

O 87. THE EVALUATION OF URBAN ENVIRONMENTAL PERCEPTION OF UNIVERSITY STUDENTS IN KONYA CBD BY COGNITIVE MAPPING METHOD

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ABSTRACT: The cities as being a techno-ecosystem is designed by urban and regional planner, the urban environment perceptions of urban planners is an important indicator of sustainability. The aim of this study is to evaluate urban and regional planning students' perception of urban environment about Konya CBD. Especially the central business districts (CBDs) are the most densely structured city centers and the most populated areas are day and night. In this study, students were asked to add ecological urban environmental performance criteria to the image components of Lynch's (1960) urban image cognitive mapping technique in order to measure the perception of CBD urban environment.

The theoretical framework of the research consists of determining the ecological environmental image elements in the students' minds and determining which ecological performance principles are combined with these elements. Data was collected from city and regional planning department's students the third and the fourth classes with 12% sampling size.

The findings of the study showed that the most important reference points and paths were given priority in the cognitive maps of Konya CBD, and environment-sensitive building orientations, climate sensitive designs characteristics, quality of open space areas and the principles of green city design were weak.

Keywords: Urban environmental perception, cognitive map, Central business district

1. INTRODUCTION

The cities as being a techno-ecosystem is designed by urban and regional planner, the urban environment perceptions of urban planners is an important indicator of sustainability. The cognitive map technique is generally used to measure people's thoughts, attitudes and behaviors about spatial or behavioral problems (Eden, 2004). The cognitive mappings is a process for describing causality of the issues by using the figures, a network of nodes and arrows. According to Harary (1965) and Eden (1988) cognitive maps are cause maps by instruction of a group people, is not individual's cognition. Cognitive maps is a dynamic systems' modelling for explaining the former development in related to influence diagrams (Ackerman et. al,1991). Lynch (1960) was one of the first to study the evolving perceptions of the built physical environment. Lynch found that the perception of urban pattern is formed by urban images in the human mind. Lynch, looking for answers to the question of how people perceive the city center, focuses on the priorities of urban images in the minds of the city's inhabitants, on which proportions they exist and how they change over time.

The Using Areas of Cognitive Maps

Cognitive maps use from the political science to the business management, from the psychology to geography in various fields of science. Cognitive maps are widely used scientific measurement tools because conceptual analyzes are intended to explain cause and effect networks. The aim of cognitive maps is to determine the problems by qualitative and quantitative analysis within the cause and effect relationship (Eden,2004, Eden, 1988).

Evans (2010) states that cognitive maps explain spatial relationships with the place. According to Lynch (1960), these relationships are related to the legibility of space. Lynch states that the 5 items of urban images that make up the space in the whole place different spatial readings by individuals. These **5 items**

of urban images of Lynch consist of **paths, edges, districts, nodes and landmarks**. **Path** is transport channels linking urban functions. **Edges** draws attention with its linear characteristic that separates urban and natural areas. **Districts** are the urban areas in which individuals visualize the physical boundaries of the regions they combine with similarities they feel. **Nodes** are the focal points where the roads intersect. **Landmarks** are structures or buildings that differentiate from the common feature of urban fabric. Lynch underlines that the individual reads the space by associating these urban images with identity, structure and meaning. The reason for differentiation of these images from individual to individual stems from the fact that the memory and spatial idioms of the individual using the space are different. In the Lynch study, the findings show that the individual who has less spatial experience emphasizes the general characteristics of the place, regional characteristics, and secondly emphasizes the paths. On the other hand, it was found that individuals who knew the place defined the place depending on landmarks.

2. METHOD

In this study, the City and Regional Planning Department's students were asked to prepare a cognitive map of Konya City Central Business Area by evaluating Lynch's urban images and ecological urban environment planning principles together. The effects of ecological urban environment principles on the legibility of the space, identification and identification were questioned. This research focused on urban environmental perception of cities designer for sustaining the urban environment. The theoretical framework of the research consists of determining the ecological environmental image elements in the students' minds and determining which ecological performance principles are combined with these elements. Data was collected from city and regional planning department's students the second, the third and the fourth classes with 12% sampling size.

3. RESEARCH FINDINGS

The number of students Department of City and Regional Planning in Necmettin Erbakan University is 253 in 2018-2019 academic year. Cognitive maps technics with sample 12 % applied to the student of Department City and Regional Planning. Research sampling consists of 42 people randomly selected from the population. The central business area of the city of Konya, which students use continuously in their social and daily life off campus, is the most crowded area of the city consisting of a combination of the old and the new center. The concept of eco-CBD in planning literature is shaped by the size and structure of the new and old CBD. Nowadays, in the planning of old and new city centers, "ecological approach (eco-CBD)" is important for environmental sciences as well as urban planning discipline as a requirement of environment-friendly planning approach. Eco-CBD aims to investigate the concept of "Sustainable Center Planning" such as evaluating and developing natural / ecological data depending on the location, climatic data of the city, saving substance and energy in the centers, sanitizing the infrastructure in an environmentally sensitive manner, and recycling waste. In the development of eco-CBD; scientific determination of environmentally responsible planning strategies and environmental standards (air, water, soil quality, noise, etc.) has priority. It should be determined to what extent, to what extent and how these strategies should be involved in planning, projecting and implementation. In this direction, legal, administrative and monetary measures should be considered and established. In this study, the perception of eco-centered planning approaches in Konya CBD urban image of the students of the planner candidate was questioned. According to classes' degree is measured the students's perceptions about characteristics eco-CBD of Konya by using the cognitive maps.

4. DATA ANALYSIS

All sketch maps of Konya CBD texture of the students were grouped in relation to the number of concepts in the maps according to Lynch's imaginary elements and eco-CBD planning factors. Group of Konya CBDs image elements (paths, edges, districts, nodes, landmarks) and the city center, geographical location, climatic, building island arrangements occupancy gap, wind, sunbathing, green area construction rates, sound, air, noise parameters such as environmental pollution urban environment perception elements based on eco-CBD factors were taken into consideration in proportion to their frequencies.

5. RESULTS

In this study, 42 cognitive maps were evaluated. Of the third grade students who participated in the study, 100% of Lynch's image elements considered paths, nodes, landmarks, 80% edges and districts, 100% green areas from ecological urban environment components, and 40% cared about environmental pollution problems. As can be seen in **Figure 1**, Lynch's image elements and the memory of the city are good at, their perception of urban environment is fully developed, and their awareness of quality urban environment standards is moderately developed. 100% of the fourth grade students who participated in the study cared about all Lynch's image elements and the presence of green spaces as an ecological urban environment component, and 60% of environmental pollution problems. As can be seen in **Figure 2**, Lynch's image elements and the memory of the city are excellent, their perception of urban environment is fully developed, and their awareness of quality urban environment standards is well developed. When the drawing styles of cognitive maps are examined, it is seen that spatial sketches emphasize Lynch urban image elements in perfect or good level (**Figure 3-4**). Sequential drawings also show moderate Lynch elements and good eco-CBD definitions.

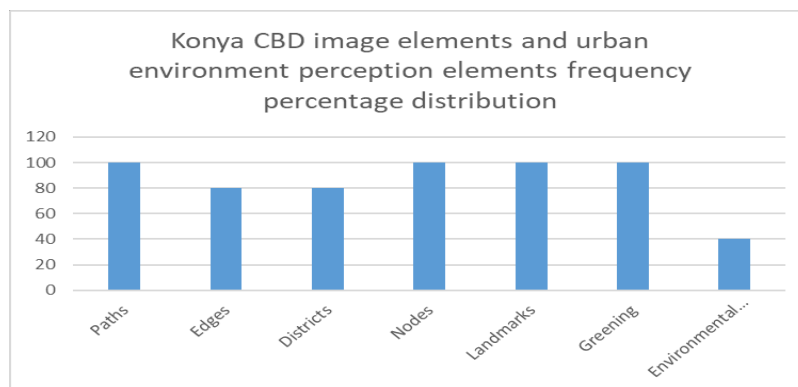


Figure 1. According to third classes Konya CBD image elements and urban environment perception elements frequency percentage distribution

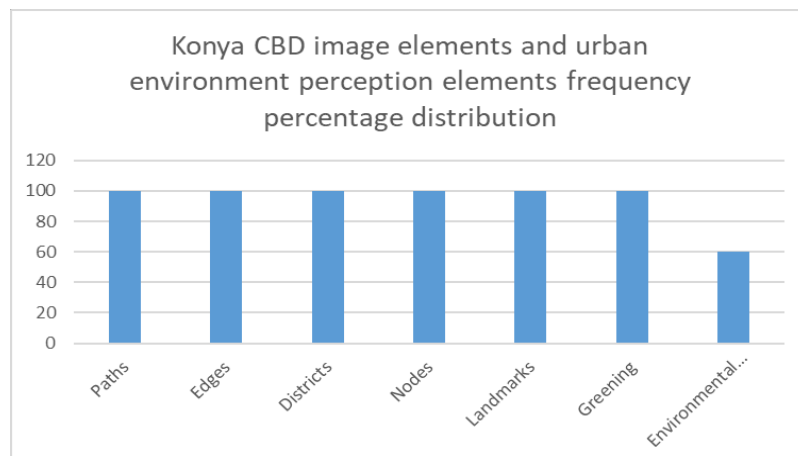
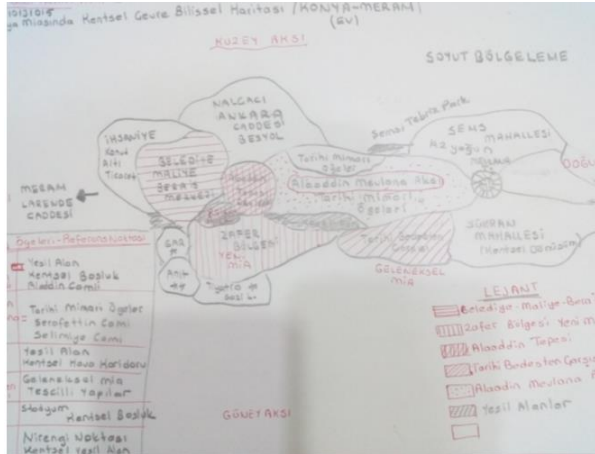
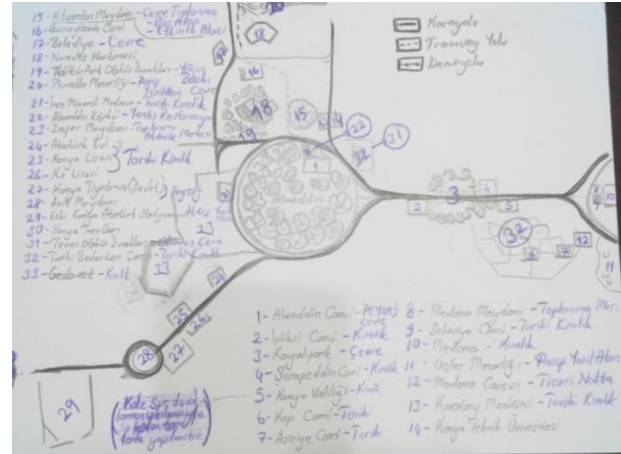


Figure 2. According to fourth classes Konya CBD image elements and urban environment perception elements frequency percentage distribution

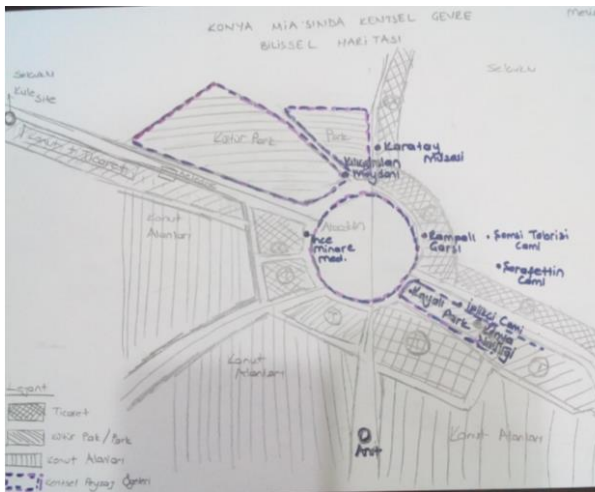


Good definition about CBD image but poor urban environment perception

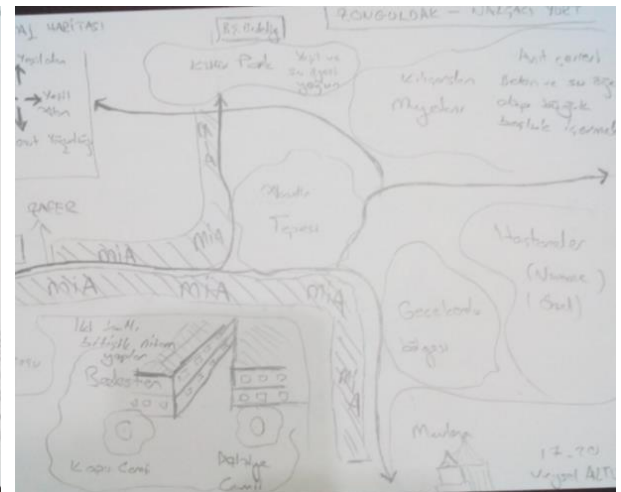


Better than fist map as to urban environment (green corridors, air ventilation, public space, noise pollution)

Figure 3. Some of Cognitive maps in Konya CBD



Good definition about CBD image but poor urban environment perception



Better than fist map as to urban environment (green corridors, air ventilation, public space, noise pollution)

Figure 4. Some of Cognitive maps in Konya CBD

6. DISCUSSION AND CONCLUSION

There is no doubt that one of the most important factors affecting the perception of urban image and eco-CBD is related to CBD of Konya where students spend most of their free time outside campus education. Over time, because of their communication with CBD, they have come across different objects and have learned them by experiencing them. Especially the green areas in the city center, trade areas, socio-cultural facilities and historical building groups were the elements that the students' image maps were primarily concerned with. This approach is consistent with Lynch urban image elements.

In the cognitive maps drawn about Konya CBD, where historical structures are predominant, third-class city planners perceive paths and reference points as a priority, and then highlight districts and nodes, while in the eco-CBD, they concentrate on green areas and remain at a moderate level in urban environmental pollution. It is understood that the fourth classes perceive the city with the Lynch image elements at a very good level with spatial drawing styles in urban tissue perceptions and that the eco-CBD perceptions develop at a much better level than the third classes.

Konya CBD, which is put forward with cognitive maps, has to approach with environmental sensitive planning, project design and implementation within the concept of sustainable center planning in urban planning and urban design disciplines.

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