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Study and Evaluation of Indicators Influencing the Livability Case Study: Famagusta, North Cyprus

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ABSTRACT

As one of the novel concepts in urban planning, livability is concerned with the appropriateness of urban environment for humans to live. In recent years, a number of liveability and benchmarking indices and studies have been published to assess the relative position of various global cities against each other in various categories. These liveability measures are typically used as a tool to make comparisons between cities with various outcome scores receiving widespread media attention. However, none of the existing indices take the perspective of the ordinary man living in that city and model this ordinary person as having multi-dimensional sensibilities towards issues like economic well-being, social mobility, personal security political governance, environmental sustainability, and aesthetics. The current study aims at defining the concept of livability, recognizing related physical components and evaluating indicators which effect on livability. Through the current article, physical components are extracted through document and library studies and observation. Having combined these criteria using the resulting weigh of ANP model and using of SWOT model for predicts strategies and policies.

Keywords: Livability; Livability Indicators; ANP Model; SWOT Model; Urban Planning

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STUDY AND EVALUATION OF INDICATORS INFLUENCING THE LIVABILITY CASE STUDY: FAMAGUSTA, NORTH CYPRUS

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Abstract

As one of the novel concepts in urban planning, livability is concerned with the appropriateness of urban environment for humans to live. In recent years, a number of liveability and benchmarking indices and studies have been published to assess the relative position of various global cities against each other in various categories. These liveability measures are typically used as a tool to make comparisons between cities with various outcome scores receiving widespread media attention. However, none of the existing indices take the perspective of the ordinary man living in that city and model this ordinary person as having multi-dimensional sensibilities towards issues like economic well-being, social mobility, personal security political governance, environmental sustainability, and aesthetics. The current study aims at defining the concept of livability, recognizing related physical components and evaluating indicators which effect on livability. Through the current article, physical components are extracted through document and library studies and observation. Having combined these criteria using the resulting weigh of ANP model and using of SWOT model for predicts strategies and policies.

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1. Introduction

The advent and development of the idea of livability can be traced back to America. In 1970, with the hope of getting their hands on urban planning ideas they had in mind, National Endowment for the Arts coined the term livable cities copied by other research centers such as Us Environmental Protection Agency who has done extensive research on the most livable cities of the US. After that influence, the term made his way to the literature through William Martins's writings in 1975 about livable places printed in magazines such as Saturday Review and Christian Science Monitor. In Europe, related studies to define a livable city goes back to 1975 when Landscape Architecture magazine published some short essays of academic practitioners on livable cities, although none stated the term livable directly. Each trying to come up with a based-on-personal-ideas answer to the question "what makes a good city?" (Larice, 2005, P.120), the articles delineated current urban issues and the ways to convert a metropolitan into an attractive place inserting lively nature in a jungle of concrete. Livability and livable society are characterized by a group of different issues

that are underpinned by a set of common guiding principles including accessibility, equity and participation. Infrastructures (transportation, communication, water and sanitation), food, clean air, appropriate housing, meaningful employment, parks and green space are perceived as what the citizens' quality of life is dependent upon. In a dwelling, occupants' engagement in decision making to meet their needs is an indicator of livability of the place. Related to concepts such as sustainability, quality of life, quality of place and proper communities, livability is a general idea. Although livability is defined differently in different societies, it is possible to use social planning goals to develop local criteria for it. It is often employed to define different aspects of society and experiences that create it. Livability focuses on human's experience of place and takes it into account in a certain time span and place.

2. Literature Review

Livability is divided to three interdependent dimensions: economic, social and environmental. Essential to people's health, economy provides people with jobs and income (food, clothes, housing), it also enables meeting needs of

higher levels such as education, health care and recreation. The way economy takes advantage of environmental resources must ensure preserving enough resources for present and future generations. However, social wellbeing needs equity: social and spatial fair distribution of economic and environmental resources and governments who take every citizen into account. Social wellbeing has personal freedom and equal opportunities as its key components. As an infrastructure, environment is the provider of natural resources, waste disposal capacity, and the relationship between human and natural surroundings. Malfunction of any of these three results in deteriorated human inhabitation, its outcome being population reduction, poverty, social conflict, increased health and environmental problems. On one hand, planning in response to post-industrial society's needs as it strongly seeks wellbeing and quality of life and on the other hand, threats to today's urban life highlights the importance of livability of cities even more. As a concept, livability can, given the field it is defined in, be either stretched or limited, nevertheless, central to it is the quality of life in any place which includes variety of measurable indexes having density, transportation, security and sustainability as their constants (Perogordo, Madrid, 2007, P.40). People and place are two faces of livability. Evans in *Livable Cities*, states: "the coin of livability has two faces, Livelihood is one of them. Ecological sustainability is the other. Livelihood means jobs close enough to decent housing with wages commensurate with rents and access to the services that make for a healthful habitat. Livelihood must also be sustainable. If the quest for jobs and housing is solved in ways that degrade the environment of the city, then livelihood problem is not really being solved (Cedar Hill Municipality, 2008, P. 5-1). In his study in California, Wheeler (2001) demonstrates different threats destroying quality of urban life in the form of rapid

population growth, lack of open spaces and unaffordable housing, heightened discrimination, undermined community identity, sense of place and social life. In addition, a raised awareness of unsustainability of urban patterns and urban consumption and recognizing them as neither healthy nor sustainable leading to decreased potency of environmental resources to support the population on planet earth is a reason to additional importance put on livability. Livability is not an easy concept to clearly define and explain or measure, but surely it has great effects on the works of those whose job is to plan or in the field of management and/or programming. Also, the key concepts it provides are highly valuable. In the literature of urban regeneration, the definition of livability for an urban center is meant to do with how capable the center is in terms of maintenance and improvement of viability and vitality. According to Carlos J. L. Balsas. 2004, these two terms determine the capacity of investment in the center to keep it alive. Livability is defined as the human's wellbeing in the environment where he lives and works. It can be affected by the physical design and how the system and processes in the cities perform. These indicators can be considered as proxies that help us to measure or make judgments on how livable a city or an area is. There are also indicators that help measure the quality of life like how well transportation covers mobility in the city or how affordable houses are can also contribute to the proxies to measure livability. Therefore, livability can be put in short as how much contribution is done by the environment to give people a good quality life (Urbis. 2008). Mitchell (1996) offered a 4-step methodology for the use of indicators in the projects: (1) define the problem and decide on the variables; (2) categorize and select important issues; (3) define the indicators; (4) evaluate the collected data. Hollander (2002. pp. 3) added some other criteria: using data that

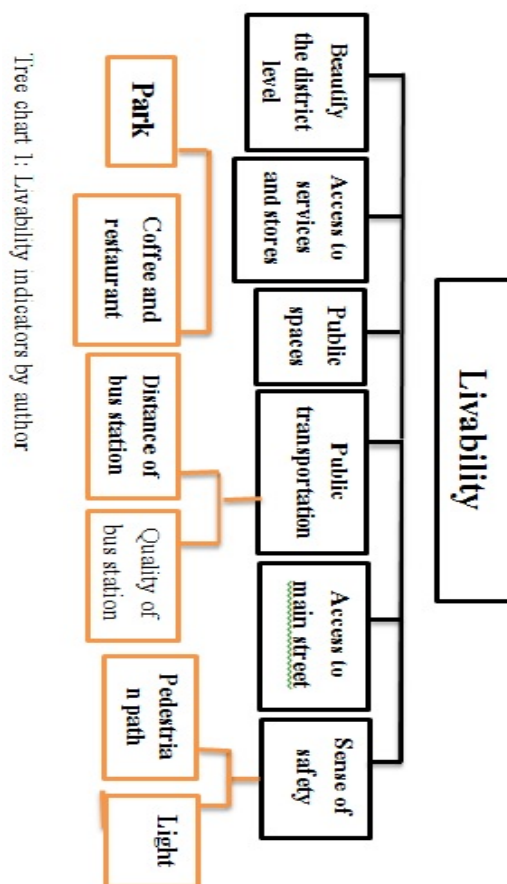
can stay reliable and consistent through time, data can be collected from the community, collecting the data should not be costly and finally data should be general enough so that it can be used for comparisons. The World Health Organization firmly believes in the relationship between livability of a city and the sense of place. The four elements referring to sense of place are: high-quality environments, sustainable ecosystem, and access to wide variety of experiences and resources connections with the past and city form (Duhl and Sanchez. 1999.pp 23-24). Density is another main factor. It not created by idiosyncratic urban design considerations. However, it is to do with the spatial structure of the city and the interaction between Government action (regulations, infrastructure investments and taxation) and the real estate market. Another thing which plays an important role in the livability of a city is transportation. Issues like reducing pollution and global emissions to promote sustainability are of matter (Henrik Gudmundsson. 2003. Making Concepts Matter: Sustainable Mobility and Indicator Systems in Transport Policy, International Social Science Journal). Level of safety of the transportation in the city is another important point of discussion. As an example, aesthetic streetscape treatments are encourages for better livability. However, conventional transportation safety practice is not in agreement with roadside features such as street trees as fixed-object hazards. In fact, there is a strong disagreement on this matter (Eric Dumbaugh .2005.Safe Streets, Livable Streets). Physical health is another significant issue to be addressed. It is expected from the governments to build sidewalks and bike paths especially on the roads with heavy load of traffic. Residential areas have to have sidewalks (Jackson, Richard J., C. Kochtitzky.2001.Creating a Healthy Environment: The Impact of the Built Environment on Public Health). Most

importantly, residents have to feel safe, so creating the sense of safety and security is a crucial element of livability. Research shows that people are so concerned with safety and security that they would choose to live in an age-restricted, gated community if they had sufficient income. The Economist Intelligence Unit has a purpose of quantifying the factors that can measure livability and help to compare different locations. These factors are set in five main categories including stability, healthcare, culture and environment, education and infrastructure. There are over 30 qualitative and quantitative factors which rates the relative comfort of a city. Quantitative factors are measured by questions and calculations of data sets and qualitative factors are measured by in-house analysts or in-city contributors. Key performance indicators (KPIs) can be necessary to improve and develop a city center. The provide an image of what is going on in the city center at a certain time or over a period of time and can contribute to the success of marketing works. It can give the investors reliable facts about where to base their investments (Cox et al..2000. pp. 14).

3. Research Methods

In this research we used ANP (Analytic network process) and SWOT model which in ANP model we can comparing and finding weights of indicators and finding the relationship between indicators and sub indicators with defining degree of importance for indicators. In next step with designing a matrix we can find weights of indicators and sub indicators. So we can find the major indicators which effect on livability of case study and after that with SWOT model we can define strengths, weaknesses, opportunities and threats that can help us for predict polices and strategies. The initial phases of the project involved analyzing the present status of the livability indicators in the Salamis Road in Famagusta. Personally visit Saliamis and qualitative and quantitative data collected by observation. Since we needed some

pictures, we choose converting data collection and after analyzing pictures we could find some indicators which effect on livability on Salamis street like sense of place, access to main street, public transportation, public spaces, access to services and stores and beautify the district level. In addition some of indicators which we choose had some sub indicators that effect on livability. In first step for using ANP model we should design a tree chart for finding relationship between indicators and sub indicators.



After this part in second step we start to use ANP model for analyzing indicators and sub indicators and finding the relationship between them. In ANP model after designing tree chart we should finding relationship between indicators and specify weight of indicators whit using matrix which in first step we should design degree of importance table that we use of these degrees for analyzing indicators. After that we should comparing indicators

to each other and finding their proportion and after calculating finding their weight.

Definition	Grade
Equal importance	1
Equal little importance	3
More important	5
Much more important	7
The absolute importance	9

Livability indicators matrix:

Table 1: calculation of indicators

	Sense of safety	Access to main street	Public transportation	Public spaces	Access to services and stores	Beauty the district level	Weight of indicator
Sense of safety	1	1/3	1	5	1	1	0.174
Access to main street	3	1	1/3	3	1/3	1	0.161
Public transportation	1	3	1	1	1	1	0.192
Public spaces	1/5	1/3	1	1	1	1/3	0.087
Access to services and stores	1	3	1	1	1	1	0.192
Beauty the district level	1	1	1	3	1	1	0.192

After calculation and finding weight of indicators know we can predict main indicators which can effect on livability and after that on next step we should find sub indicators weights.

	Light	Pedestrian path	Weight
Light	1	3	0.752
Pedestrian path	$\frac{1}{3}$	1	0.248

Table 2: calculation of indicators

	Distance of bus station	Quality of bus station	Weight
Distance of bus station	1	5	0.833
Quality of bus station	$\frac{1}{5}$	1	0.167

Table 3: calculation of indicators

	Distance of bus station	Quality of bus station	Weight
Park	1	$\frac{1}{5}$	0.167
Coffee and restaurant	5	1	0.833

Table 4: calculation of indicators

Now we can find every indicator and sub indicators weight. As was anticipated three of sub indicators like light, distance of bus station and coffee and restaurant have main role on improving livability in Salamis.

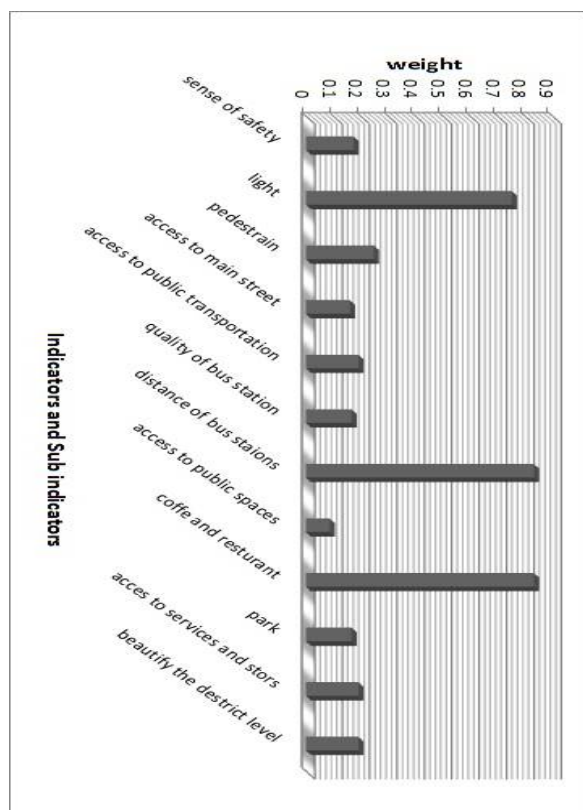


Diagram 1, by author

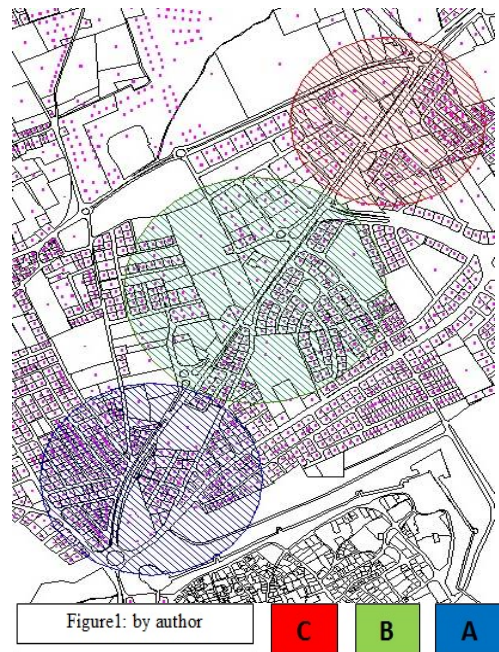
4. Analysis & Results

Field study:

Salamis street is the main street or in other words its urban center in Famagusta in Cyprus which we choose it for case study because its cover our subject and we want know about level of livability in this area and propose strategies for its.

Data collection:

After a general observation we found that indicators which we mentioned were not cover all Salamis street so we dividing Salamis to 3 parts A, B and C. Part A start from main gate of EMU university to Coffee Mania, part B start from Coffee Mania to Lemar store and the last part (C) start from Lemar to end of the street.



After 2 weeks in three times observation and collecting data we found relationship between indicators in site A, B and C.

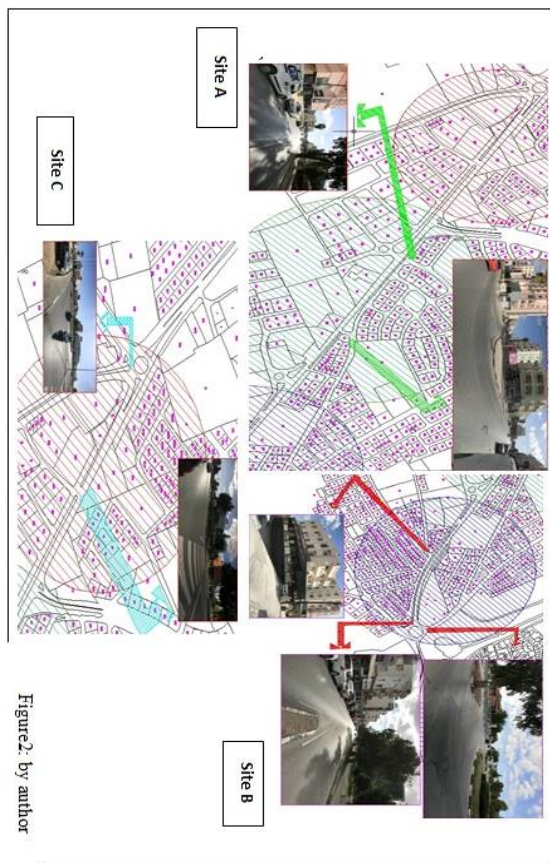
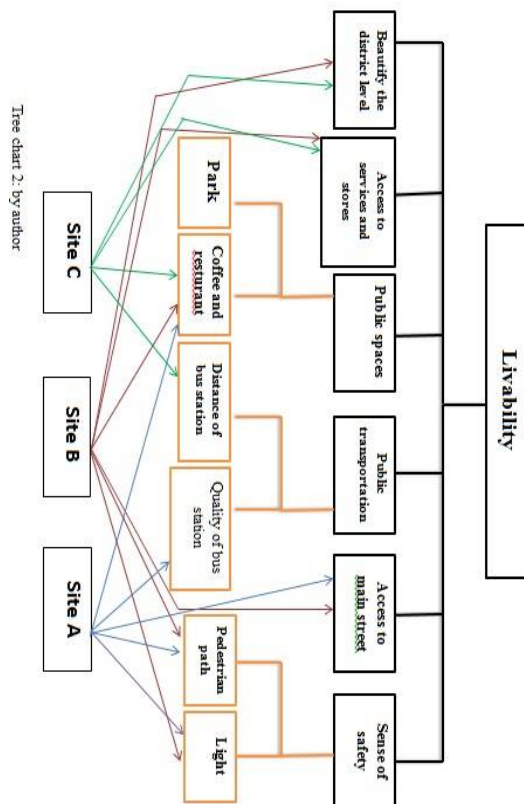


Figure2: by author

After this dividing, we start examined indicators and relationships between these area and indicators:



Tree chart 2: by author

In this part we want find major indicators which effect on each site and find their weight so we should use ANP model and design matrix for them.

Site A

	Light	Pedestrian path	Access to main street	Quality of bus station	Coffee and restaurant	
Light	1	5	3	1	1	0.314
Pedestrian path	$\frac{1}{5}$	1	$\frac{1}{3}$	1	1	0.104
Access to main street	$\frac{1}{3}$	3	1	3	3	0.258
Quality of bus station	1	1	$\frac{1}{3}$	1	1	0.147
Coffee and restaurant	1	1	$\frac{1}{3}$	1	1	0.147

Table5: calculation between indicators and sub indicators

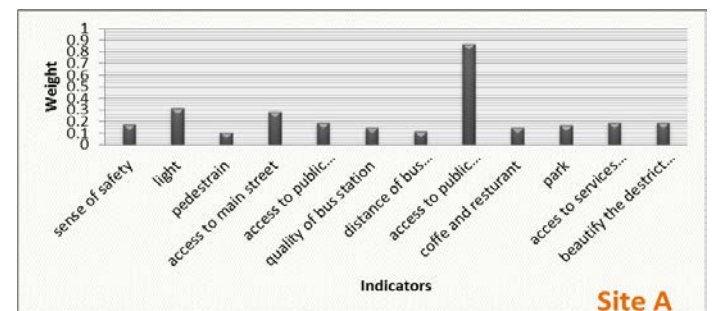


Diagram2: by author

Site B

	Light	Pedestrian path	Access to main street	Coffee and restaurant	Access to services and stores	Beautify the district level	Weight
Light	1	3	3	1	1	5	0.275
Pedestrian path	$\frac{1}{3}$	1	$\frac{1}{3}$	1	5	1	0.136
Access to main street	$\frac{1}{3}$	3	1	$\frac{1}{3}$	3	3	0.178
Coffee and restaurant	1	1	3	1	1	5	0.231
Access to services and stores	1	$\frac{1}{5}$	$\frac{1}{3}$	1	1	3	0.115
Beautify the district level	$\frac{1}{5}$	1	$\frac{1}{3}$	$\frac{1}{5}$	$\frac{1}{3}$	1	0.062

Table6: calculation between indicators and sub indicators

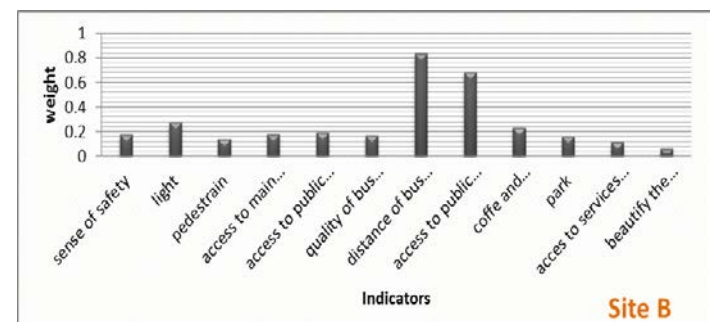


Diagram3: by author

Site C

	Distance of bus station	Coffee and restaurant	Access to services and stores	Beautify the district level	Weight
Distance of bus station	1	1	1	1	0.211
Coffee and restaurant	1	1	$\frac{1}{3}$	1	0.160
Access to services and stores	1	3	1	1	0.278
Beautify the district level	1	1	1	1	0.211

Table7: calculation between indicators and sub indicators

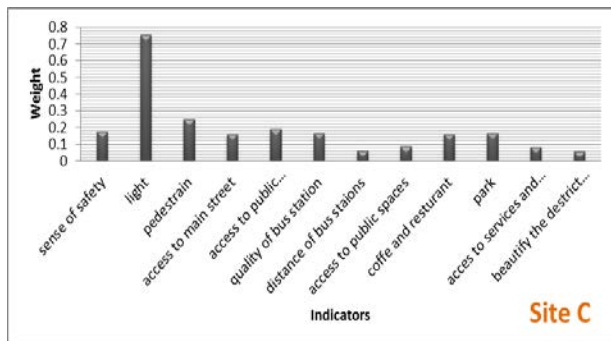


Diagram4: by author

5. Discussion & Conclusion

The effect of indicators on livability in site A shows us which access to public spaces, access to main street and light can improve level of livability in this area. In the other hand distance to bus station and access to public spaces can improve level of livability in site B. in addition light has more effect on level of livability in site C. Now we can find the major indicators which effect on each site and in last part of article with SWOT model finding strength, weakness, opportunity and threaten of livability indicators and presenting strategies and polices which can improve level of livability in Salamis street.