SCHIZOPHRENIC URBANISM: A QUANTITATIVE APPROACH FOR MONITORING DEVIATION IN NEIGHBOURHOOD'S PLANNING STANDARDS

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Abstract. Urbanism represents a new terminology and a unique approach that describes and encounters the challenges of rapid urbanization in modern developments in contemporary cities and its effect on urban planning standards. As a metaphor, this term connects schizophrenia as a specific mental disease with precise features of urban planning, such as the loss of identity, place recognition, and community interaction with the social and environmental context. The lack of consensus adds a layer of complexity to understanding the subject matter. To add to the intricacy, schizophrenia has varied presentations with an unpredictable course and recovery. Symptoms of schizophrenia are divided into three broad categories: positive symptoms, negative symptoms, and recognition symptoms. This paper attempts to draw parallels between the recognition symptoms of schizophrenia and urban planning and gain an understanding as to whether urban planning and development are indeed schizophrenic in nature or whether the interference of local authorities, planners, and certain circumstances initiates a kind of deviations that leads to schizophrenic urban symptoms. This is done through an overview of the symptoms of schizophrenia and a comparison of specific symptoms with contemporary urban planning and development, focusing on fragmentation, disconnection from reality, identity loss, adaptability and change management, environmental interaction and conflict and tension. This will be done through critically analyzing contemporary urban planning and development in relation to disorganization and intervention. The study methodology is joined by locating turf within urban planning, sociology, and cultural assessments, and the ethnography research is used that contains interviews, surveys, and content analysis, to study the outcomes of plan requirements deviation and its impact on the local perception. The paper proposed coherent Key Performance Indicators KPIs that can estimate the consequences of applying international planning standards without acknowledging local diversity and place identity. This study encourages a culturally sensitive and locally inclusive approach to local neighborhoods' planning principles, emphasizing the need to engage local communities in decision-making. The use of this proposed KPIs system could preserve and enhance the unique identities of neighborhoods and address their social needs amidst the challenges of rapid urbanization. The paper concludes that there is a high compatibility between the symptoms of schizophrenia and contemporary urban planning and development and that a greater understanding of schizophrenia can assist in improving the way we plan and develop cities' neighbourhoods.

Keywords: urbanism, urban planning, key performance indicators, neighbourhood, cities.

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1. Introduction

1.1. Background

An engaging metaphorical likeness between schizophrenia and urban neighbourhood planning lies in the idea of fragmentation. In schizophrenia, the mental processes of the individuals affected by the disease are disjointed, not very organized, and often lacking any coherent order. The concept of "schizophrenic urbanism" describes and analyses the identities of rapidly modernizing cities that are losing their coherence as a result of the practices of urban planners around the world to impose a set of global planning norms onto all urban forms irrespective of their unique cultural and historical contexts. By the excessive attempts to apply "Cities unified planning standards," cities find themselves in a situation in which the individual identities of neighbourhoods within rapidly modernizing cities are becoming "pre-made," without considering the unique personality and characteristic of each neighbourhood, city and region causing fragmentation, confusion and loss of identity for its inhabitants in a way matches the condition of individuals with actual schizophrenia who suffer from a disintegration of the self (El-Arifi, 1986). Symptoms of fragmentation, loss of identity, and reduced community interaction in urban planning indicate that the city and its neighbourhoods are drifting from effective and contextually local planning standards. Just as an individual with these troubling symptoms might be diagnosed with
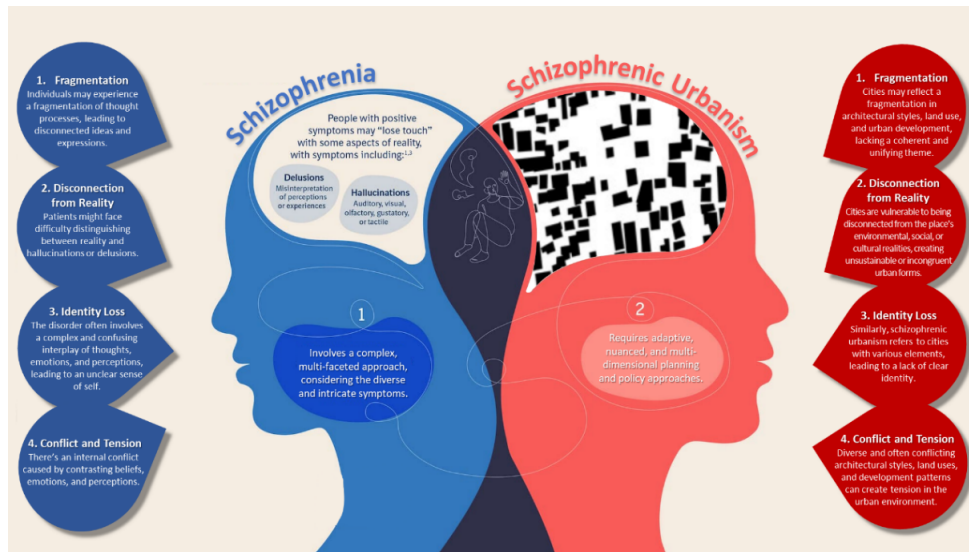
Figure 1. Establishing a metaphorical analogy between schizophrenia, a psychiatric disorder characterized by cognitive fragmentation and loss of identity, and "schizophrenic urbanism," a conceptual construct denoting a dysfunction within cities' urban planning and neighborhood development context. The urban principals are derived directly from an expert questionnaire created by the author and distributed on a large scale locally and regionally, targeting governmental and private entities. All medical symptoms are driven from (National Institute of Mental Health, 2022; Stahl, 2021)

schizophrenia, neighbourhoods suffering "disunity and disconnection" can be said to embody "Schizophrenic Urbanism." This shows the need for a serious reexamination of local planning practices. There is a need to embrace locally inclusive key performance indicators (KPIs) as part of the reexamination process. In poor urban planning, particularly in the more rapidly developing neighbourhoods, communities suffer from a lack of integration and the appearance of harmony among residential, commercial, and industrial structures. This results in a splintered urban appearance; for effect, picture anything from a collage to a jigsaw puzzle with missing pieces (Charmes, 2007). One unfortunate feature of the effectiveness of this metaphor is that it has become an appearance of reality in far too many neighbourhoods across the urban landscape. Both scenarios result from an insufficient integration of parts. In the case of schizophrenia, it is the poor integration of thoughts and perceptions. In urban planning, the integration of various urban elements and components is presumably poor. Figure 1 shows a metaphorical analogy between schizophrenia and schizophrenic urbanism.

In examining the multidimensional correlations between urban planning and the symptomatic manifestations of schizophrenia, some principal themes emerge as *fragmentation*, *disconnection from reality*, *identity loss*, *adaptability and change management*, *environmental interaction and conflict and tension* (National Institute of Mental Health, 2022). These principals serve as a dual-lens through which the complexities of urban developmental challenges and schizophrenic symptoms can be critically assessed. These parameters can help understand the challenges faced in rapidly developing urban communities and neighbourhoods in modern cities of the Gulf area as an example.

1.2. Research problem and objective

The problems associated with rapid urbanization are best expressed in "Schizophrenic Urbanism." This term is not merely descriptive. It names a theoretical condition that contemporary cities can be said to have when they experience rapid urbanization. This research is primarily focused on recognizing and understanding the essential Key Performance Indicators (KPIs) that drive the outcomes of urban planning. Its specific attention is on the KPIs that influence the preservation of the identity of neighborhoods and the enhancement of community engagement in the midst of the rapid urbanization that characterizes so many of the world's cities. Increasingly, the world is fragmenting into cities. The cities themselves are fragmenting. And within the rapidly urbanizing parts of the world, the identity of neighborhoods is under siege as never before. In brief, the research objective can be formulated as follows:

> "Identification of critical Key Performance Indicators (KPIs) that influence urban planning outcomes, specifically those that preserve neighborhood identity and foster community engagement, while monitoring the deviation from initial preplanned principles."

2. Literature review

2.1. Schizophrenic urbanism

The concept and its application in monitoring urban phenomena

Schizophrenia is a psychotic disorder that is known for its effects on personality fragmentation, disconnection from reality, identity loss, adaptability and change management,

environmental interaction, and conflict and tension (Romanyshyn, 2021). Not much has been documented about the study on understanding the concept of simultaneous or delayed acts of schizophrenia and urban development, but many scholars have discussed the relationship between the two. The study of such relationships has been of interest to many social scientists because urban dwellers are known to have higher rates of psychiatric disorders with respect to their rural counterparts. Schizophrenia generally begins in late adolescence or early adulthood, just as urban development does. The basic symptoms of schizophrenia can be categorized into three: positive, negative, and cognitive symptoms. The study is focusing on the cognitive elemenys which is fragmentation, disconnection from reality, identity loss, adaptability and change management, environmental interaction and conflict and tension (Yaldız et al., 2014). "Schizophrenic Urbanism" stands as a subtly distinct and comparatively lesser-identified idea in the fields of cities' planning and urban design. But, it consists of large weight in current educational discussions the usage of splendid altered terminologies. This paper claims that this time period aptly captures the twin or complicated components of town planning and improvement, marked thru contrasting, frequently opposing, or seemingly disordered patterns inside town layouts. Drawing a metaphorical parallel amongst schizophrenia – a intellectual disease marked through a disjunction among perception techniques, responsiveness and consequences – and "Schizophrenic Urbanism" as it should illustrate the disjointed, fragmented, and incongruent nature often observed in modern-day town traits. these developments, at the same time as adopting international and global developments, frequently fail to recollect the unique close by traits of each resulting in a lack of coherent city making plans. The genesis of "Schizophrenic Urbanism" can be located in the past due twentieth and early twenty first centuries, marked by the use of fast and transformative town adjustments. The ones modifications were stimulated greatly by means of globalization, technological improvements, and extended populace mobility (Coy, 2006). According to Dumortier (2016), as a stop end result of this, urban improvement started to exhibit a unique unification of architectural styles, land uses, and city planning requirements and consequently, metropolis spaces began to diverge from having a unique identification or character and have become complicated entities with more than one bureaucracy, functions, and interpretations (Mnzpi, 1978).

Inside the vicinity of postmodern idea, Bell and de-Shalit have speculated that the fragmentation and decentralization of towns' systems are not certainly observed phenomena but also are embraced as defining capabilities of postmodernism (Bell & de-Shalit, 2011). Diverse interpretative frameworks were accomplished to facts urban environments, every supplying a very specific yet partial belief in the discourse of metropolis improvement, the phenomenon of schizophrenic urbanism is characterized through using a superb set of skills and implications. A number one function of this phenomenon is architectural variety, wherein metropolis landscapes display a heterogeneous blend of architectural patterns and designs. This range, whilst enriching the aesthetic and experiential dimensions of the urban material, ends in faded structural and thematic coherence, as declared with the aid of way of Angel et al. (2012). Consequently, this effects in fragmented city landscapes, exceptional thru the use of their visible and sensible discontinuities. Moreover, schizophrenic urbanism is in addition described via the amalgamation of numerous land makes use of, encompassing residential, commercial, and enterprise zones.

An additional complexity arising from this architectural heterogeneity and land-use conflict is the emergence of an identity disaster inside metropolis environments. The eclectic fusion of cultural, historical, and current factors effects within the formation of a multifaceted but ambiguous city identification. Empirical studies in this location generally unveils an enriched but complicated city tapestry. Empirical studies on this vicinity generally unveils an enriched but complicated town tapestry. Empirical research in this area generally reveals a well-designed yet complex fabric of the city. Here, complex interactions between multiple elements create interest in a space where this is simultaneously convex and fragmented (Bucheli, 2022). Analytically, the presence of a complex schizophrenic urbanism also has the potential to act as a catalyst for modernity. The interdisciplinary interactions amongst diverse mind, cultures, and practices in the confines of urban regions can also engender creative synergies, as confirmed through Mikuła (2022). Current research in city enhancement ecosystems spotlight the potential for better problem-fixing talents and the improvement of latest urban answers bobbing up from this variety.

For urban planners and policymakers, schizophrenic urbanism provides a landscape replete with demanding situations and opportunities. A critical imperative exists to stability the safety of historic and cultural attributes with the needs of present day urbanization. This stability calls for the adoption of nuanced, adaptive, and bendy making plans paradigms. Those paradigms must intention to harness the innovative ability of urban variety at the same time as addressing the complexities and conflicts inherent in rapidly converting town environments (Li et al., 2019).

Policy frameworks and making plans methodologies are subsequently compelled to evolve, accommodating, and navigating the multifarious and dynamic nature of urban landscapes influenced by way of schizophrenic urbanism. In this context, future research trajectories and policy discourses are anticipated to explore integrative and adaptive techniquees, intending to harmonize the divergent facets of city environments epitomized by using the usage of this phenomenon.

3. Monitoring neighbourhood schizophrenic urbanism

KPIs survey for indicating formation, realization and deviation

Recently, a detailed questionnaire survey was launched by the author and his colleagues from Sultan Qaboos University

Table 1. Experts/stakeholders questionnaire structure for the determination of the proposed KPIs

Section	Question No.	Question type	Description
Introduction	–	Descriptive Text	Purpose, confidentiality, completion time
Respondent Information	Q1	Multiple Choice	Field of Expertise
	Q2	Numeric Input	Years of Experience
	Q3	Multiple Choice	Role in Urban Development Projects
KPI Identification	Q4	Open-Ended	List Potential KPIs
	Q5	Likert Scale	Rate Importance of Each KPI
Stakeholder Importance	Q6	Open-Ended	Identify Key Stakeholders
	Q7	Likert Scale	Rate Importance of Stakeholders' Input
Open-Ended Questions	Q8	Open-Ended	Suggestions for Additional KPIs
	Q9	Open-Ended	General Comments
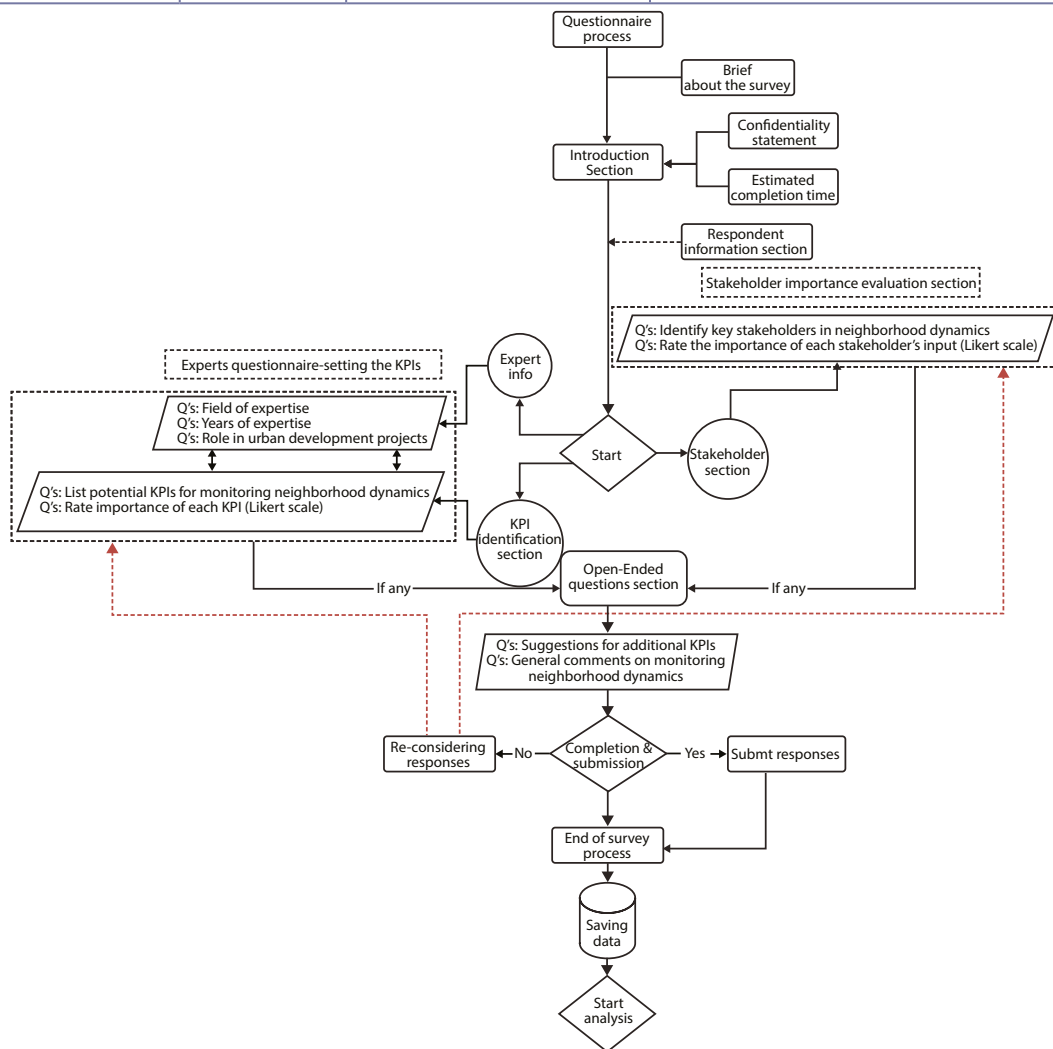
in Oman, targeting a group of distinguished experts in urban development (individuals at the local and regional levels among the GCC countries – the Ministry of Housing and Urban Planning and the private sectors in the field). The primary objective of this survey is to precisely identify and establish key performance indicators (KPIs) for evaluating urban developments, focusing on how these indicators are prioritized by various stakeholders. The selected panel, comprised of urban planners, environmental experts and policy advisors, brings a wealth of knowledge and diverse perspectives to the Table 1, essential to the intersectional nature of this endeavor.

The questionnaire is structured in a way that will deliver both qualitative and quantitative data, and the sections will start by the experts' introduction of potential KPIs and then will go on to the evaluating process. One of the important aspects of the survey is the application of a grading system, which enables the respondents to meas-

ure the significance of the KPIs using their own judgments to the context of sustainable urban developments. In addition, open-ended questions present an opportunity for experts to give more detailed information beyond the preset choices, which consequently boosts the quality of the data by incorporating their expert opinions and perspectives.

It is not intended to be a simple academic exercise, but rather a realistic step which will make urban development projects compatible with the complex, yet tangible realities of environmental, social and economic sustainability. The complex of the necessary statistical methods, which are going to be used to conduct the survey analysis, is expected to provide a higher level of KPIs. These KPIs will be validated and refined in this process and therefore are likely to be of great importance when it comes to guiding future urban development projects; besides, they will also aim to meet the diverse and ever-changing requirements of cities and their residents.

Out of 9 KPIs, 4 scored the maximum results that matched the interest of experts with the importance evaluation of stakeholders. The KPIs were introduced to experts and stakeholders based on the metaphor that has been established and introduced in a prior stage of this study, reflecting schizophrenia symptoms as a mental disease on urban planning themes and formations. Those KPIs are fragmentation, disconnection from reality, identity loss, and conflict and tension.

The questionnaire and interview survey were structured in a logical sequence, resulting in quantitative and qualitative results (Table 1).

3.1. Assessing urban dynamics deviation via KPIs

The significance of KPIs based on literature and questionnaire results – a preliminary methodological approach

This study employs a literature and questionnaire-based methodology to determine the significance of various
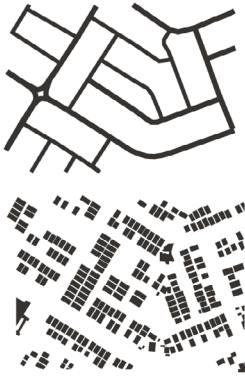
KPIs in the context of urban development and neighbourhood sustainability. The research conducted a thorough examination of the existing literature to uncover the crucial performance indicators that are most often mentioned in the urban planning discourse (Salgado et al., 2022). To augment this review and achieve a more immediate understanding of the field's principal actors, this research employed a carefully crafted questionnaire. With it, and with the help of these key participants, it sought to collect intelligence on a sparsely populated topic (Schäfer, 2013). The topic in question: the performance measures that urban planners, policymakers, and other stakeholders find most useful in the work they do–both to them and to the citizens they serve. The recruitment of this aforementioned personnel to the study allows for an at-once theoretical and practical analysis of the true significance and applicability of these oft-cited KPIs.

3.1.1. Neighborhood fragmentation

Concept of urban fragmentation

Even though fragmentation has been repeatedly highlighted in many urban studies, the concept is still in its infancy (Fu et al., 2010). Urban fragmentation is a phenomenon of artificial debris in sales to increase the "value" of space for better sales (Lefebvre, 2017). Different terms may share a common epistemology but differ in their connotations and denotations, such as a dual city (Marcuse, 2008), illegal and legal city (Krellenberg et al., 2017), city of walls (Charmes, 2007), partitioned city (Allegra et al., 2012), disconnected city (Jirón & Mansilla, 2018), polarized city (Pessoa, 2019) and divided city (Ogas-Mendez & Isoda, 2021). Graham (2001) put forward the concept of "splintering urbanism", revealing that the urban space presents a state of fragmentation relative to the past in the information age. On this basis, the concept of a "fragmented city" was proposed (Coy, 2006), describing it as an unintegrated state between formal and informal cities.

Table 2. Fragmentation models of different neighbourhoods representing typologies of Muscat neighbourhoods

Al Khaud Neighbourhood	Al Mouj Neighbourhood	Muttrah Neighbourhood
Governmental Public Sector	Gated Compounds	Traditionl & Historical Pattern

Urban fragmentation manifests in the fringes of cities and metropolitan areas consisting of disconnected patches of the urban fabric, divided by swathes of vacant land (Angel et al., 2012), that is, the development pattern of discontinuous urbanization (Guastella & Pareglio, 2016). This pattern reflects the heterogeneous levels of environmental shaping and human activity interference (Yu et al., 2023a, 2023b). In this study, urban fragmentation is portrayed as land use fragmentation. Land use fragmentation involves the fragmentation of residential land and green space, etc., threatening the integrity of the built environment and landscape due to decentralized urban development, incoherent spatial structure and disorderly mixed land use (Korah et al., 2019).

3.1.2. Disconnection from reality

In urban planning refers to the gap between planning policies and residents' lived experiences. This can be measured by comparing the objectives and projections of urban planning documents with empirical data on actual urban development outcomes. Surveys and resident interviews provide qualitative insights into whether their experiences align with the envisioned planning goals. Disconnection is quite evident when a substantial difference exists between the imagined and actual urban space (Al-Kazee et al., 2019). This separation can be shown in various ways and comes as different reasons for example the misalignment of goals. Decision-making in urban planning could prioritize commercial enterprises and infrastructure expansion, leaving citizens inadequately considered. For instance, if a

city directs substantial investment into constructing massive retail complexes, yet the actual community expresses a substantial need for more green space or affordable housing, that is an example of the city being out of touch with the lived reality of its residents, as shown in Figure 2. Another important element of our argument is the supposedly overlooked local context.

This occurs when planners, instead of adapting generic or generic urban planning models to the local specific cultural, historical, and social context, apply them without making changes. Take for example a city whose main design is a Western-style urban design and the majority of its population is different from the cultural background (Taylor & Williams, 1982). Such a city is likely to face a challenge of not being in line with the local way of life. This situation also arises when the planners may use the same or popular urban planning models, without adapting them with the specific culture, history, and society of the particular area. This could be done by way of example such as imposing the urban design of the west in a city that has a predominantly different cultural background, people might not be satisfied with such a change.

3.1.3. Conflict and tension

Among the most common issues emerging within the urban areas are zoning disputes, land use conflicts, or social and economic inequality. This KPI can be evaluated through zoning compliance data and the occurrence of land-use conflicts. Figure 3 presents the Muscat general land use plan with different zoning and urban functions.

Global architectural and planning trend in Dubai

Traditional housing types in Dubai

Figure 2. Dubai city between global architectural and planning trend and tradional tradional housing types
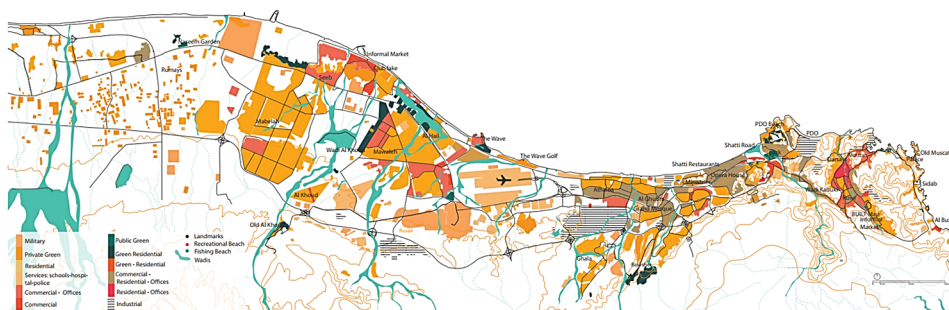

Figure 3. Muscat general land use plan

Public forums and stakeholder meetings provide the stage for the identification of areas of tension, whereas the residents' surveys can help to uncover the underlying socio-economic conflicts. The magnitude of conflict and tension is manifested in the number of disputes and the intensity of public dissent or dissatisfaction, which can be quantitatively measured through time. Furthermore, the use of social economic indicators such as income levels, housing affordability and access to basic services in different zones will offer deeper understanding of the disparities within the urban space.

One way is to use a scoring system to give points to the various aspects of these conflicts and inequalities to make them quantitative (Thondoo et al., 2020). An example might be the number of land use disputes that occur in a year and the duration of these disputes, the number of zoning variance requests submitted, and the outcomes of the public forums, all of which could be scored and accumulated to create an index (Verdeil, 2019). This index will be a measure of the overall health of urban planning and social cohesion in the given community. On the other hand, using GIS information for spatial analysis of zoning conflicts and social-economic inequalities can be an additional step. Superimposing data such as locations of public amenities, population distribution, and areas with frequent zoning changes will display visually the regions that are most affected by these problems (Zhang et al., 2023). Through the synergistic use of these tools, urban planners and policymakers can acquire a comprehensive knowledge of the city's challenges. This integrated assessment permits specific interventions.

3.1.4. Identity loss

The absence of identity in urban settings primarily involves the disappearance or the weakening of the distinctive cultural, historical, and social traits of the city or the neighbourhood (Zhang et al., 2023). The case in point is when cities are being developed rapidly, globalized, and modernized, they may lack specifically local features, and instead look like a homogenized urban culture of the whole world. The loss of identity can be represented in different ways, for example, by abandoning the original architecture for the new skyscrapers, displacing the local businesses by international chains, or by the disappearance of indigenous cultural practices and community activities (Taylor & Williams, 1982). The study find out that the phenomenon of the identity crisis at the neighbourhood level is most acutely felt in Gulf cities, given the region's rapid and comprehensive urbanization over the past few decades. A lot of Gulf cities have experienced relevant changes, caused by the diversification of economy and the need to become global cities (Verdeil, 2019). This development has frequently led to the creation of extensive, futuristic urban projects which may have a modern look but lack integration with the traditional urban fabric and existing cultural context, as shown in Figure 4. The historical neighborhoods which are characterized by their unique architec-

Doha's skyline over the last five years in the West Bay area Source: Huntress of Art 29

View of the Msheireb downtown project (2008-17) Source: Msheireb Downtown Doha 38

Figure 4. Msheireb Downtown in Doha as a sample of Identity Loss in Gulf cities

tural styles such as the courtyard houses or the "Barasti" structures are losing their importance to the contemporary developments. Identity Loss of neighbourhoods is quantifiable using indicators such as culture landmarks, architectural styles, and land use patterns. Historical data analysis with present city layout shows the level of change and loss of historical character. Resident surveys and interviews shall be the key tools to measure the community's opinion concerning the changing identity of their neighbourhoods. A rapid change in the architectural styles and a dwindling of the residents' pleasure with the place identity, shows a high degree of identity loss.

4. Applied methodology

4.1. Choosing a research method

Explanation of the research design, including approach and methods, data collection and analysis

To explore the intricate elements of contemporary urban planning and how it is linked to some of the symptoms of schizophrenia as a metaphor, a multi-method approach which will concentrate on the selected key performance indicators such as; Neighbourhood Fragmentation, Disconnection from Reality, Identity Loss and Conflict and Tension which have been explained before, as shown in Figure 5. Firstly, in this phase the nature of the study should be theoretical, so the data collection, analysis and validation are all theoretical methods of any research carried out with the KPIs.

Figure 5. Schizophrenic Urbanism: KPIs, Data Collection, Analysis and Validation Methodology. The area of the semi-circular shapes represents the ratio of experts' survey numbers in defining the most effective KPIs; the heights represent the importance of KPIs according to the stakeholder questionnaire

- To adress **Neighbourhood Fragmentation**, GIS and remote sensing technologies are the most important tools which are used to precisely analyze the spatial distribution and connectivity of the built environment. The residents' voices, recorded in the encompassing surveys, get interwoven into this story, and they provide perceptions on spatial and social cohesion in the area. Urban planners and field assessments further add to the findings, thus making them more application-oriented as well as theoretical.
- The **Disconnection from Reality** is also a key point in this process. Firstly, the scrutiny of architectural and city planning designs is of utmost importance. These perceptions, put together with the surveys of residents, bring forward a comprehensive picture of the city's connection or disconnection with its natural, cultural, and social fabric. Each piece of information is contextualized with the existing urban customs and is validated against the expert analyses and case studies, resulting in a broader picture of the city-nature balance.
- Urban complexities such as zoning and Land Use Conflicts are examined through the close look on these issues. Residents provide a living, breathing example of the challenges that urban planning confronts. The conflicting patterns such as the architectural contrasts or zoning overlaps are very carefully examined. Each finding is not only a separate insight but is also contextualized within the broader narrative of social cohesion, environmental integrity, and functional urbanity, by the help of interactions with urban planners, sociologists, and environmentalists.
- The complicated puzzle of **Identity Loss** is Unraveled

through the contrast of Historic and Modern Urban Landscapes. Data on the architectural evolution cycle, the land use patterns changing, and cultural landmarks transformation become the most important. People's opinion (that is, public sentiment which is obtained through surveys and interviews) shows that urban transformation is complex and it includes both identity preservation and change. The multi-dimensional viewpoint is offered by a thorough correlation of the data with the expert point of view.

4.2. Setting the Indicators

4.2.1. Determination of fragmentation indicators

In the planning process, fragmentation is the misplaced and disconnected placement and design of the infrastructure and the community spaces (Charmes, 2007). For example, in schizophrenia, the thought process is fragmentary and disordered, leading to a break in the thought process (National Institute of Mental Health, 2022). The similarity in this case demonstrates that the process of writing a college essay and a research paper is the same. This means that we should also maintain the same level of coherence and organization. Integration and closing the gaps should be the integral parts of the solution, which should be implemented in plans we are coming up with (Jihad & Jacques, 2012).

Defining adequate and significant indicators that are indicators is the key elements that ensure the monitoring and measurement of the fragmentation of neighborhood planning is done correctly. The indicators should be quantifiable metrics that help us to evaluate how well the

aspects of urban planning are fragmenting or integrating. The indicators were generated from the survey of experts (122 participants from various private and governmental entities in the region). Also, we applied indicator assessment questionnaire (40 participants) as a tool of research. The expert's job is to describe the fragmentation indicators, which they believe they can measure, monitor and evaluate the deviation of the neighbourhoods. On the contrary, the stakeholders' role is entirely centered on the definition of the significance of suggested KPIs.

Urban planners and policy makers will be informed of the scale and nature of the neighbourhood fragmentation by means of these indicators which will help to develop strategies for more unified and well-bonded urban environment. The study went through a methodical process of searching for indicators that are fully in line with the KPIs progress. Here is a breakdown of the process: Here is the step-by-step process: Create your own journey to success.

1. **Proposing Indicators:** In the first stage, the research team developed a list of indicators that could be reasonable. These are the indicators that can be used to monitor the progress of the KPI and measure its attainment by the specific components.

2. **Definition and Explanation:** All indicators were written along with their definitions and explanations. This was essential to ensure that participants and stakeholders well understood what each indicator meant and why it was linked to the the strategic plan indicators.

3. **Consultation with Experts and Stakeholders:** The proposed indicators were presented to stakeholders and experts. The members of the groups came from diverse backgrounds and had various levels of knowledge and expertise, which made their opinions critical to the assessment of the relevance and importance of indicators.

4. **Evaluation of Importance:** Experts and stakeholders were called upon to ascertain the significance of each indicator as it related to meeting the corresponding KPI. This evaluation is based on Likert scale which has been transformed to 100% percentages.

5. **Threshold for Selection:** This threshold was a 30% approval rating in both the expert and stakeholder assessment. Therefore, indicators that fail to meet this standard are not analyzed any further. This consideration enabled the selection of the most applicable and commonly accepted indicators for the next step of the process.

6. **Regression Analysis of Selected Indicators:** The indicators whose evaluation process was successful (i.e., those that scored 60% or above) were subjected to regression. This statistical method enabled us to explore the underlying connections between the factors and the entire KPI performance. Regression analysis can show how much of the variations in the KPIs can be accounted for by fluctuations in these indicators.

This detailed procedure is a sign of how the company is committed to the use of KPIs. The study was intended to verify that the most relevant and important indicators were used in the in-depth analysis by involving experts and stakeholders and setting a high selection bar of indicators. This intensifies the credibility of the research and boosts the effectiveness of the results in strategic planning and decision-making. The Table 3 illustrates the earlier steps for KPI 1 (Fragmentation).

Table 3. The 12 proposed indicators to assess the fragmentation status of a neighbourhood along with experts and stakeholders' evaluation of the importance

	Fragmentation indicators	Experts evaluation	Stakeholders evaluation		Fragmentation indicators	Evaluated by experts	Stakeholders evaluation
1	**Land Use Diversity Index** Measures the variety of land uses (residential, commercial, industrial, recreational, etc.) within a defined neighbourhood area. A higher index indicates greater diversity, which can contribute to or reduce fragmentation, depending on context.	93%	65%	7	**Urban Density Metrics** Evaluates the density of both population and buildings in a neighbourhood, providing insight into the compactness or sprawl of the area.	76%	98%
2	**Connectivity Index** Assesses the ease of movement within a neighbourhood, considering factors like the number of intersections per square kilometre, the average street length, and the presence of pedestrian and cycling pathways.	82%	80%	8	**Green Space Proportion** Measures the ratio of public green spaces (parks, gardens, natural reserves) to built-up areas. This KPI is crucial for understanding the balance between natural and developed spaces.	87%	93%

End of Table 3

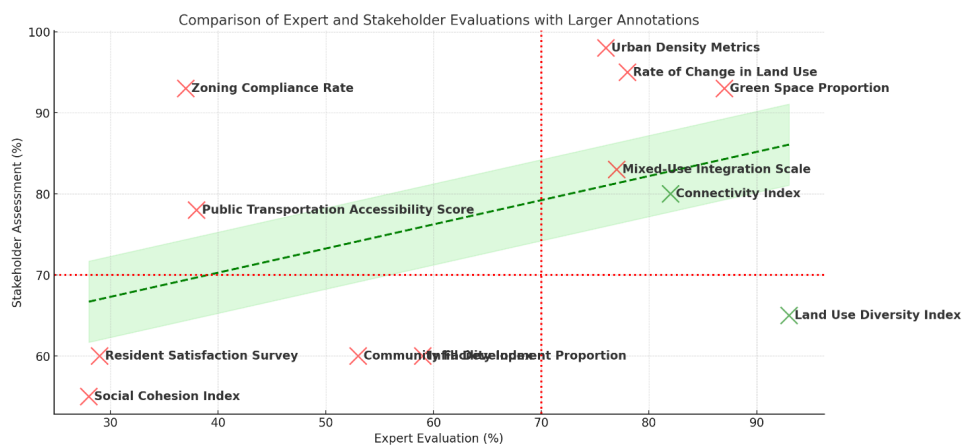|	Fragmentation indicators	Experts evaluation	Stakeholders evaluation		Fragmentation indicators	Evaluated by experts	Stakeholders evaluation
3	**Public Transportation Accessibility Score** Rates how easily residents can access public transportation, considering factors like the number of transport stops and average distance to these stops from residential areas.	38%	78%	9	**Rate of Change in Land Use** Monitors how rapidly land use in a neighbourhood is changing over time, indicating potential fragmentation or transition.	78%	95%
4	**Community Facility Index** Assesses the availability and distribution of community facilities (schools, hospitals, community centres, etc.) within a neighbourhood.	53%	60%	10	**Social Cohesion Index** A measure derived from social factors such as community engagement in planning, neighbourhood events participation, and the presence of neighbourhood associations.	28%	55%
5	**Mixed-Use Integration Scale** Quantifies the integration of mixed-use developments, which combine residential, commercial, and sometimes industrial spaces, as a countermeasure to fragmentation.	77%	83%	11	**Infill Development Proportion** Tracks the percentage of infill new developments (i.e., development that fills in vacant or underused land within existing urban areas) instead of expanding on the peripheries.	59%	60%
6	**Resident Satisfaction Survey** Regular surveys of residents to gauge their perception of neighbourhood cohesion, connectivity, and access to amenities.	29%	60%	12	**Zoning Compliance Rate** Monitors the adherence to zoning regulations, focusing on how well new developments align with planned land use.	37%	93%

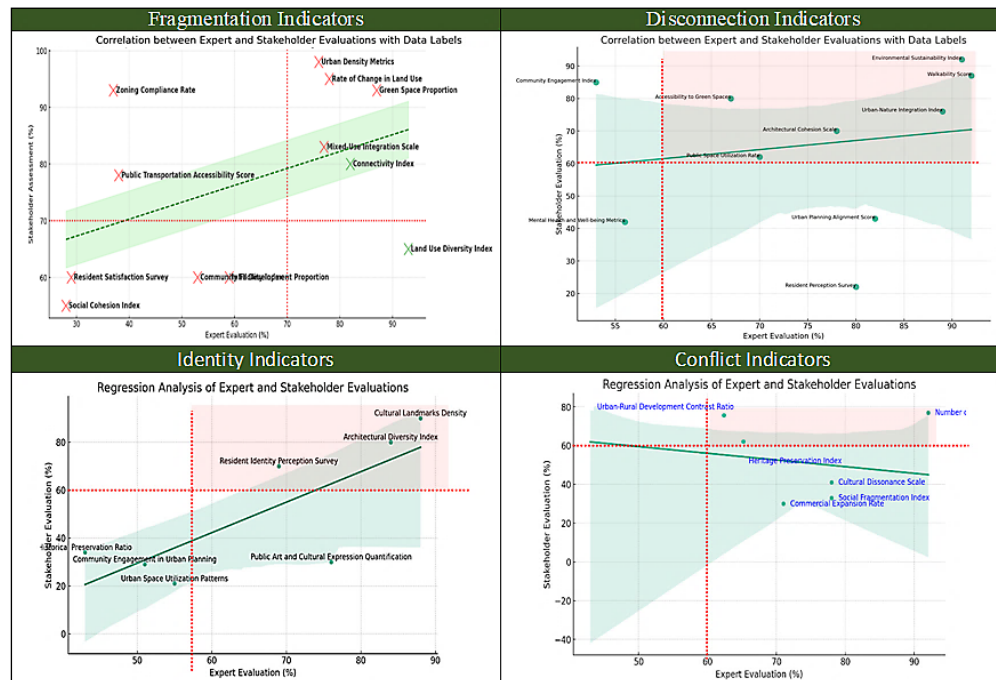**Figure 6.** Shows the stakeholders' assessment and the experts' evaluation

Based on the previous indicators survey results, the study only chose threshold scores 70% on both Expert's evaluation and Stakeholders' evaluation for the *Fragmentation* indicator and 60% for the other three indicators based on survey analysis. Figure 6 shows the stakeholders' assessment and the experts' evaluation.

The scatter plot above shows that experts and stakeholders hold similar views on the metrics indicated by the author and assessed by both groups on the Likert Scale, as shown in Table 4. Every point on the plot represents a specific indicator that has been evaluated by experts using a scale of scores (x-axis) and stakeholders (y-axis). As shown in Figure 7, The labels of data next to the points shows what urban planning indicator it represents, and it gives a clear picture of how both groups perceived a particular indicator. The regression line depicts the macro-evaluation

Table 4. The stakeholders' and the experts' evaluations for fragmentation indicators

KPI (1)	"FRAGMENTATION" High influential indicators	Expert evaluation	Stakeholders evaluation
Measurable indicators	Green Space Proportion	87%	93%
	Connectivity Index	82%	80%
	Rate of Change in Land Use	78%	95%
	Urban Density Index	76%	98%
	Mixed-Used Integration Scale	77%	83%

Figure 7. Shows the stakeholders' assessment and the experts' evaluation for different urban planning indicators

trend which measures the level of agreement between experts and stakeholders. The light green shaded area continues to highlight the proximity to the regression line.

The following regression diagrams have been initiated by repeating this evaluation survey (Table 2) process and making a regression analysis of the results to determine the influential indicators.

4.2.2. Disconnection from reality indicators analysis

The graph above represents the correlation between expert and stakeholder ratings for a new urban planning indicators set. Every point is a marker which is placed at the intersection of the expert evaluation (x-axis) and the stakeholder evaluation (y-axis). The label connected to every data point shows which urban planning factor is represented, as shown in Table 5. The correlation coefficient between the expert and stakeholder appraisal from this set of data is approximately 0.168. The indicated value is of a positive correlation that is only weak, consequently meaning the groups barely agree with each other. There could be the possibility of the experts and stakeholders holding a different view regarding these indicators, or it may be that the priorities or perspectives may be different across the groups.

Table 5. The main measurable indicators for disconnection from reality

KPI (2)	"DISCONNECTION FROM REALITY" High influential indicators
Measurable indicators	Architectural Cohesion Scale
	Urban-Nature Integration Index
	Walkability Score
	Environmental Sustainability Index

4.2.3. Identity indicators analysis

The regression analysis graph above shows the relation between the expert and the stakeholder assessments for the diverse urban planning indicators. Every one of the indicators is annotated and their position is determined by the collective percentages from both groups. From the graph, we can observe the following:

- Slope of the regression line to the right suggests that there is a positive relationship between the opinions of experts and stakeholders. As expert assessments rise, the same occurs with stakeholders' appraisals.
- The indicators which are "Cultural Landmarks Density" and "Resident Identity Perception Survey" are having

the same ratings from the experts as well as stakeholders and these ratings show the agreement on the significance of these indicators and their successful implementation, as shown in Table 6.

- On the contrary, "Community Engagement in Urban Planning" and "Public Art and Cultural Expression Quantification" indicators are the ones that stand out with a more considerable gap between the ratings of experts and stakeholders, demonstrating an area where the stakeholders' perceptions may not be in line with the experts' assessments. This reveals the system faults, opens space for new directions in solving the puzzle of stakeholder experience and matching professional goals.
- The "Urban Space Utilization Patterns", however, is below the expectations of stakeholders with regards to experts, thus they may not be satisfied with the way space is used especially when their expectations are not met. Consequently, the chart is a tool for understanding the areas of urban planning where there is a consensus and where the experts and the stakeholders may need to engage more actively in dialogues and discussions to address the perceptions of discrepancy.

Table 6. The main measurable indicators for identity

KPI (3)	"IDENTITY" High influential indicators
Measurable indicators	Architectural Diversity Index
	Cultural Landmarks Density
	Public Art and Cultural Expression Quantification
	Resident Identity Perception Survey

4.2.4. Conflict and tension

Regression analysis graph revealed the progression followed by the expert and stakeholder evaluations of a given set of urban planning indicators. The points are plotted with the "experts" evaluations on the x-axis and "stakeholders" evaluations on the y-axis, with a label for each indicator which is used to identify the corresponding indicator. The pattern of the regression line is showing a positive correlation which means that the relationship between the experts' evaluations and stakeholders' evaluation is usually coinciding. This correlation is not exactly the same for all indicators, as it is seen by the spread of these points around the line, as shown in Table 7. These show variability in the agreement levels.

An example is "Cultural Landmarks Density" where experts and stakeholders share similar views of the issue, while the "Social Fragmentation Index" and "Commercial Expansion Rate" have a contrast, with experts valuing these higher than the stakeholders. On the other hand, the "Urban-Rural Development Contrast Ratio" is the highest of all the indicators, with the stakeholders considering.

Table 7. The measurable indicators for conflict

KPI (4)	"CONFLICT" High influential indicators
Measurable indicators	Number of Zoning Disputes
	Heritage Preservation Index

4.3. Measuring the indicators

The graphs, overall, is an illustrative figure of the quantitative representation of a divergence and concordance of perception of urban planning issues among the experts and stakeholders. The fact that the paper size and format do not allow for detailed analysis in the main text or appendices must be acknowledged while examining the study analysis and findings. We have tried our best to be as thorough as possible in the presented analysis of main indicators, but the space limitations of the physical format impair us from showing the full scale of assessments for each indicator. It is clear that each indicator is significant in various ways, and thus, they were evaluated in our research process.

- **To Quantitatively measure these indicators**, the Land Use Diversity Index is introduced as an example for the first indicator the **"Fragmentation"**: An index of the diversity of Land Use is put forward to numerically describe them. It is the Land Use Diversity Index.
- **The Land Use Diversity Index** is calculated quantitatively by means of a qualitative indicator which is based on the number of different land uses distributed in a given area. There, the index is the most useful tool that can be used in urban planning and in measuring land use mix of the area (density and diversity). The initial phase would involve collecting land use data on the land and land use of the community. These data are likely to be found in the city planning authorities, GIS databases, and satellite imagery photos, respectively. Third, map land use: develop a GIS-based land use map. The map will be labeled by land use categories and will be shown as depicted by visual representation. Fourth step would be calculating the areas of all categories and further present the areas per square kilometers, hectares or acres for each category (GIS program can implement the entire workflow). Finally, the use a Diversity Index formula by applying the shannon diversity index, which is calculated as:

$$H' = -\sum (pi \times \ln(pi)).$$

The formula of Shannon diversity index, H', is given as the sum of natural logarithm of each category area proportions, pi, divided by the total area of land use categories. The total, therefore, is an aggregate of the entire land use types.

- **Interpretation of the Index:** A higher index value also indicates, though implicitly, a higher degree of land use diversity. The above statement means that the territory does not belong to any specific kind of land use and the land use is different in this area.

4.4. Disconnection from reality indicators

Repeating the same process as the previous process to attain the influential indicators for fragmentation, the results were as follows: Repeating the same process as the previous process to attain the influential indicators for fragmentation, the results were as follows:

- **In the context of study analysis and findings** in a research paper, we would like to make a note that due to the space and format limitations, we could not incorporate a fully-fledged assessment of all indicators in the main text neither in appendices. Although we have made efforts to give a comprehensive analysis of important indicators, such space limitations encountered in a physical document allow us to present only the evaluated set of indicators but not the complete set of evaluations for each indicator. It is quite natural that each indicator is of its own importance, and for that reason, we have tried to go through a comprehensive research process in order to cover them all.
- **To Quantitatively measure these indicators**, Architectural Cohesion Scale is introduced as an example: To Quantitatively measure these indicators, Architectural Cohesion Scale is introduced as an example:

First, Developing Dimensions and Proportions of Buildings by using geometric measurements and comparing the dimensions, heights, and proportions of buildings. Instead of simply describing the differences and commonalities, it is considered to be more informative to present it as ratios or percentages. Then, the Material and Color Analysis is assigned to measure the quantities of materials present in constructions (for instance, clay, glass, and concrete) as well as the primary hues. It can be done either by visual surveys or by using image analysis. Secondly, to determine the exact usage of a certain style component, I will outline the Style Elements Count technique that counts the number of style elements (columns, stained glass windows and arches) within a given area of the neighbourhood. Facade Analysis: Leverage image processing to examine the building faces looking for such features as symmetry, patterns, and other elements that promote visual harmony.

Then, Identify Density Metrics by determining the building density or floor area ratio (FAR) and calculate the number of people who live in a given area.

In conclusion, the Expert-Rating System, which gives the experts the visibility to conduct the overall evaluation of cohesion factors, should be considered to validate the previous steps.

4.5. Identity loss indicators

The regression analyses graph with data points pointed out represents the relationship between experts and stakeholders' evaluations across urban planning indicators. Here is an interpretation of the results:

- General Trend: The positive slope of the regression line implies a direct relationship between expert and stakeholder evaluations. On the whole, stakeholders' scores are likely to rise as experts' scores go up, which

is a sign of a certain level of agreement in terms of the effectiveness of the measures used.

- Degree of Agreement: High Agreement: Some indicators, for instance, "Cultural Landmarks Density" and "Residents' Identity Perception Survey", reveal a high concurrence between experts and stakeholders, as they are close to the regression line and both groups gave high ratings.
- Moderate Agreement: Indicators like the "Architectural Variability Index" display a moderate concurrence, as both experts and stakeholders evaluated the proposed measure less divergent, yet experts rated slightly higher.
- Low Agreement: While "Community Engagement in Urban Planning" and "Public Art and Cultural Expression Quantification" have received largely different ratings, this may suggest that there are divergent perspectives on their effectiveness or importance.
- Outliers and Variability: There is a striking divergence like in the case of "Community Engagement in Urban Planning," which has seen very different scores from experts and stakeholders. Taken in this way the two groups may exhibit different prioritization or perhaps even different expectations, or, alternatively, it is possible that these groups differ in the way they see community engagement success.
- Close Alignments: "Resident Identity Perception Survey" almost hits the regression line and has a good level of scores for both groups. From that follows the notion that the residents' feelings are of paramount in the assessment of urban space and identity.
- Areas of Concern: Indicators like "Historical Preservation Ratio" and "Urban Space Utilization Patterns" reveal low ratings in the evaluation of the stakeholders. This might suggest that planners have not yet achieved the desired result where stakeholders believe that the endeavors are not attaining the objectives or are not in line with their expectations.

The analysis is a crucial input for the experts who decide which indicators are seen to be successful or problematic. It can inform urban planners where to direct their efforts to stay relevant and address complaints and which areas may need the strategic development of an action plan. In addition, it points out the need of participative approaches in which both experts and involved parties are taken into account during the evaluation process to obtain a more general and representative view of the urban planning results.

4.6. Conflict and tension

The graph of the regression analysis plots the correlation between expert and stakeholder assessments for several urban planning parameters. Each data point is plott ed with the experts' evaluations on the x-axis and the stakeholders' evaluations on the y-axis, each one duly labelled with the indicator to be used. The regression line trend reveals a significant positive correlation, which is interpreted as an overall increase in expert evaluations, and therefore,

also in the evaluations made by stakeholders. This relationship is not unilateral for all indicators, as seen from the distribution of the points about the line, indicating that there is variability in the degree of agreement levels.

Example of this high degree alignment between the experts and stakeholders can be the "Cultural Landmarks Density" while on the other hand the "Social Fragmentation Index" and "Commercial Expansion Rate" are the ones showing major disagreement among the experts and the stakeholders as the former group give higher ratings to those indices than the latter one. The "Urban-Rural Development Contrast Ratio" appears very high on stakeholders' ratings, showing their discontent with the inequality of urban and rural areas' development.

Overall, the graph conveys a quantitative picture of the agreements and knowledge gaps concerning key issues of urban planning between the experts and stakeholders.

5. Discussion on schizophrenic urbanism KPIs

The research supports the proposition that "schizophrenic urbanism" is not a mere abstract concept but a concrete and intriguing urban phenomenon appearing within the urban fabric of cities in the GCC region. The synchronicity in the opinions of the experts and stakeholders on fragmentation and identity loss reveals a shared view of the problems, but the difference in the views on disconnection and conflict suggests a deeper complexity in managing the realities of urban life and urban planning ideal.

Regarding the disparities noted between the experts' and stakeholders' evaluations indicate a need for a systemic review and realignment of the urban planning processes to be more inclusive and serving the community as the primary goal. This study calls on urban professionals and policymakers to employ more participatory models that take into account the socio-cultural dynamics at play, ensuring that the development is not only sustainable but also inclusive and reflects the diverse identities it is meant to serve. Moreover, implications for policy and urban planning, urban planning officials are advised to include these research outcomes in their future projects, especially in those regions where rapid urbanization is taking place. Urban planning practices that are nowadays "schizophrenic" can be recognized by decision-makers as a problem. They should, therefore, try to solve this issue through the implementation of integrated and holistic planning approaches which will put emphasis on connectivity, cultural coherence, and community integration. This may include the re-interpretation of zoning laws, enhancement of public transportation, and guarantee that new developments are in harmony with the historical and cultural context of the locality. Besides that, the studies should be extended for a longer period of time, so that it is possible to observe the dynamics concerning the identified indicators. Moreover, examining the geographical extent of the research will also allow for cross-city comparison across different urban environments which will help to understand this concept in the context of different cultures and economies. Also, it may be helpful to explore the possibility of adopting participatory research tools which could contribute to more detailed data collection on the social factors that affect urban planning.

6. Conclusions

This research argues that cities are turning schizophrenic and there is a growing similarity between the symptoms of schizophrenia and the phenomena observed in urban planning. A framework of KPIs is used to measure deviations in neighborhood planning standards and to explore the significant overlaps between cognitive fragmentation in schizophrenia and spatial disorganization in cities. The metaphorical analogy is deepened by the inclusion of such core themes as fragmentation, disconnection from reality, identity loss, and conflict and tension- which each is clearly linked to the symptomatic experiences of schizophrenia. The outcomes reflect the theoretical foundations of schizophrenic symptoms, and the practical issue in urban design, where the urbanization without cohesive strategies results in the fragments urban landscape and the weak sense of community and sense of place. Also, the study shows that although the concepts of the indicators are generally agreed upon by the experts and stakeholders, the actual perceptions on the specific metrics of community engagement and public art are strongly different, indicating the cases where urban planning may be failing to meet community expectations. The findings of the regression analysis and KPI assessments reveal a more or less unanimous view among experts and stakeholders that fragmentation and identity loss are present in the urban planning processes, particularly in the fast-urbanizing cities of the Gulf Cooperation Council (GCC). This agreement emphasizes a shared perception of the challenges that are associated with the modern urban development practices that are inclined towards growth rather than unity. However, the subtle variations that are observed in the perceptions of disconnection from reality and conflict indicators signify the huge gap between what the urban planning wishes and the actual life experiences of urban dwellers. These disparities are not only the "schizophrenic" attitude to urban planning, which is demonstrated by the uncoordinated developments and the absence of the consistent integration of community needs, but also show the necessity of more effective communication and engagement strategies between planners and the communities they serve. The metaphor of schizophrenia utilized in urban planning accurately characterizes the disorderly and sometimes chaotic nature of urban development in the context of the current globalized world. It requires a complete rethinking of the way cities are planned and developed, promoting a planning process that is more responsive to the historical, cultural, and social context of urban settings. The study should be a source of urban planners and policy makers to provide a path towards a more balanced urban environment which would not suffer from the fragmentation typical for schizophrenic urbanism.

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