextual and cultural indicators". None of the eight QoUL models illustrates a specific list of indicators that accounts for scalar differences, contextual and social group characteristics, and objective-subjective classification.

3.3 Key Dimensions of QoUL Models

Building upon the preceding discussions about the influential QoUL models in literature, this section discusses the seven key dimensions for examining QoUL.

- **Domain Categorisation:** Campbell *et al.* (1976) defined domains as areas of life that are important for individuals. The multi-disciplinary nature of the field creates inconsistencies in establishing a standardised set of domains. The same domain headings might have different meanings across studies, and conversely, different headings may refer to similar concepts. However, there is a general consensus that domains should cover the totality of life experiences, should be widely acknowledged by most people, and should have measurable indicators (Al-Qawasmi, 2020). van Kamp *et al.* (2003) identified economic, social, and physical domains as the three pillars of sustainability, which represent the most common domain headings in the literature (Al-Qawasmi, 2020; Hancock *et al.*, 1999; Massam, 2002). An important distinction must be made between the place-related domains that refer to QoL derived from urban environment and QoL that is experienced within it (Marans and Stimson, 2011). This research focuses on the first understanding, specifically QoUL domains stemming from the urban environment.
- **Indicator Selection:** To understand a particular urban setting, the conditions of that setting need to be measured, using a set of indicators (Marans and Stimson, 2011). Thus, indicators can be defined as measurable variables of QoUL (Al-Qawasmi, 2020). There cannot be a standardised set of indicators due to the complex, multi-dimensional, and context-specific nature of the field. Overall, the selected indicators must be meaningful, with a clear operational definition, and reflective of their assigned domain while capturing a wide range of urban characteristics (Al-Qawasmi, 2020; Craglia *et al.*, 2004; Massam, 2002). They must also be applicable to a specific setting, acknowledging that setting's limitations in time and resources.
- **Objective-Subjective Classification:** There are two broad approaches for examining QoUL in a specific setting: objective and subjective. The objective approach refers to factual qualities of urban environment that are reported using secondary data sources (Marans and Stimson, 2011). The subjective approach refers to individuals' behaviours and evaluations of aspects of QoUL, collected through primary data (Marans and Stimson, 2011). Both approaches to data collection have limitations if not used in a complementary manner. While objective approaches cannot capture people's behaviours, opinions, and experiences (Das, 2008), subjective approaches cannot provide a reliable and valid image of QoUL (Rezvani *et al.*, 2013). It is common for QoUL scholars to classify indicators as objective and subjective. Marans and Stimson (2011) noted that this categorisation can be extended to explicitly behavioural indicators. Nevertheless, the real challenge for QoUL scholars is to test the nature and strength of the relationship between these approaches (Marans and Stimson, 2011).

- **The Scale of Urban Environments:** The urban environment can be examined at different levels of geographic scale, ranging from housing, neighbourhood, and city level to county level (MacLean and Salama, 2019). Each layer of geographic scale might have different impacts on people and people may express varying levels of satisfaction across each layer (Esmailpoorabi *et al.*, 2016). It is also possible for the satisfaction experienced at one layer to impact the satisfaction at another (MacLean and Salama, 2019). Scale is therefore both a distinct and interconnected concept. Recognising this, Pacione (2003) noted that descriptive mapping of QoUL indicators based on their scale of analysis is valuable for detailed investigation and policy relevance. The larger the unit area, the greater the potential to overlook human-scale problems (Pacione, 2003). As such, the indicators can also be classified based on their degree of specificity (Pacione, 2003). While national or regional-level indicators are more general, housing or neighbourhood-level indicators are more specific.
- **Contextual, Cultural, and Social Group Characteristics:** The term ‘quality’ is inherently context-dependent, across both cultural and social factors (van Kamp *et al.*, 2003). Pacione (2003) highlighted that these factors, such as social group characteristics and individuals’ cultural background, intervene between the objective world and subjective evaluations, transforming what initially appear to be objective conditions into highly subjective results. MacLean and Salama (2019) identified these factors as social groups, cultural values, ethnic heritage, and lifestyle, with Pacione (2003) further subdividing social groups into gender, ethnicity, socio-economic status, age group, ideology, and sexuality. Building on this, McCrea *et al.* (2005) found that the varying importance of urban conditions across different social groups remains a less studied area, and that future research should incorporate their preferences into urban planning and policy.
- **Personal Characteristics and Standards of Comparison:** A person evaluates a specific attribute of an urban environment based on a standard of comparison (Marans and Rodgers, 1975). This standard has many determinants, including past experiences, expectations, aspirations, needs and values, that shape their perception (Marans and Rodgers, 1975). For this reason, one’s perception of an urban attribute does not always align with the reality of that condition (Marans and Rodgers, 1975). This inconsistency does not make subjective judgement invalid or incorrect but rather highlights the emotional bond between people and their living environment (Insch and Florek, 2008).
- **Time:** Monitoring QoUL over time informs policymakers and planners about the effectiveness of their policies and identifies improving and declining aspects of urban environments (Marans and Stimson, 2011). Although there is not a standardised time interval for examining QoUL, Marans (2003) suggested that further research should be conducted if the available data is outdated and inadequate for addressing informational needs. Such research may also reveal the intensity of change in an urban environment (Marans, 2003). David Harvey defined the intensification of life events per unit of time and space as the ‘time-space compression’, highlighting that pace of change has been accelerated since the 1970s with economic restructuring, globalisation, and technological advancements (Harvey, 1992). Consequently, frequent monitoring of urban environments has become increasingly important.

4 Mapping QoUL Models to Empirical Cases

The synthesis of the QoUL models demonstrated the key QoUL dimensions and highlighted the complexities in their real-life application. The context-specific and relative nature of the field makes the indicator selection process particularly challenging. To uncover further conceptual and methodological considerations, four-stage criteria were developed to examine the QoUL studies that empirically test the key dimensions from the discussed models, as shown in Table 4.

Table 4. Assessment criteria for examining empirical cases (Source: authors).

	Criteria	Question
Context	Location	Where is the case located?
	Nature of the Problem	What are the main challenges that different social groups face?
	Purpose	Which of these challenges that the study focuses on?
Scope	Scale of Investigation	Which level of living did the study examine?
	Domains	Which domain headings are used in the study and why?
	Indicators	Which indicators are used in the study and how are they selected?
Approach	Methodology	Does the study use objective and/or subjective approaches?
	Methods	What types of data collection methods did the study use?
	Tools	What are the tools used for data collection?
Outcomes	Data Analysis Methods	Which methods are used for data analysis?
	Findings	What are the main findings of the study?
	Use of Data	How did the study use the collected data and what are the future implications?

4.1 Context: Location, Nature of the Problem, Purpose

Table 5 presents the selected case studies, outlining the nature of the problem addressed and the purpose of each empirical study. Three of these cases represent post-industrial contexts, examining overall QoUL as a result of the economic and social changes since the 1970s. While the Detroit case refers to a theory-based approach, operationalising Marans and Rodgers' (1975) model, the Edinburgh and Valenciennes cases refer to a practice-based approach, tackling distressed urban areas to improve quality of life. Additionally, the case in Belgrade focuses on the continuous change in urban environment, representing a post-industrial, post-socialist context at the public space level. In response to the growing urbanisation rates, four of these cases examine QoUL at different contexts and scales. While the Brisbane and Lilongwe cases examine overall QoUL at regional and neighbourhood levels, operationalising Marans and Rodgers' (1975) and MacLean and Salama's (2019) models, respectively, the Zurich and Guwahati cases test the relationship between objective and subjective approaches at neighbourhood and city levels. On a more specific level, the Bursa case examines public participation, and the Tehran case examines accessibility in relation to overall QoUL.

Table 5. Summary of the selected empirical cases (Source: authors).

	References	Nature of the Problem	Purpose	Scale of Investigation	Domain-Headings
Detroit (USA)	Kweon and Marans (2011)	Socio-economic changes since the 1970s	To assess residents' level of satisfaction with their changing urban environments	Community	Non-place attributes; place attributes—community, neighbourhood, and dwelling
Brisbane, SEQ (Australia)	McCrea <i>et al.</i> (2005)	Growing population rate in a low-density urban region	To assess the importance of regional satisfaction in predicting the overall life quality-of-life	Regional	Overall life satisfaction measures; personal characteristics; place attributes—region, neighbourhood, and housing
Guwahati (India)	Das (2008)	The rate of urbanisation	To examine the correlation between objective and subjective dimensions of QoUL	City	Demographic information; social environment; physical environment; economic environment
Lilongwe (Malawi)	MacLean and Salama (2021)	The rapid population growth	To examine residents' evaluations of QoUL at a neighbourhood scale	Neighbourhood	Demographic information; well-being domain; physical domain; social domain; economic domain

Zurich (Switzerland)	von Wirth <i>et al.</i> (2015)	The rate of urbanisation	To test the relationship between accessibility and safety in public spaces	Suburban	Population characteristics; safety; access
Bursa (Turkey)	Gur <i>et al.</i> (2019)	Unresponsiveness of authorities during a transformation project	To examine the role of participation in transformation projects and overall QoUL	Residential Area	Life satisfaction/ individual characteristics; social aspects; physical aspects; economic aspects; organisational components
Tehran (Iran)	Lotfi and Koohsari (2009)	Lack of access to local facilities	To examine the links between objective and subjective access	Public Spaces	Population characteristics; accessibility measures
Belgrade (Serbia)	Vukovic <i>et al.</i> (2021)	The social, ideological, and cultural changes	To examine the impact of spatial transformations on QoUL	Public Spaces	Perceptual attributes; social attributes; functional attributes
Edinburgh (Scotland)	Baker <i>et al.</i> (2005)	The socio-economic problems as a result of economic restructuring	To improve QoL in a large urban distressed area	Large Urban Distressed Area	Social; basic data, ecological, functional and structural urban aspects; governance and institutions
Valenciennes (France)	Vandamme <i>et al.</i> (2006)	The socio-economic problems as a result of economic restructuring	To improve QoL in a large urban distressed area	Large Urban Distressed Area	Social; basic data, ecological, functional and structural urban aspects; governance and institutions

4.2 Scope (Scale of Investigation, Domains, and Indicators)

The cases represent five dominant scales, as shown in Table 5 with their exact terminology. Despite the focus on a specific level of analysis, the cases also discuss other geographic scales, highlighting the interconnectedness between them. A key consideration is the differences in understanding the territorial units; for instance, Kweon and Marans' (2011) definition of a community is different from MacLean and Salama's (2021) definition of liveable communities. As Kweon and Marans (2011) refer to city, town, or township, MacLean and Salama (2021) refer to neighbourhoods. Attending to definitional clarity between perceived and intended territorial units is essential to avoid inaccuracies in data collection. This mismatch is defined as 'scale discordance' by Pacione (2003) and the effects of it might be stronger when the scope of investigation is larger.

Table 5 also presents the domain headings used in the empirical studies with their exact terminology. Kweon and Marans (2011) and McCrea *et al.* (2005) made a clear distinction between place-related domains and non-place-related domains. In their studies, place-related domains were examined at three geographic scales, distinctly from the overall QoL experience. When scholars discuss the links between objective and subjective approaches, they often refer to the place-related domains (McCrea *et al.*, 2011). However, the distinction between them is not always clear due to the social and cultural factors that intervene between the objective and subjective approaches. To demonstrate this, McCrea *et al.* (2005) examined the moderating effects of social group characteristics, namely occupation, health status, and family status, on various place-related domains. For instance, while neighbourhood satisfaction was found to be an important predictor of overall life satisfaction for parents, this was not the case for singles.

The selected cases demonstrate the most common place-related domain headings as economic, social, and physical. MacLean and Salama (2021) included well-being as the fourth domain. However, the indicators they assign to it substantially overlap with those in earlier studies, appearing either under overall satisfaction measures when related to non-place domains or under the social domain when tied

to a specific urban scale, as in Kweon and Marans (2011) and McCrea *et al.* (2005). Meanwhile, Gur *et al.* (2019) added the organisational component, specifically trust in local authorities and participation, whereas MacLean and Salama (2021) included local governance under the social domain. For analytical clarity, this study categorises the indicators related to governance and participation under the political domain. This decision is particularly relevant to PICs, emphasising the role of local authority decisions on people's living environment.

The scope of QoUL studies can vary by their degree of specificity, as discussed by Pacione (2003). The selected ten cases represent a wide range of issues from general to specific. While Kweon and Marans (2011) assessed the degree of housing, neighbourhood, and community satisfaction for overall QoL in Detroit, representing a broader study, Lotfi and Koohsari (2009) assessed the degree of accessibility in public open spaces for QoUL in Tehran, representing a smaller scope. Categorising indicators based on their scale of analysis and level of specificity is a valuable analytical method for systematic assessment of the context under investigation. This process adds clarity and transparency to the empirical research and also opens opportunities to explore relationship between and within different domains, sub-domains, and indicators. For instance, MacLean and Salama (2021) mapped the QoUL domains and indicators and found strong correlations between them.

4.3 Approach (Methodology, Methods, and Tools)

The case studies reveal the challenges of either objective, subjective, or integrative approaches in examining QoUL. Baker *et al.* (2005) and Vandamme *et al.* (2006) represent two urban regeneration projects, relying exclusively on objective approaches at the initial stage to understand the urban conditions in distressed areas, while participatory processes in their second stages remain limited to stakeholders, excluding residents' perceptions and evaluations entirely. Similarly, Lotfi and Koohsari (2009) study demonstrates the limitations of objective approaches alone, acknowledging that without subjective input, findings risk being misleading.

McCrea *et al.* (2005) used subjective approaches, specifically survey data, to test aspects from the meta-theory model by Marans and Rodgers (1975), claiming that overall life satisfaction is predicted from the satisfaction with urban domains in the context of Brisbane. McCrea *et al.* (2005) nonetheless acknowledge that subjectivity cannot be assessed without an understanding of the objective conditions. McCrea *et al.* (2006) later complemented this with objective approaches and used GIS to link both approaches. The geocoding method was also used in Kweon and Marans' (2011) and von Wirth *et al.*'s (2015) studies to link objective and subjective approaches, demonstrating integrative methodology.

Survey methods, predominantly Likert-scale questionnaires, remain the most widely used tool across the cases for assessing people's evaluations of urban conditions. MacLean and Salama (2021) and Vukovic *et al.* (2021) extend this with observational methods, such as walking-tour assessments, capturing people's behaviours in urban settings. Both studies employ such methods to assess user behaviour, yet neither explicitly categorises these as behavioural attributes, representing a gap in the literature. Furthermore, across the ten cases, qualitative insights into lived experiences remain inadequate, reinforcing a need for an approach that centres urban life holistically.

4.4 Outcomes (Data Analysis, Key Findings, and Use of Data)

Predominantly, the cases used statistical methods to identify the predictors of overall QoUL and then used modelling approach to test the links between objective and subjective approaches. Kweon and Marans (2011) found that housing was an important predictor of overall life satisfaction among residents of Detroit. McCrea *et al.* (2005) found that regional satisfaction, specifically regional services and cost of living, was a key determinant of life satisfaction in SEQ. These studies were useful for identifying areas of urban life that are important for residents' life satisfaction based on regional or city-level survey data.

The relationship between objective and subjective approaches produced varied results. While Das (2008) found poor correlation between objective and subjective QoL, von Wirth *et al.* (2015) found strong link between objective safety measures in public spaces and residents' sense of safety. von Wirth *et al.* (2015) highlighted that weak correlations are more likely to be found in larger scale studies as they are more likely to miss human-scale problems. Furthermore, MacLean and Salama (2021) found discrepancies in QoUL experience between the three urban neighbourhoods in Lilongwe. These findings highlight the context-dependency of QoUL and suggest smaller scale studies for exploring variations in residents' experiences of urban spaces.

The empirical studies were useful for informing policymakers and planners regarding the aspects of urban life that are important for residents' life satisfaction. The findings also highlighted that objectively positive conditions do not necessarily lead to positive satisfaction outcomes among the residents and the urban experiences can vary across a city or a region due to the nature of social groups. Some of these findings are difficult to translate into policy due to the time and cost related limitations. Kweon and Marans (2011) outlined such difficulties as the data is not released promptly, disseminated effectively, and maintained with continuity.

4.5 Comprehensive List of QoUL Indicators

Table 6 presents the QoUL indicators identified through a systematic literature review and empirical case studies, organised by domain and sub-domain. The full indicator list including references, descriptions, scale, methods, and tools is provided in Appendix B. The indicators are grouped under four frequently used domain-headings: political, economic, social, and physical. However, key concerns in their operationalisation, such as contextual factors, indicator specificity, and scalar differences emphasise the need for a situated QoUL framework in PICs. The following section characterises PICs to situate these indicators within the post-industrial context.

Table 6. QoUL indicators derived from the systematic literature review and empirical cases (Source: authors).

Domain	Sub-Domains	Indicators
Political	Urban Governance	Local Government & Institutions
		Public Trust
	Public Participation	Right to Have a Say
		Citizen Involvement
	Public Services	Educational Services
		Healthcare Services
		Waste Management Services
Emergency Services		
Economic	Economic Activity and Participation	Labour Market Characteristics
		Economic Activity Status
		City Branding Strategies
	Cost of Living and Income Security	Housing Affordability
		Income
		Housing Tenure/Ownership
	Education, Skills, and Training	Educational Status
	Research, Training, and Skills	
Physical	Urban Infrastructure	Transportation
		Accessibility
		Utility Services
	Urban Form	Land-Use
		Residential Density
		Urban Pattern
	Environmental Care	Climate
		Environmental Pollution
	Image	Urban Maintenance & Upkeep
Housing Quality		
Visual Attractiveness		
Social	Urban Safety	Crime & Sense of Safety
	Public Amenities	Cultural Facilities
		Shopping & Recreation
		Open Public Spaces

	Social Cohesiveness	Neighbourhood Relations
		Having Family and Friends Nearby
		Social Interaction
	Sense of Belonging	Diversity
		Community Identity & Attachment
		Collective Memory & Nostalgia

5 Characterising Post-Industrial Cities

There have been significant changes in the political, economic, and socio-cultural functions of Western modern society since the early 1970s, and many disciplines came up with concepts to comprehend these emerging changes. Figure 9 shows the three fundamental terms to apprehend these changes in society: post-industrialism, post-Fordism, and post-modernism.

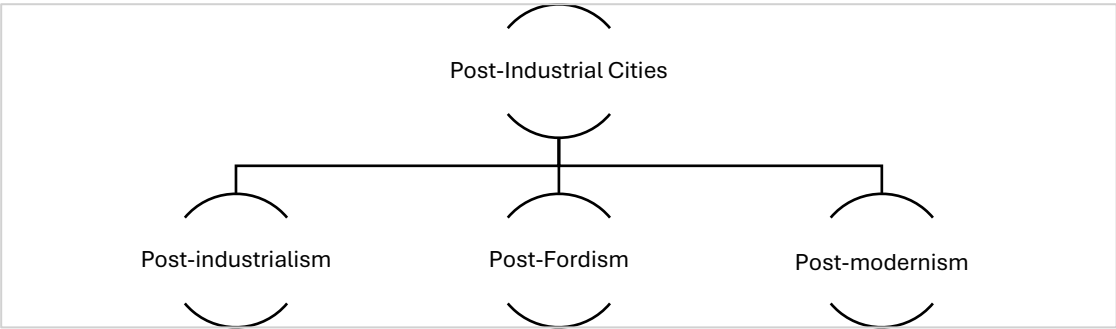


Figure 9. Three overlapping concepts of post-industrial cities (Source: authors).

5.1 Three Overlapping Concepts

The concept of post-industrial society was developed by Daniel Bell, an American sociologist. Bell divided modern society into three dimensions—social structure, polity, and culture (Bell, 1974). His concept of post-industrial society focused on the changes within the social structure of Western society and was considered a social forecast of the future of Western industrial cities (Hill, 1974). According to him, the social structure referred to the economizing principles, such as allocation of resources, processes, and mechanisms for productivity, and the changes in this dimension would then pose challenges in polity and culture (Bell, 1974).

His seminal work categorised the phases of Western society as pre-industrial, industrial, and post-industrial for analytical purposes (Bell, 1974). Bell foregrounded four components in his classification to comprehend the changing tendencies from pre-industrial to post-industrial society. These components are economy, occupational structure, axial principle, and technology (Gibson, 1993). Building upon this analysis, he defined post-industrial society as “the changes in the social structure, the way in which the economy is being transformed and the occupational structure is reworked, and with the new relations between theory and empiricism, particularly science and technology” (Bell, 1974). The prefix “post” points to a “sense of interstitial time”, highlighting the dynamic nature of this transformation rather than a complete social order.

The concept of post-Fordism is a widely used term to define the emerging economic transformations in Western society since the 1970s, focusing on the changes in Fordist production methods and management systems implemented by Henry Ford during the 1920s-1930s (Amin, 1995). Three theoretical positions—regulatory approach, neo-Schumpeterian approach, and flexible specialisation approach—were introduced by Ash Amin, a British geographer, to comprehend the emerging economic systems. The most popular position among these approaches is the regulatory approach, which was also adopted by David Harvey (1992) as a heuristic device to understand the complexity of political

economy in the 20th century. The prefix post within this context is used in a literal sense as a break from the Fordist production processes.

Various conceptual approaches were analysed by Harvey (1992) and Jameson (2013) to apprehend the cultural transformations in Western modern societies. The first approach views post-modernism as a break from modernism and a style of a certain period in history, whereas the second approach views it as a shift in cultural practices within the restructuring of late capitalism. Jameson (2013) favoured the latter approach, defining post-modernism as the cultural logic of late capitalism. Harvey (1992) emphasised that the first approach might be more appropriate in architecture and urban design fields, representing the radically changing perceptions regarding representation of space. However, Harvey (1992) also noted that post-modernism should not be treated as a purely artistic notion due to its rootedness in everyday life.

As the previous attempts to define post-industrial city have been criticised by scholars due to the pervasive use of the term, it is particularly important to establish a clear and theoretically grounded definition of PICs, synthesising the overlapping concepts. Bell's (1974) concept excluded the polity and cultural dimensions of society as these aspects were found less predictable. Later on, Harvey (1992) and Jameson (2013) provided extensive analysis, understanding the links between political, economic, and socio-cultural shifts. Shaw (2001) highlighted that the term post-industrial is a container concept, involving both post-Fordist economy and socio-cultural forms. Building upon these discussions, the post-industrial city is defined as the spatial manifestation of political, economic, and socio-cultural shifts in Western industrial society. Therefore, the analysis from post-war industrial to post-industrial city will be discussed in these four dimensions: political, economic, socio-cultural, and spatial.

5.2 From Post-War Industrial City to Post-Industrial City

Table 7 summarises the transition from post-war industrial city to post-industrial city across four dimensions.

Table 7. Transformation from post-war to post-industrial city (Source: authors).

	Industrial/Fordist/Modern City	Post-industrial/Post-Fordist/Post-modern City
Political	Regulated market conditions	Unregulated market conditions
	Keynesian macro-economic policies	Neoliberal policies
	Social welfare principles	Privatisation of public services
	Strong role of local governments and institutions	Decreasing role of local governments and institutions
Economic	Manufacturing-led labour market	Service-led labour market
	Mass production and mass consumption of standardised goods	Flexible specialisation of varied niche products
	Rigidity and stability	Flexibility and insecurity
	Organised labour (trade unions)	Rejection of organised labour (highly mobile and flexible labour)
Socio-cultural	High culture of modernism	Post-modernism
	Mainstream values and experiences	Alternative lifestyles
	Functionality over aesthetics	Aestheticization of diversity (eclecticism of styles)
	Traditional working-class families and homogeneity	Counter-cultural movements and self-expression (new middle class)
Spatial	Modernist-style planning and building	Urban regeneration of de-industrial areas
	High-rise flats (oversimplified and uniform)	Culturally vibrant and diverse neighbourhoods
	Single zoning	Gentrification and social mixing

The key principle of the post-war industrial city was the stability of the manufacturing-led market conditions supported by Keynesian macro-economic policies and social welfare principles. The post-war conditions positioned local governments into strong roles to preserve the regulated market conditions that supported mass production and mass consumption of the standardised goods (Harvey, 1992). This required a balance between organised labour and large corporations (Harvey, 1992). The stability of the economic system was anchored by a high culture of modernism, centred on the

traditional working-class family structure (Lever, 2001). Assuming uniformity of needs and experiences, cities were reconstructed with Modernist-style planning and building principles (Goodman *et al.*, 1999). For instance, combining high-rise flats with single-use zoning produced urban environments that were uniform and oversimplified aesthetically and socially disruptive in character (While and Pendlebury, 2025).

The rigidity of the Fordist economic system became more visible in the 1970s with the growing conflicts between the large-scale corporation and working-class power, as well as the economic recession (Harvey, 1992). The solution was found in the flexibility of the market conditions, supported by neoliberal policies and privatisation principles (Lever, 2001). The role of local governments was weakened, shifting responsibility for welfare onto the individual level and freeing the market conditions from state intervention (Brenner and Theodore, 2002). The labour market was shifted from manufacturing-led to service-led industries, employing highly mobile, diverse, and educated knowledge workers (Tallon, 2020). The flexibility of the economic system was supported by a post-modern culture, centred on the new middle class with their alternative lifestyles (Harvey, 1992). To address the diversified needs of the social groups, cities adopted urban regeneration strategies, creating culturally vibrant and diverse centres and neighbourhoods (Tallon, 2020). For instance, former factories were transformed into neo-bohemian art studios, gradually displacing the former working-class with the new middle class (Grodach and Ehrenfeucht, 2015). However, these shifts resulted in emerging challenges due to the increasing economic, social, and spatial inequalities between advantaged and disadvantaged population groups.

5.3 Key Themes and Challenges

The analysis of the transformation from post-war industrial to post-industrial city revealed eight themes and seventeen challenges. These are discussed in the following sub-sections, drawing examples from the UK context. Figure 10 shows the key themes and challenges.

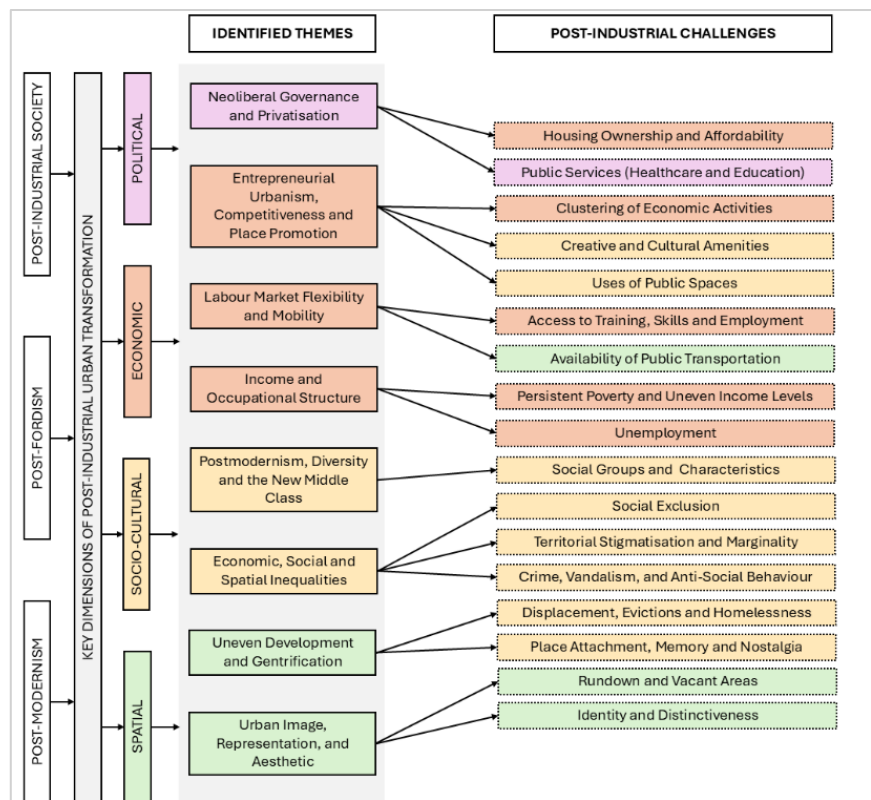


Figure 10. Key post-industrial themes and challenges (Source: authors).

5.3.1 Neoliberal Governance and Privatisation

PICs have a neoliberal governance structure that is liberated from government intervention, encompassing market-driven policies and privatisation strategies. The budgetary cuts to the provision of public services and housing reduced local councils' ability to provide social welfare (Goodwin *et al.*, 1993).

- **Housing Ownership and Affordability:** The Right to Buy (RTB) policy, introduced in the 1980s, reduced the social housing stock from 5.1 million to 1.6 million properties, with 40% ending up in the private rental sector often with insecure tenancy, poorer quality, and higher prices (Ministry of Housing, 2024; Murie, 2023). The privatisation of social housing stock and the reduced capacity of local authorities to address growing housing needs have contributed to today's deepening affordability crisis.
- **Provision of Public Services:** Quasi-market mechanisms were introduced to healthcare and education in the 1980s and 1990s, centring on patient and parental choice alongside increased competition (Lewis, 2017). However, these reforms raised questions about equity in access to public services since gains in choice for some were offset by diminishing access for others (Reay, 2022).

5.3.2 Entrepreneurial Urbanism, Competitiveness, and Place Promotion

Entrepreneurial strategies in urbanism comprise key components of PICs, aimed at attracting investment and enhancing economic competitiveness through rebranding, using buzzwords such as 'creative city', 'knowledge city', 'city of culture', or 'entrepreneurial city' (Anttiroiko, 2014).

- **Clustering of Economic Activities:** The concentration of economic activity in small urban spaces facilitates knowledge spillovers and drives innovation (Florida, 2017). However, the rising land values disproportionately benefit landlords and homeowners, with London's property market exemplifying how real estate functions as a store of wealth for affluent groups, gradually displacing lower-income groups and exacerbating inequalities (Florida, 2017).
- **Cultural and Creative Industries/Amenities:** Cultural and creative industries attract highly skilled and talented individuals, encourage innovation, and enhance economic growth (OECD, 2022). The creative sector contributed £124.6 billion in GVA to the UK economy and 90% of this contribution was attributed to the 55 clusters across the UK (UK Government, 2025). However, rising property prices and inaccessibility of creative and cultural amenities in growth clusters remain an equity-related challenge especially for lower-income groups (Florida, 2017).
- **Public Spaces:** They hold economic, aesthetic, and symbolic value for PICs (Akkar, 2005). The reshaping of public spaces through new material practices, visual rebranding, and symbolic boundaries of inclusion and exclusion reorients their value towards economic competitiveness (Akkar, 2005). These top-down strategies reduce public spaces to a commodity and undermine their function as everyday spaces for local communities (Paddison and Sharp, 2007).

5.3.3 Labour Market Flexibility and Mobility

The rebranding of PICs for a flexible, highly skilled, and internationally mobile workforce enhances economic growth, requiring appropriate infrastructure to facilitate employment and movement for the highly skilled and talented labour force (Rousseau, 2012).

- **Access to Skills, Training, and Employment:** The new employment opportunities tend to draw from national and international labour pools, increasing competition in local job markets (Collinge and Musterd, 2009). The growing demand for higher education, training, and skills has excluded lower-skilled labour force, posing challenges to equal access to employment (van Kempen, 1994).
- **Public Transportation:** Transportation can be a key determinant in accessing employment, skills, and training (Benson and Reardon, 2025). High-skilled jobs tend to concentrate in city centres while

the lower-skilled jobs are often located outside public transportation corridors, making lower-income groups more dependent on car-ownership (Chatterjee *et al.*, 2019). Yet 40% of households without a car in the UK are lower-income, reinforcing their disadvantage in accessing employment opportunities (Benson and Reardon, 2025).

5.3.4 Income and Occupational Structure

Global competition for a limited number of high-paying jobs has exacerbated inequalities in occupation structure and income (van Kempen, 1994). While some benefitted from the economic growth, others were systematically excluded from it (Rousseau, 2012).

- **Persistent Poverty and Uneven Income Levels:** Poverty rose in the 1980s due to uneven income growth and has never been fully reversed (Joseph Rowntree Foundation, 2024). In the UK, 22% of the local authorities have at least one area experiencing extreme deprivation, demonstrating the persistent spatial concentration of poverty (Ministry of Housing Community & Local Government, 2019).
- **Long-term Unemployment:** Cuts in manufacturing jobs left many workers with skills that were incompatible with the new post-Fordist economy (Tallon, 2020). Skills mismatches and long-term unemployment have persisted as challenges in the UK (PWC, 2025).

5.3.5 Post-modernism, Diversity, and the New Middle Class

The diversity and multiculturalism in post-modern society pose new challenges around the representation of various social groups (Hutton, 2004). Planning and design in PICs came to focus increasingly on the consumption needs of the new middle class, also defined as the creative class (Florida, 2014).

- **Social Groups and Characteristics:** The representation of socio-cultural diversity raised equity-related challenges to social cohesion in PICs (Hutton, 2004). While the new middle class was positioned at the centre of economic growth strategies, disadvantaged groups felt increasingly neglected (Tallon, 2020). The increased focus on the new middle class reduced diversity to only those differences considered acceptable by mainstream society (Hassen and Giovanardi, 2018).

5.3.6 Economic, Social, and Spatial Inequalities

All preceding themes and challenges point to different forms of inequality inherent in PICs. Scholars have used terms, such as the 'divided' or 'dual city', to emphasise inequalities between the disadvantaged and advantaged population groups and their spatial representation (van Kempen, 1994).

- **Social Exclusion:** The systematic exclusion of certain groups through restricted access to public services, amenities, and housing remains a key challenge. The English Deprivation Index (2019) was developed to assess multiple deprivation, recognising social exclusion as a central concern (Ministry of Housing Community & Local Government, 2019).
- **Territorial Stigmatisation and Marginality:** The concentration of certain behaviours in territories of exclusion is defined as territorial stigmatisation (Paton *et al.*, 2017). These prejudices are often reinforced by media narratives, with consequences including postcode discrimination and breakdown of community cohesion (Holmes, 2022).
- **Crime, Vandalism, and Anti-Social Behaviour:** Disadvantaged groups and their living environments are often negatively stereotyped through associations with crime, violence, and anti-social behaviour (Wilson, 2024). Labelling these areas as dangerous or in-need of intervention, and assuming cultural regeneration could resolve these issues, represents a superficial approach that fails to address the root of the problem (Wilson, 2024).

5.3.7 Uneven Development and Gentrification

Gentrification, as a global urban strategy, promotes social mixing to address negative conditions in PICs (Lees, 2008). However, it has also been associated with displacement, loss of affordable housing, homelessness, community conflict, and crime (Atkinson, 2004).

- **Displacement, Evictions, and Homelessness:** Displacement, resulting from the rehabilitation of working-class areas, has been debated since the early 20th century, with particular focus on disadvantaged population groups in PICs (Phillips *et al.*, 2021). Rising housing prices, insecurities in the private rented sector, and the reduced social housing stock remain the primary causes of evictions and homelessness (Crisis UK, 2018).
- **Place Attachment, Memory, and Nostalgia:** Social mixing strategies, such as gentrification, overlook the differences in the way individuals form an emotional bond with their living environments (Bezljaj, 2025). Those with residential choice tend to develop attachments through consumption patterns, defined as ‘elective belonging’, whereas forced relocation under regeneration schemes disrupts the community bonds and collective memories of longer-established residents (Benson, 2014). The resulting conflict between the incoming middle-class and long-term working-class community stems from the fundamentally different ways to belong to and identify with a place, further complicated by the changing character of places (Benson, 2014).

5.3.8 Urban Image, Representation, and Aesthetic

Promoting an image of a liveable city centred on culture and creativity has been a significant imperative for PICs (Lees, 2008). However, aesthetic concerns often overshadow prolonged social problems (Talen, 2000).

- **Rundown and Vacant Areas:** These areas are often viewed as opportunities for revitalising economic activity through improvements to the physical and social fabric of PICs (Atkinson, 2000). Urban regeneration schemes transform declining areas into vibrant neighbourhoods with cafes, pubs, and other consumption-oriented amenities. However, this seldom addresses underlying urban poverty (Naylor *et al.*, 2019).
- **Identity and Distinctiveness:** Identity formation in PICs is increasingly based on the consumption value of a place (Bole *et al.*, 2022). While the industrial identity was shaped by collective lifestyles of workers, embedded in a distinctive urban fabric, post-industrial identity is largely shaped by a global audience through consumption-oriented imagery (Bole *et al.*, 2022). This transition represents a symbolic break from the past, repositioning PICs for external appeal rather than local communities.

6 Mapping the QoUL Indicators in Relation to the Challenges of PICs

The previous section discussed the eight themes and seventeen challenges based on the thematic analysis of the literature. This section applies text-mining techniques to verify their occurrence in literature and map them to the QoUL indicators.

Figure 11 shows the results from the frequency analysis, establishing measurable grounding for the identified post-industrial themes and challenges. ‘Housing affordability and ownership’ occurred most frequently, followed by ‘uneven development and gentrification’ in PICs literature. This aligns with the conceptual discussions in the preceding section, where gentrification was identified as a driver of rising property prices, reflecting the relational nature of the post-industrial challenges. These relational patterns between post-industrial themes and challenges are further explored through the co-occurrence analysis.

Figure 12 illustrates the findings from the co-occurrence analysis, exploring the links between QoUL indicators within the PICs literature. Out of thirty-seven term clusters, thirty-three met VOSviewer’s

default threshold and were represented as nodes across three term clouds, where node size refers to co-occurrence frequency. As shown in Table 8, Cloud 1 encompasses the most frequently co-occurring indicators, spanning political, economic, socio-cultural, and spatial dimensions, including housing affordability, economic activity, accessibility, cultural facilities, diversity, public spaces, and recreation & shopping. Clouds 2 and 3 have comparatively fewer indicators yet remain relevant to the post-industrial context. Therefore, the VOSviewer categorisation shows how frequently used terms co-occur and interact in literature, highlighting the relational nature of the QoUL indicators in PICs. The implications of this relational categorisation for the framework development are discussed in the following section.

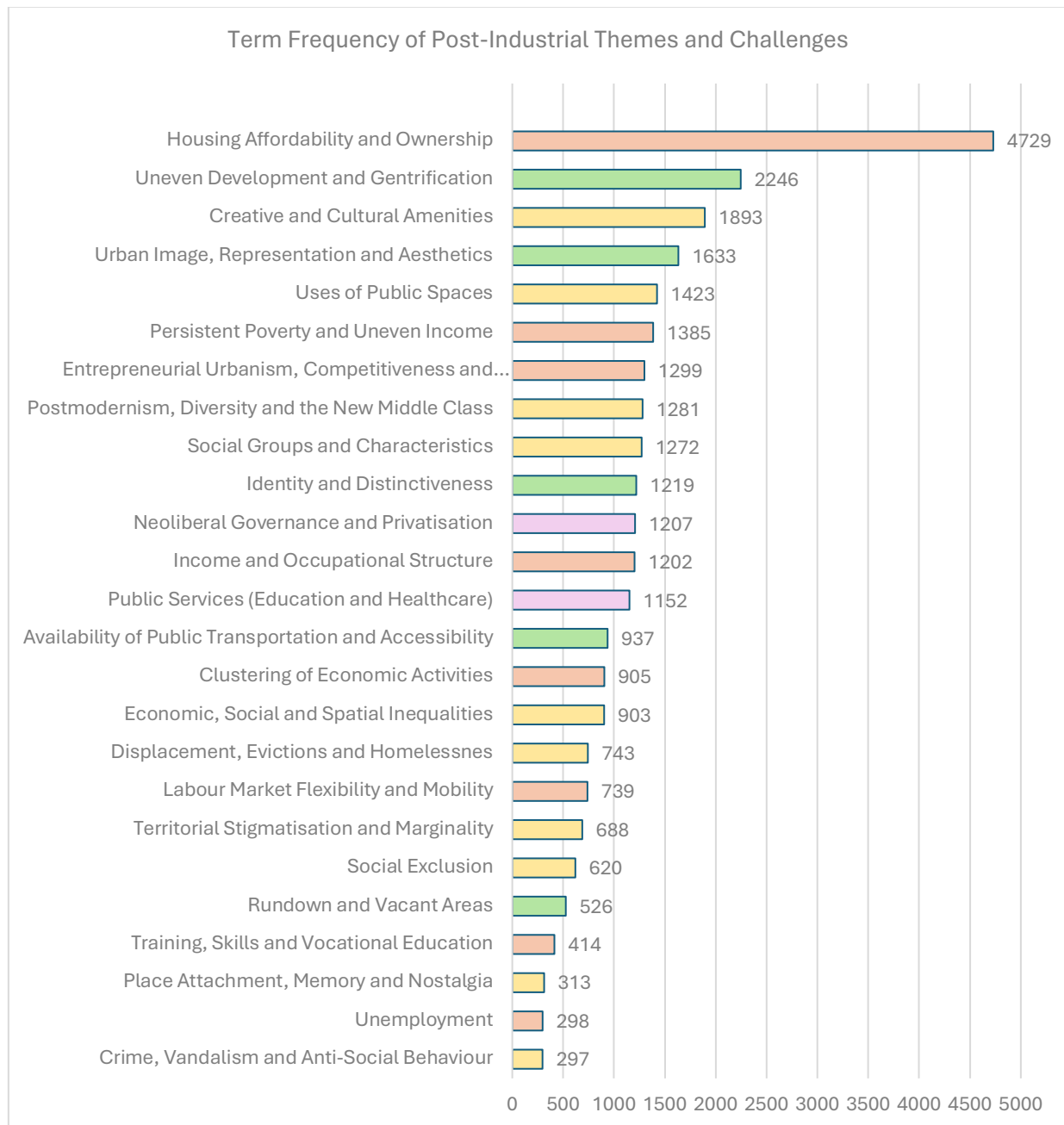


Figure 11. Key post-industrial themes and challenges based on frequency analysis (Source: authors).

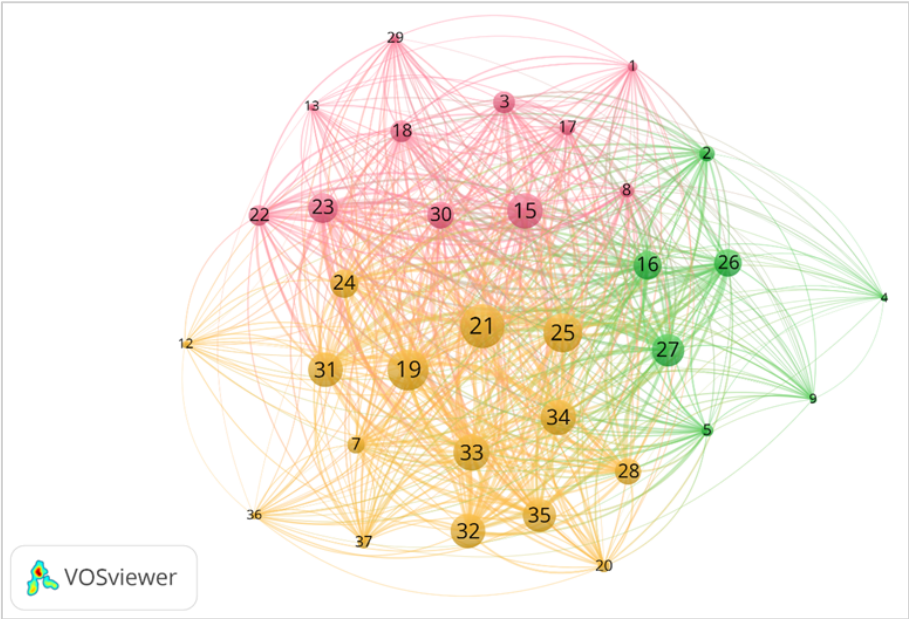


Figure 12. The relevance of QoUL indicators for PICs literature based on co-occurrence analysis (Source: authors).

Table 8. Three term clouds generated by VOSviewer (most frequently used terms are highlighted) (Source: authors).

Cloud 1	Cloud 2	Cloud 3
12-Civic Rights	1- Urban Pattern	16- Healthcare
19-Economic Activity	13- Citizen Involvement	2- Density
21- Housing Affordability	15- Education	26- Transportation
24- Skills and Training	17- Local Government	27- Maintenance & Upkeep
25- Accessibility	18- Labour Market Characteristics	4- Climate
20- City Branding	22- Housing Tenure	5- Pollution
28- Visual Attractiveness	23- Income	9- Waste Management
31- Cultural Facilities	29- Housing Quality	
32- Recreation & Shopping	3- Land-Use	
33- Public Spaces	30- Crime & Sense of Safety	
34- Diversity	8- Social Interactions	
35- Identity		
36- Place Attachment		
37- Memory & Nostalgia		
7- Neighbourhood Relations		

7 Towards A Situated Framework for Examining Quality of Urban Life in PICs

Informed by these findings, Figure 13 illustrates the proposed Situated Framework for Examining QoUL in PICs, integrating relevant QoUL indicators grounded in the operational considerations of existing meta-theory models. The categorisation of the relevant indicators based on their scalar differences and objective-subjective classification is intended to clarify ambiguities in operationalisation of the framework.

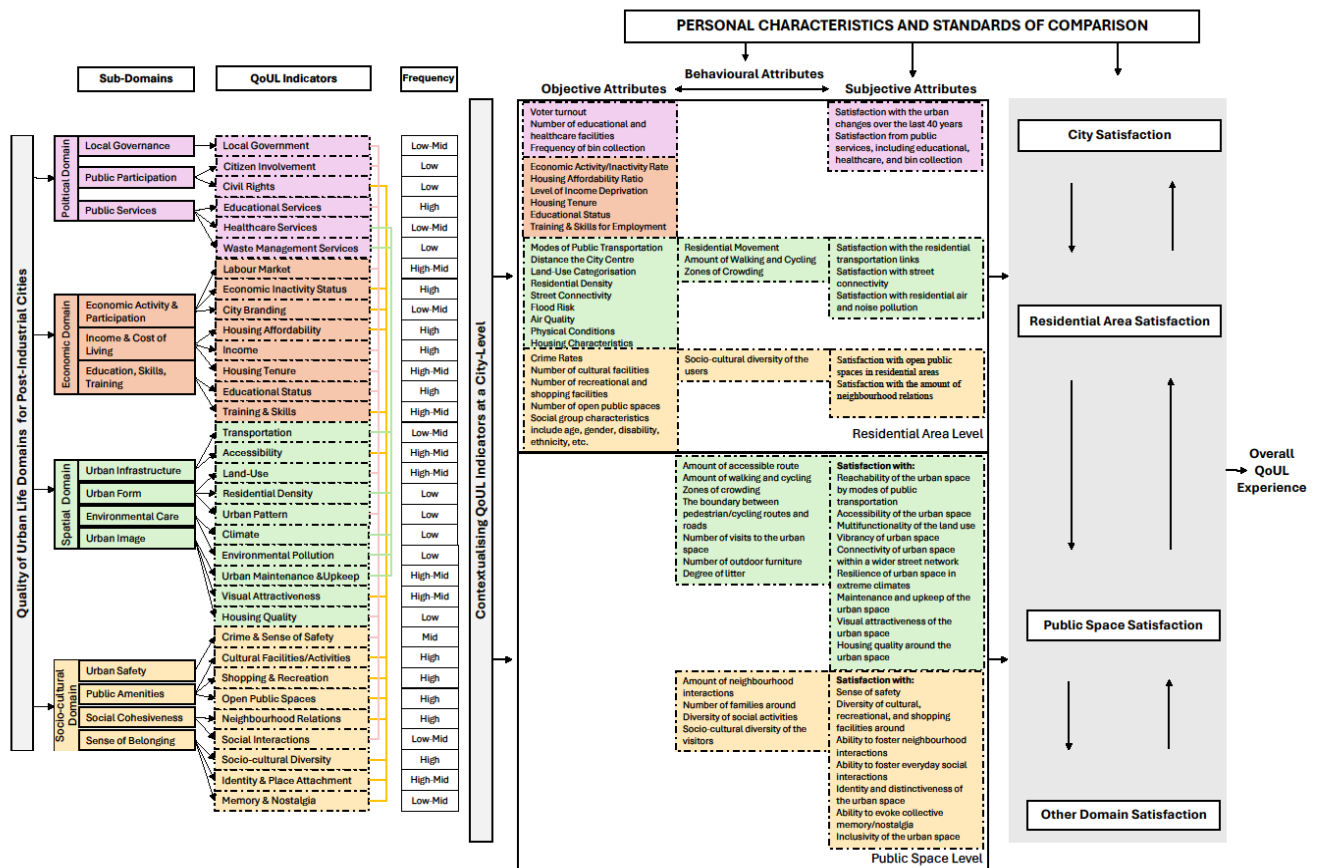


Figure 13. A Situated Framework for Examining Quality of Urban Life in Post-Industrial Cities (Source: authors).

Considering these points, the framework can be explained in three steps:

Step 1. Integrating QoUL indicators for PICs

The discussions around the transition from post-war industrial to post-industrial city were examined across four dimensions: political, economic, socio-cultural, and spatial. These parallel the commonly used place-related QoUL domain headings in Table 6, reflecting how different domain headings can refer to similar underlying concepts, as discussed in Section 3.3. The interconnected domains shape the challenges of PICs. The four domains are further categorised into fourteen sub-domains and thirty-three relevant indicators. The VOSviewer clustering revealed groupings that diverge from the conceptual categorisation of indicators, as shown in Table 8, suggesting that the relationships between QoUL indicators in PICs literature do not follow strict domain boundaries. While the conceptual categorisation organises indicators thematically based on the nature of the post-industrial themes and challenges, the VOSviewer groupings are relational, reflecting how these indicators co-occur and interact within the literature. This divergence reveals that post-industrial challenges are not only distinct thematic categories but are deeply interconnected. For instance, healthcare, transportation, and pollution appear within the same term cloud despite belonging to different thematic domains, suggesting that PICs literature recognises their interdependency and reinforces the argument that PICs cannot be examined in a single dimension.

The proposed framework illustrates the three term clouds in coloured schematic lines, where yellow represents Cloud 1, pink represents Cloud 2, and green represents Cloud 3. These highlight potential cross-domain discussion points between different QoUL indicators. The proposed framework also situates the frequency analysis results into a frequency continuum. The continuum was established by ranking the thirty-three indicators by their term frequency and categorising as low, low-mid, mid, mid-

high, and high, based on their relative distribution across the dataset. This layer identifies the most relevant QoUL indicators, underscoring their centrality within PICs literature.

Step 2. Operationalising QoUL indicators using objective-subjective classification and their scalar differences

The classification of the relevant QoUL indicators based on their measurability using objective and subjective approaches is necessary for their applicability in a real-life context. Thus, the attributes derived from these indicators are grouped into objective, behavioural, and subjective classification. The preceding sections discussed that objective approaches use secondary data and subjective approaches use primary data to examine urban environments, representing the most commonly used approaches in QoUL discourse. As Marans and Stimson (2011) acknowledged, it is valuable to differentiate explicitly behavioural attributes in addition to objective and subjective attributes. The proposed framework builds on that foundation by outlining the behavioural attributes explicitly. Behavioural attributes are observable qualities of urban life, such as user interactions, pedestrian behaviours, and residential movement, that are derived from the interaction between the urban conditions and people.

Building on this classification, the objective, behavioural, and subjective attributes are further categorised by their scalar differences. The framework focuses on residential-area-level assessment, explicitly distinguishing residential-area-level variables from public-space-level variables. While residential-area-level assessment refers to more general qualities of urban life, public-space-level assessment refers to more specific aspects, emphasising the degree of specificity of the indicators. This is also a method of clearly defining the geographic boundaries of the assessments, reducing the risk of scale discordance. Prior to the smaller-scale assessments, the framework highlights the necessity of gaining a city-level contextual understanding. This refers to situating the framework in a specific post-industrial city, repeating the text-mining process, and discussing the relevant QoUL indicators conceptually at a city-level. Ultimately, the scalar discussions highlight the distinctiveness and interconnectedness of the three scales of living shaping urban environments.

Step 3. Grounding the developed framework into wider meta-theory models

The proposed framework is grounded in the meta-theory model by Marans and Rodgers (1975), demonstrating the relationship between objective attributes at various geographic scales and residents' satisfaction with them. However, the proposed framework extends this notion from residents to individuals more broadly, reflecting the diverse and highly mobile nature of populations in PICs. Unlike the close-knit communities, PICs are characterised by transient social groups whose relationship with their living environment differs fundamentally from those of long-term residents, as discussed in Section 5.3.8. Marans and Rodgers' (1975) model implied that objective attributes alone are not enough to reflect the true quality of a place; thus, the proposed framework suggests that objective, behavioural, and subjective attributes are necessary to understand urban life quality comprehensively. Another important aspect of their model was to show that the sum of all domains produces overall QoUL experience; this has also been illustrated in the proposed framework. Finally, their meta-theory model emphasises the role of personal characteristics and standards of comparison in evaluating QoUL; this is reflected in the proposed framework as a mediating factor influencing the behavioural and subjective attributes, ultimately shaping the overall QoUL experience.

8 Discussion

The preceding discussions related to QoUL and PICs literature highlighted a need for a situated QoUL framework for PICs. The proposed framework clearly identifies the relevant QoUL indicators derived from the distinct post-industrial themes and challenges and defines the scope of analysis through the categorisation of objective, behavioural, and subjective attributes in relation to their scale of analysis.

This framework seeks to overcome the ambiguities in operationalisation of key QoUL dimensions in post-industrial contexts.

The rigorous synthesis of literature on QoUL and PICs through systematic review with qualitative thematic analysis and quantitative text-mining techniques informed the development of a cohesive list of QoUL indicators yielding measurable results. This method provides a systematic way of identifying relevant indicators for PICs across a broad body of literature. The mapping of the QoUL indicators to the post-industrial themes and challenges also provided a context-specific approach to the indicator selection process. Therefore, the proposed framework is designed to encompass both robustness and context-sensitivity, integrating objective and subjective approaches.

The explicit categorisation of QoUL indicators as objective, behavioural, and subjective attributes, alongside their scalar differences, is intended to address key operationalisation challenges identified in the QoUL literature. This categorisation suggests appropriate data collection methods for each attribute type, while scalar differentiation between residential area and public space levels is intended to reduce the risk of scale discordance and enable a more nuanced understanding of variation in urban conditions and lived experiences that shape everyday life.

The proposed framework has potential diagnostic value and could provide analytical guidance to examine QoUL in PICs, specifically within the UK context. The practical application of the framework requires a contextual literature review of the relevant post-industrial city and repeating the text-mining techniques to search QoUL indicators within the targeted literature. Following this, residential areas are selected based on their representation of the post-industrial themes and challenges identified. In Western European and North American contexts, this process would also require adapting these themes and challenges to reflect the specific political, economic, socio-cultural, and spatial transformations of those cities. The application of the framework requires a mixed-methods approach, integrating quantitative secondary data and qualitative primary data through observational and co-assessment methods. The framework therefore potentially contributes to more evidence-based decision-making, though limitations may arise in contexts where data availability and resources are restricted, requiring adaptation to locally available data and priorities.

Overall, the proposed framework is designed to inform policymakers, urban planners and designers, and local authorities with a comprehensive understanding of the urban conditions and inhabitants prior to the decision-making process. This is necessary to mitigate the negative impacts of top-down approaches in PICs.

9 Conclusion

PICs face complex and multi-dimensional challenges that generic QoUL models and frameworks fail to address. This study responds to this gap by proposing a Situated QoUL Framework in PICs. The proposed framework makes key theoretical contributions to the QoUL and PICs discourses through the rigorous synthesis of literature using qualitative and quantitative methods. These contributions involve developing a framework that: (1) identifies relevant QoUL indicators for examining PICs through mapping key post-industrial themes and challenges to the measurable QoUL indicators, (2) clarifies ambiguities in operationalisation of QoUL indicators through their explicit classification as objective, behavioural, and subjective attributes, (3) reduces the risk of scalar mismatches by distinguishing the residential-area-level analysis from public-space-level analysis explicitly, and (4) illustrates the interconnectivity between various scales and indicators.

Beyond these contributions, the proposed framework is grounded in the existing meta-theory models of QoUL, as well as in the post-industrial context. The preceding discussions outlined the framework's applicability to PICs across the UK and outlined the necessary steps for its transferability to the wider post-industrial contexts sharing similar transformations. Together, these implications contribute to both QoUL discourse and post-industrial urbanism. As part of a wider doctoral study, this framework is

subsequently implemented in Newcastle upon Tyne, highlighting its practical significance. Future research could compare the implementation of the framework in other PICs across the UK and further explore its transferability to other geographies undergoing similar transformations.

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Ethical Approval Declaration

The study was conducted in accordance with established standards for research integrity and ethics. The authors declare that this research did not involve human participants or animals, and therefore, ethical approval was not required

Informed Consent Statement

Not Applicable

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Data Availability Statement

The data supporting the findings of this study are available from the author upon reasonable request.

Conflicts of Interest

The authors declare no conflict of interest.

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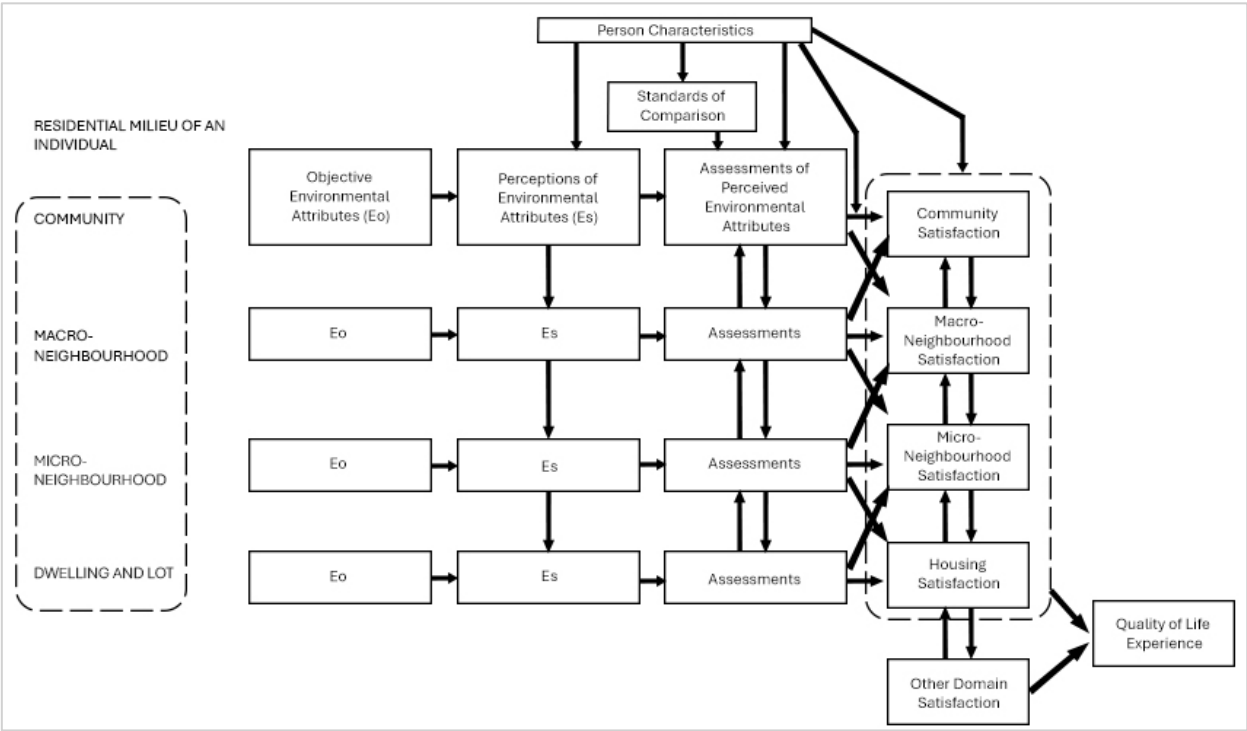
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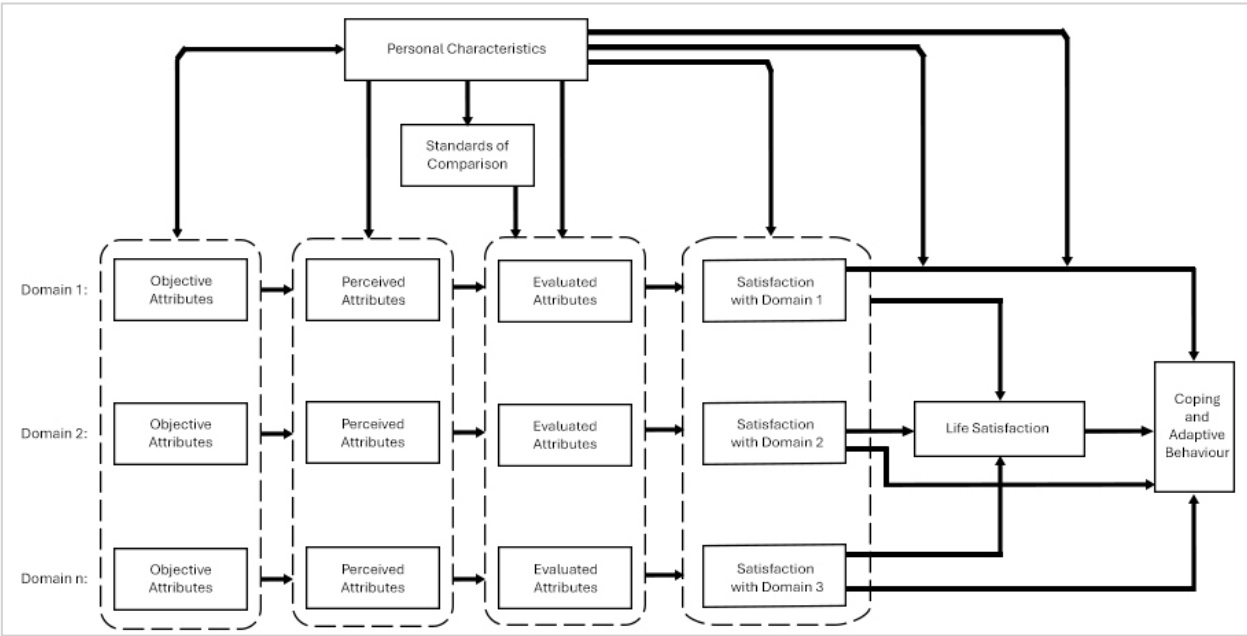
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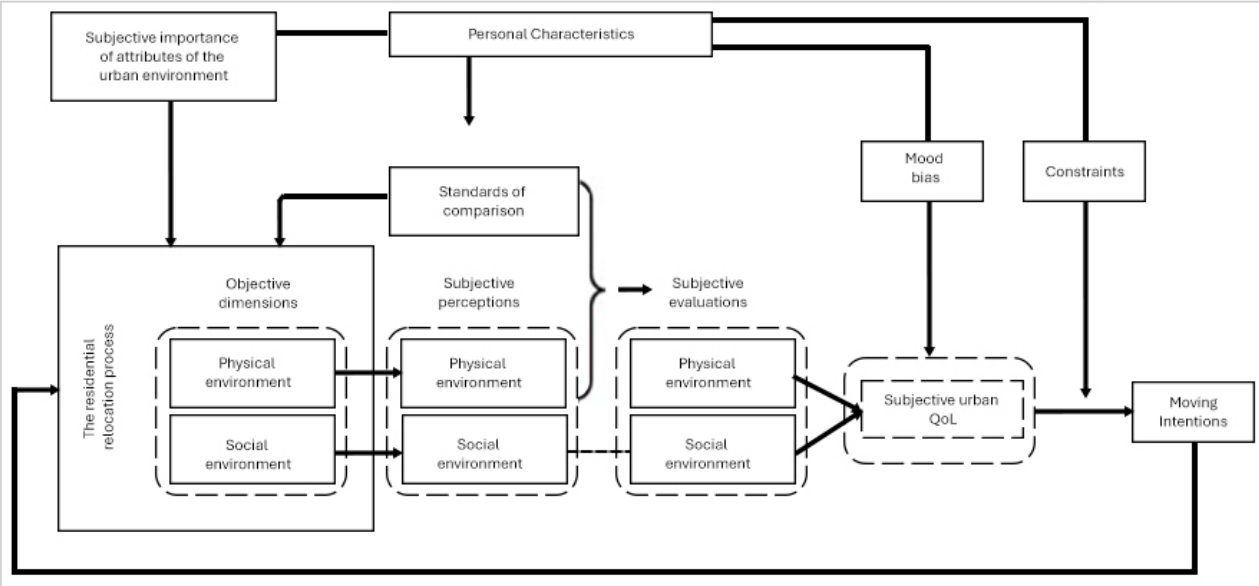
APPENDIX A: Figures of the Eight QoUL Models (Redrawn from the original)



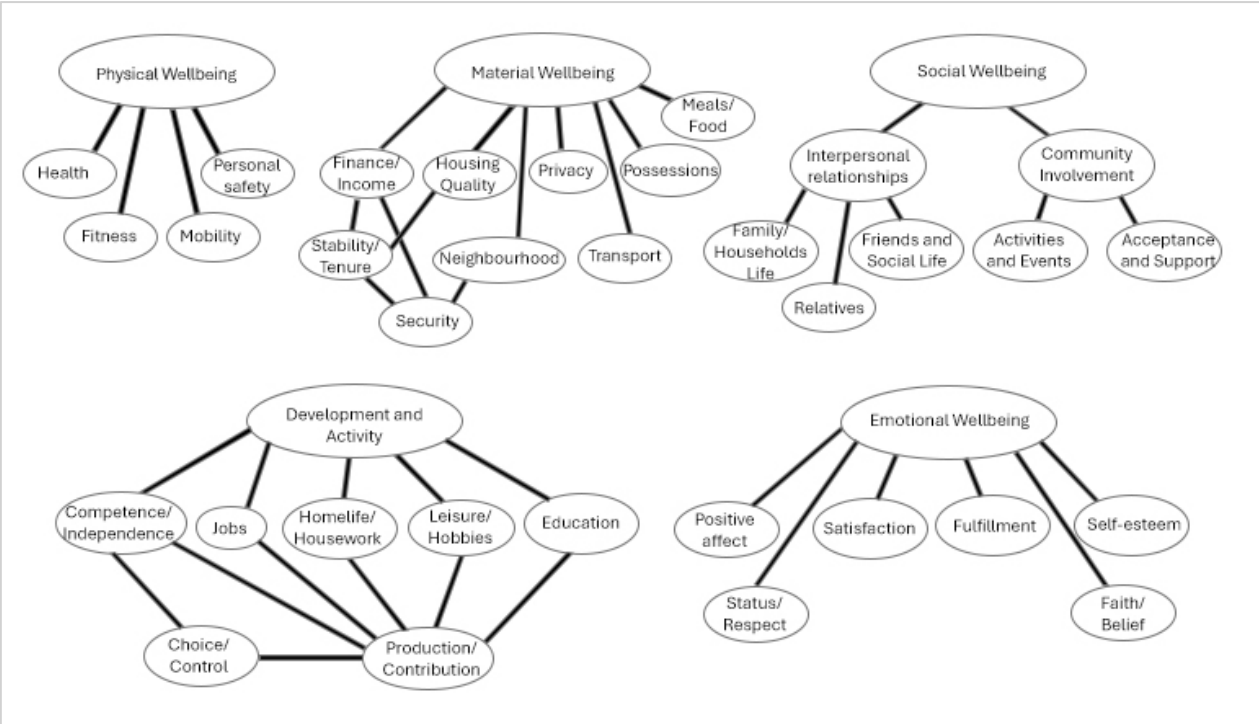
Marans and Rodgers' (1975) meta-theory model (redrawn from original)



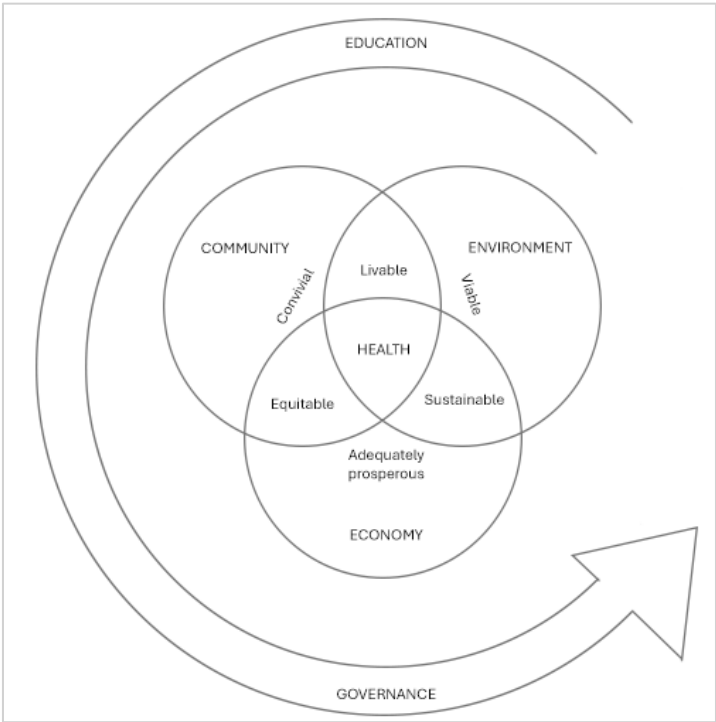
Campbell et al.'s (1976) model of life satisfaction (redrawn from original)



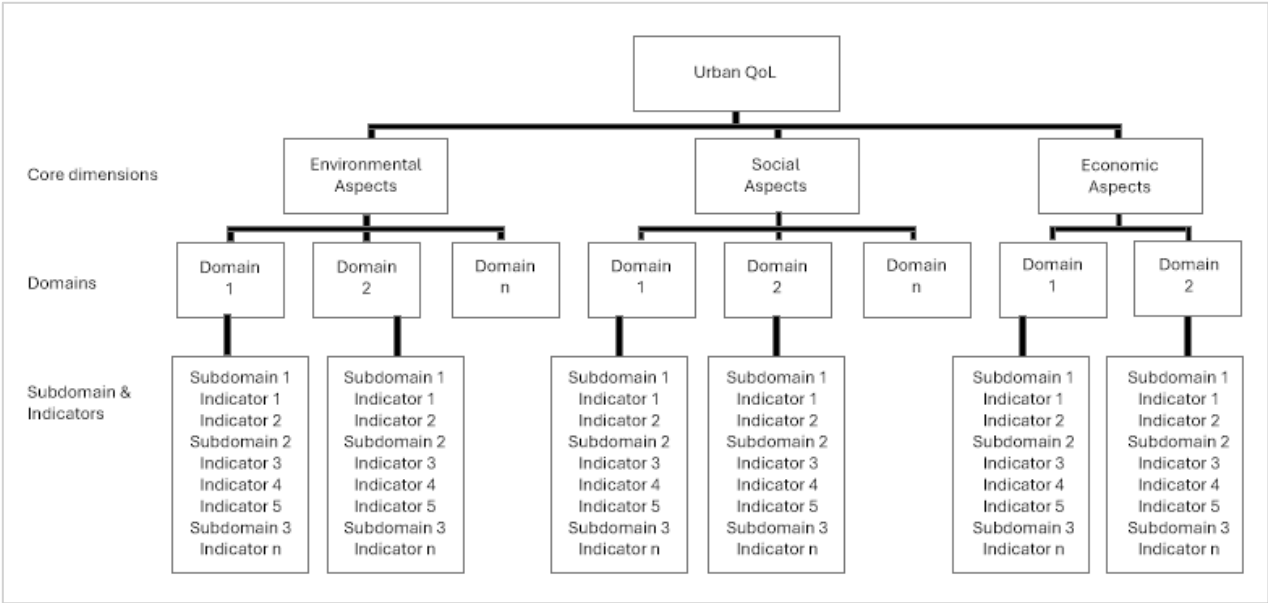
McCrea's (2007) integrated model (redrawn from original)



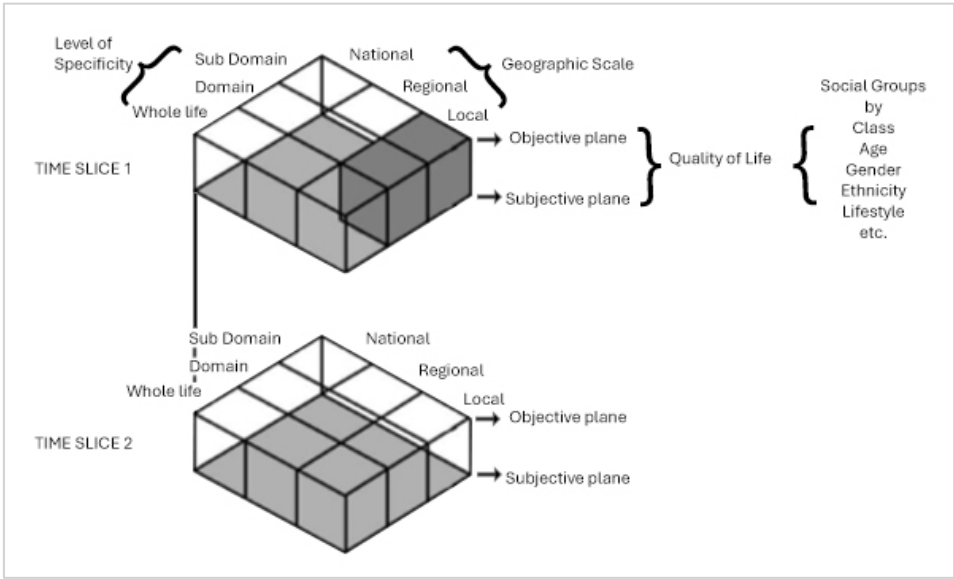
Felce and Perry's (1999) life domains model (redrawn from original)



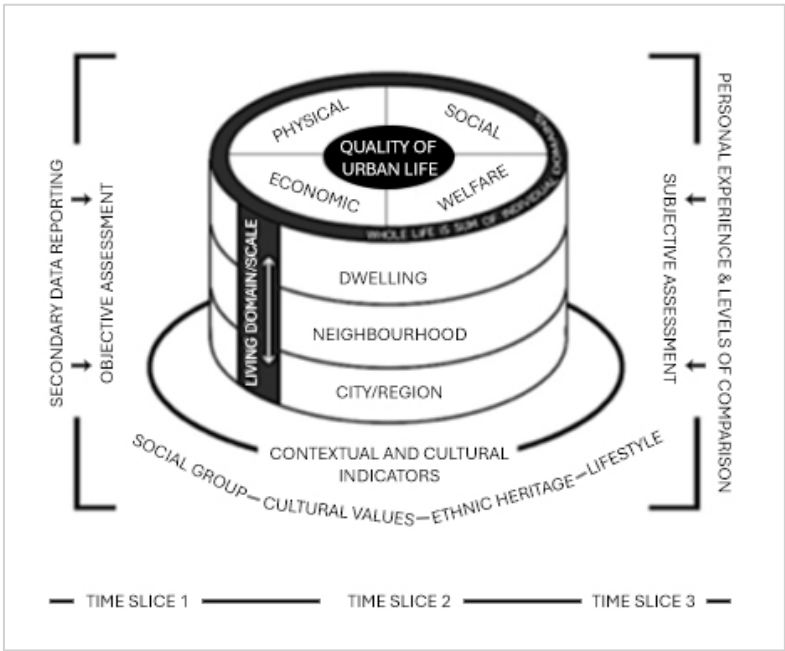
Hancock et al.'s (1999) model for indicator development (redrawn from original)



Al-Qawasmi et al.'s (2021) model (redrawn from original)



Pacione's (2003) five-dimensional model (redrawn from original)



MacLean and Salama's (2019) context-specific model (redrawn from original)

APPENDIX B: Comprehensive List of QoUL Indicators

	Indicators	References	Description	Scale	Methods	Tools
POLITICAL DOMAIN	Urban Governance					
	Local Government & Institutions	Al-Qawasmi <i>et al.</i> (2021); Esmaeilpoorarabi <i>et al.</i> (2016); MacLean and Salama (2021)	Performance of the local government and institutions	City; Residential Area	Secondary Data Collection	Government Reports
	Public Trust	Gur <i>et al.</i> (2019)	Level of trust in local government	City	Secondary Data Collection	Government Reports
	Public Participation					
	Right to Have a Say	Gur <i>et al.</i> (2019); Hancock <i>et al.</i> (1999); Sheikh and van Ameijde (2022)	To be heard in local decision-making	City; Residential Area	Primary Data Collection	Surveys
	Citizen Involvement	Hancock <i>et al.</i> (1999)	Representation of public voice in local government	City; Residential Area	Secondary Data Collection	Government Reports
	Public Services (provided by the local authorities)					
	Educational Services	Esmaeilpoorarabi <i>et al.</i> (2016); Hancock <i>et al.</i> (1999); MacLean and Salama (2021)	The provision of educational services in the local area	City; Residential Area	Secondary Data Collection	Government Reports/Maps
		Das (2008); Kweon and Marans (2011); McCrea <i>et al.</i> (2005)	Satisfaction from educational services	City; Residential Area	Primary Data Collection	Surveys
	Healthcare Services	Esmaeilpoorarabi <i>et al.</i> (2016); MacLean and Salama (2021); Sheikh and van Ameijde (2022)	The provision of healthcare services in the local area	City; Residential Area	Secondary Data Collection	Government Reports/Maps
		Das (2008); Gur <i>et al.</i> (2019); MacLean and Salama (2021); McCrea <i>et al.</i> (2005)	Satisfaction from healthcare services	City-Level; Residential Area-Level	Primary Data Collection	Surveys
	Waste Management Services	Al-Qawasmi (2021); Marans (2015)	Recycling and rubbish collection services	City; Residential Area	Secondary Data Collection	Government reports
		McCrea <i>et al.</i> (2005); Rezvani <i>et al.</i> (2013)	Satisfaction with waste management services	City	Primary Data Collection	Surveys
	Emergency Services	(Das, 2008); MacLean and Salama (2021); Rezvani <i>et al.</i> (2013)	Police, fire, rescue, and ambulance services	City; Residential Area	Secondary Data Collection	Government reports
		Sirgy and Cornwell (2002)	Satisfaction with emergency services	Residential Area	Primary Data Collection	Surveys
ECONOMIC DOMAIN	Economic Activity and Participation					
	Labour Market Characteristics	Esmaeilpoorarabi <i>et al.</i> (2016)	Local economic activity	City; Residential Area	Secondary Data Collection	Census
		Rezvani <i>et al.</i> (2013); Senlier <i>et al.</i> (2009)	Satisfaction from employment opportunities	City	Primary Data Collection	Surveys
	Economic Activity Status	Baker <i>et al.</i> (2005); Hancock <i>et al.</i> (1999); Low <i>et al.</i> (2018); Seik (2000)	% of the population in employment, unemployed, and economically inactive	City	Secondary Data Collection	Census
	City Branding Strategy	Esmaeilpoorarabi <i>et al.</i> (2016)	Economic specialisation strategies	City	Secondary Data Collection	Government Reports
	Cost of Living and Income Security					
	Housing Affordability	Al-Qawasmi (2021); Esmaeilpoorarabi <i>et al.</i> (2016)	Housing market prices in the local area, cost of properties, etc.	City	Secondary Data Collection	Government Reports
		Kweon and Marans (2011); Low <i>et al.</i> (2018)	Satisfaction with the housing affordability/costs	Housing	Primary Data Collection	Surveys
	Income	Das (2008); Low <i>et al.</i> (2018); MacLean and Salama (2021); Seik (2000)	Income security for the last 45 days	City	Secondary Data Collection	Census
		Low <i>et al.</i> (2018); MacLean and Salama (2021); Seik (2000)	Net monthly household income	City; Residential Area	Secondary Data Collection	Census

PHYSICAL DOMAIN		Das (2008); Rezvani <i>et al.</i> (2013)	Satisfaction from economic condition	City	Primary Data Collection	Surveys
	Housing Tenure/ Ownership	Low <i>et al.</i> (2018); McCrea <i>et al.</i> (2005); Rezvani <i>et al.</i> (2013)	Percentage of owned, privately rented and socially rented properties	Residential Area; Housing	Secondary Data Collection	Census
	Education, Skills, and Training					
	Educational Status	MacLean and Salama (2021); Seik (2000)	Levels of educational qualifications	City; Residential Area	Secondary Data Collection	Census
	Research, Training and Skills Centres	Esmailpoorabi <i>et al.</i> (2016); Sheikh and van Ameijde (2022)	Research, skills, and training opportunities	City	Secondary Data Collection	Government reports
	Urban Infrastructure					
	Transportation	Al-Qawasmi (2021); Lotfi and Koohsari (2009)	Mode of transport	City	Secondary Data Collection	Census
		Low <i>et al.</i> (2018)	Adequacy of public transportation	City	Primary Data Collection	Surveys
		Gur <i>et al.</i> (2019); McCrea <i>et al.</i> (2005); Rezvani <i>et al.</i> (2013); Sirgy and Cornwell (2002)	Satisfaction from public transportation	Residential Area	Primary Data Collection	Surveys
	Accessibility	Lotfi and Koohsari (2009); Rezvani <i>et al.</i> (2013); von Wirth <i>et al.</i> (2015)	Distance/proximity to public services and amenities	Residential Area; Public Spaces	Secondary Data Collection	QGIS/other maps
		Gur <i>et al.</i> (2019); Kweon and Marans (2011); Lotfi and Koohsari (2009); Oktay and Marans (2010)	Satisfaction from accessibility to transportation, services, and amenities	Residential Area; Public Spaces	Primary Data Collection	Surveys
	Utility Services	Seik (2000); Sheikh and van Ameijde (2022)	Satisfaction from electricity, water supply, gas, and internet	City	Secondary Data Collection	International index systems
	Urban Form					
	Land-Use	Al-Qawasmi (2021); Hancock <i>et al.</i> (1999); Kweon and Marans (2011); MacLean and Salama (2021)	Land-use category and degree of mix	City; Residential Area	Secondary Data Collection	QGIS/other maps
	Residential Density	Gur <i>et al.</i> (2019); Kweon and Marans (2011); MacLean and Salama (2021)	# of people per area	City; Residential-Area	Secondary Data Collection	Census
		Kweon and Marans (2011)	# of dwelling units per area	Residential Area	Secondary Data Collection	Census
		Kweon and Marans (2011); McCrea <i>et al.</i> (2005); Sirgy and Cornwell (2002)	Satisfaction with the level of crowding	City; Residential Area; Housing	Primary Data Collection	Surveys
	Urban Pattern	Jalaladdini and Oktay (2012); Lotfi and Koohsari (2009)	Street network and connectivity	Residential Area; Public Spaces	Secondary Data Collection	QGIS/other maps
	Environmental Care					
	Climate	Low <i>et al.</i> (2018); McCrea <i>et al.</i> (2005)	Climate conditions	City	Secondary Data Collection	Meteorology
	Environmental Pollution	Das (2008); Seik (2000)	Level of air, water, and noise pollution	City	Secondary Data Collection	Meteorology
		Das (2008); Kweon and Marans (2011); McCrea <i>et al.</i> (2005)	Satisfaction from level of pollution	City; Residential Area	Primary Data Collection	Surveys
	Image					
	Urban Maintenance and Upkeep	Sirgy and Cornwell (2002)	Perceived level of litter in open public spaces	Residential Area	Primary Data	Surveys
		Gur <i>et al.</i> (2019); Kweon and Marans (2011); Sirgy and Cornwell (2002)	Satisfaction from upkeep of homes and green areas	Residential Area	Primary Data	Surveys

SOCIAL DOMAIN	Housing Quality	Baker <i>et al.</i> (2005); MacLean and Salama (2021); von Wirth <i>et al.</i> (2015)	Housing characteristics	City; Residential Area; Housing	Secondary Data	Census
		Gur <i>et al.</i> (2019); Kweon and Marans (2011); MacLean and Salama (2021); McCrea <i>et al.</i> (2005)	Satisfaction from housing	Residential Area; Housing	Primary Data	Walking-Tour Assessment; Surveys
	Visual Attractiveness	Oktay and Marans (2010); Vukovic <i>et al.</i> (2021)	Perceived attractiveness of the area	Residential Area; Public Space	Primary Data	Survey
		Esmailpoorarabi <i>et al.</i> (2016)	Perceived image of the city as a place to live	City	Primary Data	Surveys
	Urban Safety					
	Crime	Das (2008); Kweon and Marans (2011); McCrea <i>et al.</i> (2005); Sirgy and Cornwell (2002); von Wirth <i>et al.</i> (2015)	Crime rates	City; Residential Area; Public Space	Secondary Data	Police Reports
		Lotfi and Koohsari (2009); von Wirth <i>et al.</i> (2015)	Perceived fear of crime	Residential Area; Public Space	Primary Data Collection	Surveys
	Sense of safety	Gur <i>et al.</i> (2019); von Wirth <i>et al.</i> (2015); Vukovic <i>et al.</i> (2021)	Sense of safety at night	Residential Area; Public Space	Primary Data	Walking-tour Assessment; Surveys
	Public Amenities					
	Cultural Amenities/ Facilities	Esmailpoorarabi <i>et al.</i> (2016)	Cultural facilities per 1000 people	City	Secondary Data Collection	QGIS; Census
Rezvani <i>et al.</i> (2013)		Frequently done cultural activities	Residential Area	Secondary Data Collection	Government Reports	
Senlier <i>et al.</i> (2009)		Satisfaction from cultural amenities	City	Primary Data Collection	Surveys	
Oktay and Marans (2010)		Participation in cultural amenities	Residential Area	Primary Data Collection	Surveys	
Shopping & Recreation	Al-Qawasmi (2021); Yadav and Gupta (2021)	Availability of recreational and shopping facilities	Residential Area	Secondary Data Collection	QGIS/other maps	
	Kweon and Marans (2011); Oktay and Marans (2010); Rezvani <i>et al.</i> (2013)	Satisfaction from recreational and shopping facilities	City; Residential Area	Primary Data Collection	Surveys	
Open Public Spaces	MacLean and Salama (2021); von Wirth <i>et al.</i> (2015); Vukovic <i>et al.</i> (2021)	Availability of open public spaces such as parks, streets, etc.	City; Residential Area; Public Space	Secondary Data Collection	QGIS/other maps	
	Das (2008); MacLean and Salama (2021); Vukovic <i>et al.</i> (2021)	Satisfaction with open public spaces	City; Residential Area; Public Space	Primary Data Collection	Walking-tour assessment; Surveys	
Social Cohesiveness						
Neighbourhood Relations	Gur <i>et al.</i> (2019); Kweon and Marans (2011); MacLean and Salama (2021)	Satisfaction with neighbourhood relationships	City; Residential Area	Primary Data	Surveys	
Having Family and Friends Nearby	Kweon and Marans (2011); Rezvani <i>et al.</i> (2013)	Satisfaction from the proximity to friends and family	Residential Area	Primary Data	Surveys	
Social Interaction	Kweon and Marans (2011); McCrea <i>et al.</i> (2005); Vukovic <i>et al.</i> (2021)	Opportunities and places for social interaction	Residential Area; Public Spaces	Primary Data	Walking-Tour Assessment; Surveys	
Sense of Belonging						
Diversity	Vukovic <i>et al.</i> (2021)	Diversity of activities	Public Spaces-Level	Primary Data	Walking-Tour Assessment	
	Vukovic <i>et al.</i> (2021)	User diversity	Public Spaces-Level	Primary Data	Walking-Tour Assessment	

	Community Identity/ Attachment	Vukovic <i>et al.</i> (2021)	Urban elements that contribute to the identity of the area	Public Spaces-Level	Primary Data	Walking-Tour Assessment, Surveys
		Gur <i>et al.</i> (2019); MacLean and Salama (2021); Oktay and Marans (2010)	Resident's feelings of attachment to these urban areas	Residential Area-Level	Primary Data	Surveys
	Collective Memory/ Nostalgia	Vukovic <i>et al.</i> (2021)	Memories and narratives that are associated with the public spaces	Public Spaces-Level	Primary Data	Surveys

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