

Deriving a Methodology to Evaluate Urban Areas on the Basis of Happiness Index - A Case Study in Urban Mobility of Kochi Corporation Area

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Abstract: *Happy city is a concept of a city where residents can experience joy, wellbeing and overall sense of happiness. Mental health problems are becoming more prevalent among urban residents every day. One of the reasons is that the city does not offer the facilities required for people to be happy. The study includes understanding the concept of happy city and analyzing the factors affecting the quality of life in an urban setup. The various case examples of cities such as Bhutan, and Finland where its citizens experience higher levels of happiness are studied in detail to identify the parameters. Also deriving a methodology for accessing urban areas on the basis of Happiness Index, with Kochi city as a case example. Finally, understanding the strategies for improving the quality of life in cities, for achieving the ideal happy city through improved urban infrastructure, much healthy community gathering spaces to enhance emotional bonding, better connectivity through efficient transport system, providing walk-able neighbourhood, geriatric-friendly and disabled-friendly infrastructure, services and amenities. Thus, planning for the society rather than the conventional planning method of orderly placement of elements of an urban area. Hence Happy city is the perfect city of the future.*

Keywords: Happy city, Disabled-friendly, urban setup, Quality of life

1. Introduction

According to the idea of "happy city" the most crucial infrastructure in any city is its emotional infrastructure. Through urban planning, the idea of a city as a joyful place for its residents to live is made possible, regardless of their age, gender, race, economic situation, and disabilities [1]. Cities are physical constructions, but when they can provide for their citizens, they transform into happy cities where residents feel more safe, comfortable and at ease in an environment that is intellectually stimulating [2]. The concept of happy cities is gaining popularity all over the world. The aim of such a city is to experience joy, wellbeing and sense of happiness among its residents. This idea gives locals a positive impression of their community and encourages them to visit or decide to go back there after having the same experience [3].

The Sustainable Development Solutions Network (SDSN) is a non-profit organization established by the UN to pursue the goals of sustainable development in 2012. This organisation publishes the World Happiness Report (WHR). It is a significant assessment of the global state of happiness. This report includes a variety of rankings and articles on national happiness. As of March 2022, Finland had won the title of world's happiest country for five consecutive times. The UN General Assembly adopted the resolution 65/309, "Happiness: Towards a Holistic Definition of Development," in July 2011 requesting nations to conduct polls on the happiness of its citizens and use these results to modify public policy. The first High Level Meeting of UN, entitled "Well-being and Happiness," was held on 2nd April, 2012, and was presided over by Secretary of the UN and Prime Minister of Bhutan.

On 1st of April, 2012, the first report of World Happiness was released. It gave a general summary of the level of happiness throughout the world. The 2nd report got published in 2013 and following that the 3rd report was published in 2015. Since 2016, it has been made available annually on March 20 which is the UN's International Day of Happiness. Understanding and assessing the variables affecting urban living quality is another aspect of the study. Additionally, there are modifications that can be made to enhance urban happiness among the residents, which is accomplished by studying the best practices for creating the ideal happy city. Planning for society is thus preferred to the traditional planning approach of arranging urban area components in a systematic manner. Happy City should therefore be supported because it is the ideal city of the future.

1.1 Need and feasibility of the study

A city that prioritises community wellbeing over a smart city built on resources, infrastructure, technology, and government has become the necessity of the hour. This idea developed based on how different urban planners approached and worked for creating the perfect city, as Charles Montgomery proposed in his book "The Happy City." Happy City places a high value on its citizens' emotional health, making a city where people may live authentically. Other urban planning ideas like "green city," "smart city," are related to "happy city." As a result, it is essential to the development of society and the economy.

It is long past time to put improved planning ideas into practice in a developing nation like India. Thejas Jagannath claims that "Far too many citizens suffer from mental health concerns because the city does not offer the resources essential for people to be happy" in her blog post [4]. Currently majority people live in cities than in rural areas for

the first time in history. Additionally, the UN estimates that by 2050, an additional 2.5 billion people will reside in cities. (Urbanism and the Pursuit of Happiness, 2019).

Compared to people who live outside the city, urban residents have a 20% increased chance of acquiring depression. In the meantime, people who live in cities are 77% more likely than those who live in rural areas to have psychosis, a severe psychiatric disease characterized by hallucinations, delusions, paranoia, and disordered thought. Additionally, those who live in cities have a 21% higher risk of getting generalised anxiety disorder [5]. Numerous elements of the urban environment enhance the chance of acquiring these issues, according to epidemiological studies. Some of these draw attention to possible issues with the built environment, like restricted access to green spaces and significant levels of noise and air pollution. Others are social in nature and include social injustices, criminality, and loneliness.

It's crucial to understand that the elements of the urban environment that raise the risk of mental illness are not inherent nor unavoidable features of urban life. Instead, they are the outcome of subpar design, administration, and planning, and they might be undone. When people have access to high-quality housing and green spaces, the prevalence of depression in urban settings is reduced. (King's College London, n.d.).

India lacks well-maintained public squares and central public places that encourage cohesion among its population, and its pedestrian routes are in poor condition and do not enable continuous walkability. Another problem that affects the standard of living in urban areas is the existing level of social and spatial inequality. Absence of a public bicycle hub, lack of a sports facility, lack of pollution control, lack of support for small and cottage industries, and a subpar waste and water management system are all examples of poorly constructed public transportation systems. Therefore, India has the potential to become a happy city by focusing on these aspects.

1.2 Criteria for selection of study area

Kochi smart city ABD area was selected for the study as many characteristics of smart city leads to happy city. The top city among the ten joined to the Center's Smart Cities Mission in 2016 is Kochi. The average literacy rate in Kochi City is 96.29%, higher than the urban literacy rate in Kerala State (95.11%).

According to the Ministry of Housing and Urban Affairs' Ease of Living Index for 2020, Kochi is ranked 39th out of all cities having a population under a million. The city received 61.39 out of a possible 100 points to win the 'governance' component of the Municipal Performance Index. In terms of total municipal performance, it is placed 12. The city's quality of life, economic viability, sustainability, and resident perception have all been evaluated in the study. According to district-level per capita gross state value, Kochi ranks first and has a per capita income growth rate that is 7.9% higher than the state growth

rate. All these records suggest that the city has the potential to develop into a happy city.

Unplanned urban growth is hurting Kochi's residents' quality of life. According to the 2011 Human Development Report, the urbanisation rate is 68% and the population growth rate is 5.69%.

According to the District Mental Health Programme (DMHP), moderate to severe depression affects roughly 25% of the population. Thus, it is a necessity to plan for the wellbeing of its citizens.

1.3 Significance of happy city

The happy city ranking is based on the self-reports of city residents about how they personally assess the quality of their lives, as opposed to a list of variables that researchers believe to be significant. By emancipating respondents in this way, it allows individuals to decide for themselves which factors observable or invisible to researchers matter most to them. It may be argued that this bottom-up strategy offers the people a direct voice for selecting what is important for the wellbeing of city people.

Importantly, using the results of well-being surveys is a method that enables us to gain a more comprehensive understanding of the factors that influence happiness. In actuality, using well-being surveys makes it possible to determine the relative significance of various domains in determining well-being, giving politicians evidence-based advice on how to maximize the well-being of their communities.

1.4 Research question

- 1) Can happiness index be used as a tool to evaluate the existing urban planning scenario of Kochi corporation area?
- 2) Can a higher happiness index be achieved through a better planning of urban areas?

1.5 Aim

To understand the scope of happiness Index in effective planning of urban areas.

1.6 Objectives

- 1) To study and analyze the concept of Happy Cities.
- 2) To identify parameters which help in deriving the Happiness Index.
- 3) To derive a methodology for evaluating planning of urban areas in terms of Happiness Index.
- 4) To interpret urban mobility of Kochi corporation area in terms of Happiness Index.

1.7 Methodology

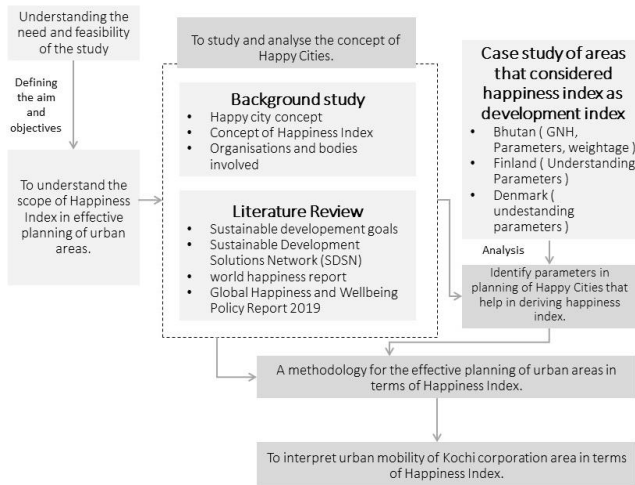


Figure 1: Methodology for The Study

2. Literature Review

2.1 Happiness index

This Index is a thorough survey modality that evaluates resilience, sustainability, and happiness. Community organizers, researchers, and anyone looking to use a well-being statistics and index can use this index as a survey tool. This tool can be used to gauge happiness with one's life and living circumstances. [6].

This index assesses life satisfaction, happiness, and other happiness-related factors, such as psychological well-being, physical health, social support, community, time balance, arts, culture, education government and employment. (Happiness Alliance, 2014).

2.2 Global happiness and wellbeing policy report (GHWPR).

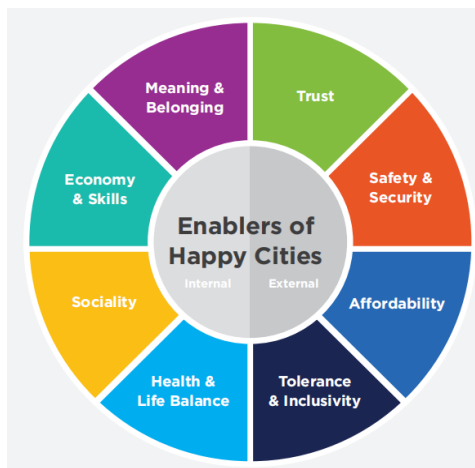


Figure 2: Enablers of Happy cities

Source: Global Happiness and Wellbeing Policy Report, 2019

The Global Happiness Council (GHC) prepares the 2019 GHWPR. This paper offers data and policy suggestions on the most effective ways to foster happiness and wellbeing.

According to this study, the first group of topics examines how happiness is related to city design, namely the physical elements such as, Urban design & place making, Nature, Mobility, and Conceptual elements such as Sustainability & Partnership, Culture and Service. The city's enablers of happiness, which are frequently linked to the results, are described in the second set.

3. Case Study

Finland, Chandigarh and Bhutan were studied. According to the World Happiness Report, Finland has been named the happiest country in the world for the fifth year in a row. The nine parameters that were considered in Finland to attain happiness index included sustainable development, social justice, global prosperity, clean city, good government, freedom, trust, equality, work-life balance and education. Chandigarh is considered to be the happiest city of India, according to a study commissioned by LG and conducted by IMRB International. The study considered factors such as Pursuit, Purpose, Pleasure, Passion and Context, which relates to the surrounding socioeconomic situation.

The Kingdom of Bhutan invented the idea of gross national happiness (GNH) in response to efforts to utilise Gross National Product as the primary aim and indicator for the government. The GNHI is used in Bhutan to calculate GNH. The Bhutanese Gross National Happiness Commission, ensures that all development programmes and plans are developed and implemented in accordance with GNH principles.

The four pillars of GNH are ecological sustainability, preservation and promotion culture, good governance and equality, sustainability and equitable socio-economic development. To clarify the idea of GNH, these four pillars contain nine domains as its subgroups.

Additionally, there are 33 indicators throughout these nine categories. There are many variables in each of the 33 variables that make up the gross national happiness index. Each of these factors contributes to the citizens' increased wellbeing and consequently higher level of living.

According to the legal definition found in Article 9 of the Bhutanese Constitution from 2008, the State is mandated to "promote those conditions that will permit the achievement of Gross National Happiness" (Karma Ura et al, 2013).

Weighting and Methodology

All of the domains have an equal index weightage. In order to determine if a person is happy, the index used two different types of thresholds:

- Sufficiency threshold (ST)
- Happiness threshold (HT)

ST indicate the minimum amount required for a person to enjoy sufficiency in the thirty-three indicators. The HT aims to provide a response to the query, "What percentage of the thirty-three indicators must a human being attain in order to be understood as happy"?

Table 1: Gross National Happiness

Domain	Indicators	Weight	Domain	Indicators	Weight
Psychological wellbeing	Life satisfaction	33%	Time use	Work	50%
	Positive emotions	17%		Sleep	50%
	Negative emotions	17%		Political participation	40%
Health	Spirituality	33%	Good governance	Services	40%
	Self reported health	10%		Government performance	10%
	Healthy days	30%		Fundamental rights	10%
	Disability	30%		Donation (time & money)	30%
Education	Mental health	30%	Community vitality	Safety	30%
	Literacy	30%		Community relationship	20%
	Schooling	30%		Family	20%
	Knowledge	20%		Wildlife damage	40%
Cultural diversity & resilience	Value	20%	Ecological diversity & resilience	Urban issues	40%
	Zorig chusum skills (Thirteen arts & crafts)	30%		Responsibility towards environment	10%
	Cultural participation	30%		Ecological issues	10%
	Speak native language	20%	Living standard	Per capita income	33%
	Driglam Namzha (Etiquette)	20%		Assets	33%
				Housing	33%

Source: Gross National Happiness USA

4. Data Analysis and Inference

The field survey results in the selected ward Vyttila, of Kochi corporation area is discussed to identify how the enablers of happy city as mentioned by the Global Happiness and Wellbeing Policy Report 2019, impact the happiness of the users of the mobility services and providing appropriate inferences based on the analysis.

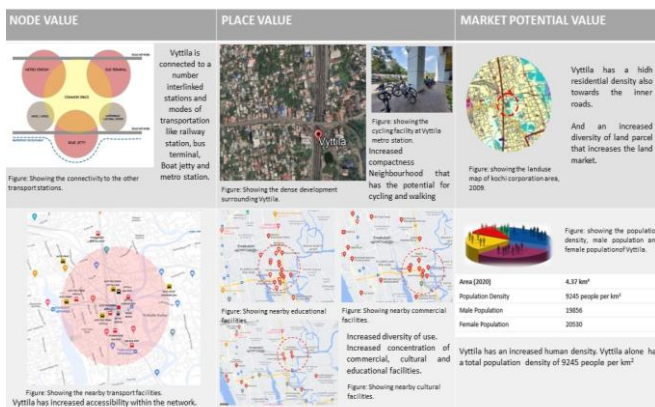


Figure 3: Analysing Vyttila for place value, node value and market potential value.

Source: Author generated, based on primary survey, 2022



Figure 4: Parameters considered for survey, 2022.

The enablers of happy city are broadly classified into two categories being external factors and internal factors, external factors include trust, safety and security, affordability, tolerance and inclusivity and internal factors include meaning and belonging, economy and skills and sociality. The indicators were derived based on these enablers of happy city, and each indicators considered were given equal weightage.

Table 2: Classification based on age

Category	Age- Group
Young Men	16- 24
Young Women	16- 24
Middle aged Men	25- 54
Middle aged women	25-54
Senior Citizen	Above 60

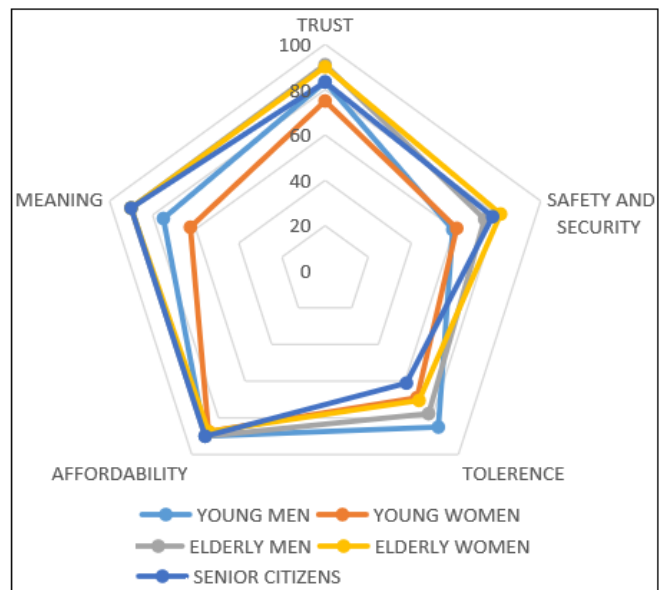


Figure 5: Happiness index as calculated based on primary survey, 2022

The happiness based on the Definition of groups having Sufficiency in, was adopted from the Bhutan's happiness indication methodology. The study was conducted age specific and gender specific. The young women were found to be least happy in trusting the transportation and related infrastructure, more people trusted the metro facility compared to other modes of transportation due to the high security that the metro system provides. The road-based transportation facilities at times failed to reach on time due to increased traffic at peak hours.

The younger generation also felt less safety, especially near the hub where it lacks traffic signal. Lack of well-maintained cycle track also lessened their happiness. The poor condition of the foot path reduced the happiness of the users all alike. The people were alike happy about the affordability of the transportation services. Senior citizens were unhappy regarding the less geriatric friendly furniture and facilities and increased time taken for crossing. The younger generation's happiness was hindered by lack of parking facilities available along the main roads.

5. Conclusion

Happiness in a city through urban planning depends on various physical factors like urban design, nature, and mobility. Conceptual indicators like service quality, culture and sustainability and partnership. The happiness within a city can be redefined by modifying external and internal enablers of happy cities which includes trust, safety and trust, safety and security, affordability, tolerance and inclusivity, meaning and belonging, economy and skills and sociality. Urban happiness is region specific they can vary depending on the culture and lifestyle of the region, the happiness of a commercial city can vary from the happiness of an administrative city. Urban happiness is people specific the happiness of the people belonging to the young men and women category can be different form that of the older generation. Their happiness in an urban area can be hindered by certain factors like lack of geriatric friendly design, which might not be a hindrance to the happiness of the young population. Mobility is one of the most important physical factors that influences the day-to-day activities of the people, and is also used alike by all regard less of their age, gender, and other similar conditions.

Kochi is one of the fastest growing cities with high economic growth and supports a large number of working populations, who are the regular users of mobility services. Kochi also ranks 45th in the ease of living index, thus there is an opportunity to make the city more livable and happier. Vyttila in addition had higher potential for development into a happy city as the region has higher place value, node value and market potential value. Thus, this prototype developed in deriving the happiness index can be applied to other areas as well.

The proposals are provided for the areas studies for improving the happiness index based on the primary studies conducted. Each proposal aims to improve the happiness index by improving the facilities that need maintenance and implementing facilities that are lacking.

References

- [1] Huemer, A. (2019, May 18). "Happy City: Transforming Our Lives Through Urban Design" a Book Review by Andreas Huemer. IGLUS. Retrieved October 3, 2022,
- [2] Jain, T. K. (2019, January 12). Concept of Happy City: The Smart Cities of the Future. SSRN. Retrieved October 3, 2022,
- [3] SEPE, M. (2017). The role of public space to achive urban happiness. IRISS C.N.R, 96.
- [4] Jagannath, T. (2019, December 5). What does India need to do to create more happy cities? Planning Tank. Retrieved October 5, 2022,
- [5] Mechelli, A. (n.d.). Cities increase your risk of depression, anxiety and psychosis – but bring mental health benefits too. The Conversation.
- [6] Musikanski, L., Cloutier, S., Bejarano, E., Briggs, D., Colbert, J., Strasser, G., & Russell, S. (2017, January 1).

Happiness Index Methodology. Journal of Social Change, 9(1).

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