



(RESEARCH ARTICLE)



## Development of a framework for measuring attractiveness of Cities and Urban Areas

Muhammad Tahir Khattak\*

*National institute of urban infrastructure planning, University of Engineering and Technology Peshawar, 2500, Pakistan.*

International Journal of Science and Research Archive, 2025, 15(01), 1357-1366

Publication history: Received on 16 October 2024; revised on 25 March 2025; accepted on 27 March 2025

Article DOI: <https://doi.org/10.30574/ijrsra.2025.15.1.1989>

### Abstract

Urbanization has been a top trend in the recent history of mankind. Besides the tremendous increase in the world population, urban influx has adversely affected the balance of resource consumption. In this age of communication, cities and urban areas compete with each other to attract more people towards them in order to create more opportunities. Sustainable tourism as well as better living becomes to decisive factors. Therefore, development of a comprehensive framework to evaluate attractiveness of cities and urban areas is needed to rate the cities. The phenomena of attractiveness of cities are based on multi criteria analysis of diverse factors that affects attractiveness. Namely the aesthetics, Environmental Comfort, Social Structure and economic stability. A model is developed and validated through incorporating inputs from surveys and opinions of expert stakeholders. Attractiveness is a very complex as well as multi criteria phenomena therefore, a Multi criteria analysis tools was used in analyze the data. A general format frame work was created based on the literature review. Pairwise comparisons of different components, factors and sub factors from the hierarchy were done through different type of surveys. The feedback of the respondents was analyzed and relative priorities were calculated in the form of weights given to the components by the respondents.

**Keywords:** Evaluation; Attractiveness; Cities & Urban Areas; Framework; Stakeholders

### 1. Introduction

Cities are engines of economic growth as well as abode for its residents. Besides the financial gains from the businesses in the city, the residents also desire to live in an attractive environment [1]. They desire to breath in fresh air, walk in a green park, eat nutritious food and drink clean water. They also desire to look at attractive vistas and beautiful skylines. They aspire to relate to their history and heritage. Citizens generally want to be surrounded by serene views and be part of that serenity. Each city has a unique character, culture, history, heritage, food and lifestyle[2]. Some are designed and others develop over time. We shape our cities, then cities shape us, that is, the built environment can affect our mood and wellbeing. The cells of our brain are adapted to the geometry and location of the space in which we live[3]. People have a positive impact on buildings of proportional and interesting buildings; while disproportionate structures have a very negative impact. Similarly, green spaces can offset stress and provide healthy life to the citizens [4]. In general, the cities of Pakistan do not create an attractive image for the outside world and for their own residents. In addition to visual improvements in and around cities, economic, social, cultural, environmental and other factors need to be taken into account. For example, the city of Peshawar cannot be made more attractive by adding flower pots and green belts only [5]. There is a lack of social and cohesive bonds in the neighborhood. Important social interactions are vital for mental health. Isolation is the main risk factor for many diseases. Design principles are not implemented in totality to bring visual improvements. The cityscapes do not blend into its context. Art work and installation for enhancing attractions are differ areas of our cities are not nudging people physically closer together not blending into

\* Corresponding author: Muhammad Tahir Khattak

its backdrop [2, 6]. Enriching communal places can minimize the sense of being alone and help the residents to get engaged in its surroundings and feel comfortable [7].

Urban planning and development are sometimes not integrated with its context therefore do not produce the desired results [1]. Comparison between now and then is done unscientifically through pictures. Results are left to the wisdom of the viewer. In such a case, the development indicators of the interventions are not known. They are also not quantified due to its complex nature. An integrated framework to evaluate the attractiveness and impacts of any intervention in the cities and urban areas does not exist [7]. One of the major issues is non-existence of a mechanism to evaluate the level of attractiveness of a city. Interventions are not being spearheaded by a program to enhance certain variables and decrease the others to achieve the desired results.

The main objective of the study was to contribute to urban development process by establishing an evaluation system based on certain agreed upon criteria for evaluation of attractiveness of cities and urban. Therefore, distinctive objectives were placed for this research as following,

- Development of an applied definition for attractiveness of cities and urban areas
- Development of a framework to measure the attractiveness of cities and urban areas in quantifiable terms.

---

## 2. Approach and methodology

This chapter focuses on the methodology adopted to propose the definition of the attractiveness and development of the evaluation framework. This consists of two types of surveys namely the field work and the surveys

### 2.1. Field Work

A firsthand information has been gathered by making site visits to different parts of the city which has been in focus for the recent urban regeneration/beautification projects in the last ten years. The sites were examined keenly in terms of attractiveness interacting with the local residents and communities. While interviewing citizens, huge trust deficits were identified between the citizens and the authorities. Most of the people were of the opinion that the Government has not taken them on board. Citizens' requirements are not taken into consideration while planning to invest funds in the urban regeneration or beautification programs. In response to certain queries, they opted that any intervention in the built environment will be useless until and unless all stakeholders are taken in to confidence and ownership is established.

### 2.2. Development of the Questionnaire and Hierarchy

A fundamental hierarchy of attractiveness of cities and urban areas and a questionnaire was developed on the bases of literature review. These were shared with people from different professional backgrounds to critically analyze it and responses were incorporated from time to time in its contents. Various relevant Government departments and private sector were involved in the process. Reports and policies relevant to the research question were studied and critically discussed with representatives of those departments in order to fully understand their stance on urban renewal and regeneration of our cities.

Firstly, the list of factors was identified for developing a framework. The identified factors were then categorized into three or four levels of hierarchy i.e. Goal, Factors, Sub-factors and sub-sub-factors [8].

In the next step each level of hierarchy was evaluated separately to give relative importance to factors in the hierarchy. This step involves pairwise comparisons on a numerical scale by the respondents. These subjective judgments and personal preferences were translated into numerical values which were then analyzed by putting it into matrix and ranking it.

### 2.3. Survey and Procedures

The purpose of the survey was to determine the priorities and subjectivity of parties interested in the attractiveness of cities and urban areas [9]. It was designed to gather the opinions / judgments of various interest groups in the form of a relative comparison of different pairs of ingredients and factors. Stakeholder priorities are expressed as the weight assigned by the person to the components and factors of attractiveness. Interested persons were contacted via email, seminars, institutions and social contacts. In order to facilitate the answers, participants were provided with an electronic version and a printout of the survey. The answers obtained in the printed version have been transformed into an electronic format to ensure uniformity of the data set.

Four attributes of respondents (interest groups) were used to analyze the prioritization process for different groups. The attributes were organizational connections of the workforce (Academia, Public Sector, Practitioners and Social Sector).

**2.4. Inputs form Expert Stake holders**

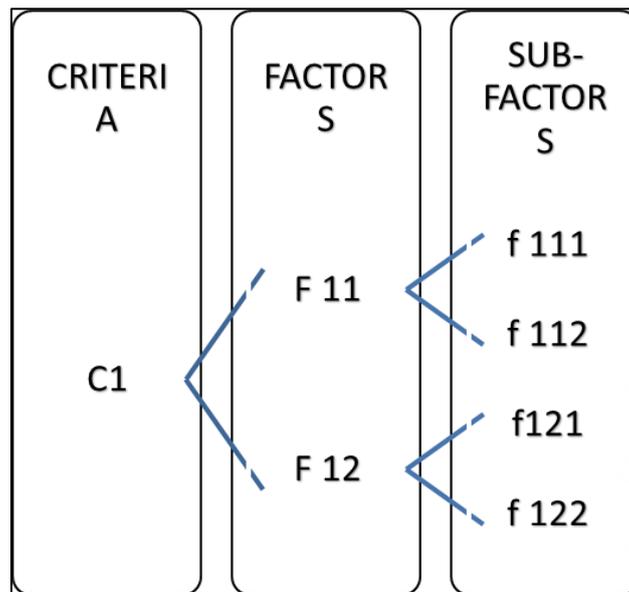
This definition was placed in front of expert stakeholders in a round table conference to get their input. The observations and recommendations of the stakeholders were incorporated in the definitions and improved definitions was generated. The nature of the subject was more complex and multidisciplinary therefore it was divided into factors and sub factors for better understanding and elaboration[10].

**2.5. Participants**

Participants of the expert stakeholder workshop were invited from varied background covering all the areas identified in the first part. There were experts from environment, social sector, economy, urban planning & design and Architecture. Most of the participants were been part of research at their respective organizations. The group comprised of private as well as public sector employee from development authorities to educational institutions. These groups of respondents comprised of people from varied professional and social backgrounds. Selection of people has been done on random bases to get diversity in the results. The respondent expert stakeholders were categorized into the following four groups.

**2.6. Workshop**

After the formal inauguration of the workshop and their introduction, the participants were divided into groups. They were presented with the background of the research and problems. Proposed definition of Attractiveness of cities and urban areas as presented for comments and discussions. The deliberations were very fruitful and interesting. The author reached to each group to facilitate the group activity and shared his research findings with the participants. The group leaders were requested to comment on the proposed definitions in light of their group discussions. The responses were recorded on the forms already provided to the participants as well as audio were also recorded.



**Figure 1** Schematic of hierarchy

Components already proposed in the proposed definition i.e. aesthetics, environmental comfort, social structure and economic stability were agreed upon all the participants [8]. The workshop participants were asked to do the pairwise comparison of the above-mentioned components to find out their relative priorities. Attractiveness of cities and urban areas is a multi-criteria phenomenon; therefore, a multi-criteria analysis technique Analytical Hierarchical Process (AHP) was used for conducting data analysis[11]. It is a most widely accepted technique of decision making and has been tested by thousands of researchers. It has Broad set of applications i.e. it can be used for a variety of decision-making problems. AHP is easy to use as it incorporates pair wise comparison method and is specifically designed for the evaluation of multiple Criteria thus giving consistent outcomes as shown in the Figure 1 [8].

### **3. Results and Discussions**

#### **3.1. Identification of Stakeholders**

These groups of respondents comprised of people from varied professional and social backgrounds. Selection of people has been done on random bases to get diversity in the results. The respondent expert stakeholders were categorized into the following four groups.

##### *3.1.1. Aesthetics Stakeholders*

People included in this stakeholder group includes architects, planners and specialists who were involved in the urban renewal projects in and around the country, they have been part of the academia at the national and international level. The group also included people form professional practice in public and private sectors.

##### *3.1.2. Environmental Stakeholders*

The environmental stakeholders are from the academia and practice of environmental sciences and design. These people have been part of the either evaluations of environmental impact assessments at various organization or practicing environmental design at their design studios.

##### *3.1.3. Social Stakeholders*

This group constituted of people from different social groups, i.e. politicians, social workers and mobilizers, community developers, traders and senior citizens.

##### *3.1.4. Economic Stakeholders*

The group of stakeholders contained representative from the economics sector. This included chartered accountants, hospitality services, businessmen and tour operators.

The stakeholder perspective in the whole system of urban renewal projects (city beautification) is of utmost importance but unfortunately it has never been integrated into the system at a satisfactory level. The stakeholders' subjectivities and priorities has not been transformed into a database or any other tool for reference. No data is available for comparisons with the results of this study.

#### **3.2. The Process**

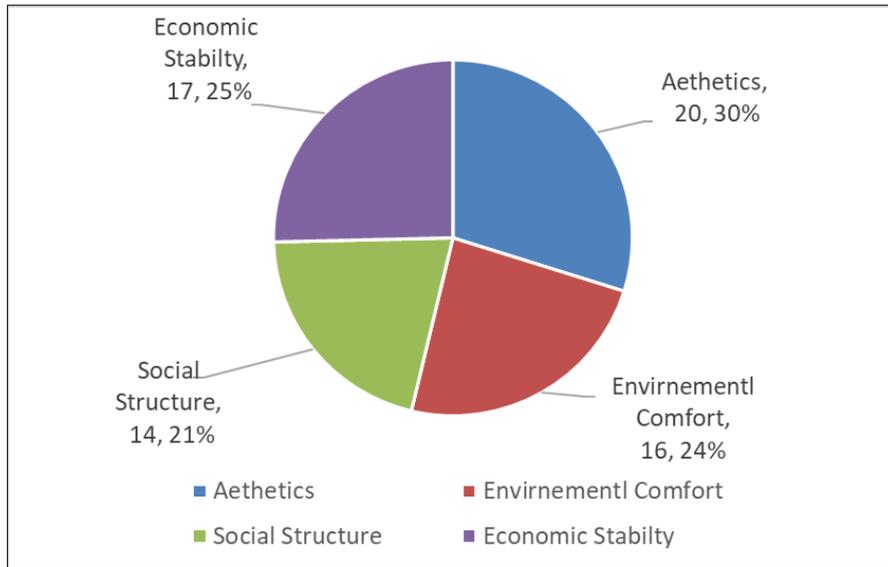
As mentioned earlier the stakeholders were selected randomly to collect the data through the paper-based survey forms. These documents were presented to the stakeholders with brief descriptions of the primary components of the attractiveness of cities and urban areas [12]. Every respondent was asked to make a number of pairwise comparisons between four components and also between the factors and sub factors of these components. Keeping in view the nature of complexity of the definition of attractiveness and the multi criteria affecting its manifestation, Analytical Hierarchal Process (AHP) has been selected to analyze and provide different statuses to different components based on the given priorities by the respondents. The priorities/weights projected by this process are amount of stakeholder's subjectivities.

After asking for their personal credentials, the stakeholder was asked to provide information about their previous experience and related organizations. They were also requested to place themselves in the given categories of respondents based on their area of expertise i.e. aesthetics, environment, social and economy.

#### **3.3. Results**

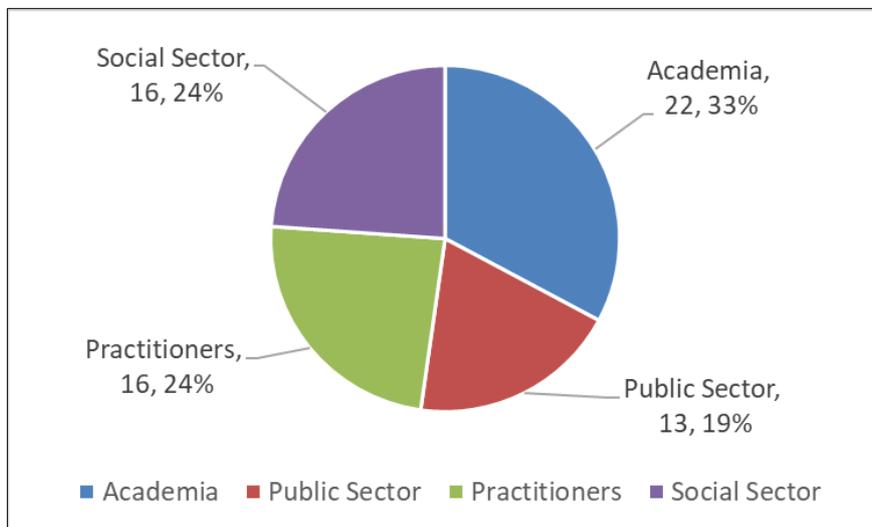
The survey was conducted with over 120 individuals from varied professional background. They were contacted in equal proportion; however, response rate was not similar. Presence of respondents from all four groups was almost similar. Over 55% of the total participants responded to the questionnaire.

The results in the Figure 2 shows the percentage of the respondents from various groups.



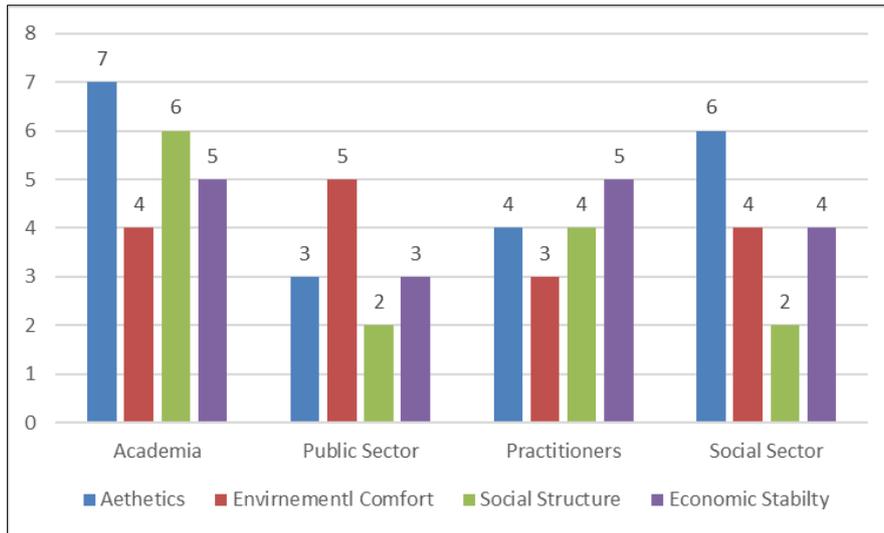
**Figure 2** Percentage of respondents from different groups

Percentage of respondents on the on their organizational background is provided in the following pie chart shown in the Figure 3.



**Figure 3** Percentage of respondents on the on their organizational background

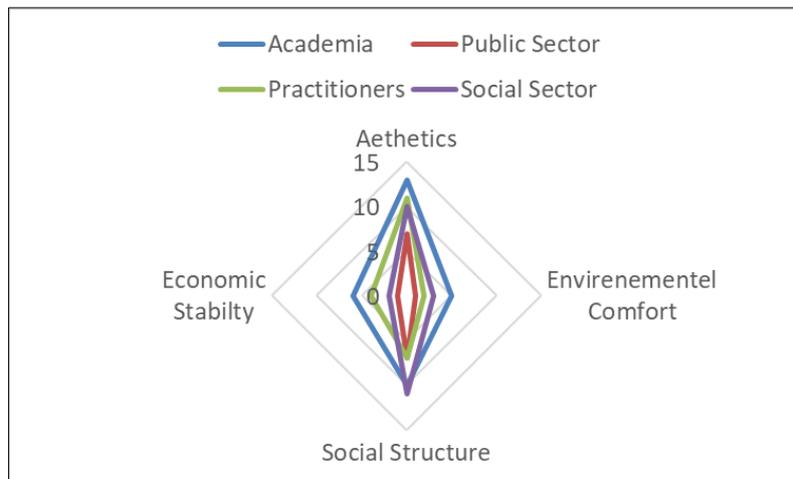
Number of respondents in each group showing their organizational affiliations is Presented in the following Figure 4.



**Figure 4** Number of respondents in each group showing their organizational affiliations

### 3.4. Weights for the Components

Weights of different components of attractiveness of cities and urban areas proposed by the respondents' groups are averaged and presented the Figure 5.



**Figure 5** Average weights of the components based on the stakeholder groups

The comparison shows that aesthetics and social structure has been more important components in the opinion of the stakeholders in comparison to the economic stability and environmental comfort in the context of cities and urban areas attractiveness.

Weights for the factors and sub factors were also calculated on the procedures already discussed in the preceding paragraphs for the components. However, it has been observed that weightage of the sub factors will be taken as equal to get clear results in application.

### 3.5. Applied Frame work

The applied formwork as shown in the Table 1 which is constituted of all the hierarchical components, factor and sub factors to evaluate the cities and urban areas attractiveness. The weight derived from the data collected has been placed in it to benchmark all of them.

**Table 1** Applied Framework to evaluate the attractiveness of cities and urban areas

Goal	Components (c)	Weights (Wc)	Factors (F)	Weights (WF)	Sub-Factors (f)	Weights (Wf)	Sf status	Attractiveness Score	Component Attractiveness results	Conclusion
1	2	3	4	5	6	7	8	9=(8*7)/100	10	11
To Evaluate Attractiveness of Cities and Urban Areas	Aesthetics	41	Architecture	13	Proportions of Building forms	3.25	St111	S111	S144 Σ S1	More Attractive/less Attractive/ Not Attractive
					Scale of building in relation to human scale	3.25	St112	S112		
					Colors Combination	3.25	St113	S113		
					Visual Balance of the Sky line	3.25	St114	S114		
			landscape	8	Trees, Plants	2	St121	S121		
					Flowers	2	St122	S122		
					Water Bodies	2	St123	S123		
					Parks	2	St124	S124		
			streetscape	9	Roads, Street	2.25	St131	S131		
					Furniture	2.25	St132	S132		
	Signage & Skyline	2.25			St133	S133				
	Artwork	2.25			St134	S134				
	Cultural Heritage	11	Preserved /Protected Archeology	2.75	St141	S141				
			History/ Museums	2.75	St142	S142				
			local Crafts/Hand-made Promotion	2.75	St143	S143				
			Cultural Culinary/ Cuisine/Music/	2.75	St144	S144				
	Environmental	11	Air Quality	4	Air Quality Index/Air Pollution	1	St211	S211		
					Air Movement	1	St212	S212		
					Odor/Fragrance/ Bad smell	1	St213	S213		

Eco Social Structure	13	Temperature	2	Humidity/Water bodies/Fountains/ Dehumidifiers	1	St214	S214	S244 $\Sigma$ S1		
				Open Spaces between blocks and buildings	0.5	St221	S221			
				Green facades	0.5	St222	S222			
				Green Roof, green ground cover/ cool pavements	0.5	St223	S223			
				Shading Systems/Trees /Screens	0.5	St224	S224			
				Noise Pollution	3	Noise Buffers	0.75		St231	S231
						sound Absorbent Surfaces	0.75		St232	S232
						Urban Acoustics Designs/Fountains/Water falls	0.75		St233	S233
						Traffic noise	0.75		St234	S234
				Brightness	2	Sunlight	0.5		St241	S241
						Glare	0.5		St242	S242
						Reflective index	0.5		St243	S243
						Solar Angles	0.5		St244	S244
		35	Urban Nodes	8	Open Spaces	2	St311	S311	S344 $\Sigma$ S1	
					Accessibility	2	St312	S312		
					Urban Night Life	2	St313	S313		
					Community Centers	2	St314	S314		
			Neighbourhood	9	Health Care	2.25	St321	S321		
					Education	2.25	St322	S322		
					Market Place	2.25	St323	S323		
Sports Facilities	2.25				St324	S324				
Proximity	8		Workplace	2	St331	S331				
			Housing	2	St332	S332				
			Recreational Facilities	2	St333	S333				
			Entertainment	2	St334	S334				
Urban	10	Water Supply	2.25	St341	S341					
		Drainage and Sewerage	2.25	St342	S342					
		Roads, Street	2.25	St343	S343					
		Mass Transit	2.25	St344	S344					
13	3	Museums/Art galleries	0.75	St411	S411					

			Guided Tours	0.75	St412	S412	$\sum S1$	
			Hotels	0.75	St413	S413		
			Crafts	0.75	St414	S414		
		Retail	2	Industrial Shopping	0.5	St421		S421
				Cultural Shopping	0.5	St422		S422
				Grocery Shopping	0.5	St423		S423
				Street Shopping	0.5	St424		S424
		Industry	3	Heavy Industry	0.75	St431		S431
				Clean Industry	0.75	St432		S432
				Service Industry	0.75	St433		S433
				Smart Industries	0.75	St434		S434
		Hospitality	5	Local Cuisine	1.25	St441		S441
				Fast Foods	1.25	St442		S442
				Traditional Foods	1.25	St443	S443	
				Fine Dining	1.25	St444	S444	

Column 1 of the framework defines the objective as "Evaluation of the attractiveness of cities and urban areas", related to the evaluation of the components (or subsystems) presented in column 2. These components are based on related factors (column). 4) and each factor consists of a specific number of sub-factors (column 6). Columns 3, 5 and 7 indicate the weight of each element (in the same series). Field evaluation begins by examining sub-factors at the bottom of the hierarchy. The status of the subfactors in column 8 is identical to that of the day of the exam - from zero to 100%, where the zero functionality represents the absolute or absolute functionality of the subfactor and 100% the ideal conditions. The attractiveness score for each sub-factor is then calculated as the product of the weight and status of this sub-factor (column 9). The results in column 10 aggregate the score of all subfactors for each component to determine its contribution to attractiveness. Overall attractiveness is then evaluated by summing all values.

This framework would need inputs form the surveyors to evaluate attractiveness of any city.

#### 4. Conclusions

- Aesthetics plays a key role in providing identity and sense of space to any city and urban areas according to the majority of practitioners (Table 9). The overall perception is created thought the architectural vocabulary/style and its implementation. Secondly, urban landscape provides attraction coupled with climatic benefits for instance shading under sun, cold breeze, eye catching colors of foliage are few of them. Roads, street, pathways and all means of accessibility are other features of the city and urban areas which makes it attractive or not.
- Most of our societies follow a social structure that is deep rooted in the culture of the people of those areas according to the social sector respondents (Table 9). It is manifested in their daily life and controls most of their decisions. This social structure is an unwritten contract of living in harmony with each other. Strong political leadership can also emerge from strong social cohesion of societies. Receptive and welcoming social structure has been pointed out in this study to be a strong component which helps in creating the perception of attractiveness.
- In the modern age, environment has been damaged by mankind in such a bad manner that it has become irrevocable. The research found that environmental comfort also plays a key role in creating perception of attractiveness of cities.
- Most of our societies follow a social structure that is deep rooted in the culture of the people of those areas. It is manifested in their daily life and controls most of their decisions. This social structure is an unwritten contract of living in harmony with each other. Strong political leadership can also emerge from strong social cohesion of

societies. Receptive and welcoming social structure has been pointed out in this study to be a strong component which helps in creating the perception of attractiveness.

- Economy is the back bone of a society, competing in the modern world without economic stability could be a utopia. Making urban areas and cities appealing to the visitors as well as its residents is impossible. This research finds out that there are instances where a lot of international loans were being spent to make our cities beautiful but all in vain. The projects could not succeed because of unsustainable economy. Economic stability of the overall economy as well as financial wellbeing of the residents of a city play a major role in creating better perception about the cities' attractiveness.

---

## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

---

## References

- [1] Sarkar, C., et al., Exploring associations between urban green, street design and walking: Results from the Greater London boroughs. 2015. **143**: p. 112-125.
- [2] Chan, A., et al., City image: city branding and city identity strategies. 2021. **10**: p. 330-341.
- [3] Herget, J., et al., City branding and its economic impacts on tourism. 2015. **8(1)**: p. 119.
- [4] Bond, M.J.B.F., The hidden ways that architecture affects how you feel. 2017. **5**.
- [5] AYZAZ, M., *ruI=\ffirs*.
- [6] Sinkienė, J., S.J.P.p. Kromalcas, and administration, Concept, directions and practice of city attractiveness improvement. 2010. **31(1)**: p. 147-154.
- [7] Karlsson, S. and M. Nilsson, What makes a city centre attractive from a consumer perspective?: A comparison between residents and visitors of Kristianstad city centre. 2017.
- [8] Aslam, M.S., Sustainability of community-based drinking water systems in developing countries. 2013: McGill University (Canada).
- [9] Yilmaz, A. and D.S. Gunay. Urban tourism and its contribution to economic and image regeneration. in Proceedings of the 1st International International Interdisciplinary Social Inquiry Conference, Bursa, Turkey. 2012.
- [10] Fok, K.W.K. and W.W.Y.J.J.o.e.m. Law, City re-imagined: Multi-stakeholder study on branding Hong Kong as a city of greenery. 2018. **206**: p. 1039-1051.
- [11] Lu, S., W. Zhu, and J.J.C.I.i.T. Wei, Assessing the impacts of tourism events on city development in China: A perspective of event system. 2020. **23(12)**: p. 1528-1541.
- [12] Ezmale, S.J.E.i.s., STRATEGIES FOR ENHANCING ATTRACTIVENESS OF THE CITIES IN LATGALE REGION. 2012(6).