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Ministry of Higher Education and Scientific Research

University of M'sila



Urban Techniques Management Institute

Department of City Management

Dissertation submitted in Partial Fulfillment of the Requirements for Master's

Degree in City Management

Specialty: City Management

Title of Master's Dissertation:

Happy city

A THREE-CRITERIA URBAN HAPPINESS ACCOUNTING
MODEL FOR THE CITY (MOBILITY, SERVICES, AND
SOCIAL LIFE)

CASE STUDY: M'SILA CITY

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2023/2024

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

----- In The Name Of Allah, The Most Gracious, The Most Merciful -----



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Office Word

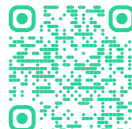
الحمد لله على إحسانه والشكر له على توفيقه. ونشهد أن لا إله إلا الله وحده لا شريك له. تعظيماً لشأنه. ونشهد أن سيدنا ونبينا محمد عبده ورسوله الداعي إلى رضوانه. وصلى الله وسلم عليه وعلى آله وصحبه ومن تبعهم بإحسان إلى يوم الدين

We extend our sincere thanks and gratitude for your invaluable generosity. You have been a true support in our journey, and your constant presence and unlimited support have been a fundamental building block in our success. We are deeply grateful for every moment you spent helping and encouraging us to achieve our goals. Thank you for the generosity you have shown and for bearing the burden of challenges. The presence of individuals like you during the completion of this work gave us the confidence and inspiration to constantly grow and develop. We hope to always live up to your expectations and proudly deserve the great support you have given us.

Special thanks

We extend our sincere thanks and deep gratitude to Professors **Saad Taibaoui** and **Asma Djaidja** for their invaluable guidance and support throughout this journey. They have been a true pillar and a fundamental contribution to our success. Their wise guidance and valuable advice have been the cornerstone that shaped our success. We are particularly grateful for their continuous presence and priceless, unlimited support. Thank you both for every effort you've made and for every encouragement you've provided to help us achieve our goals.

Jadallah Mohamedine



Zhadbane Amina

Medication

With all my love, I dedicate my success and graduation...

To the one who adorned my name with the most beautiful titles, who supported me boundlessly and gave without expecting anything in return. To the one who taught me that life is a struggle, and its weapon is knowledge and education. My first supporter in my journey, my strength, and my refuge after God, my pride and honor
(my father).

To the one who turned hardships into prayers, to the tender heart and the candle that was the secret of my strength and success in dark nights, my paradise **(my mother)**, paradise lies beneath her feet. Her heart embraced me before her hands did, and she made things easy for me.

To the one who supported me in my weakness, who cleared the obstacles from my path, planting confidence and determination inside me. To the one whom God blessed with me as a brother, and became the best support, my brother **(Abd El Rahman)**.

To those through whom I tasted the sweetness of beautiful life, who changed my concepts of love, friendship, and support in my life, my sisters **(Maryam and Kawthar)**.

To the companions of the first step and the step before the last, to those who were like a rainy cloud during the lean years, I am grateful.

Zahara Amina

Medication

*To....Who left before we realized our dreams,
To....Every night is long on my own,
To....Every tear has fallen,
To....the void I've left in my life.
Give this work to your memory,
Hoping you're proud of what I got,
Despite the pain,
Despite the separation.....*

Judith M. Mohamedine

Happy City



Abstract

The urban landscape is in a constant state of flux, as millions of individuals around the world choose to reside in cities that offer a wide range of lifestyles and prospects. As the concentration of people in urban areas continues to grow, it will become necessary to study and understand the factors that contribute to the overall satisfaction and well-being of city dwellers. This serves as the motivation behind this master's thesis titled "The Happy City: The Three Conditions for Urban Happiness". The primary objective of this thesis is to delve into the concept of urban happiness and provide a comprehensive understanding of the basic criteria that promote the creation of a joyful city. It studies the personal experiences of individuals living in diverse urban environments and analyzes the elements that increase happiness and satisfaction. The research methodology used in this study combines an extensive review of relevant theoretical frameworks with analysis of empirical data and the results of a survey conducted among city residents. By examining quantitative and qualitative aspects, this topic seeks to provide a holistic perspective on the topic. Through this research, three basic criteria emerged as influential factors in determining urban happiness: access to basic services, social life, and mobility. These criteria are selected based on their importance in previous studies and their relevance to the overall well-being of urban residents. The thesis will delve into each criterion in great detail, exploring the specific elements that contribute to urban happiness within each category. By identifying the factors that promote urban happiness, policymakers and city planners can make informed decisions to create cities that are more livable and more enjoyable for their residents.

keywords

AHP • Analytic Hierarchy Process • Happiness • Happy City
Mobility • Satisfaction • Services • Social life • SWB
Quality of life • Questionnaires • Urban Happiness • Well-being





المدينة السعيدة

الملخص

يشهد المشهد الحضري حالة تغير مستمر، حيث يختار ملايين الأفراد حول العالم العيش في المدن التي تقدم مجموعة واسعة من أنماط الحياة والفرص. ومع استمرار تزايد تركيز الناس في المناطق الحضرية، سيصبح من الضروري دراسة وفهم العوامل التي تسهم في الرضا العام ورفاهية سكان المدن. هذا هو الدافع وراء هذه الأطروحة التي بعنوان "المدينة السعيدة: الشروط الثلاثة للسعادة الحضرية". الهدف الرئيسي من هذه الأطروحة هو التعمق في مفهوم السعادة الحضرية وتقديم فهم شامل للمعايير الأساسية التي تعزز إنشاء مدينة سعيدة. تدرس الأطروحة التجارب الشخصية للأفراد الذين يعيشون في بيئات حضرية متنوعة وتحلل العناصر التي تزيد من السعادة والرضا. المنهجية البحثية المستخدمة في هذه الدراسة تجمع بين مراجعة شاملة للأطر النظرية ذات الصلة وتحليل البيانات التجريبية ونتائج استطلاع أجري بين سكان المدينة. من خلال فحص الجوانب الكمية والنوعية، تسعى هذه الدراسة إلى تقديم منظور شامل حول الموضوع. من خلال هذا البحث، ظهرت ثلاثة معايير أساسية كعوامل مؤثرة في تحديد السعادة الحضرية: الوصول إلى الخدمات الأساسية، الحياة الاجتماعية، والتنقل. تم اختيار هذه المعايير بناءً على أهميتها في الدراسات السابقة وصلتها بالرفاهية العامة لسكان المدن. ستتعمق الأطروحة في كل معيار بالتفصيل، مستكشفة العناصر المحددة التي تسهم في السعادة الحضرية ضمن كل فئة. من خلال تحديد العوامل التي تعزز السعادة الحضرية، يمكن لصناع السياسات والمخططين الحضريين اتخاذ قرارات مستنيرة لإنشاء مدن أكثر قابلية للعيش وأكثر متعة لسكانها.

الكلمات المفتاحية

- AHP
- عملية التحليل الهرمي
- السعادة
- المدينة السعيدة
- التنقل
- الرضا
- الخدمات
- الحياة الاجتماعية
- الرفاهية الذاتية
- جودة الحياة
- الاستبيانات
- السعادة الحضرية
- الرفاهية



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THE THEORETICAL PART



I - Introduction:

The urban character is constantly evolving around the world, and as the concentration of urban populations increases, it becomes interesting to observe how the relationships between urban spaces and human interactions affect the well-being of urban populations. Because the well-being of urban dwellers is critical to maximizing their potential in dealing with the pressures of daily life of busy city life (Houlden et al. ,2018).

Humanity's concentration in cities is paradoxical. On the one hand, urban centres provide opportunities for growth, creativity and communication. On the other hand, they contain pressures such as traffic congestion, noise pollution and others, which can erode well-being. In addition to growing urban populations around the world, understanding the factors that contribute to urban happiness becomes critical.

How does the city's features, availability of services and the vitality of our social relations affect our satisfaction? And how do human interactions within these spaces constitute our emotional landscape? Questions highlight the complex relationship between urban environments and human well-being, and focus on a holistic approach to urban planning and design that prioritizes urban people's health and happiness.

When we and you delve into the nuances of urban happiness through this thesis, we realize that it's not just an aesthetic or economic matter. Urban happiness depends on a delicate balance between physical infrastructure, social relations and an individual's ability to use these spaces easily. By providing urban spaces that care for people's well-being, we will enable them to thrive amid the hustle and bustle of modern life.

This letter is therefore interested in studying the concept of "urban happiness" and what makes cities happy through the "Happy City" project launched by the Utopia Office for Urban Studies. This project aims to examine aspects of happiness in urban life through a set of standards. These standards aim to assess the level of urban happiness by understanding users' satisfaction with urban spaces and the diversity of their services, as well as social interactions.

The aim of this project is to conduct qualitative research to understand how to achieve happiness in an urban environment and enhance the quality of life in cities. By analysing these factors and criteria, the project can provide valuable recommendations for developing cities and improving the quality of life of its residents, contributing to building happier and more prosperous communities.

The background, objectives, and approaches used in this research project will therefore be discussed in this chapter.

II - Background of the study :

Significant interest in recent years has seen a marked increase in understanding the impact of our surroundings on our feelings and psychological state. Many studies in various scientific and research fields have sought to identify and analyze indicators and objective and subjective factors of happiness in urban life. In order to gain a deeper understanding of the study's purpose, it shows the importance of reviewing past research on the topic and how its perception has evolved and changed over time.

One method used to measure happiness is based on objective indicators, such as personal income, employment, level of education, health care and access to basic services. These objective measures are seen as a means of quantifying the living conditions and resources available in urban areas, enabling researchers to analyse the impact of these factors on individuals' quality of life.

David Smith's 1973 study was the first to use an objective approach to measuring quality of life and happiness in cities. This study was largely based on publicly available information, including income and welfare payments, diets and other social services provisions, education, health and crime. This study discussed the importance of these factors in determining general levels of well-being (Gert, 1974).

In addition, other research has been attempted to develop a comprehensive conceptual, theoretical, and empirical framework for analysing regional variation in quality of life and happiness. Among these researchers, Rosen (1974), Cropper (1981), Graves (1982) and Roback (1982) who studied the relationship between wages, rents and quality of life indicators can be mentioned.

Subjective measures of happiness are centered on evaluating the levels of satisfaction and well-being that individuals personally express. These measures are usually based on surveys and questionnaires that aim to gather individuals' opinions about their happiness and satisfaction with life directly. For example, several studies conducted by Dolan et al., 2007; Frey & Stutzer, 2002; Layard, 2005) used questions like "Are you so happy, so happy, or so unhappy?" to measure self-happiness (Dimitris Ballas , 2013).

This method of assessing happiness and self-satisfaction through questionnaires and surveys is highly reliable in the field of psychology and sociology. These tools help researchers better understand individuals' experiences and feelings about their lives.

This method of assessing happiness and self-satisfaction through questionnaires and surveys is highly reliable in the field of psychology and sociology. These tools help researchers better understand individuals' experiences and feelings about their lives.

The development of statistical methodological frameworks for understanding self-happiness was the objective of several quantitative studies. These studies focus on the analysis of demographic and socio-economic factors affecting the level of self-well-being and happiness. Most of these studies aim to determine the relationship between individual demographic factors such as age and gender, and socio-economic factors such as education, health, individual and family income, and how they affect happiness and satisfaction. This allows us to disseminate the results more widely than the population, make predictions, conclusions and test hypotheses. Using statistical tools and techniques, insights into self-happiness and its underlying factors can be revealed.

The renewed interest in the field of quality-of-life research and happiness reflects a shift in the approach used to study these phenomena. Most studies have previously been based on "objective" measures, but with the emergence of the new "science of happiness", attention is moving towards exploring the possibility of measuring happiness and identifying the factors that affect it more comprehensively.

This emerging interdisciplinary field is an opportunity for sociologists and behaviors to add a new space dimension, where they can identify the characteristics and factors of cities and regions that affect self-happiness and measures of well-being. Although there has been limited research in this area so far, the increasing recognition of the importance of these studies suggests that there are considerable possibilities for developing knowledge in this area.

The main issue of possible interdisciplinary research aimed at better understanding what makes the city happy was identified. By integrating successful urban and regional research with self-measurements of happiness and well-being, quality of life can be improved.

III - Statement of the problem :

By looking at the changing indicators and criteria mentioned in the previous title, it can be noted that determining urban happiness is a difficult and complex task. Happiness depends on a variety of factors, such as access to basic services, facilities and infrastructure, as well as social dimensions. Given the diversity of urban dwellers' needs and preferences, it is difficult to balance these different factors.

Urban happiness is increasingly complicated as cities evolve and demand for people's needs increases. Cities are constantly evolving and expanding, thus increasing pressure on urban planners and policymakers to meet the population's growing needs. But this must be done in a way that balances an appropriate lifestyle with responsibility for equitable development. This poses a critical challenge for urban planners, policymakers and decision makers. The following questions may therefore be asked:

- **The main question:**

How much does the city of Msila meet the requirements of urban happiness for its residents?

- **Sub-questions:**

What are the factors contributing to the happiness of M'sila city's residents?

IV - Objectives of the study:

This thesis aims to do a qualitative study in order to explore the concept of urban happiness and provide a comprehensive understanding of the main criteria that contribute to the creation of a happy city. It also aims to analyze the impact of the urban environment on the psychological and physical well-being of the population, by addressing a range of personal experiences of individuals in living in urban environments, and analyzing urban elements that enhance their sense of happiness and satisfaction. How a variety of factors contribute to shaping their overall sense of satisfaction while in cities through the following points:

- Understanding the elements of inner-city happiness
- Study the relationship between urban elements, social interactions and happiness
- Identification of the set of criteria used in the urban happiness assessment process
- Measuring the level of happiness within the city

V - Research Methodology :

The research methodology used in this study is based on a variety of interrelated steps. First, the literature on the subject and the relevant theoretical frameworks are reviewed, where previous research and published scientific articles in this area are studied. The data available and the collection of information relating to the city in question are then analysed with a view to understanding the current situation.

In addition, a survey of the population is conducted in the city of Msila, where their opinions and observations on the subject are collected. These results are analyzed and interpreted thoroughly and rationally, with the aim of reaching a comprehensive and integrated vision on the topic discussed in the study. Building on these multiple methods, the objectives of the study are achieved and provide a deep and comprehensive understanding of the topic studied.



LITERATURE REVIEW

Introduction

At the end of the twentieth century, human happiness and vitality were discussed as an important issue. Because one of the most important problems of societies is neglecting happiness and vitality, and thus increasing mental illness, such as anxiety and depression, especially in cities, the main basis for research in our study is human beings, understood as residents, employees, parents, children and a widely understood member of society. Urbanization and increased social issues endanger the mental and social well-being of citizens and determine the need to address the happiness of citizens on the basis of appropriate indicators in this city.

Cities are complex and dynamic entities. It is also a decade in spatial economic, social and political networks. They are central to many of the concerns underlying the current discussions, particularly on sustainable development and urban happiness. The purpose of this chapter is to review and pass through various previous studies on the quality of life in the city and to roll over the concept of urban happiness. From being a philosophical idea to a set of measurable and applicable criteria and indicators, more generally, determining the role that indicators of urban happiness can play in helping to improve urban planning and management.

This chapter delves deeply into a comprehensive examination of the notion of happiness from several angles. Using a variety of social studies carried out in recent decades, we seek to shed light on its importance and the numerous elements impacting it in urban settings. Our goal is to offer a thorough grasp of the nuances related to happiness in urban settings, therefore illuminating strategies for promoting personal and collective well-being in the face of contemporary urban issues.

II - Terminology Overview

1. City management and planning:

More than half of the world's population already lives in cities, and it is expected that another 2.5 billion people will move to urban areas by 2050. The way we build new cities will impact numerous critical issues, ranging from climate change to economic vitality, for our well-being and sense of connection. Many countries are witnessing a shift in traditional methods of governing and managing local governments, with innovations in democratic and administrative practices now proliferating.

The concept of urban management has its roots in local governance reform and the geographical concepts of "urban management" in the 1970s, but it primarily flourished as an institutional concept since the mid-1980s when it was advocated for by several major international donors (Devas, N 1993).

Urban planning can be considered in terms of three criteria which define the existence of a discipline (Daniel Pinson, 2004). These criteria are:

- First, a specific set of knowledge and skills.
- Second, a training system that facilitates the transmission of this knowledge and skills.
- Third, a professional organization that engages in applying this knowledge and ensuring its recognition.

Based on these three criteria, urban planning is considered a branch of the field of urban issues just as medicine lies within this domain.

Until recently, urban planners often assumed the role of a "supporting tool" for professionals and researchers in various fields. Today, this situation is beginning to change as the status of cities in national regional planning and international agreements has undergone a radical transformation. Many disciplines now provide invaluable contributions to enhancing information and knowledge about cities, highlighting the uniqueness of urban agglomerations and the constraints imposed on urban planning in practical application.

Urban planning is more than just designing city projects; it's about ensuring cities prosper and promote urban happiness. It involves regulation, infrastructure development, and creating efficient transport systems. Urban planning isn't just about how a city looks; it's about making sure it grows sustainably and people can live well in it, enjoying a high quality of life and well-being.

2- Quality of life

QOL may be defined as subjective well-being. Recognizing the subjectivity of QOL is a key to understanding this construct. QOL reflects the difference, the gap, between the hopes and expectations of a person and their present experience. Human adaptation is such that life expectations are usually adjusted so as to lie within the realm of what the individual perceives to be possible. This enables people who have difficult life circumstances to maintain a reasonable QOL (Janssen, 2007).

The meaning of the phrase quality of life differs a good deal as it is variously used but, in general, it is intended to refer to either the conditions of the environment in which people live, (air and water pollution, or poor housing, for example), or to some attribute of people themselves (such as health or educational achievement) (Pacione, 1982; Hills, 1995; Benzeval et al., 1995). Central to this developing interest in quality of life is research into the relationship between people and their everyday urban environments (Pacione, 2003).

The well-being or quality of life of a population is an important concern also in economics, urbanism and political science. It is measured by build, social and economic environment. There are many components to well-being. A large part is standard of living, the amount of money and access to goods and services that a person has; these numbers are fairly easily measured. Others like freedom, happiness, art, environmental health, and innovation are far harder to measure.

Debate on quality of life is millennia-old, with Aristotle giving it much thought in his *Nicomachean Ethics* and eventually settling on the notion of *eudaimonia*, a Greek term often translated as happiness, as central. The neologism *liveability* (or *livability*), from the adjective *liv(e)able*, is an abstract noun now often applied to the built environment or a town or city, meaning its overall contribution to the quality of life of inhabitants.

- this Table presents the concepts identified in the literature related to urban QoL, including objective and subjective dimensions.

Tab.01-Main urban QoL concepts and its objective and subjective dimensions

Main Urban QoL Concepts	
Urban quality of life	Material and non-material aspects Individual and collective life conditions Objective and subjective dimension
Objective dimension of urban QoL	Exogenous facts of a person's life External conditions Objective measurement/universal metrics
Subjective dimension of urban QoL	Endogenous individuals' perceptions Internal mechanisms Subjective measurement/people's satisfaction

Source: Josana Wesz et al., *Urban Quality of Life: A Systematic Literature Review*

Based on the above, as shown in (Table No 01) we considers that urban QoL is multidimensional, and that it includes material, non-material, individual and collective life conditions, the objective dimension of living conditions (indicators based on universal metrics), and the subjective dimension of these living conditions (people's satisfaction).

The well-being or quality of life of the population is also an important concern in the economy, age and political sciences. They are measured by construction and socio-economic environment. There are many components to well-being. Much of it relates to the standard of living, amount of money and access to goods and services owned by a person; these figures are fairly easily measured. Other things such as freedom, happiness, art, environmental health and innovation are much more difficult to measure.

But to test the idea of our thesis, the idea of using science to show how to define the standards of happiness within the city, what we mean by happiness, and how to measure it, how can a road, a bus, a park or a building contribute to the joyous feelings of man? To answer these questions, we first have to go beyond politics and philosophy in order to find a map of the components of happiness. (Montgomery Charles ,2013)

Elements such as walkability, access to green spaces, social relationships, and a sense of community significantly contribute to people's levels of happiness. Studies indicate that happiness is not merely an individual pursuit but is greatly influenced by the quality of the social and material environment in which people live.

The elements of wellbeing



Happy City

▲ Fig.01 - "The wheel of wellbeing" by (CHARLES MONTGOMERY) This figure outlines nine key elements crucial for urban wellbeing

4- Urban happiness:

Happiness is a broad and complex concept, with multiple definitions in cognitive sciences. These definitions have been developed based on human perceptions of this concept at different periods. Many studies have been conducted on defining happiness in various fields of study such as philosophy, economics, and especially the social sciences. Happiness is defined in this context as "the degree to which an individual judges the overall quality of their life positively," or simply: the extent to which one enjoys the life they lead. In this way, happiness belongs to a broader category of self-assessments of life, commonly referred to as "subjective well-being" (SWB) or "life satisfaction."

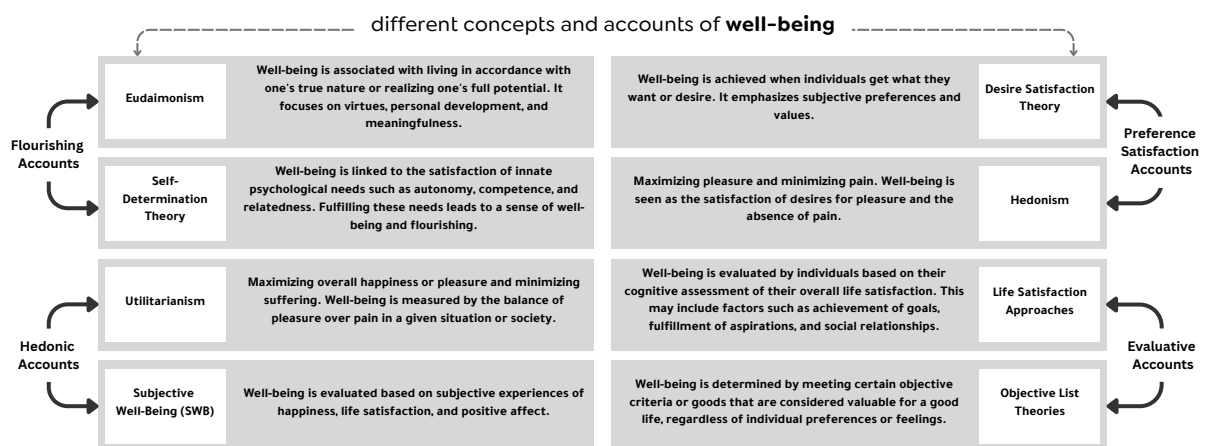
There has been a long, successful history and lively debates regarding the 'objective' measurement of happiness in cities. All studies reviewed in the previous section are underpinned - at least implicitly - by the assumption that objectively measured variables (such as life expectancy, education attainment, number of amenities or disamenities) are correlated with how the inhabitants of the cities subjectively feel about their quality of their life. However, it has often been argued that any such correlation would vary and would depend on individual characteristics (e.g. gender, income, and position in the life cycle) as well as area, or contextual and cultural characteristics. In addition, any such correlation would depend on the ways in which subjective QoL and well-being are measured. The importance of exploring this issue has long been recognized and also highlighted in the work of Smith (1973), who argued that there is a need to compare objective measures to social attitude and other subjective measures.

Amongst the first attempts to actually examine whether there is any association is the work of Schneider (1975), who investigated correlations between objective indicators such as those proposed by Smith with subjective measures of QoL (such as 'life satisfaction', 'satisfaction with job', and 'satisfaction with housing') in a selection of large American cities and found that:

"... no relationship exists between the level of well being found in a city as measured by a wide range of commonly used objective social indicators and the quality of life subjectively experienced by individuals in that city. Cities that are most well off as measured by objective indicators are not necessarily the same cities in which people are subjectively the most satisfied with their life situations. Conversely, cities that are worst off objectively are not necessarily the same cities where subjective dissatisfaction is highest. Moreover, while considerable differences in objective conditions between cities are readily apparent, city residence does not appear to be of any great importance in structuring individual evaluations of life experiences." (Schneider, 1975).

Nevertheless, there is on-going debate on the most appropriate and valid measure of well-being and it has long been argued that there are different types and dimensions of happiness. For instance, Dolan et al. (2006) present detailed discussions of different concepts and accounts of well-being and classify them in the following categories: "Preference satisfaction" based on the fulfilment of desires; "Flourishing accounts", based on the satisfaction of certain psychological needs; "Hedonic accounts" based on how people feel and "Evaluative accounts" based on how people think they feel.

- The various concepts and interpretations of well-being can be classified into different categories based on the underlying principles that prioritize them:



▲ Fig. 02 - A multi-level modelling approach to the analysis of happiness and well-being (Source: Dimitris Ballas. Happy places or happy people?)

As urban planners, we interchangeably use the terms happiness, life satisfaction, and well-being (subjective) as their dimensions overlap, as evidenced in much literature (Andrews and Withey 1976; Diener 2000; Argyle 1987; Lu 2001; Eastlin 2003; McGillivray and Clarke 2006). However, in the field of urban development, it has only recently gained attention. Happiness is defined in the data and measurement section. Wirth, who used the term "urban discomfort" in his influential article "Urbanism as a Way of Life," referred to general dissatisfaction and unhappiness, hence we use the happiness scale to study urban discomfort, as Fisher did (1972, 1973). In other words, we interpret the early 20th-century focus on "urban discomfort" as "urban misery or discontent" in the 21st century.

Urban happiness expresses the concept that gives a positive perception of a place for individuals living in it, motivating them to spend a long time there and/or choose to live there again with the same experience. While defining a happy place is entirely achievable, it is challenging to ascertain how to attain it.

Urban studies agree that the goal of any urban project intervention is to alter the experience of that space for its inhabitants, designing urban environments to be increasingly distinctive in an attempt to create unforgettable sensory experiences and provide happiness to its users. Even people visiting ordinary urban centers can describe a series of emotional experiences related to those places through the five senses. These experiences can vary from one place to another.

5- Factors and Indicators of Urban Happiness:

Urban happiness - a term familiar to most urban planners and designers. This term is coined to identify urban spaces where we feel joy, contributing to a greater sense of well-being, belonging, and adaptability. But what does urban happiness look and feel like for each of us? Perhaps we've experienced it while traveling, or while in a place we call home, or during an unforgettable event that made the place exceptionally special...

In recent years, there have been numerous attempts to identify, measure, and analyze indicators of happiness in various contexts spanning a wide range of disciplines, from neuroscience and psychology to philosophy and architecture. There are several theories and methods for measuring happiness and well-being. Specifically, happiness questions are increasingly used in population surveys. There is a rapidly growing body of interdisciplinary research on the determinants of happiness and well-being.

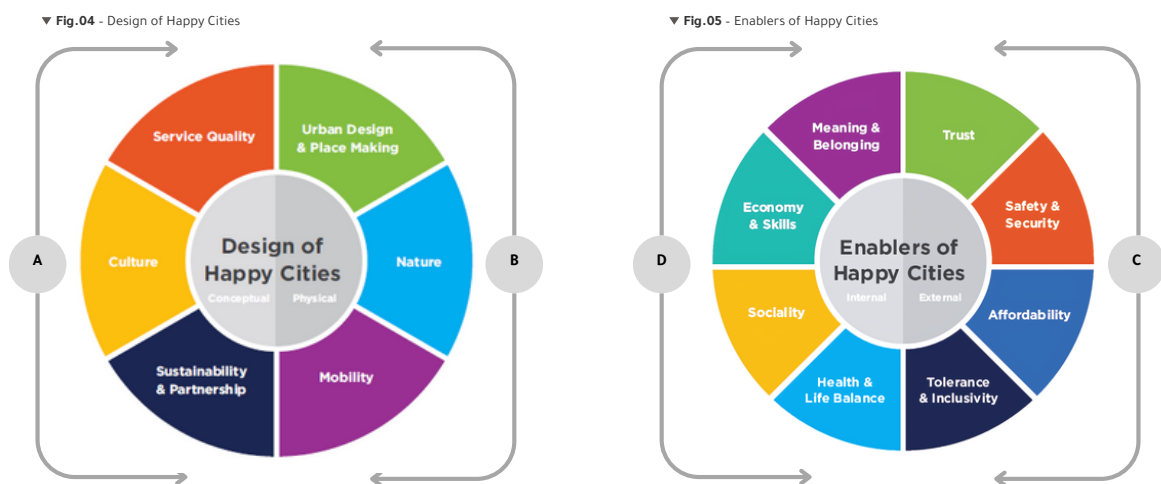
The (Figure No 03) with three crossed circles represents the concept of urban happiness through three interconnected dimensions: thriving, happy, and healthy. Each circle represents one dimension, and the overlapping areas between them illustrate the intersections and relationships between these aspects of urban well-being.



▲ Fig.03 -Interconnected Dimensions of Urban Well-being: Thriving, Happy, and Healthy (Source: CHARLES MONTGOMERY. A recipe for urban happiness)

Design and policy initiatives can enhance health and happiness in urban areas, as shown in (Figure No 04). The first theme (A) focuses on the physical and social fabric of the city, such as streets, piazzas, buildings, cycling routes, and parks that may be seen and touched. On the other hand, the second theme (B) highlights the conceptual aspects, such as city culture, community relationships, and services, which are symbolic and relational despite being concrete.

As for the themes that enable happiness in the city, and are the outcomes of policies and initiative. There are two categories. The themes within the (Figure No 05) category (C) tend not to require any direct input from the residents of the city in order to gain the benefits, and so they might be seen as passive or external to citizens, and are 'about he city'. These include safety (i.e. it's a safe city), tolerance & inclusivity, and affordability. The second group (D) may be seen as active enablers (or 'internal' to the person), and are 'about the person'. These require people to actively engage with them and take self-responsibility in order to gain their benefits, such as sociality, health and life balance.



Source: Aisha Bin Bishr, 2019

- **NOTE:** the themes mentioned above do not have a specific order of importance, nor are they completely separate from each other. Instead, they often overlap and intersect. For example, various initiatives or projects may address multiple themes simultaneously rather than focusing solely on one. This acknowledgment highlights the complexity and interconnectedness of the topics being discussed. In the following chapters, the proposed happiness indicators will be prioritized using appropriate methods and means.

Conclusion

The above brief review of happiness studies discussed some of the key variables that appear to affect subjective happiness and well-being. There is a vast literature in this area and a lot of ongoing research is aimed at further corroborating associations as well as researching possible interactions between variables and additional possible determinants of urban happiness, including commuting time (Stutzer and Frey, 2005), ethnicity (Lu and Gilmour, 2004), environmental factors (Brereton et al., 2008; Ferrer-i-Carbonelli and Gowdy, 2007) and inequality (Alesina et al., 2004; Ballas et al., 2007; Frank, 2007; Wilkinson, 2005). It should be noted that most of these studies make an explicit or implicit assumption that variables that are correlated with wellbeing and happiness are also the causes of urban happiness.



TOOLS AND METHODS & CRITERIA

Introduction

This chapter provides an introduction to the tools and methods used in this research to study the subject of happiness in cities. This chapter is divided into two main sections: section I addresses the tools and methods used in data collection and analysis, and section II addresses the three criteria selected to measure happiness: mobility, services and social life.

In section one, we explore the various tools and methods used for data collection and analysis. The chapter highlights the role of Geographic Information Systems (GIS) and questionnaires. GIS contributed to mapping and performing spatial analysis by integrating location data with a variety of metadata to uncover patterns and relationships within the urban fabric, allowing for an accurate understanding of how different elements interact within the city. The section one also explains the design and deployment of questionnaires, which have been used to collect both quantitative and qualitative data from the residents of M'sila regarding their perspectives on various aspects that influence their happiness.

Additionally, the chapter introduces advanced decision-making methodologies such as the Delphi method and the Analytical Hierarchy Process (AHP). The Delphi method is used to achieve consensus among experts through iterative rounds of questionnaires, refining the criteria and indicators relevant to urban happiness. AHP, on the other hand, is employed to assign relative weights to these criteria and indicators, facilitating a structured decision-making process.

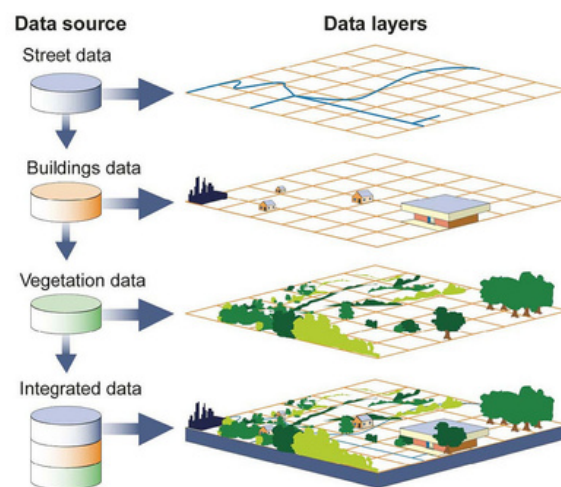
In section two This section is dedicated to defining and justifying the criteria selected to measure happiness in the city. Three core criteria are examined: mobility, services, and social life. Each criterion is precisely defined, and associated indicators are identified to provide a comprehensive framework for evaluation. The theoretical underpinnings and relevant literature for each criterion are presented, offering a robust foundation for the research.

By breaking down the criteria into measurable indicators, the study aims to paint a detailed picture of the factors contributing to the happiness of M'sila residents. Analyzing these criteria through GIS data and questionnaires enables the identification of strengths and areas needing improvement within the city.

I - Tools (Geographic Information Systems (GIS) and questionnaires) :

1- geographic information systems (GIS) :

According to the GIS website, **Esri** is a system that creates, manages, analyses and maps all types of data. GIS connects data to the map, integrating location data (where things are located) with all kinds of metadata (how things look there). This provides the basis for mapping and analysis that is used in science and almost every industry. GIS helps users understand patterns, relationships and geographic context.



▲ Fig.06 - How Geographic Information Systems works (Source: ESRI)

DUEKER also defines it as a special case of information systems containing databases based on the study of spatial distribution activities or targets that can be identified in the spatial ocean, such as points, lines and spaces and GIS processes data related to these points, lines or spaces to retrieve data for analysis and query data through them.

That is, GIS can integrate site-related data anywhere. With data describing that location quantitatively and qualitatively, once all the data required is entered into GIS, individuals can analyze the relationships between the different elements. To produce a variety of individual maps, by the data layers included.

GIS as previously addressed, plays a crucial role in capturing, storing and analysing data on different locations on Earth's surface. By seamlessly integrating this information with digital data from questionnaires and using the hierarchical analysis method, GIS will help us to gain a more comprehensive understanding of available data. This allows us to see, analyse and understand patterns and relationships more effortlessly, ultimately enhancing our ability to draw meaningful conclusions and perform a mapping output client.

2- questionnaires :

The questionnaire is a research tool used to gather information from individuals or groups. The questionnaire includes a set of questions carefully designed to obtain valuable data. The questionnaire is an effective means of collecting data from a large number of participants according to the target group.

Questions in the questionnaire can be open or closed. Open questions allow participants to provide detailed and comprehensive answers, while closed questions allow participants to choose specific answers by the researcher or questionnaire user. Data from the questionnaire can be analyzed in quantitative or qualitative ways, depending on the specific research objectives.

We relied on the questionnaire as a key tool in our study, where the process was divided into two consecutive phases. In the first phase, the questionnaire was directed at professors to assess and select appropriate criteria to be used in the analysis and measurement process. In the second phase, those criteria were converted into specific questions in the questionnaire, with a simple and understandable formulation of the target group of the questioned population.

2-1- Sample Selection Conditions :

In order to maximize the accuracy of the research process during the use of the questionnaire, the set of criteria or conditions agreed upon by many specialists in the scientific research curriculum must be recognized and taken into account in determining the appropriate number of sample individuals. The following are:

- Heterogeneity or heterogeneity of society: The more homogeneous society members are, the more it is necessary to represent society and there is no specific number identifying the members of the sample, but what the researcher deems appropriate and justified.
- The method of research used: surveys need as many members of the community as possible to represent it. Experimental studies in the number of members of the sample depend on the number of experimental and control groups in the study.
- Degree of accuracy required: whenever the decision based on this study is relevant, however accurate it is envisaged, and therefore more members of the sample represented to give the necessary confidence to disseminate the results, the writer (Uma,S,1992,p,35) has provided the following points to determine the size of the sample required:

- 500-30 individual is suitable for most research and studies.
- The number of vocabulary per layer should not be less than 30 in class samples.
- It is preferred that the sample vocabulary should not be less than ten times the number of study variables.
- The sample size may be 20-10 acceptable if the research experimentally and the size of the adjustment and control is high and justified by the researcher.

2-2- Questionnaire for expert professors :

For our reliance on the hierarchical analysis method (AHP) and the Delphi method of determining the importance of urban happiness criterias and indicators. A questionnaire should be directed to expert professors to assess and select appropriate criteria to be used in the analysis and measurement process.

The questionnaire is designed to contain questions that compare criteria and indicators between them based on Saaty digital scale. Data from expert professors were collected and analyzed using Expert Choice software to calculate weights, priorities and the consistency standard.

2-3- Questionnaire for residents of the city of Msila :

To gauge the satisfaction and happiness of the residents of the city of M'sila in their city and after the use of the Delphi style, a set of criteria related to mobility, transportation, services and social life of the city were selected.

These criteria and their indicators were converted into specific questions in the questionnaire, with a simple and understandable formulation of the target group of the questioned population. The questionnaire was distributed to a random sample of the population, and the data were collected and analysed using appropriate statistical methods.

II - Methods (Delphi method, AHP) :

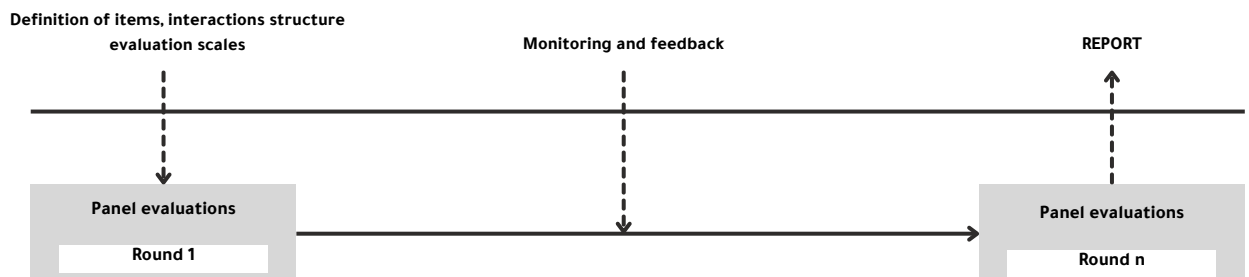
1- Delphi method :

The Delphi technique, sometimes called the Delphi Method, is named after an ancient Greek temple, the Delphi Temple. (Delphi) where "some priests, wise people and the knowledgeable were practicing their attempt to look ahead" and was credited with using them scientifically, orderly and meaningfully at the hands of (Norman Delke and Olafhilmer, 1950).

In the 1950s, the United States Navy continued to operate until 1963, after which it began to proliferate and evolve, and many areas and studies became used, contributing to finding appropriate solutions to many issues and problems through a group of experts and specialists. (S. Dehimi 2019)

Experts will answer questionnaires on the subject to be seen in two or more rounds. After each round, the researcher sends an anonymous summary containing the summary of the experts' expectations of the previous round and the reasons on which their judgments were built. Experts are therefore encouraged to review their previous responses in the light of those from other members of the Committee of Experts. It is believed that during this process the scope of responses will be reduced and the group of experts' views will converge towards the "correct" answer. Finally, the process is stopped at a predetermined "stop standard." (Rowe G, Wright G October 1999) (Figure No. 07)

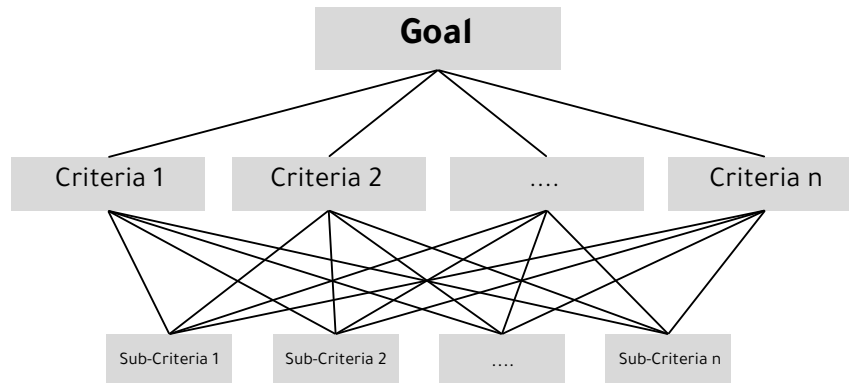
The method is adopted in this thesis to be seen as an effective means of making decisions to a large extent and to reduce the number of criteria to be studied, as it is based on collecting and summarizing the views of a group of experts through a series of questionnaires submitted to them across a certain number of stages. The main objective of this technique is to achieve consensus or reduce differences between experts' views.



▲ Fig. 07 - Delphi method diagram (Source: Prepared by the students)

2 - hierarchical analysis process (AHP) :

The Analytical Hierarchy Process (AHP), proposed by the scientist Sati in the 1970s (Saaty 1979, 1980), a widely used multi-standard decision-making method, has been successfully applied to many practical decision-making problems, and AHP relies on the principle of analyzing the problem to a hierarchy of sub-problems, each of which can be analysed separately (Gang Kou, Daji Ergu, Yi Peng, Yong Shi 2013).



▲ Fig. 08 - The typical hierarchy structure with three levels in the AHP (Source: Gang Kou,Daji Ergu,Yi Peng,Yong Shi 2013)

When using the hierarchical analysis method (AHP) in the decision-making process, it first requires identifying the problem you need to decide on. Thereafter, the decision must be analyzed and divided into a hierarchical structure that demonstrates the relationships between objectives, criteria and alternatives, as they are represented from the top down according to the different levels, namely level I, level II and level III as shown in the figure. The typical steps of the hierarchical analysis method include four basic steps:

1. Define the problem and decompose the problem.
2. Construct a set of pairwise comparison matrices.
3. Weights calculation and prioritization
4. Test the consistency of all comparison matrices.

2-1- Application of the hierarchical analysis process (AHP):

2-1-1- Define the problem and decompose the problem:

The goal is placed at the top of the pyramid and the lower level of the hierarchy is one of the more detailed elements at the top level, the elements must be organized in hierarchical form, where the target is at the top and the criteria are at the next level and alternatives at the base. Criteria can be divided into sub-criteria if necessary.(Figure No. 08)

2-1-2- Define the problem and decompose the problem:

A square matrix should be created for each level in the hierarchy, where the elements are in the rows and columns. Each item should be compared with each other element at the same level (corresponding (Table No 04) stocks express how to compare any degree of relevance of Criteria 1 to Criteria 2 and so on), and mobilize values in the cells.

Tab.02 - Example of comparison matrix

	Criteria 1	Criteria 2	Criteria 3
Criteria 1	1	8 (i,j)	5
Criteria 2	1/8 (j,i)	1	2
Criteria 3	1/5	1/2	1

Source: Prepared by the students

A digital "saaty" scale from 1 to 9 can be used to express the degree of importance or preference between elements (Table No. 03), where 1 means equal importance and 9 means paramount importance. The matrix should be identical, so that the value in the box (i,j) is inverted to the value in the box (j,i) in the following example three criteria were introduced:

Tab.03 - The Saaty's 9-points rating scale

Equal importance	1
Weak importance of one over another	3
Essential or strong importance	5
Demonstrated importance	7
Absolute importance	9
Intermediate values between the two adjacent judgments	2,4,6,8

Source: S. Dehimi 2019

2-1-3- Weights calculation and prioritization:

In the third step, as stated previously, there are more than 20 prioritization methods that can be used to calculate the priority vectors, however, the Eigenvector Method (EM) introduced by Saaty is the most popular one, which has been embedded in AHP Expert Choice Software (Gang Kou, Daji Ergu, Yi Peng, Yong Shi 2013).

2-1-4- Test the consistency of all comparison matrices:

Consistency must be checked to ensure that the values given in conjugal comparisons are consistent and logical. The consistency standard (CR) can be used to measure the degree of consistency, calculated by dividing the consistency index (CI) by a random indicator (RI), a value based on the size of the matrix. CR should be less than 0.1 for values to be acceptable. If the CR is greater than 0.1, the values should be reviewed and the previous steps reinstated.

- Step 1: Calculate the maximum matrix comparing one λ_{max} .
- Step 2: Calculate the **CI** value using the $CI = (\lambda_{max} - n) / (n - 1)$ formula.
- Step 3: Calculate **CR** using the $CR = CI / RI$ formula
- Step 4: Compare the **CR** value with the **0.1** consistency limit to say whether the comparison is consistent.

Tab.04 - Random Consistency Index (RI)

n	1	2	3	4	5	6	7	8	9	10	11	12	...
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.53	...

Source: Gang Kou,Daji Ergu,Yi Peng,Yong Shi 2013

By analysing matrimonial comparisons and calculating weights, the analytical hierarchy process (AHP) enables us to identify weights and criteria and arrange them in a logical and objective manner. We can then recognize each criterion's relevance to the ultimate objective.

3 - Summary of Work Steps :

- Step one: Adopt the Delphi curriculum and identify criteria and indicators through an expert questionnaire and a population questionnaire

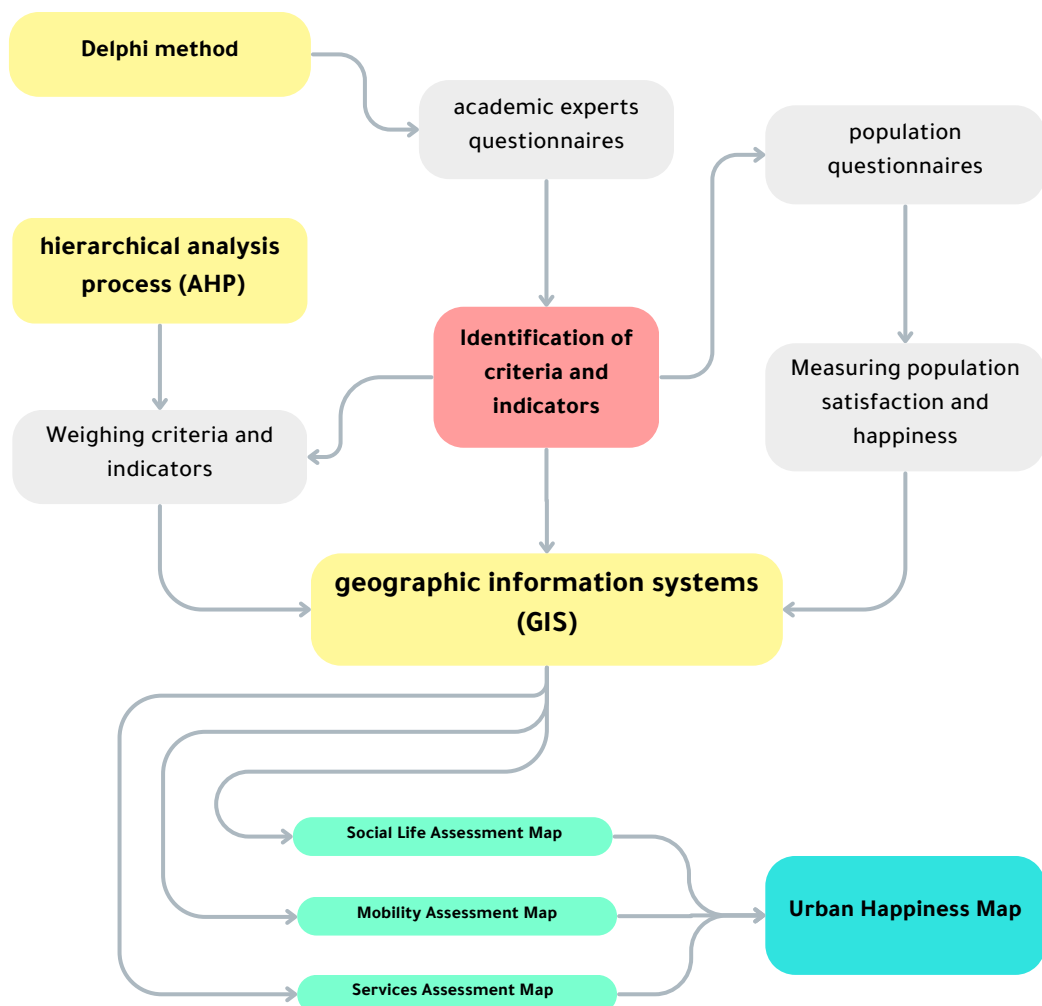
This step begins with the application of the Delphi method, which is a structured communication technique used to gather expert opinions and reach consensus on important criteria and indicators for measuring happiness. This is done through several rounds of questionnaires, where detailed questionnaires are sent to a selected group of academic experts. Through the development of a comprehensive preliminary questionnaire containing a wide range of possible criteria and indicators affecting urban happiness. By means of a specific number of tours, the questionnaire is sent to the experts and their responses are received, and then these responses are analyzed. This process is repeated several times until a collective consensus is reached on the most important criteria and indicators. The population questionnaire was then drawn based on the results of the Delphi curriculum, a population-oriented questionnaire is designed to collect the necessary data on their satisfaction with the different aspects of life in the "City of M'sila."

- Step two: hierarchical analysis process to determine appropriate weights for criteria and indicators

In this step, the hierarchical analysis process is used to determine the relative weights of the criteria and indicators identified by the Delphi method. This tool helps in making decisions by comparing standards even and determining the relative importance of each.

- Step three: Use of geographic information systems for mapping using measurement and analysis results

In this step, GIS is applied to draw and analyze happiness data in the "City of M'sila". This technology helps to visualize results spatially and analyze spatial relationships between different indicators. Spatial data and results from population questionnaires and hierarchical analysis are entered into the GIS system. Can Create spatial maps showing the spatial distribution of happiness in the city, and identify areas that need improvements based on different indicators.



▲ Fig. 09- diagram explaining the working method and the steps taken (Source: Prepared by the students)

I - Criteria and indicators :

1- Definition of criteria :

The concept of "criteria" includes different interpretations, and its meaning depends on the specific context in which it is used. As defined in the **Oxford dictionary**, the criteria is the reference through which something is evaluated and includes aspects such as quality levels and measurement units. Thus, it also plays a role in guiding decision-making processes.

It can be said that the criterias are a set of tools or reference rules that regulate different processes and activities, which serve to measure and evaluate. The criterias are therefore also considered to be broad lines of reference in various areas, including quality control. Understanding the context in which the criteria is applied is essential for its precise interpretation.

2- Definition of indecator :

In our previous statement on the definition of criterias, it was said to include a set of tools and regulations aimed at identifying or structuring certain aspects. In the context of monitoring or evaluation procedures, indicators serve as a model that gives measurements and weights their real value and the tools that are taken into account for measurement. These indicators represent variables that can be observed and measured, providing valuable insights into the subject matter at hand.

II - Happiness criterias and Indicators:

1- Criteria of social life :

people need people, and ways to increase and improve relationships with others. City managers are often reminded that the "city is but its people", and this quote from Shakespeare emphasises the centrality of people's relationship to each other, and that the social fabric makes the city. Therefore, these social relationships are key atomic components at the core of the city, and this sociality must be nurtured. Sociality is the "tendency of groups and persons to develop social links and live in communities...the quality or state of being social" (CollinsDictionary.com)

1-1- Indicators of Social Life

. Safety Index:

Feeling safe and secure is crucial for mental health (Maslow, 1987), and the most dangerous streets in the city are those devoid of people. An important aspect of social interaction is the sense of safety and belonging to a place (Afsharkohan and Yazdi, 2013).

- **social participation Index:**

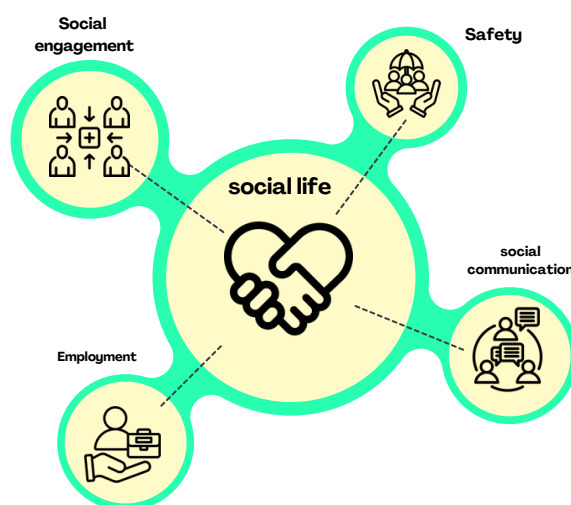
This indicator was included due to its extreme importance by highlighting the importance of social comparison of consumption patterns, whereas more recently Runciman (1966) argued that people compare themselves most with their “near equals”. It has long been argued therefore that people tend to compare themselves to their colleagues, friends, neighbours or so called “reference groups” and this in turn has an impact on urban happiness and health (Layard, 2005).

- **community engagement Index:**

Social activities within the residential neighborhood strengthen social relationships between people and are the most powerful driver of health and well-being – in cities and across nations. While the pleasure we experience after buying a new car or house wears off quickly, the satisfaction that comes with social bonds is long-lasting. People with strong, positive relationships are happier. They are healthier. They are more productive at work.

- **Employment Index:**

One of the variables for which there is very strong and consistent evidence of negative association with happiness is unemployment (Clark and Oswald, 1994; Clark, 2003). In particular, it has been suggested that being in a state of unemployment has severe and long lasting negative impacts on happiness. These impacts cannot be explained only in terms of loss of income and there are significant non-pecuniary effects (Clark and Oswald, 1994; Clark, 2003; Theodosiou, 1998; Winkelmann and Winkelmann, 1998). Another variable that is often found to be positively associated with happiness and is also related to employment status and income is social class and occupational status (Marmot, 2006; Ballas et al., 2007). However, this variable seems to have a higher impact on happiness in countries that are highly stratified and have high levels of income inequality (Argyle, 1999).



▲ Fig. 10- Indicators of Social Life (Source: Prepared by the students)

2- Criteria of Mobility:

An important aspect of city living is being able to get around, and congestion has a negative influence on well-being. Also, there is no doubt of the stress caused by long commute times, which are certainly negatively associated with well-being (Stutzer & Frey, 2008). Conversely, active travel can improve physical health and bring psychological benefits (Martin, Goryakin, & Suhrcke, 2014).

2-1- Indicators of Mobility:

• **Comfort Index:**

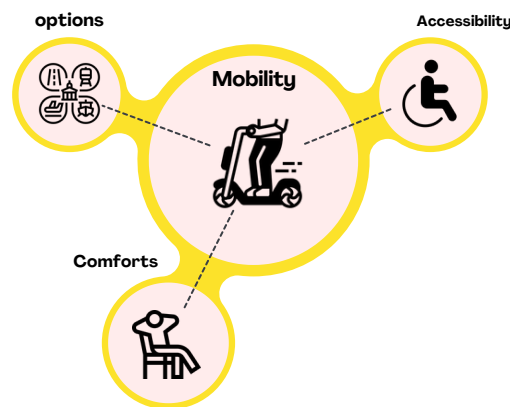
The key factors in transportation are availability, comfort, and suitability (TRB, 2013). The presence of clean and attractive public transport stations and vehicles works to improve the transportation image in the city, even among non-users. On the other hand, a dirty or vandalized station or vehicle can raise questions in the minds of non-users about the comfort and quality of the transportation service, as well as other aspects of the service, such as maintenance. The emphasis on such a detailed need results from the care for the well-being of the inhabitants

• **Accessibility Index:**

Accessibility refers to equal access regardless of physical abilities to services and opportunities: basic local services such as shops, schools, and health centers; recreational opportunities and open spaces; public transportation; job opportunities. Accessibility ensures a form of balance among all parts of the city: all neighborhoods must be accessible, meaning they should be connected in some way to other neighborhoods in the city. Today, a neighborhood that is inaccessible is one that suffers from exclusion (Ouzir M. 2020), with significant economic and social ramifications. By enhancing accessibility to urban areas, we ensure spatial dispersion of mobility. On the other hand, supporting and enhancing the sense of satisfaction and well-being among residents from various sectors.

• **Options Index:**

Choices related to public transportation options are choices related to the future of the city (Lloyd Wright, 2003). Transportation choices largely depend on where we live within the city. Urban and suburban communities generally offer a more diverse range of services than rural areas. Recognizing and connecting with alternative options will ensure constant accessibility to desired destinations, thereby enhancing urban well-being and residents' satisfaction during daily commutes.



▲ Fig. 11 - Indicators of Mobility (Source: Prepared by the students)

3- Criteria of Services:

The quality of urban services significantly influences residents' happiness and well-being (Diener et al., 1999). Access to essential services such as healthcare, education, and security plays a pivotal role in shaping individuals' experiences and perceptions of urban life (Kroll and Vogt, 2017). When these services are readily available and of high quality, residents are more likely to experience satisfaction and a sense of security (Kahneman et al., 1999). Moreover, access to quality services fosters social cohesion and community engagement, contributing to overall urban happiness (Helliwell et al., 2020). Therefore, addressing service-related factors in urban planning and policy-making initiatives is crucial for promoting residents' well-being and enhancing urban livability (Ryan and Deci, 2001).

3-1- Indicators of Services:

- **Health Index:**

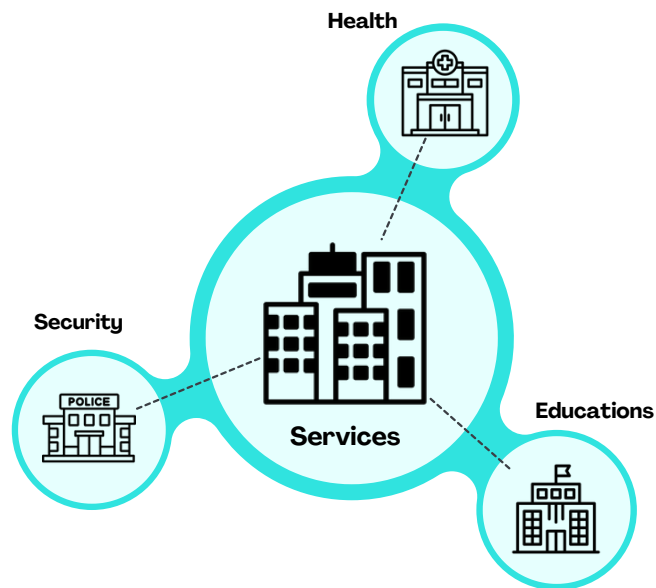
In addition to various factors that contribute to happiness, health status emerges as a pivotal determinant. Extensive research in this domain underscores the profound impact of health on overall well-being. Numerous studies, including those conducted by Dolan et al. (2007), Michalos et al. (2000), and Frey and Stutzer (2002), consistently highlight a robust positive correlation between happiness and both physical and mental health.

- **Education Index:**

A number of studies have looked at the impact of education on happiness but the evidence regarding possible associations is rather mixed. Some studies suggest that there is a positive relationship (Diener et al., 1993; Hartog and Oosterbeek, 1998; Stutzer, 2004; Stutzer, 2004). However, it has also been suggested that education is correlated to a great degree with income, occupational status and social class. Also, it should be noted that a number of studies found a negative impact (Clark and Oswald, 1996), suggesting that this may be due to changing aspirations and the creation of expectations for a higher income.

- **Security Index:**

The role of security services in urban happiness is paramount, as it directly influences the overall sense of safety and well-being among residents (Inglehart & Welzel, 2005), and it is a fundamental need which is a basic requirement of well-being. Studies have shown that areas with effective security measures experience higher levels of social cohesion and trust among community members (Sampson et al., 1997), which are essential components of urban happiness. Moreover, access to reliable security services fosters a sense of peace of mind and reduces fear of crime,



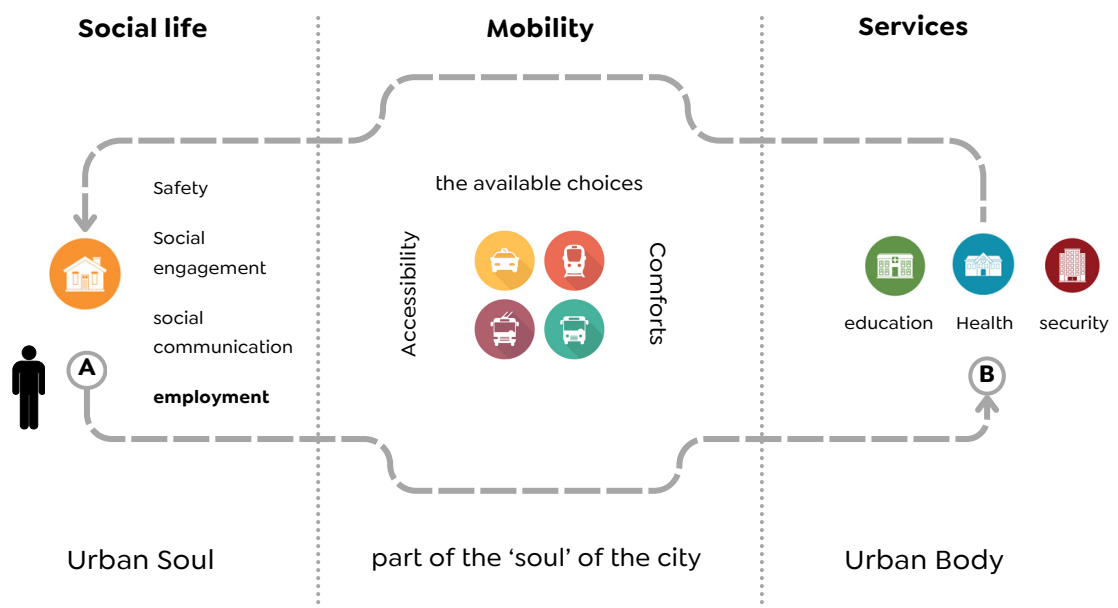
▲ Fig. 12 - Indicators of Services(Source: Prepared by the students)

What distinguishes these indicators is that they are deep sources of happiness and are sustainable, meaning they provide a sense of joy for a longer period and enhance urban social behaviors and citizenship in general, unlike the causes of momentary well-being and pleasure that lose their impact over time. In other words, the road to happiness is not hedonism, but a life devoted to important meaningful goals and other people. (Dr. Ed Diener)

Conclusion

The chapter outlines a comprehensive methodology for studying happiness in cities, emphasizing the use of both quantitative and qualitative data, expert opinions, and spatial analysis. By integrating these various approaches, the research aims to provide a holistic understanding of the factors contributing to urban happiness in city of M'sila

- **A tri-criteria scheme for urban functions performed by residents within the city according to the proposed model for measuring urban happiness.**



▲ Fig. 13 -A tri-criteria scheme for urban functions performed by residents within the city according to the proposed model for measuring urban happiness(Source: Prepared by the students)

→ Research of the last decades proliferated with surveys on the so-called Work-Life Balance. Instead, we proposes an integrated approach where work and personal life are considered as interconnected and inseparable components of overall well-being, so we anticipate further convergence between work and personal life driven by technological advancements. The figure 10 shows the movement of the person in the city from point **A** to point **B** That is, from the residence to key services such as education, health and security, passing through the transportation network, whether by mechanical means or on foot, on his way there, then returning home. All these elements and factors affect his mental health positively or negatively. This process may be repeated several times during his day, so it is necessary to delve into it and its results.



PRESENTATION OF THE CITY OF M'SILA

Introduction

This chapter provides a comprehensive overview of the city of M'sila, shedding light on its demographic, social, and urban aspects. The aim of this chapter is to provide a deeper understanding of the physical infrastructure and urban planning, in addition to analyzing population composition and service distribution.

The physical infrastructure and urban planning of the city are among the most important factors affecting the quality of life for its residents. In this part of the chapter, we review road networks and urban sectors. By analyzing these elements, we can identify strengths that contribute to enhancing urban life, as well as pinpoint weaknesses that require improvements to provide a better environment for residents.

Population composition plays a vital role in understanding the urban dynamics of any city. We will analyze the age and gender distribution of the population, as well as sociological studies that give us a deeper understanding of the city's economic reality. This analysis will help us understand the different needs of diverse population groups and how to effectively meet them, closing potential social and economic gaps that may affect urban happiness.

The distribution of public services such as healthcare, education, and transportation is an important indicator of social justice and welfare for the residents. We will analyze the accessibility and distribution of these services in different sectors of the city, aiming to identify areas in need of improvements. This step is necessary to ensure equitable service provision for all residents regardless of their place of residence in the city.

I - M'sila City Location :

The city of M'sila is located in the central part of the national territory, within the basin of Al-Hodna, which is 100 km from the direction of Bejaya, rising above sea level by 470 m, cut longitudinally by the cane valley (north of the south). It also intersects three important axes of the movement: National Road No. (40) and (45) (60). The city of M'sila is the headquarters of the state and municipality and occupies an estimated area of 232 km², with a population of about 214,661 people, with a population density of 925 inhabitants per km². The city's urban center is about 50.01 km², according to 2014 municipal statistics.

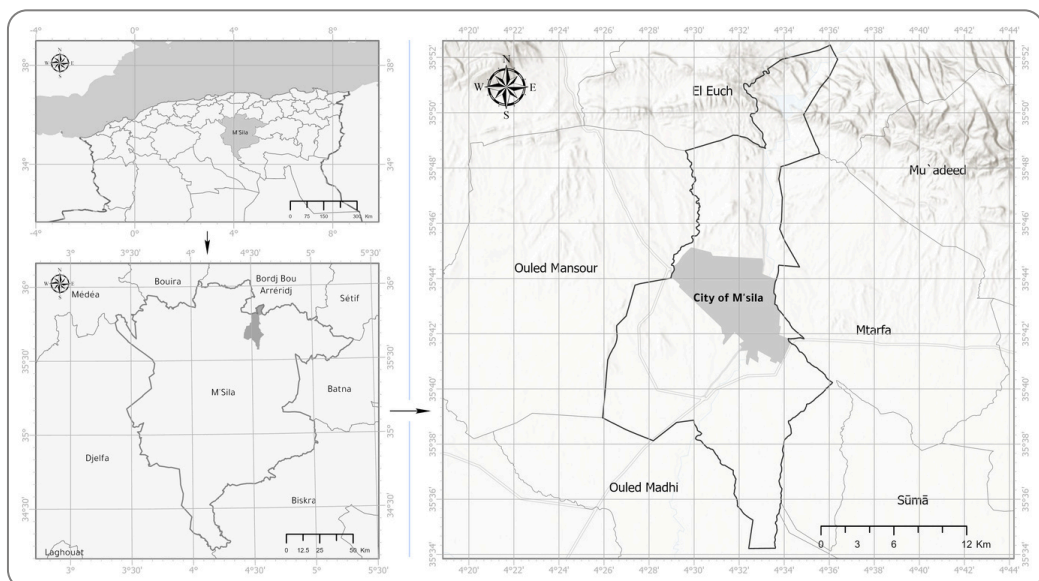
1- Astronomical Location :

The city of M'sila lies between latitude (35.48 °) and (35.67 °) north of the equator and between longitude (4.57 °) and (4.48 °) east of the Greenwich line.

2- Administrative Location :

The Municipality of M'sila is located in the northern frontiers of the State of M'sila, where it is limited:

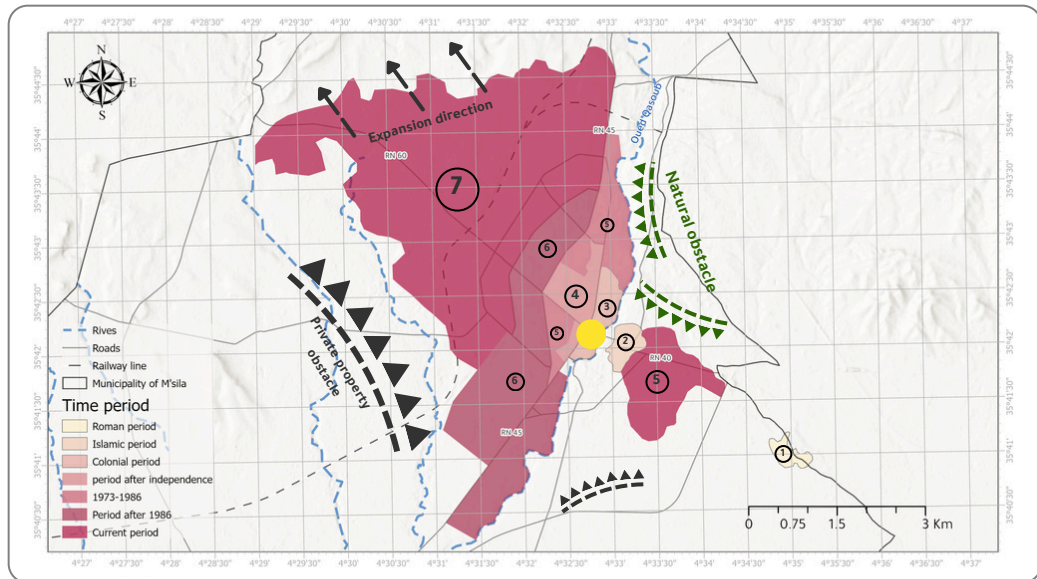
- From north: Al-Eush Municipality, State of Bourj Bouarij
- From East: Municipality of Matrafa.
- From South: Municipality of Suma.
- From West: Municipality of Olad Mansour.
- From south-west: Municipality of Olad Madi.



▲ Fig.14 - Location of the Study-Area City of M'Sila (Source: By students Prepared by the students)

II - A Historical Overview of the City's development :

The history of the city of M'Sila can be divided into four main stages. The first stage (pre-1830) is divided into two main periods: the first period is the Roman period, and the second period is the Arab-Islamic period. The second stage includes French colonization from 1830 to 1962. The third stage spans from 1962 to 1986. The fourth stage begins in 1986 and continues to the present day.



▲ Fig.15 -The city's evolution of M'Sila(Source: Prepared by the students)

III - Urban Study :

1- Urban Sectors :

To facilitate analysis, comparison, and interpretation, the city was divided into urban sectors. This division helps conduct a valid and objective study of the city and understand the interactions between different urban sectors. By identifying future needs, essential services such as health, education, transportation, and recreation can be planned and distributed fairly. These studies also contribute to improving infrastructure by assessing its condition and determining priorities for enhancement. In this way, studying urban sectors helps to improve the quality of life for residents.

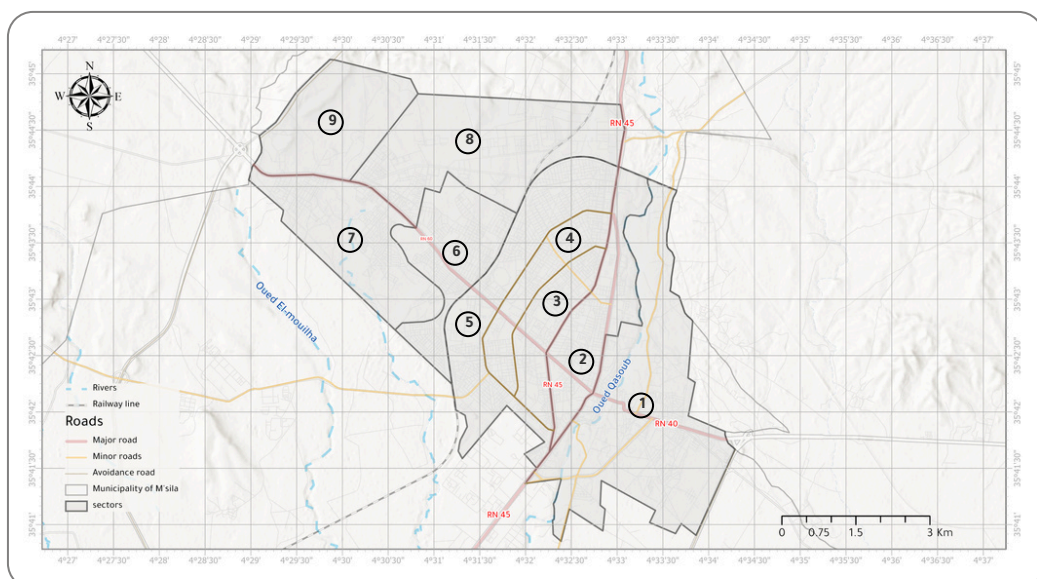
Tab.05 - Distribution of spaces to sectors

Sector N0	1	2	3	4	5	6	7	8	9	Total
Area (ha)	1241.23	425.47	268.42	257.59	611.67	437.81	570.84	854.88	503.29	5171.20
Percentage (%)	24.00	8.23	5.19	4.98	11.83	8.47	11.04	16.53	9.73	100%

Source: Prepared by the students

The table reflects the distribution of urban areas by different sectors of the city, showing the varying areas and percentages of each sector. This distribution allows us to understand how the city is divided and land use, and can have significant implications for urban planning and service distribution.

- **Sector 1:** It has the largest urban area of 1241.23 hectares, representing 24% of the city's total area. The sector is the oldest in origin and represents the old civic, where it is the first in origin
- **Sectors 2, 3 and 4:** These sectors have relatively small areas ranging from 257.59 to 425.47 hectares, and together account for about 18.4% of the total area. These sectors represent the city centre and are characterized by high commercial activity and are concentrated for most of its services.
- **Sector 5:** 11.83% of the total area is 611.67 hectares. This medium-sized sector is available on the equipment of the higher education sector (Mohamed Boudiaf University), as is the last sector of the city centre.
- **Sectors 6, 7 and 8:** Its area ranges from 437.81 to 854.88 hectares, together constituting about 36% of the total area. Separated by National Road No. 60 towards Algiers, Sectors 6 and 7 are characterized by commercial residential sectors and Sector 8 is a newly established sector, that is, after the second millennium to meet the needs and the housing crisis, located north of the city with the prevailing pattern of community housing
- **Sector 9:** It has an area of 503.29 hectares, representing 9.73% of the total area. It is the latest sector in the city and shows us the trend of expansion, located in the Northwest Front which includes AADL collective rental sale housing



▲ Fig.16 -Urban sector of city of M'Sila(Source: Prepared by the students)

(Table No 06) shows the distribution number of neighbourhoods within the different sectors of the city of M'sila. The table covers nine sectors, each containing a range of neighbourhoods. We note that distribution reflects a diversity of housing patterns between different sectors, helping to provide a comprehensive picture of the urban and social distribution in the city.

This table was used to distribute the questionnaire in order to obtain comprehensive coverage that ensures the collection of diverse data reflecting all aspects of life in different neighbourhoods, allowing balanced representation from different neighbourhoods, thus increasing the accuracy of the results.

Tab.06 - Distribution of neighbourhoods to sectors

Sector 01	El-Argoub
	El-Koushe
	El-Djaafra
	Larocade
Sector 02	Waewae el-madani
	El-Zahir
	El-Noubala
Sector 03	El-Nasser 1000 residence
	322 residence
	Administrative district (hay el-idari)
	El-Zouhour (villa rose)
	El-Nahdha
	206 residence
Sector 04	500 residence
	Ibn rouchaik (Police school)
	924 residence
Sector 05	Ewlad Sidi Ibrahim
	700 residence
	270 residence
Sector 06	Echbilila
	504 residence
	608 residence
Sector 07	05 July
	Mouilha
Sector 08	3000 and 560 residence
	El-Kia
	New urban pole (El-kotb)
Sector 09	1600 residence AADL
	600 residence AADL

Source: Prepared by the students

2- Road network :

The city of M'sila as a state headquarters played an important role in structuring and organizing the field within the national regions. The roads were one of the most contributing factors to the city's development and progress

2-1- railway:

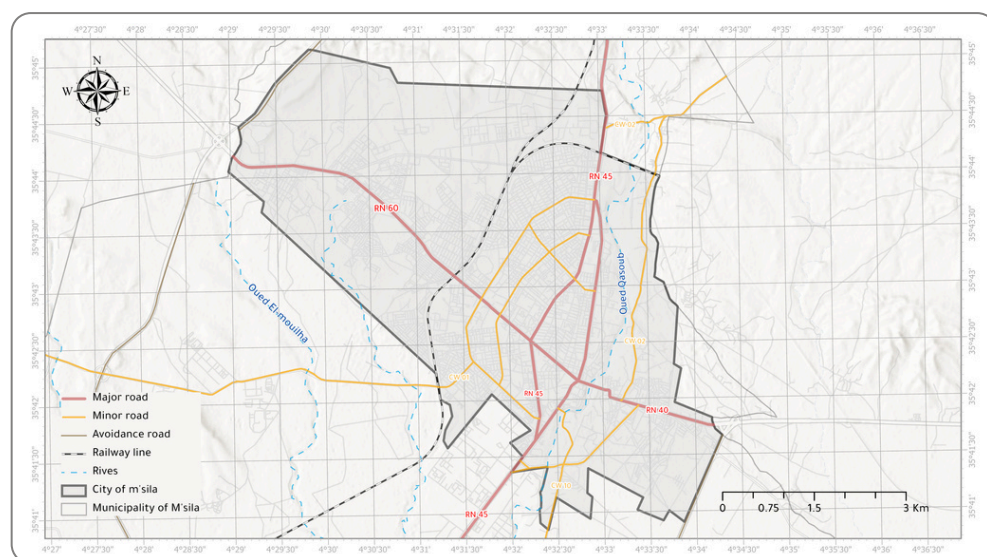
- linking the city of M'Sila to the towns of Barika (Battna State) East and the city of Bordj Bou Arreridj (B.B.A) North, also connecting it to the national railway network.

2-2- Major road:

- National Road No. 45 crossing from the north of the state the borders of the Bordj Bou Arreridj to the south of it through the centre of the city.
- National Route No. 40, which extends to the eastern side of M'Sila City and connects it to each of the opposing countries, and is the eastern entrance to the city.
- National Road No. 60 extends northwards to M'Sila City and connects it to Algiers through the Hammam El Dalaa

2-3- Minor road:

- State Road No. 01, which runs from bchilkah East to the border with the town of Olad Mansour West through the city center.
- State Road No. 02, which blazes the city from the north of the village of Badirah Boys through the Ja 'afarah neighbourhood in the centre of the city to the south of the city link with the town of Madi Boys



▲ Fig.17 -Road network map of the city of M'Sila(Source: Prepared by the students)

3- facilities :

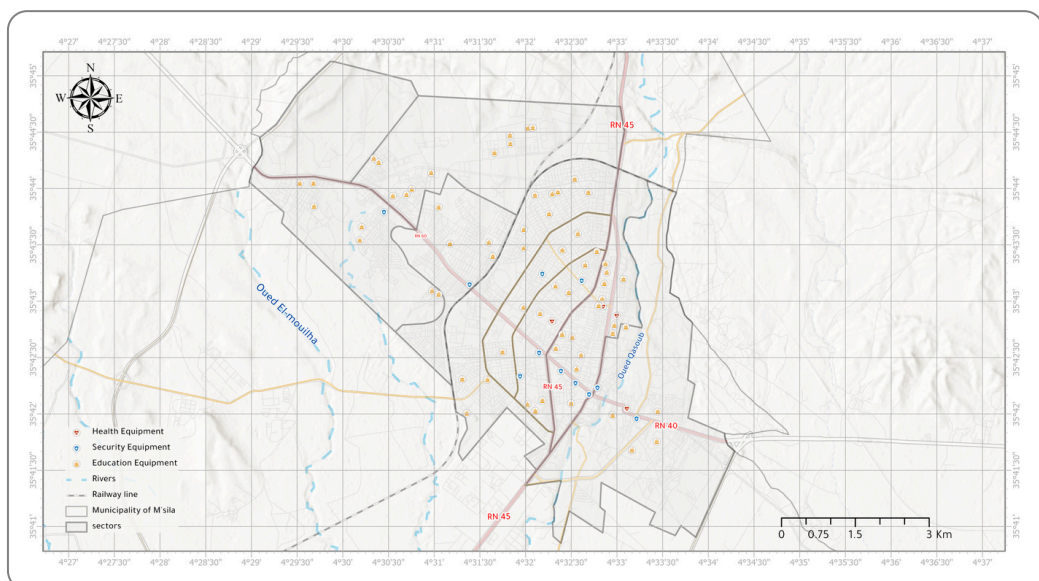
The facilities of the city of "M'sila" consist of structures and institutions serving community and urban activities, such as administrative, recreational and commercial facilities. These vital facilities bring the urban character of the city. In addition, these facilities provide services that meet the population's daily needs. Below is (Table No, 07) summarizing the number of facilities in the city

Tab.07 - The facilities of the city of 'M'sila'

Category of facilities	number	Percentage (%)
Administrative facilities	86	25.9
health facilities	12	3.61
education facilities	96	28.91
religious facilities	71	21.38
tourist facilities	6	1.8
sports facilities	9	2.71
Financial and insurance facilities	23	6.92
cultural facilities	13	3.91
Security facilities	14	4.21
transport stations	2	0.6
total	332	100

Source: Prepared by the students based on the Statistics Cell of the Municipality of M'sila

Through the distribution map of facilities, it can be observed that the distribution of facilities in the city of M'sila is unbalanced, with the majority being concentrated in the city center. This reveals the reality of the imbalance and disparity between neighborhoods, resulting in several problems, the most important of which are increased traffic and movement towards the city center, among other issues.



▲ Fig.18 - Equipment in the city of M'sila (Source: Prepared by the students)

4- housing:

Housing is one of the most important components of the city. Understanding its nature in the urban environment requires comprehensive analysis. Urban and demographic developments affect housing, which in turn has direct implications for the quality of life and well-being of the city's inhabitants.

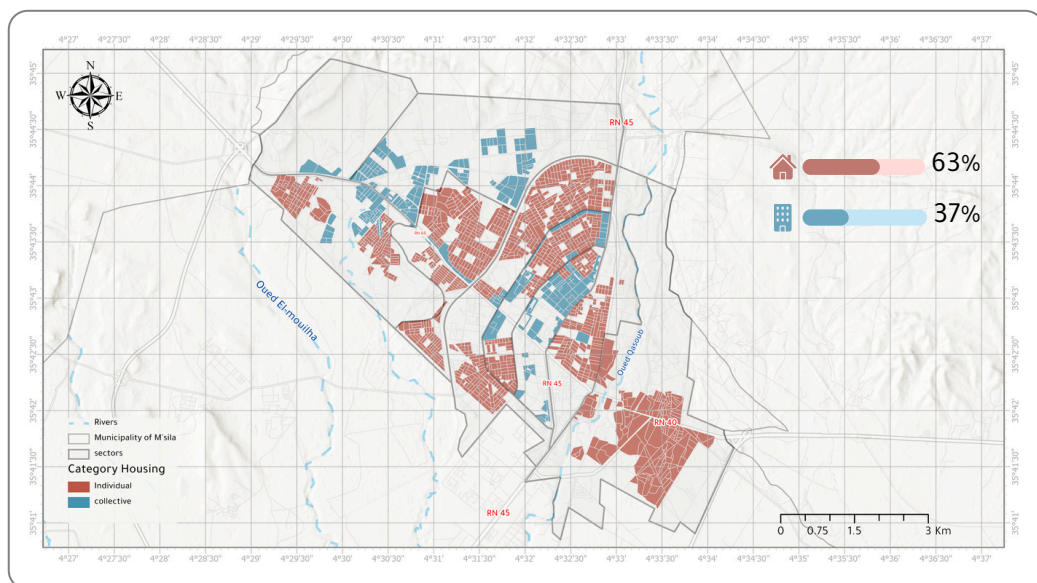
From the data of (Table No 08) we note that the development of housing has been noticeable over the past decades. The population increased from 6281 in 1977 to 13735 in 1987, an increase of 54%. The number then increased to 20119 in 1998, representing an increase of 30%. Growth continued to reach 23420 in 2008, an increase of 18%. Finally, the period between 2008 and 2019 saw the biggest jump, with the number rising to 45394 by almost 94%. This rise also responds to government policies and ongoing efforts in the field of housing.

Tab.08 - The development of housing

Years	1977	1987	1998	2008	2019
number of houses	6281	13735	20119	23420	45394

Source: Prepared by the students based on the Statistics Cell of the Municipality of M'sila

Through (Figure No. 19) we note that the per capita housing ratio is the largest with an estimated 63.09%. This widespread spread of individual housing leads to irrational consumption of the urban field. For group housing, it represents only 36.91% of the total population. These figures reflect the need to reconsider the distribution of housing patterns to achieve more efficient use of the field and improve the population's infrastructure and services.



▲ Fig.19 - Map of the distribution of individual and collective housing in the city of M'sila. (Source: Prepared by the students)

IV- Social Economic Study :

Social economic study is very important. It is one of the foundations of future planning processes. It also contributes to the understanding and clarification of all spatial relationships and various population, historical and functional relationships and characteristics in human life. It is also essential that it paves the way for planning and preparation processes.

1- Population Development City :

Studying the population development of the city of M'sila helps us determine the pace of growth. This is to determine the extent of the city's attraction and alienation through our tracking of the population increase from 1966 to 2019 as shown in (Table No 09).

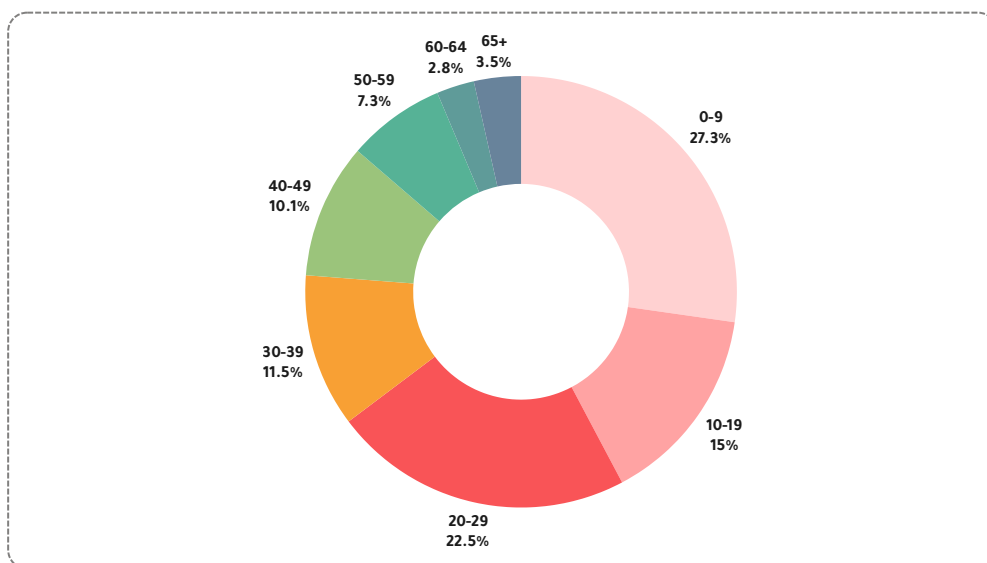
Tab.09 - Population and Annual Growth Rates Development City

Years	Population						Annual Growth Rates (%)				
	1966	1977	1987	1998	2008	2019	66/77	77/87	87/97	98/08	08/19
city of M'sila	19657	29512	65805	102151	123975	203029	4.06	8.02	4.4	2.64	3.06

Source: Statistics Cell of the Municipality of M'sila 2019

2- Age groups of the city's inhabitants :

The analysis of the composition of the population by gender and age facilitates the extraction of important age groups such as the experienced class or working class. The composition of the age reveals many demographic phenomena through (Figure No, 20) we find that the city of M'sila is a city.



▲ Fig.20 - Age groups of the city's inhabitants in the city of M'sila (Source: Prepared by the students based on the Statistics Cell of the Municipality of M'sila)

3- Economic composition of the city's population :

Studying the economic composition of the city's inhabitants is of great importance because it provides a comprehensive understanding of the economic structure of the community. By analyzing different population categories, such as employed individuals, unemployed individuals, those capable of working but unwilling to do so, and those outside the working age, it helps identify the strengths and weaknesses of the local economy. This analysis aids in improving job opportunities and providing necessary support to the most needy groups.

Tab.10 - Economic composition of the city's population

category	number	Percentage (%)
In working age	109311	53.84
Manpower	68116	33.55
non-working population	41195	20.29
Actually working	49823	24.54
Unemployed	18232	8.98
Out of working age	93718	46.16
Young people	85597	42.16
Old people (the elderly)	7309	3.6
total population	203029	100

Source: Statistics Cell of the Municipality of M'sila 2019

In addition to the results shown in (Table No, 10), the population of the city of M'sila can be divided into four main categories:

- Employed population: These are individuals who are currently working. In 2019, their number was approximately 2,019, constituting about 33.55% of the total active population.
- Unemployed population: This group includes individuals who are unemployed and belong to the 15-65 age group. In 2019, there were around 18,232 unemployed people, representing approximately 8.98% of the total population of the city.
- Individuals capable of working: These are individuals in the 15-65 age group who are not willing to work. This category includes housewives, students, and individuals with disabilities, representing 20.29% of the city's total population, with a count of 41,195 people.
- Individuals outside the working age: These are individuals in the 0-14 age group and those over 65 years old. They are classified this way because they are unable to bear the burdens of work, either because they have not reached the legal working age (0-14 years) or have exceeded the working age (65+ years). In 2019, their number was approximately 93,718 individuals, representing about 46.16% of the city's total population.

Conclusion

In conclusion, this study has explored the nuanced interplay between urban happiness and the city of M'sila, considering its urban, socio-economic, and facilities . Through our analysis, we have unveiled the importance of these factors in shaping the urban landscape and dynamics of urban happiness within the municipality. The city's characterization has offered a fundamental insight into M'sila, scrutinizing its physical infrastructure, layout, and demographic structure.

The analysis of physical infrastructure and urban planning reveals strengths that contribute positively to the quality of urban life, such as well-established road networks and urban sectors. However, weaknesses are also identified, particularly in areas where improvements are needed to create a more favorable environment for residents. This understanding has enabled us to grasp the urban backdrop in which urban happiness manifests, shedding light on the spatial distribution, accessibility, and potential impact on residents' well-being.



PRATICAL PART



ASSESSMENT OF URBAN HAPPINESS IN M'SILA CITY

Introduction

This chapter focuses on the topic of "Assessing Happiness in the City of M'sila," constituting the practical part of this thesis where the research and theories discussed in previous chapters are applied to real-life scenarios to analyze the level of happiness and satisfaction among the residents of M'sila.

The aim of urban happiness assessment is to measure the level of satisfaction and happiness among the residents of the city of M'sila. This assessment includes studying the factors influencing happiness such as basic services (health, education, security), social life, mobility, and the set of indicators discussed in previous chapters. This chapter has been divided into two parts:

Results of Surveys and Analytical Hierarchy Process (AHP) Analysis: In this section, we collected data through specific surveys designed for the residents of the city of M'sila. After gathering the data, we analyzed and processed it using appropriate statistical tools, and translated the results into graphical representations to illustrate the derived outcomes. Additionally, the results of the Analytical Hierarchy Process (AHP) analysis were presented to determine the importance of various criteria and rank them according to their impact on urban happiness.

Analysis of the results of the measurement of urban happiness: In this section, the results obtained from the measurement of urban happiness in the city of M'sila, and the assessment of the level of satisfaction and happiness among the population based on the different factors studied. The data were collected through questionnaires distributed to the city's inhabitants, where questions included multiple topics related to basic services, such as health care, education and security, as well as social life and transportation. After collecting the data, we analyzed them using statistical tools to translate the results into graphs and tables that make them easier to understand and interpret.

Through this comprehensive analysis, we have been able to identify the strengths and weaknesses of the city regarding the well-being of the population. The results describe the state of happiness in the city of M'sila.

I - Results of the Questionnaire :

A total of 200 forms were distributed randomly to the residents of the city of M'sila in addition to the adoption of electronic forms, each containing a set of simple questions. After collecting forms whether electronic or paper, 197 of them were recovered. However, when reviewing the forms, 11 were excluded because they contained unanswered questions and phrases or answers from outside the city of M'sila, leaving 186 forms that were fully answered by the city's residents.

The participation rate was 93%, a high proportion indicating the interest of the city's residents in their city. It also considers a positive observation and reflects residents' desire to assess their happiness in the city and share their views on the various aspects mentioned in the questionnaire.

The questionnaire model is therefore designed in two main sections is for general population information, while Part two measures the level of satisfaction with respect to different indicators on a scale from 0 to 5, graded from completely dissatisfied to very satisfied. All these phrases directly contribute to the headline we have chosen for this section, in order to assess urban happiness in the city of M'sila. Here we try to provide a brief analysis of the results of the survey for the city's residents.

Tab.11 - General information about participants

information	categories	number	Percentage (%)	total
gender	Male	120	64.32%	186
	Female	66	35.68%	
Age	Less than 20 years old	28	15.05%	186
	Between 20 to 40	120	64.52%	
	More than 40 years	38	20.43%	
Category Housing	individual	78	42.39%	186
	collective	108	57.61%	
situation	Government employer	24	12.09%	186
	private employer	13	6.99%	
	free lancers	23	12.37%	
	retired	11	5.91%	
	unemployed	24	12.9%	
	student	91	48.92%	

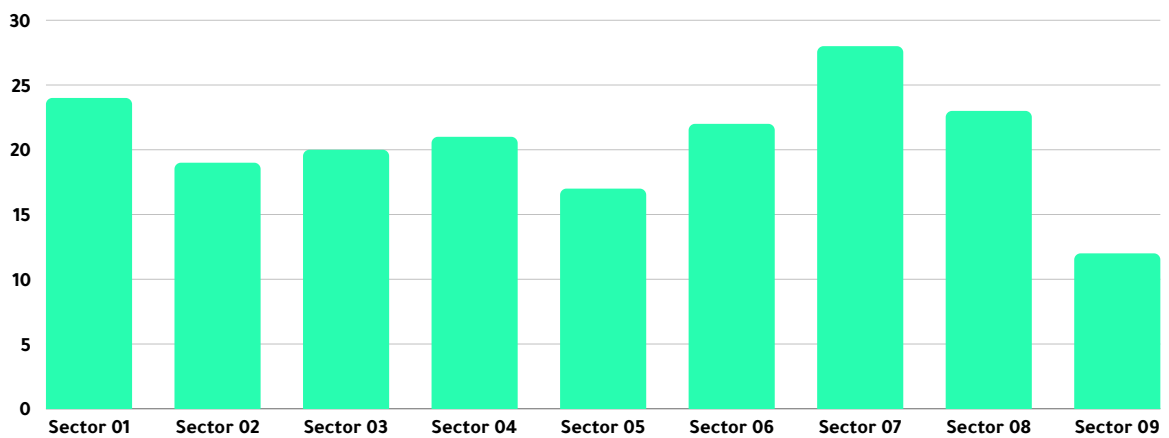
Source: Prepared by the students

Tab.12 - Summary of questionnaire participants' findings

phrase	completely dissatisfied	dissatisfied	Less satisfaction	pretty much satisfaction	satisfaction	completely satisfaction
	0	1	2	3	4	5
social life						
Safety	4	9	48	56	47	22
social participation	39	51	54	32	7	3
community engagement	11	20	39	62	37	17
employment	50	52	49	29	5	1
Mobility						
Comforts	23	71	67	23	1	1
Accessibility	18	36	50	56	24	2
Options	15	78	54	31	7	1
Services						
health	14	28	50	63	31	1
education	3	4	17	58	81	23
Security	1	16	45	58	57	9

Source: Prepared by the students

The following graph shows the distribution of the number of participants in the Happy City questionnaire across the nine sectors. It is noticeable that Sector 7 and Sector 1 have the highest participation rates, with Sector 7 having more than 28 participants and Sector 1 having more than 24 participants. In contrast, Sector 9 has the lowest participation rate, with approximately 12 participants. The remaining sectors have a relatively balanced distribution of participants, with the numbers ranging between 17 and 23.



▲ Fig.21 - Results of sectors' participation in the questionnaire (Source: Prepared by Students)

II - Results of hierarchical analysis (AHP) :

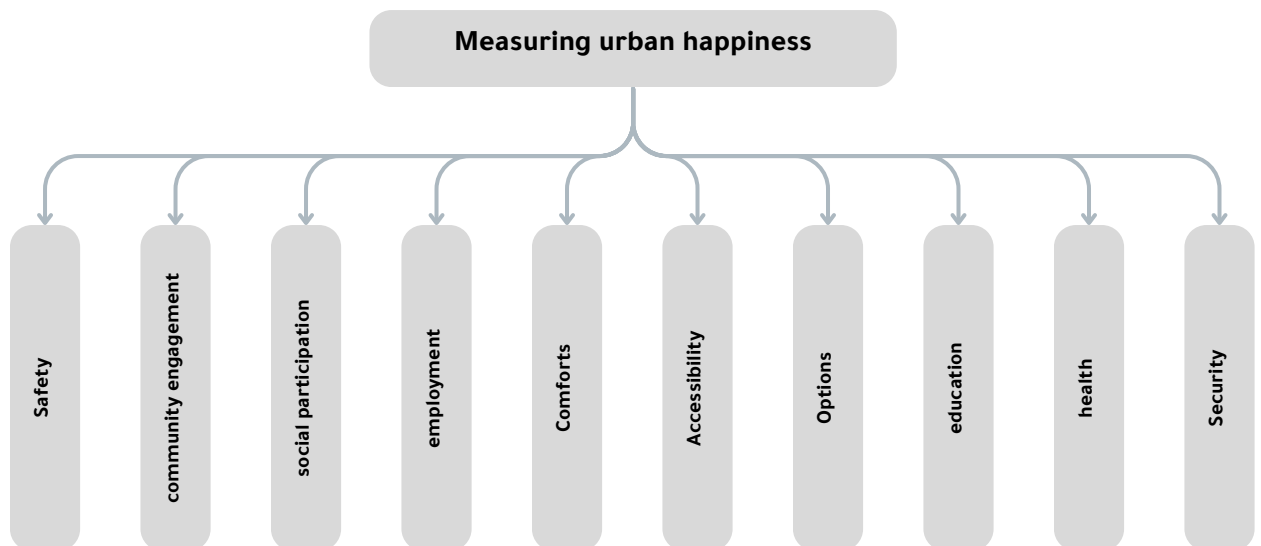
Hierarchical analysis (AHP) proceeds from determining the primary goal to be reached. and the establishment of a set of matrices for marital comparison. Weights calculation and prioritization. Consistency test for all comparison matrices see (Chapter III ,Part 2).

The hierarchical analysis process aims to prioritize selected criteria based on their level of relevance for each criterion and indicator. This is achieved through the identification, evaluation and comparison of criteria and indicators affecting the target. To allow precise determination of the relative importance of each criterion and indicator, the typical steps of the hierarchical analysis method include four basic steps:

1. Define the problem and decompose the problem.
2. Construct a set of pairwise comparison matrices.
3. Weights calculation and prioritization
4. Test the consistency of all comparison matrices.

1- Define the problem and decompose the problem :

The goal at the top of the pyramid is the measurement of urban happiness, while the minimum levels of hierarchy include indicators used during measurement, down to the base of indicators for measurement, see (Figure No 22).



▲ Fig.22 - AHP's Happiness Index Hierarchy Structure (Source: Prepared by Students)

2- Construct a set of pairwise comparison matrices :

After the hierarchy is established, the relative significance of all indicators is determined and discovered by marital comparisons, which are made using matrices of marital comparison. These matrices are used to compare indicators from the same hierarchical level. "Saaty" proposed numerical table is used for the evaluation process (Table No, 13).

Tab.13 - Results of pairwise comparison matrices

	Safety	social participation	community engagement	employment	Comforts	Accessibility	Options	health	education	Security
Safety	1	2	2	7	6	7	8	5	7	5
social participation	1/2	1	1/4	5	2	3	4	1/2	1	3
community engagement	1/2	4	1	8	4	3	7	3	5	6
employment	1/7	1/5	1/8	1	1/5	1/4	1/2	1/7	1/6	1/3
Comforts	1/6	1/2	1/4	5	1	2	4	1/3	1/2	3
Accessibility	1/7	1/3	1/3	4	1/2	1	3	1/4	1/3	2
Options	1/8	1/4	1/7	2	1/4	1/3	1	1/6	1/5	1/2
health	1/5	2	1/3	7	3	4	6	1	3	5
education	1/7	1	1/5	6	2	3	5	1/3	1	4
Security	1/5	1/3	1/6	3	1/3	1/2	2	1/2	1/4	1
total	3.12	11.62	4.80	48.00	19.28	24.08	40.50	10.93	18.45	29.83

Source: Prepared by the students

3- Weights calculation and prioritization :

Following the establishment of the matrix matrix for marital comparison and determination of the level of importance for each indicator, the next step involves calculating weights to prioritize each indicator. To achieve this, the EM method is used and is the most common among methods after being proposed by Saaty, to be integrated into AHP Expert Choice.

Tab.14 - Normalization of factor weights

	Safety	social participation	community engagement	employment	Comforts	Accessibility	Options	health	education	Security	Weight	Rank	PEV (λ)
Safety	0.32	0.17	0.42	0.15	0.31	0.29	0.20	0.46	0.38	0.17	0.303	1	10.8198
social participation	0.16	0.09	0.05	0.10	0.10	0.12	0.10	0.05	0.05	0.10	0.089	4	10.8198
community engagement	0.16	0.34	0.21	0.17	0.21	0.12	0.17	0.27	0.27	0.20	0.220	2	10.8198
employment	0.05	0.02	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.017	10	10.8198
Comforts	0.05	0.04	0.05	0.10	0.05	0.08	0.10	0.03	0.03	0.10	0.060	6	10.8198
Accessibility	0.05	0.03	0.07	0.08	0.03	0.04	0.07	0.02	0.02	0.07	0.044	7	10.8198
Options	0.04	0.02	0.03	0.04	0.01	0.01	0.02	0.02	0.01	0.02	0.021	9	10.8198
health	0.06	0.17	0.07	0.15	0.16	0.17	0.15	0.09	0.16	0.17	0.134	3	10.8198
education	0.05	0.09	0.04	0.13	0.10	0.12	0.12	0.03	0.05	0.13	0.082	5	10.8198
Security	0.06	0.03	0.03	0.06	0.02	0.02	0.05	0.02	0.01	0.03	0.031	8	10.8198
total	1	1	1	1	1	1	1	1	1	1	1		

Source: Prepared by the students

4- Test the consistency of all comparison matrices :

Upon completion of the previous stages, it is necessary to ensure the correctness and consistency of all comparison matrices using the random consistency standard (CR) (page 24). CR should be less than 0.1 for values to be acceptable. If the CR is greater than 0.1, the values should be reviewed and the previous steps reinstated.

Tab.15 -Results of CI, CR, RI

n	PEV (λ)	CI	RI	CR
10	10.8198	0.0911	1.49	6.11%

Source: Prepared by the students

5- Hierarchical Analysis Summary (AHP) :

The indicators were analyzed using hierarchical analysis (AHP) to assess urban happiness in the city of M'sila. This was done through a series of steps, starting with the implementation of the matrices of matrix comparison for each indicator, through a questionnaire involving a total of experts to provide an appropriate assessment of the selected set of indicators using the "Saaty" Assessment System, the evaluation of each of these elements was conducted to the degree of importance. Thereafter, the evaluation scores were translated into weights for each indicator. The indicators were therefore compared and arranged. The final weights were finally extracted to determine the impact of each indicator on inner-city happiness (Table No, 16).

Tab.16 - Hierarchical Analysis Summary (AHP)

	Weight	Rank	PEV (λ)
Safety	0.303	1	10.8198
social participation	0.089	4	10.8198
community engagement	0.220	2	10.8198
employment	0.017	10	10.8198
Comforts	0.060	6	10.8198
Accessibility	0.044	7	10.8198
Options	0.021	9	10.8198
health	0.134	3	10.8198
education	0.082	5	10.8198
Security	0.031	8	10.8198
total	1		

Source: Prepared by the students

I - Social Life Assessment :

The Social Life Assessment evaluates various sectors labeled from "sector 1" to "sector 9" using four key indicators: safety, social participation, community engagement, and employment. Additionally, a composite "Rate Social Life" score is provided to offer a holistic view of each sector's overall social life. This analysis will delve into each indicator's contribution to the social life ranking and explore the geographical distribution of these scores as represented in the provided map (Figure No, 23).

Tab.17 - Scoring of decision factors from 0 to 5(Social life)

Sectors NO	Social life Indicators			
	Safety	social participation	community engagement	employment
sector 01	3.29	1.83	2.79	1.54
sector 02	3.16	1.68	3.32	1.74
sector 03	3.40	2.10	2.85	1.30
sector 04	3.19	1.38	2.29	1.48
sector 05	3.59	1.76	2.94	1.18
sector 06	2.91	1.41	2.50	0.86
sector 07	2.82	1.61	2.68	1.50
sector 08	2.52	1.04	2.87	1.52
sector 09	2.92	1.75	3.00	1.58

Source: Prepared by the students

The "Social life Rate" score combines four indicators to assess each sector's social health. Sector 5 has the highest score of 1.83, making it the most socially healthy and vibrant area, while sector 8 has the lowest score of 1.51, indicating significant social challenges. These rankings highlight areas needing targeted interventions to improve social well-being. (Table No, 18 - 19)

Tab.18 - Summary of results of social life indicators in sectors

Sectors NO	Social life Indicators				Social life Rate
	Safety	social participation	community engagement	employment	
	0.303	0.089	0.220	0.017	
sector 01	1.00	0.16	0.61	0.03	1.80
sector 02	0.96	0.15	0.73	0.03	1.87
sector 03	1.03	0.19	0.63	0.02	1.87
sector 04	0.97	0.12	0.50	0.03	1.62
sector 05	1.09	0.16	0.65	0.02	1.91
sector 06	0.88	0.13	0.55	0.01	1.57
sector 07	0.85	0.14	0.59	0.03	1.61
sector 08	0.76	0.09	0.63	0.03	1.51
sector 09	0.88	0.16	0.66	0.03	1.73

Source: Prepared by the students

Tab.19 - Summary of results of the rate of social life in sectors

sectors NO	sector 01	sector 02	sector 03	sector 04	sector 05	sector 06	sector 07	sector 08	sector 09
Social life Rate	1.80	1.87	1.87	1.62	1.91	1.57	1.61	1.51	1.73
Sector Rank	4	2	3	6	1	8	7	9	5

Source: Prepared by the students

• Safety :

Safety is considered one of the critical elements of social well-being, as mentioned in previous chapters, reflecting the level of security and risks within the local community. Safety scores range from 0.76 in Sector 8 to 1.09 in Sector 5 (Table No. 18). The variation in safety scores indicates different levels of perceived or actual safety across the sectors. Sector 5 leads in safety with a score of 1.09, which suggests it may have lower crime rates, better policing, or higher community vigilance. Conversely, the low score of Sector 8 points to potential safety concerns that could be due to factors such as higher crime rates or inadequate security measures.

• Social participation :

Social communication is an effective indicator of how individuals interact with their surrounding community, including positive communication with neighbors, mutual support, exchange of dialogues and discussion of everyday life issues. This type of interaction is a key factor in determining the extent of an individual's integration into society. Levels of social contact vary between different regions, ranging from 0.09 to 0.19. Sector 3 shows a high level of social communication at a rate of 0.19, demonstrating an active society that promotes frequent social exchanges, thereby strengthening society's bonds and public happiness. Sector 8 low level of 0.09 indicates obstacles to interconnection, such as security concerns or the absence of social activities.

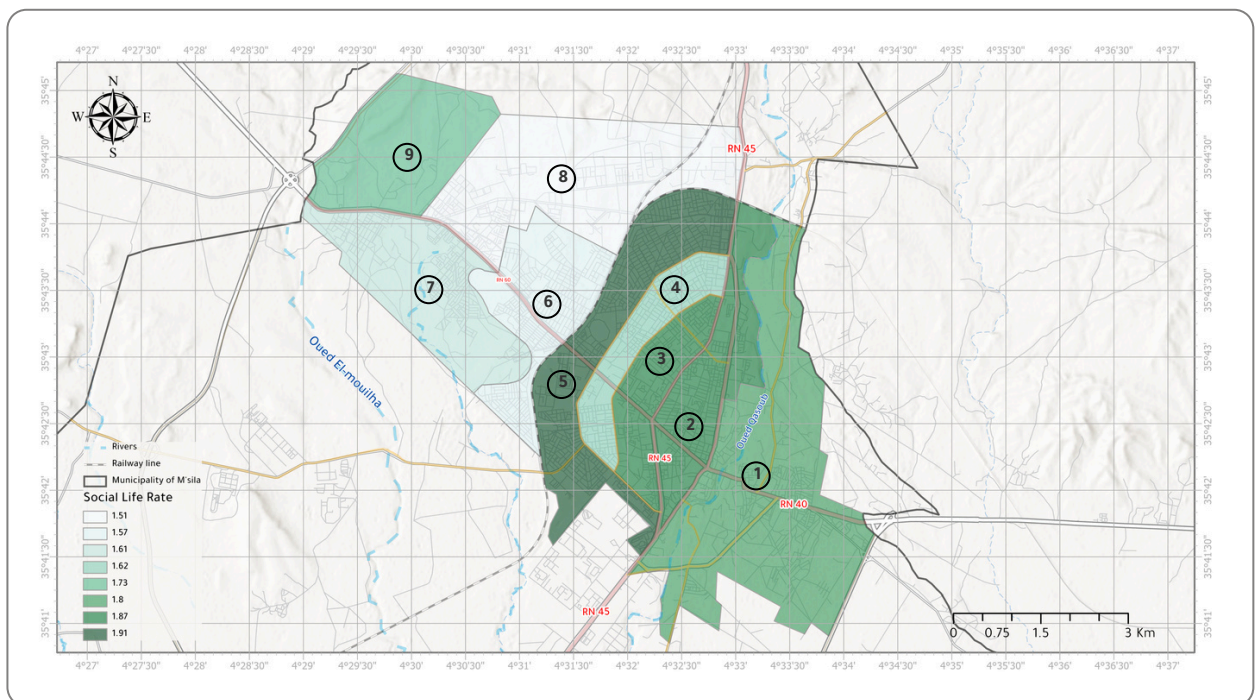
• Community engagement :

Community engagement measures the involvement of individuals in social activities and community events. Scores range from 0.50 in Sector 4 to 0.73 in Sector 2 (Table No 18), with similar variations in the ranked table. The high social participation in Sector 8 indicates a vibrant community with frequent interactions and social activities. This can strengthen community bonds and contribute to overall happiness. Conversely, low scores in sectors such as 4 and 6 may indicate a lack of community activities or barriers to participation, such as limited access to public spaces.

• employment :

Employment is a critical indicator of economic stability and people's well-being. Employment rates in different sectors range from 0.01 to 0.03. Low employment rates in most sectors point to scarce employment opportunities and the challenge of economic conditions, such as high unemployment or lack of jobs. These factors can negatively affect public health and social stability.

The map provided offers an assessment of social cohesion within the city of M'sila, employing a green-coded scale to visually depict varying levels of social interaction. Upon analysis, Sector 5 and downtown sectors 2 and 3 exhibit the highest scores, ranging from 1.9 to 1.8. These assessments are informed by several key factors including safety, social participation, community engagement, and employment opportunities. This suggests a notable degree of social cohesion within Sector 5, likely attributed to factors such as the historical significance of the area and strong community ties. Conversely, Sectors 6 and 7 register lower scores, with a rating of 1.5, encompassing neighborhoods such as Echbilha, July 5, and Al-Mouilha. This decline in social cohesion may be linked to economic and social challenges prevalent in these areas. Collective housing arrangements in these sectors often face difficulties stemming from a lack of trust among residents, which can hinder community integration and cohesion.



▲ Fig.23 - Social Life Assessment Results Map (Source: Prepared by the students)

• Social Life Assessment Conclusion

The detailed analysis of social indicators across various sectors reveals significant disparities in safety, social participation, community engagement, and employment. Sectors like Sector 5 exhibit high scores in most indicators, reflecting strong social health, while sectors like Sector 8 lag behind, highlighting areas that require concentrated social and economic interventions. The geographic distribution map serves as a valuable visual aid in identifying and addressing these disparities to enhance more equitable and prosperous communities.

II - Mobility Assessment :

The assessment of mobility indicators measures the performance of different sectors from "Sector 01" to "Sector 09" using three key indicators: comfort, accessibility, and diversity of options. Additionally, it includes providing a composite result of "mobility ranking" to offer a comprehensive view of mobility in each sector. This analysis aims to elucidate the extent of impact each indicator has on the mobility ranking result, as well as to provide insights into the performance of each sector and the challenges they face.

Tab.20 - Scoring of decision factors from 0 to 5 (mobility)

Sectors NO	Mobility Indicators		
	Comforts	Accessibility	Options
sector 01	1.33	1.63	1.96
sector 02	1.68	1.47	2.47
sector 03	1.45	1.75	2.55
sector 04	1.57	1.62	1.95
sector 05	1.24	1.41	1.76
sector 06	1.55	1.91	2.00
sector 07	1.50	1.93	2.43
sector 08	1.65	1.57	2.39
sector 09	1.83	1.67	2.25

Source: Prepared by the students

The composite "mobility rate" provides a comprehensive view of mobility across different sectors. Sector 07 and Sector 09 share the highest score of 0.23, showing that they are the best in overall mobility. Sector 05 is the lowest performing by 0.17, indicating mobility challenges such as lack of comfort and Accessibility. Sectors 02, 03, 06 and 08 record 0.22 mobility results, with overall good performance and slight differences in individual indicator scores. Sectors 01 and 04 also show good performance with results of 0.19 and 0.21 respectively, but slightly lower compared to leading sectors.

Tab.21 - Summary of results of Mobility Indicators in sectors

Sectors NO	Mobility Indicators			Rank Mobility
	Comforts	Accessibility	Options	
	0.060	0.044	0.021	
sector 01	0.08	0.07	0.04	0.19
sector 02	0.10	0.06	0.05	0.22
sector 03	0.09	0.08	0.05	0.22
sector 04	0.09	0.07	0.04	0.21
sector 05	0.07	0.06	0.04	0.17
sector 06	0.09	0.08	0.04	0.22
sector 07	0.09	0.08	0.05	0.23
sector 08	0.10	0.07	0.05	0.22
sector 09	0.11	0.07	0.05	0.23

Source: Prepared by the students

Tab.22 - Summary of results of the rate of mobility in sectors

sectors NO	sector 01	sector 02	sector 03	sector 04	sector 05	sector 06	sector 07	sector 08	sector 09
Rank Mobility	0.19	0.22	0.22	0.21	0.17	0.22	<u>0.23</u>	0.22	<u>0.23</u>
Sector Rank	8	5	6	7	9	3	1	4	2

Source: Prepared by the students

• Comfort :

Comfort in mobility refers to the quality of seating, available space, ventilation and air conditioning, cleanliness, and other factors affecting comfort. Comfort scores range from 0.07 in sector 05 to 0.11 in sector 09. Sector 09, which recorded the highest scores, indicates that it provides a reasonably comfortable and acceptable transportation experience. On the other hand, sector 05, which recorded the lowest scores, points to potential issues in transportation comfort, highlighting an urgent need for improvement. Sectors 02, 03, 06, 07, and 08 have relatively high scores, indicating an acceptable level of comfort in transportation across these sectors.

• Accessibility :

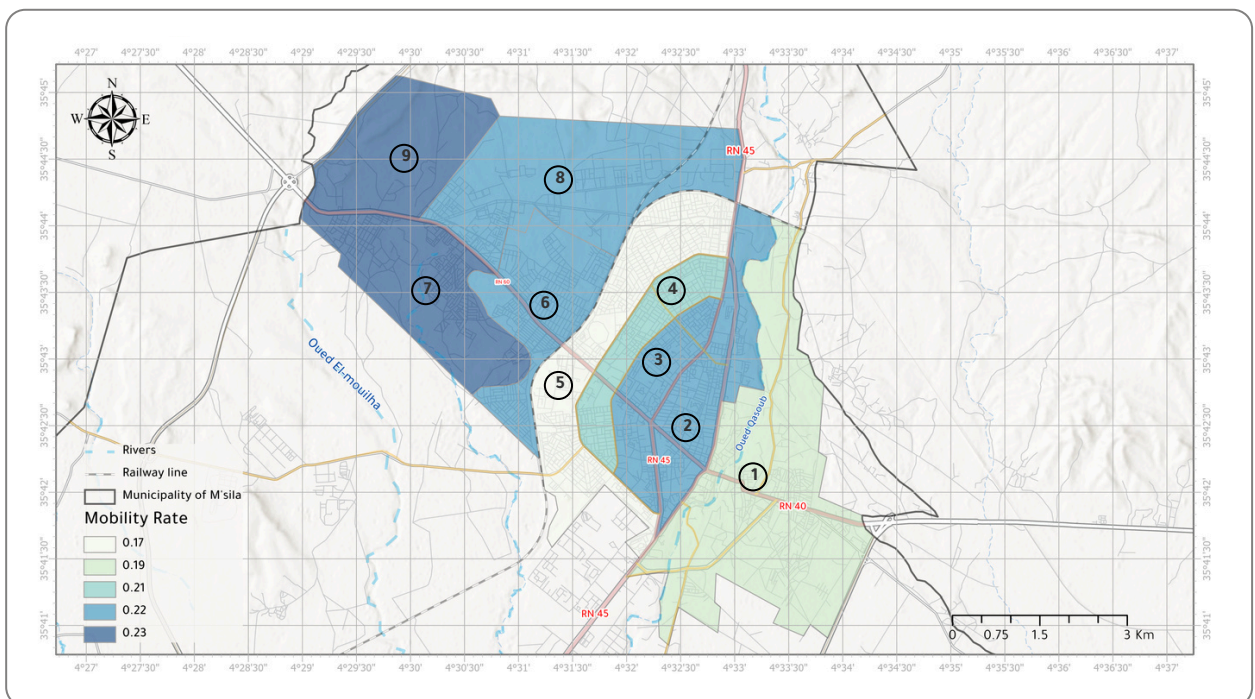
Accessibility measures the ability to physically access locations regardless of physical abilities, in addition to affordability. Accessibility scores range from 0.06 in sectors 02 and 05 to 0.08 in sectors 03, 06, and 07. Sector 07, with the highest accessibility score of 0.08, indicates acceptable accessibility. Sectors 03 and 06 also perform well, reflecting a good level of accessibility. In contrast, sectors 02 and 05, which have the lowest scores, indicate challenges in accessing and using transportation, highlighting the need for improved accessibility measures in these areas

• Options :

options metric indicates the diversity and availability of various transportation modes within the sector. Scores for options range from 0.04 in sectors 01, 04, 05, and 06 to 0.05 in sectors 02, 03, 07, 08, and 09. Sector 03 leads with the highest score, indicating a wide range of transportation options, enhancing flexibility and convenience for residents. Sectors 02, 07, 08, and 09 also score high, reflecting significant diversity in transportation choices. In contrast, sectors 01, 04, 05, and 06, with lower scores, indicate limited transportation options, highlighting the need to diversify and enhance the available transportation modes.

The map provided offers an assessment of social cohesion within the city of M'sila, employing a blue-coded scale to visually depict varying levels of Mobility effectiveness. Upon analysis, Sector 7 and 9 exhibit the highest scores (0.23). This is due to the transportation policies adopted to integrate new residential areas and break their isolation by providing additional private and government transportation lines.

As for sectors located in the city center, such as 3 and 2, the recorded value registered a slightly lower estimate of (0.22), this is explained by the pressure and large flow of vehicles, which in turn led to a decline in the efficiency of the system, whether through convenience or options. There remains sector No. 05, which obtains the lowest percentage despite its location near a good transportation network. The result of user dissatisfaction is explained by the following reasons: The majority percentage of users in that sector are students, and because of the enormous traffic between the two universities, that area has become a black point for vehicles to cross. Also, the results. It is based on the index of comfort, accessibility, and options. Therefore, most resident students have limited mobility due to carrying luggage, and this leads to their dissatisfaction with regular means of transportation like bus.



▲ Fig.24 - Mobility Assessment Results Map (Source: Prepared by the students)

• Mobility Assessment Conclusion

The detailed analysis of mobility indicators across different sectors reveals significant variations in comfort, accessibility, and transportation options. Sectors 07 and 09 lead in terms of mobility efficiency, indicating an effective transportation infrastructure despite some shortcomings. Conversely, Sector 05 faces the greatest challenges, highlighting the need for targeted improvements in transportation services. Sectors 02, 03, 06, and 08 generally exhibit good performance, reflecting comfortable and efficient mobility. This comprehensive analysis helps identify strengths and weaknesses in mobility within each sector, directing efforts towards improving transportation infrastructure and enhancing the quality of life for residents.

III - Services Assessment :

This assessment seeks to identify areas with exemplary service provision, pinpoint regions requiring enhancements, and uncover potential obstacles in service delivery, focusing on vital sectors such as health, education, and security. It delineates the performance of each sector, denoted from Sector 01 to Sector 09, based on criteria such as service quality and accessibility.

Tab.23 - Scoring of decision factors from 0 to 5 (Services)

Sectors NO	Services Indicators		
	health	education	Security
sector 01	2.33	3.04	3.00
sector 02	2.47	<u>3.74</u>	3.21
sector 03	2.70	3.60	3.10
sector 04	<u>2.90</u>	3.52	<u>3.24</u>
sector 05	2.53	3.59	2.65
sector 06	1.95	3.55	2.82
sector 07	1.89	3.71	3.04
sector 08	2.30	3.26	2.65
sector 09	2.75	3.58	3.08

Source: Prepared by the students

This table shows how different sectors compare in terms of health, education, and security services, with their respective rankings. Sector 04 ranks highest overall, indicating better health services, closely followed by Sectors 03 and 09. Sectors 02 and 03 are ahead in education services, suggesting good schools or educational facilities, while Sectors 01 and 02 perform well in security services, indicating safer environment.

Tab.24 - Summary of results of Services Indicators in sectors

Sectors NO	Services Indicators			Rank Services
	health	education	Security	
	0.134	0.082	0.031	
sector 01	0.31	0.25	0.09	0.65
sector 02	0.33	0.31	0.10	0.74
sector 03	0.36	0.30	0.10	0.75
sector 04	0.39	0.29	0.10	<u>0.78</u>
sector 05	0.34	0.29	0.08	0.72
sector 06	0.26	0.29	0.09	0.64
sector 07	0.25	0.30	0.09	0.65
sector 08	0.31	0.27	0.08	0.66
sector 09	0.37	0.29	0.10	0.76

Source: Prepared by the students

Tab.25 - Summary of results of the rate of services in sectors

sectors N0	sector 01	sector 02	sector 03	sector 04	sector 05	sector 06	sector 07	sector 08	sector 09
Rank Services	0.65	0.74	0.75	<u>0.78</u>	0.72	0.64	0.65	0.66	0.76
Sector Rank	8	4	3	1	5	9	7	6	2

Source: Prepared by the students

• Health :

The health indicator across the different sectors presents a range of values, suggesting varying levels of access to and quality of healthcare services within the city. Sectors 04 and 09 exhibit the highest values for the health indicator, with sector 04 ranking the highest overall. This indicates that these sectors may have better healthcare infrastructure or services compared to others. Conversely, sector 06 shows the lowest health indicator value among the sectors, indicating potential challenges or disparities in healthcare provision in that area. Overall, the data highlights the importance of ensuring equitable access to healthcare services across all sectors to promote the well-being of residents throughout the city.

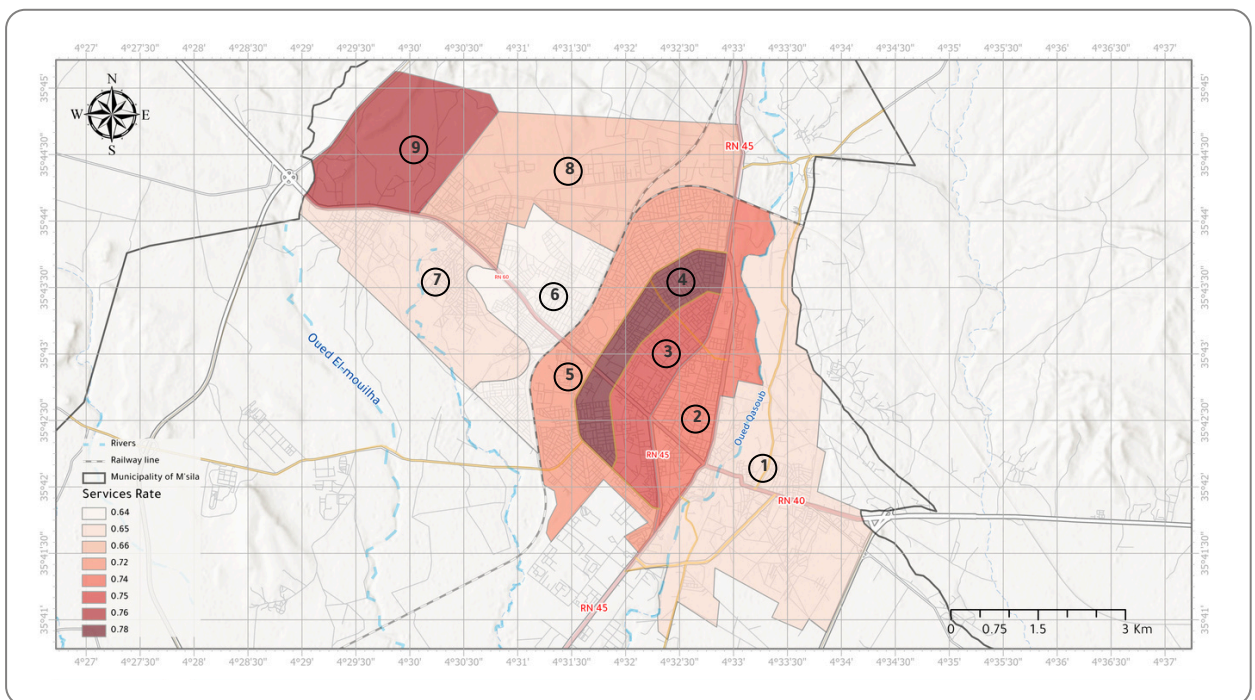
• Education :

The education indicator provides insights into the accessibility and quality of educational opportunities within the city, which can significantly impact urban happiness. Sectors 02 and 03 demonstrate relatively high values for the education indicator, suggesting better access to quality education in these areas. Access to education plays a crucial role in fostering personal development, social mobility, and economic opportunities, all of which contribute to overall well-being and urban happiness. Conversely, sector 06 shows a lower value for the education indicator, indicating potential challenges or disparities in educational access and quality in that sector. Addressing these disparities and ensuring equitable access to education for all residents can contribute to greater urban happiness.

• Security :

The security service is a fundamental aspect that significantly influences the overall well-being and quality of life in urban areas. Security scores, ranging from 3.24 in Sector 4 to 2.64 in Sector 9, highlight the varying levels of satisfaction among urban residents regarding safety and security provisions. This discrepancy underscores potential inefficiencies in certain sectors, while others may excel in providing adequate security measures. Comparing these scores across sectors is crucial for assessing the effectiveness and quality of the security service within the city.

The accompanying map provides a visual representation to evaluate the extent of users' satisfaction with the following basic services: health, education and urban security according to each sector of the city of M'sila. Using a red colored scale. Sectors 04 and 03, which have the highest ratings due to their location near most health equipment, such as the maternity hospital, and security equipment, such as the police school and various educational equipment, appear, while Sector 06, which has the lowest scores, appears in light color. This may be due to a lack of capacity to accommodate the equipment or perhaps difficulty. Access to them. As for services of average quality, they appear in sectors 01, 05, 07, 08, which are areas that require interventions to fill their deficits and inefficiency. As for sector 09, which appears on the northwestern borders, satisfaction results are higher than average despite being far from the city center. This is due to the programmed service projects. There are such as the university hospital, urban security centers, high and middle schools .



▲ Fig.25 - services Assessment Results Map (Source: Prepared by the students)

• Services Assessment Conclusion

Overall, the results highlight the importance of equitable access to essential services and the impact of strategic planning on enhancing urban well-being. Sectors 04 and 03 exhibit the highest satisfaction ratings, likely attributed to their proximity to essential facilities such as the maternity hospital and police school. Conversely, Sector 06 shows lower satisfaction levels, possibly due to challenges in accessing these services. Sectors 01, 05, 07, and 08 indicate average satisfaction, signaling a need for interventions to address deficiencies. Importantly, Sector 09, situated on the northwestern borders, displays above-average satisfaction despite its distance from the city center. This can be attributed to planned service projects such as the university hospital and urban security centers.

IV - Assessment of urban happiness :

The table shows the ranking of different sectors in liquefied, from Sector 01 to Sector 09, based on three main criteria. Each sector receives separate scores for social life, mobility, services, plus an overall urban happiness score. Sector 03 and 02, which ranks first in urban happiness at 2.83 2.84, show a balanced performance across all three criteria, indicating better living conditions in these sectors. By contrast, Sector 04 ranks lower in urban happiness at 2.39, indicating potential issues in social life, mobility, and services that need to be addressed to improve the quality of life of the population.

Tab.26 - Results of the Rate urban happiness in sectors

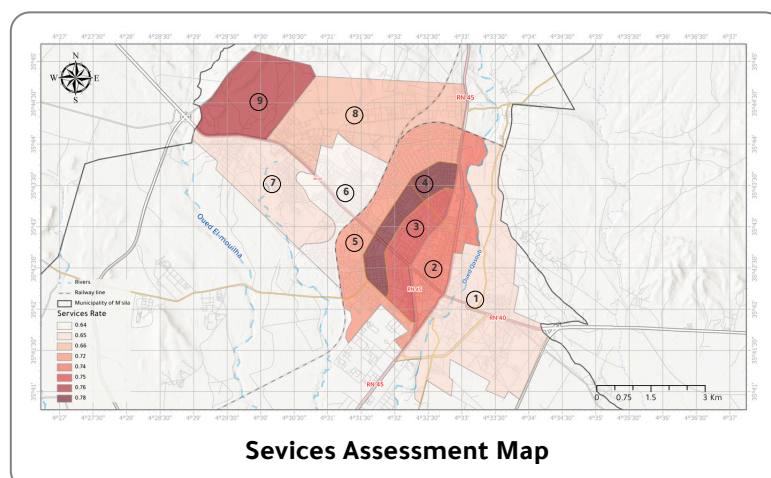
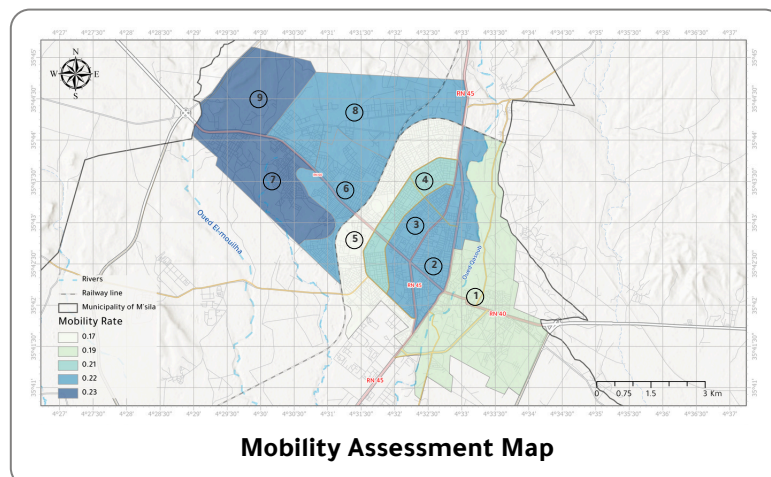
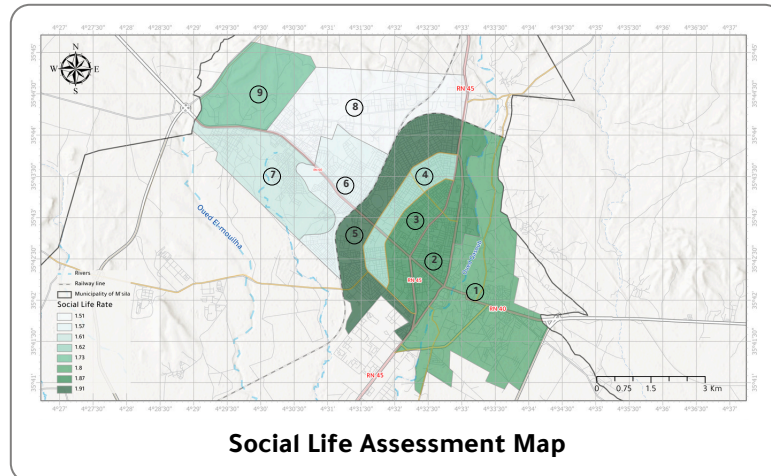
sectors No	sector 01	sector 02	sector 03	sector 04	sector 05	sector 06	sector 07	sector 08	sector 09
Rate Social life	1.80	1.87	1.87	1.62	1.91	1.57	1.61	1.51	1.73
Rate Mobility	0.19	0.22	0.22	0.21	0.17	0.22	0.23	0.22	0.23
Rate Services	0.65	0.74	0.75	0.78	0.72	0.64	0.65	0.66	0.76
Rate urban happiness	2.64	2.83	<u>2.84</u>	2.61	2.8	2.43	2.49	2.39	2.72

Source: Prepared by the students

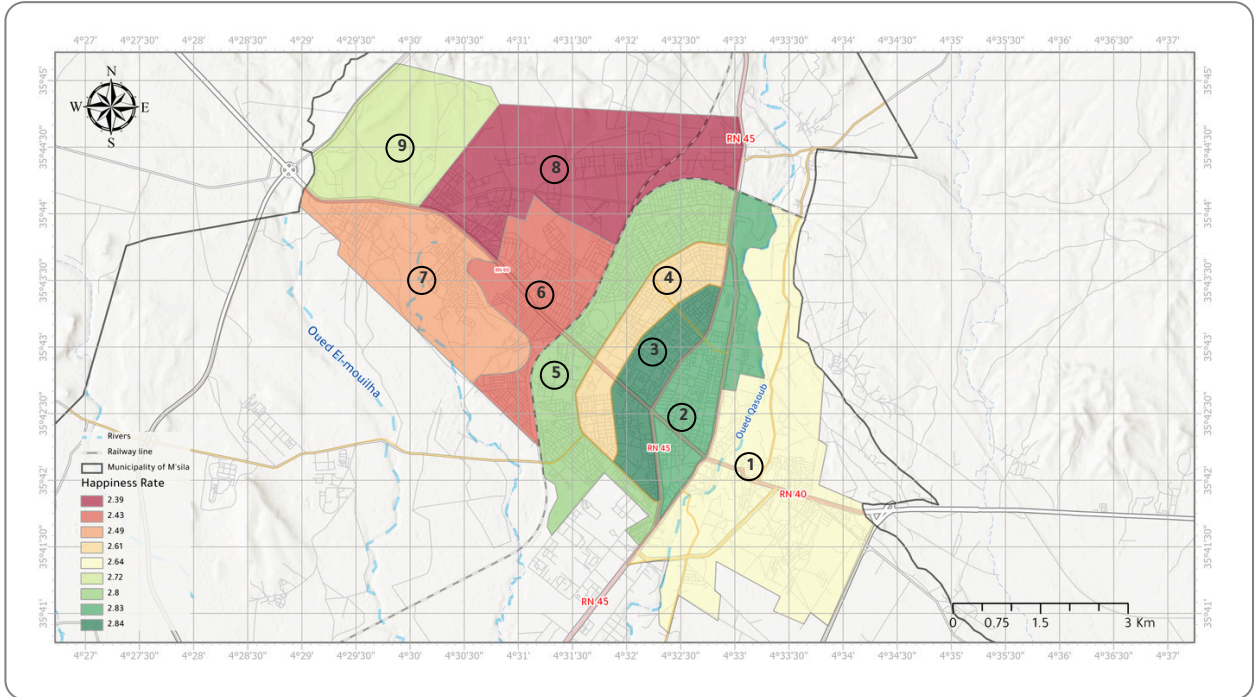
The final map visually represents urban happiness levels in M'sila city, indicating the satisfaction rates in each sector individually. Sector 03 stands out with the highest satisfaction level among residents, averaging 2.82. This sector, representing the first new residential area, fosters social cohesion due to its communal origins and proximity to various essential services. Immediately following is Sector 02, with an average of 2.83, situated at the city's core but slightly ranking lower due to vehicular congestion and weakened social bonds, often leading to reduced satisfaction levels.

- Sector 04 records comparatively lower happiness levels compared to adjacent sectors, possibly influenced by transportation issues and social relationship deficiencies despite its recognition as a service-focused area.
- Sectors 05 and 09 exhibit acceptable to good urban happiness levels, averaging 2.8-2.7, serving as relief zones from traffic congestion, thereby meeting citizens' satisfaction.
- Sector 01 denotes a below-average happiness level, averaging 2.6, experiencing marginalization in terms of services despite being the city's nucleus.

- Regarding sectors 6, 7, and 8 highlighted in red, hosting relatively new and predominantly communal housing, mark the lowest urban happiness levels in M'sila. These sectors struggle with service inadequacies amidst continuous population growth, with Sector 08, the newest sector, grappling with a fragmented social base and crime prevalence.



▲ Fig.26 - Results of urban happiness indicators Map (Source: Prepared by the students)



▲ Fig.27 - Urban happiness Assessment Results Map (Source: Prepared by the students)

- The table provides a comprehensive overview of the urban happiness indicators in the city of M'sila. the rate of 57.78% seems promising, the city demonstrates a significant level of social life with a score of 54.73%. Additionally, the mobility rate of 33.96% suggests potential challenges in transportation infrastructure, which could impact residents' daily commutes and overall mobility within the city. the substantial rate of 57.36% in services underscores the city's commitment to providing essential services, the presented indicators suggest a moderate level of urban happiness

Tab.27 - The overall urban happiness rate

	Indicators Rate	percentage(%)	Rate urban happiness
City of M'sila Score	Rate Social life	54.73	<u>57.78</u>
	Rate Mobility	33.96	
	Rate Services	57.36	

Source: Prepared by the students


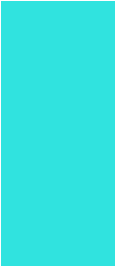
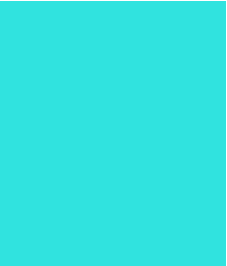

Conclusion

Based on the comprehensive assessment conducted in this chapter, we have gained valuable insights into the level of happiness and satisfaction among the residents of the city of M'sila. By applying research methodologies and theories discussed in previous chapters to real-life scenarios, we have effectively analyzed various factors influencing urban happiness, including basic services such as health, education, and security, as well as social life and mobility.

The results obtained from surveys and Analytical Hierarchy Process (AHP) analysis provide a nuanced understanding of the factors contributing to urban happiness, allowing us to rank them according to their importance. Through graphical representations and statistical analysis, we have elucidated the strengths and weaknesses of the city in meeting the well-being needs of its population.

The analysis of survey data, including responses from residents on topics ranging from basic services to social interactions, has provided valuable insights into the state of happiness in M'sila. By interpreting this data through statistical tools and visual representations, we have highlighted areas of success as well as areas requiring improvement.

Overall, this chapter serves as a critical assessment of urban happiness in the city of M'sila, offering policymakers and stakeholders valuable information to enhance the well-being of residents. By addressing the identified weaknesses and building upon the city's strengths, we can work towards creating a more inclusive and prosperous urban environment that prioritizes the happiness and satisfaction of all residents.



GENERAL CONCLUSION

General Conclusion

This thesis is a research effort to discover what actually makes cities happy, and to try to develop an approach that measures what is known as urban happiness by drawing on previous studies and research in this area. This modest research enabled results on happiness factors in cities, which were a set of economic, environmental, social and service standards and indicators. These criteria also revealed the difficulty of establishing a consistent approach that determines what happiness is in cities.

By integrating the methods and methods used to build this thesis, such as the Delphi method and the hierarchical analysis process (AHP), a set of criteria was carefully selected based on the convergence of views of a group of academic experts in different fields. The summary of this experience was reflected in three criteria, each with a set of indicators:

Measuring individual happiness aids in making better decisions. By understanding the factors contributing to their happiness, individuals can make choices that enhance their well-being. For example, social connections have been found to be a significant indicator of happiness. Individuals may prioritize spending time with friends and family over other activities. This highlights the importance of social relationships in fostering happiness and suggests that investing in social connections can lead to greater overall well-being.

We conclude that urban happiness indicators and factors form an interconnected chain, whereby the absence of a particular element or service affects the rest. It is observed that in some sectors of M'sila, objective well-being factors are present, yet the absence of subjective and emotional well-being factors has led to a decline in the satisfaction levels of its residents. This underscores the importance of considering not only material aspects but also psychological and emotional aspects in urban planning and service provision. By addressing both objective and subjective well-being factors, cities can better cater to the holistic needs of their inhabitants, fostering higher levels of urban happiness and satisfaction.





APPENDICES



a copy of the questionnaire



الجمهورية الجزائرية الديمقراطية الشعبية
People's Democratic Republic of Algeria
وزارة التعليم العالي والبحث العلمي
Ministry of Higher Education and Scientific Research
القطب الجامعي محمد بوضياف - المسيلة
University Pole Mohamed boudiaf - M'Sila -



Questionnaire

This form represents the practical aspect of the study for the purpose of supporting it with the necessary field information and data

For the thesis required to obtain the Master's degree in Urban Management Technologies.

UNDER THE TITLE

HAPPY CITY



We inform you that the disclosed information is confidential and will be used for scientific research purposes only

SPECIFIC TO INDICATOR EVALUATION

Within the framework of preparing a master's thesis entitled "The Happy City: A Model for Measuring Urban Happiness Using a Tri-criteria Approach for Cities (Mobility, Services, and Social Life)" in the field of Urban Technology Management, this questionnaire serves as the practical aspect of the study to support it with necessary information and data and to analyze them according to The Analytic Hierarchy Process (AHP).

Please ask expert professors to evaluate the following indicators by assigning weighted values according to their level of preference, as represented in the provided table

INDICATORS

Equal importance	1
Weak importance of one over another	3
Essential or strong importance	5
Demonstrated importance	7
Absolute importance	9
Intermediate values between the two adjacent judgments	2,4,6,8

		Happiness Indicators									
		Comforts	Options	Accessibility	health	education	Security	community engagement	social participation	Safety	Employment
Happiness Indicators	Comforts	1									
	Options		1								
	Accessibility			1							
	health				1						
	education					1					
	Security						1				
	community engagement							1			
	social participation								1		
	Safety									1	
	employment										1

GREETING

Hello, thank you for participating in this Questionnaire titled "The Happy City Survey."



















This Questionnaire is part of the preparation of a graduation thesis for obtaining a Master's degree in Urban Management Technologies. The Questionnaire addresses "The Three-Criteria Model for Calculating Urban Happiness (Mobility, Services, and Social Life)." This questionnaire represents the practical aspect of the study, and its goal is to support the study with the necessary field information and data to calculate the level of people's happiness in their cities.

We would like to assure you that all the information you provide will remain confidential and will be used only for scientific research purposes.

RESPONDENT INFORMATION

- ▶ **Gender** Male female
- ▶ **Situation** Government employer private employer free lancers retired unemployed student
- ▶ **Age** Less than 20 years old Between 20 to 40 More than 40 years
- ▶ **Category Housing** individual collective
- ▶ **Neighborhood of residence**

YOUR LEVEL OF SATISFACTION WITH THE FOLLOWING ASPECTS

	0	1	2	3	4	5
▶ SOCIAL LIFE						
• Safety while walking around at various times						
• Level of communication and interaction with your neighbors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Contribution of neighbors in social activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Adequacy of job opportunities in the city	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
▶ MOBILITY						
• Availability and variety of transportation options in the city						
• Comfort of available transportation in the city	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Ease of access and use of transportation for everyone, regardless of age or physical abilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
▶ SERVICES						
• Availability of health facilities						
• Availability of schools and educational institutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Availability of urban security services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

----- By the grace of Allah, it is done -----



ملحق بالقرار رقم 1082 المؤرخ في 27 ديسمبر 2020
الذي يحدد القواعد المتعلقة بالوقاية من السرقة العلمية ومكافحتها

الجمهورية الجزائرية الديمقراطية الشعبية
وزارة التعليم العالي والبحث العلمي

مؤسسة التعليم العالي والبحث العلمي : جامعة محمد بوضياف - المسيلة

تصريح شرفي

خاص بالالتزام بقواعد النزاهة العلمية لانجاز بحث

أنا الممضي أسفله:

السيد [ة]: سعد الله محي الدين الصفة (أستاذ، باحث، طالب): طالب

الحامل (ة) لبطاقة التعريف الوطنية رقم: 208664246 والصادرة بتاريخ: 2022/12/29

المسجل [ة] بكلية /معهد : معهد تسيير التقنيات الحضرية - المسيلة - قسم : تسيير المدينة

و المكلف [ة] بانجاز أعمال بحث [مذكرة التخرج، مذكرة ماستر، مذكرة ماجستير، أطروحة دكتوراه]

عنوانها :

**Happy City: A three-criteria urban happiness accounting
model for the city (mobility, services, and social life)**

أصرح بشرفي أنني ألتزم بمراعاة المعايير العلمية والمنهجية ومعايير الأخلاقيات المهنية والتزامه الأكاديمية المطلوبة في انجاز
البحث المذكور أعلاه.

التاريخ : 2024/05/15

توقيع المعني [ة]



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المسجل [ة] بكلية /معهد : معهد تسيير التقنيات الحضرية -المسيلة- قسم : تسيير المدينة

و المكلف [ة] بانجاز أعمال بحث [مذكرة التخرج، مذكرة ماستر، مذكرة ماجستير، أطروحة دكتوراه]

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توقيع المعني [ة]

Edm