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Rhythmanalysis as a Method of Analyzing Everyday Life Spaces: The Case of Kıbrıs Şehitleri Street in İzmir

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ABSTRACT
The main aim of this paper is to demonstrate how everyday life of urban spaces can be analyzed through the interdisciplinary concept of rhythmanalysis. Lefebvre's conceptual expression defined as a Rhythmanalysis Project is an inspiring resource for revealing the rhythms of everyday life in cities and urban spaces. This project is first included in the book 'Éléments de rythmanalyse: Introduction à la connaissance de rythme', published in 1992 after the death of Lefebvre and translated in English as in 2004 as 'Rhythmanalysis Space-Time and Everyday Life'. While examining the studies conducted so far, it has been seen that, rhythmanalysis theory is not an effective and valid rule that can be generalized. This term interpreted by researchers using different methods. The fact that rhythm analysis theory derives its origin from phenomenology leads to subjective and experiential interpretation of the studies. This study conducts a three-layered reading on selected Kıbrıs Şehitleri Street in the İzmir where is a prominent city in Mediterranean geography. It has been proposed a systematic reading model that will contribute to urban science by integrating the methods of space syntax, perceptual mapping and behavioral mapping to Lefebvre's rhythmic analysis project.

Keywords: rhythmanalysis, urban space, everyday life, space syntax, behavioral mapping.

1.INTRODUCTION

1.1. Problem and aim of the study

Urban space is reproduced every day with social relations and daily life rhythms beyond physical boundaries. Factors affecting pedestrian movements in urban space include morphological structure (function / ground floor uses, spatial configuration), weather conditions such as solar wind, rain, week-weekend, temporal conditions such as working hours during the day, sensory parameters such as sound and smell. Urban spaces are reproduced every day and at any time through the morphological, perceptual and temporal factors.

Lefebvre's conceptual expression as a Rhythmanalysis Project is an inspiring resource for revealing the rhythms of everyday life in cities and urban spaces. This project is first included in the book *'Éléments de rythmanalyse: Introduction à la connaissance de rythme',* published in 1992 after the death of Lefebvre and translated in English as in 2004 as *'Rhythmanalysis Space-Time and Everyday Life'.* When the studies in the literature are examined, it is seen that rhythmanalysis theory is not a rule that can be generalized and interpreted by researchers using different methods. The fact that rhythm analysis theory derives its origin from phenomenology leads to subjective and experiential interpretation of the studies.

The aim of this study is to show that Lefebvre's rhythmanalysis theory can be transformed into a scientifically validated reading style by using qualitative and quantitative methods together. This reading model, which is nourished by different methods, transforms

Lefebvre's rhythmanalysis project into a systematic data set which is fed from morphological, perceptual and behavioral analyzes and forms a leading model for urban studies. In this data set, there are objective space syntax values, perceptual data obtained by subjective experience and behavior maps obtained from observational data. This model, which is fed from three different data sources, aims to be the continuation of Lefebvre's rhythm analysis project.

1.2. Definition of rhytmanalysis

Rhythms consist of combination of the smallest moments of the urban spaces and therefore they are significant in urban space studies. The concept of rhythm is used in sociology, architecture, health, visual arts, as well as music and literature. According to the Merriam Webster dictionary, rhythm is "a pattern of regular and repetitive sounds or movements". Another definition is "strong musical notes, words or voice patterns used in music, dance, poetry" (Cambridge Dictionary). Musical rhythms consist of regular beats, intervals, accents, measures and meters. In visual arts, the concept of rhythm expresses the regular and harmonic repetitions of shapes, lines and colors.

To Lefebvre and Régulier, "everywhere where there is an interaction between a place, a time and an expenditure of energy, there is a rhythm" (Lefebvre & Régulier, 1985/2004, p. 155). In this sense, the concept of rhythm points to abstract and concrete forms. While biological and musical rhythms are considered in concrete forms; rhythms related to physical time and experiential time are classified as abstract rhythms (Wunderlich,2007, p.93). According to Lefebvre & Régulier (1985), the concept of measurement is necessary to describe rhythms for their classification with different characteristics in modern everyday life. Rhythms having different sources and composed of different qualities, intervals, frequencies can be distinguished in daily routines of urban life.

Although rhythmanalysis as a concept has been proposed by Lefebvre, it is necessary to link academic studies guiding the formation of this theoretical framework chronologically. Emile Durkheim (1912) and Marcel Mauss (1950), the French phenomenologist Gaston Bachelard (1969), the Austro-Hungarian choreographer Rudolf Laban (1920, 1950), the German art historian Aby Warburg (1939) and the cultural theorist Walter Benjamin (1968) were all interested in this issue.

Tarde (1903) has stated that the universe repeats and exists through imitation. Psychology, biology and social life are also prone to defining these rules as "universal laws of repetition". He has analyzed the physical world by comparing it with the sociological and biological world. Also, Durkheim (1912) has referred to the dual rhythms of social life. To him, these rhythms are represented in the times of syndos and dispersals of religious rituals. To Durkheim, social rhythms are parallel to the rhythms of nature, and they are not coincidental.

The concept of rhythmanalysis first appeared in *"La Rythmanalyse"* by the Portuguese philosopher Lúcio Alberto Pinheiro Dos Santos in 1931. Additionally, Bachelard referred to the concept of rhythmanalysis in his *book "La dialectique de la durée"* in 1936. Defining the concept of 'lived time', he has suggested that the flow of time is established now (Bachelard, [1936] 2010, p. 41). All these studies are thought to be inspired by Gabriel Tarde's *universal repetition theory* (Brighenti & Kärrholm, 2018).

Lefebvre reinterpreted the concept of rhythm from the 1960s to the 1980s, from the philosophy of Bergson, Dos Santos and Bachelard with the Marxist approach and Situationist philosophy. To him, rhythms not only symbolize natural and social events, but also express class dominance. First, Lefebvre's *"La Vie Quotidienne II"* (1961) has a reference to the concept of rhythm. Secondly, *'La Production de L'espace'* (1974) offers a wide range of work on rhythm. Afterwards, Lefebvre has published several articles on the concept of rhythmanalysis with his wife (Lefebvre and Régulier 1985, Lefebvre and Régulier

1986). These articles were later published in a book entitled *"Éléments de rythmanalyse: Introduction à la connaissance des rythmes"* in 1992. Lefebvre developed *'the theory of moments'*, the starting point of the rhythmanalysis concept in his book *"Critique De La Vie Quotidienne II"* in 1961. He referred the concept of rhythm and rhythmanalysis in his book *"La Production de L'espace"* (1974). And finally, in the 1980s, he started to work on the project *'Rhythmanalysis'.*

Rhythmanalysis theory was first interpreted by Lefebvre within the scope of urban studies. To Lefebvre, everyday life can only be analyzed through a complex and interdisciplinary method. Thus, rhythmanalysis serves to analyze the temporalities of everyday life. He has argued that the interaction between time and space occurs through everyday life practices. The concept of rhythmanalysis refers to the tension between linear rhythms, penetrating into everyday life and repetitions of the capitalist system, and cyclic rhythms of cosmic origin. While the cyclical rhythms in pre-industrial societies are leading daily life of society, the linear rhythms of the capitalist system in modern urban society dominate over cosmic-based cyclic rhythms. Thus, Lefebvre's rhythmanalysis project questions the exact quantification of social time and how these quantities integrate with the society (Lefebvre 2005, p.130). The last book of Lefebvre, *'Éléments de rythmanalyse: Introduction à la connaissance de rythme,'* was the final product of this thought and published in 1992 by his friend René Lourau after his death and translated in English in 2004 as '*Rhythmanalysis Space-Time and Everyday Life'.*

Lefebvre, in this project has described the rhythmanalyst as a concrete actor. It is not the mere actor operating rhythmanalysis as a tool, but also the one experiencing the city through its body and its rhythms. The rhythmanalyst uses smells, hearing and views to perceive the rituals of everyday life. To analyze the data obtained through the body and sensory organs, it is necessary to adopt an approach nurtured from many sciences such as physics, sociology, ethnology, biology and mathematics.

Lefebvre has expressed that the person named as 'rhythmanalyst' perceives the rhythms by walking on the street and observing them through the window are different. He/she perceive the buzzing sounds and voices by combining them with their own body rhythms. On the other hand, noise, flow and rhythms can be perceived objectively by the person observing from the window.

1.3. Identification of the case: KŞS

In order to examine the layers of Lefebvre's rhythm analysis in urban space, it was pedestrianized in the center of İzmir Kıbrıs Şehitleri Street (KŞS), which reflects many rhythm elements, is chosen. In accordance with the studies in the literature, the rhythmanalytical layers of this area will be examined.

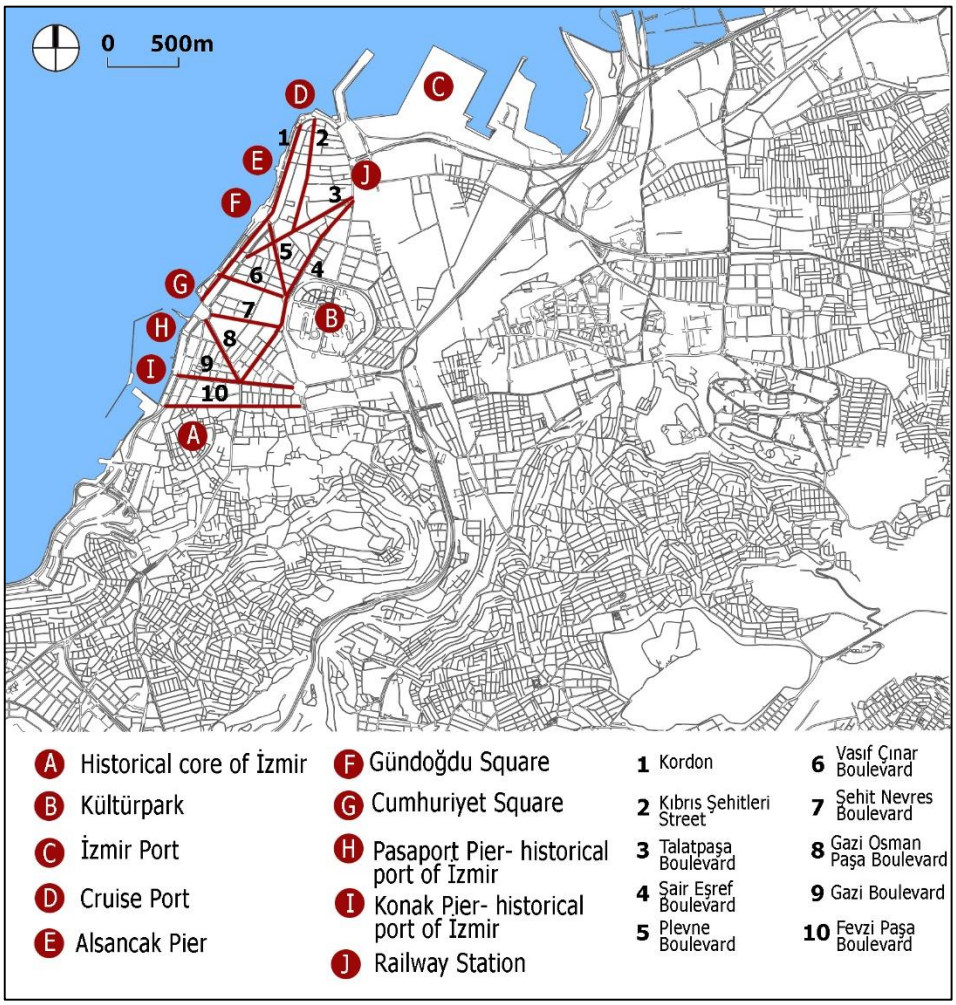


Figure 1. Map Showing Central Urban Locations in İzmir

The street is located in the city center of Izmir Harbor, Alsancak and Konak Pier, Kordon promenade, Cumhuriyet Square and Gündoğdu Square, surrounded by important landmarks such as Kültürpark (fair area) and in this street the density of pedestrians is very high **(Figure1).** KŞS is important in providing links between the coastal region and the city center. Due to its proximity to Kordon, Gündoğdu Square and Cumhuriyet Square, Izmir Fair, Izmir harbor and Alsancak Train Station, this street has been affected by many rituals and important moments in the memory of the city. The street which is 2-km-long is an urban area where many political and social events take place, as well as clustering, gathering, entertainment, protest, shopping, eating and drinking activities.

This is a pedestrianized street used by many urban city-dwellers from different ages, income groups and professions. The heterogeneous nature of this street separates it from other urban spaces. It preserves its multi-functional structure not only in special times with specific activities, but also in the everyday life routines of the city.

2. Literature Review

2.1. Interpretations after RA Project of Lefebvre

Lefebvre's rhythmanlysis project has been interpreted by many researchers in different disciplines and applied in the field of urban research. Studies on the concept of rhythm analysis can be been examined and listed under five different groups. These are studies on rhythm analysis theory and the concept of 'chronotrop' (Crang, 2001; Mulicelk et al., 2015); studies applying rhythm analysis theory with time-lapse photography method (Simpson, 2012); studies based on Lefebvre's theoretical approach (Mayer, 2008); studies examining the relationship among music, city and rhythm (Wunderlich, 2008;2013); urban

geography-oriented studies (Edensor, 2010; Brighenti & Karralhom, 2018) and cultural studies (Highmore, 2005).

Crang (2001) and Mulicek et al. (2015) have studied the concept of rhythm analysis through the concept of 'chronotope'. In his book, Crang (2001) has noted that rhythm studies for certain places are important to understand the memory of the place and establish a relation between time and space. He has used the chronotrope concept of Bakhtin and stressed that experience flows in time-space processes are created through repetitive actions in daily life.

Mulíček, Osman and Seidenglanz's article (2015) is a valuable research in rhythm concept and urban reading. In this article, Bakhtin's chronotope concept and Lefebvre's rhythmanalysis concept have been analyzed comparatively. The researchers have analyzed the city of Brno in the Czech Republic through the concept of 'pacemaker' defined as "constituting collectively shared, often institutionalized and above all stable sources of particular rhythms" (Mulíček et.al, 2015, p.311).

Simpson (2012), using the time-lapse photography technique, has demonstrated the rhythmic state of the chosen urban space. Meyer (2008) has analyzed Lefebvre's theory of rhythm analysis and daily life critique. He has deciphered the rhythm concept and summarized Lefebvre's rhythmanalysis method theoretically and included complete data in comprehending crucial points on this theory. However, this study has not been supported with a case study. While Meyer (2008) has discussed the theoretical framework of Lefebvre in his research, Simpson (2012) has applied the theory of rhythmanalysis to the city of Bath in UK and drawn attention to polyrhythms.

Moreover, Wunderlich (2013) has described the relationship between music and rhythm with the concept of rhythm analysis. In addition, Wunderlich has used this concept in revealing the characteristics of the squares in London. In Wunderlich's article, the rhythmanalysis method is utilized as a tool of city reading. In-depth analysis of case studies has been carried out and the actions have been diagrammed to reveal the rhythms of places.

Also, Edensor (2010) has interpreted rhythmanalysis concept to decipher the urban space and compare the functional, geographical and cultural qualification of the urban areas. He has separated the concept of rhythm into themes and itemized their characteristics in his book, combining rhythm studies from different geographies.

As another researcher, Highmore (2005) has stated that the mobility of modern urban life can be explained by using Lefebvre's rhythmanalysis method in his book. In this book, everyday life and urban readings have been performed in different geographical regions using the rhythmanalysis method. To Brighenti & Kärrholm (2018), Lefebvre's rhythmanalysis project has a phenomenological background as well as ecological approaches. They think that this concept can be understood through the spaces where temporalities are observed. These spaces, including temporalities are filled with social relations and meanings. In this study, concept of rhythm has been handled as a special time. They have also qualified rhythms as temporal and spatial regions (Brighenti and Kärrholm, 2016).

There are also some experimental studies (Cronin, 2006; Edensor & Holloway, 2008; Koch & Sand, 2009; Edensor, 2010; Prior, 2011; Lin, 2012; Simpson, 2012; Schwanen, 2012; Smith and Hetherington, 2013; Mareggi, 2012; Yeo & Heng, 2014; Paiva, 2016) based on Lefebvre's concept of rhythmanalysis.

3. Research Methodology

3.1. General approach to concept of rhythmanalysis

The potentials offered by the rhythmanalysis theory are using as a source of three main methods, morphological, perceptual and behavioral mapping. The cosmic rhythms of the city and studied area are accompanied by this analysis. Seasonal and time parameters added to the analysis studies reveal the relationship between cyclic and linear rhythms of rhythmanalysis theory **(Figure 2).**

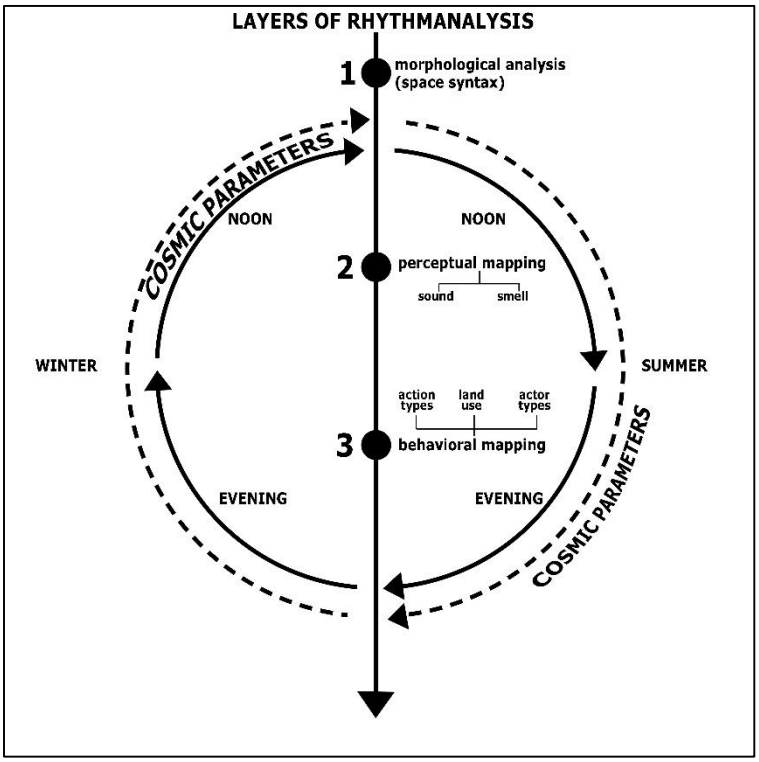


Figure2. Diagram showing the stages of the study

3.2. Space syntax analysis

The space syntax method presented by Hillier and Hanson (1984) examines the interaction between urban space and human movements. This method, which reveals the objective and numerical characteristics of the layout and urban fabric, reveals the experience of space. Space syntax provides information about everyday life by marking places that people use and interact with intensively.

Urban space pattern influences the rhythm of urban space by directing human movements and behaviors. In space syntax, the corresponding integration and connectivity values are used as syntactic parameters in this study. First, an axial map of the study area was prepared to analyze the effect of physical properties of space on human movements. This map allows the calculation of Rn (global integration value), R3 (local integration value) and Connectivity values using the Depthmap X program.

The global integration value of KŞS is 2.77612 and the local integration value is 3.30509. The mean global integration value of the area was 1.65472, the local integration value was 0.422392 and the average connectivity value was 3.69231. This street is the maximum value of the limited working area **(Table 1).**

Table 1. Global, local integration and connectivity values of the study area and Kıbrıs Şehitleri Street

	Global Inetgration (Rn)			***Local Integration (R3)***			***Connectivity***		
	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min
ALSANCAK DISTRICT	2.77612	1.65472	0.82423	3.30509	1.87397	0.422392	18	3.69231	1
KIBRIS ŞEHİTLERİ ST.		2.77612			3.30509			18	

In the analysis, the axes (5, 6,9 and 13) which provide direct access to the shore are those with high local integration value (2.19392, 2.20202, 2.29866 2.56827) and higher than the average local integration value of the area (1.87397). Pedestrian mobility is high on these axes. Pedestrian mobility is maximum observed on KŞS. The local integration value of this street **(Figure 3)** was measured as 3.30509 **(Table 2).**

Table 2. Syntactic values of streets in the study area

Street No	***Street Name***	***Global Integration (Rn)***	***Local Integration (R3)***	***Connectivity***	***Observation Point***
1	1671/1 St.	1.85755	2.58609	6	
2	1477. St.	1.66750	2.10854	2	
3	1478. St.	1.66750	2.10854	2	
4	1479. St.	1.73626	2.23246	5	
5	1469. St.	1.73032	2.19392	3	
6	1481. St.	1.81746	2.20202	2	
7	Cumhuriyet Blv.	1.93584	2.66856	13	
8	Kıbrıs Şehitleri St.	2.77612	3.30509	18	
9	Muzaffer İzgü St.	1.88527	2.29866	2	
10	1453. St.	2.12291	2.61327	5	
11	Atatürk St.	1.58885	2.02503	5	
12	M.E. Bozkurt St.	1.95078	2.54492	6	POINT 3
14	1440. St.	1.98138	2.51907	6	POINT 1
15	İrfan Boyuer St.	1.79168	2.21596	3	
13	1448. Cumbalı St.	2.00497	2.56827	6	POINT 2
16	1441. St.	1.82402	2.25403	3	

The mean global integration value of the area was measured as 1.65472. Axis number 4, which connects the KŞS to the coast and the train station, is above average with a global integration value of 1.73626.10. In particular, the axes 10 and 12 are important points for coastal interaction with KŞS. Axis 12 also provides communication with the hinterland. Cumhuriyet Avenue, which is located parallel to KŞS, is the axis where there is a high amount of vehicle traffic with high global integration value **(Figure 4).**

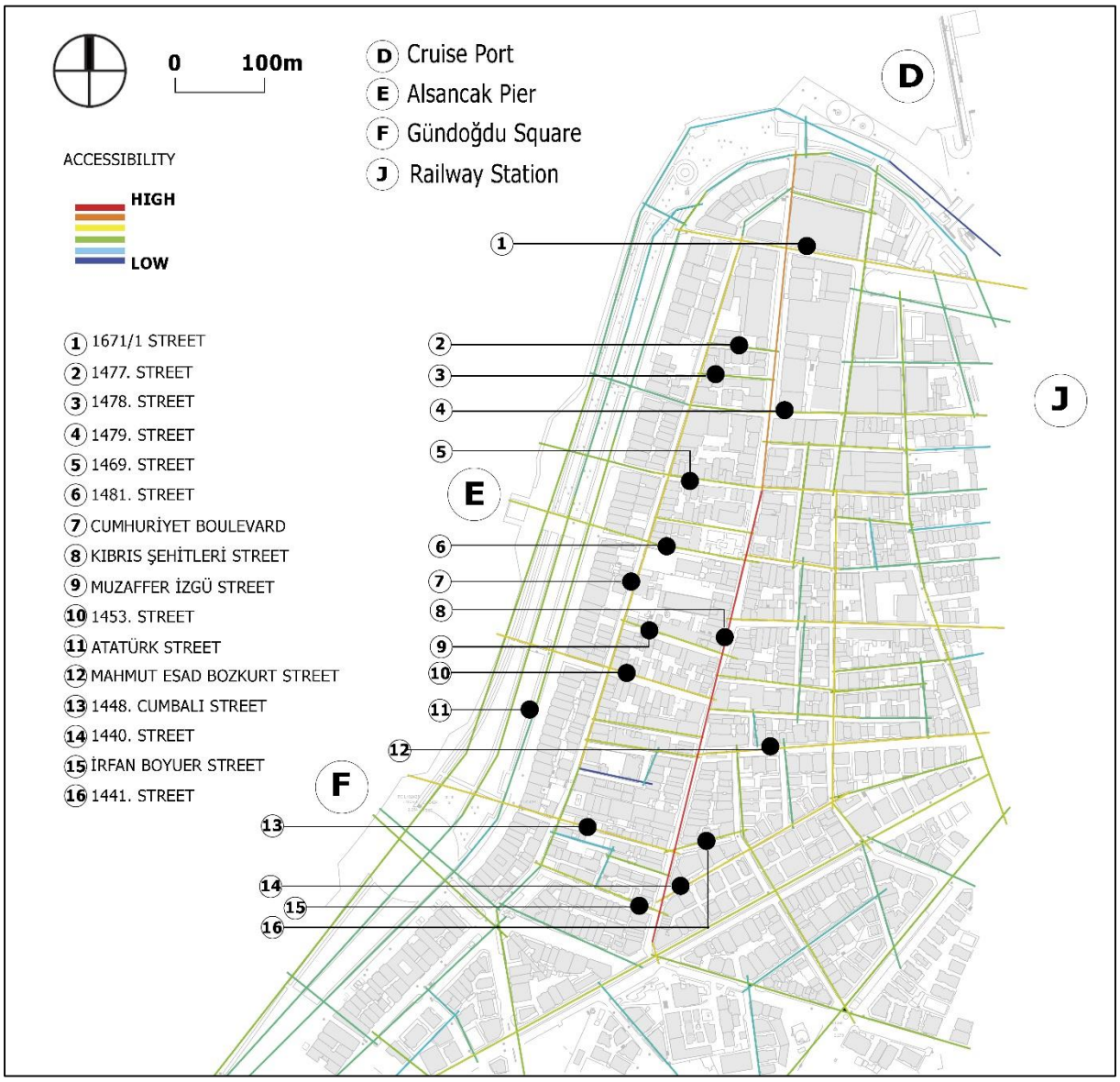


Figure 3. Local integration analysis of Kıbrıs Şehitleri Street

The average connectivity value of the region was measured as 3.69231. While KŞS are at the highest value with 18, Cumhuriyet Street is the second which is parallel to this Street. The axes named as 1,4,10,12, 13, 14 that feed KŞS, where the interaction is high and the time spent with the values of 6,5,5,5,6,6,6 respectively **(Figure 5).**

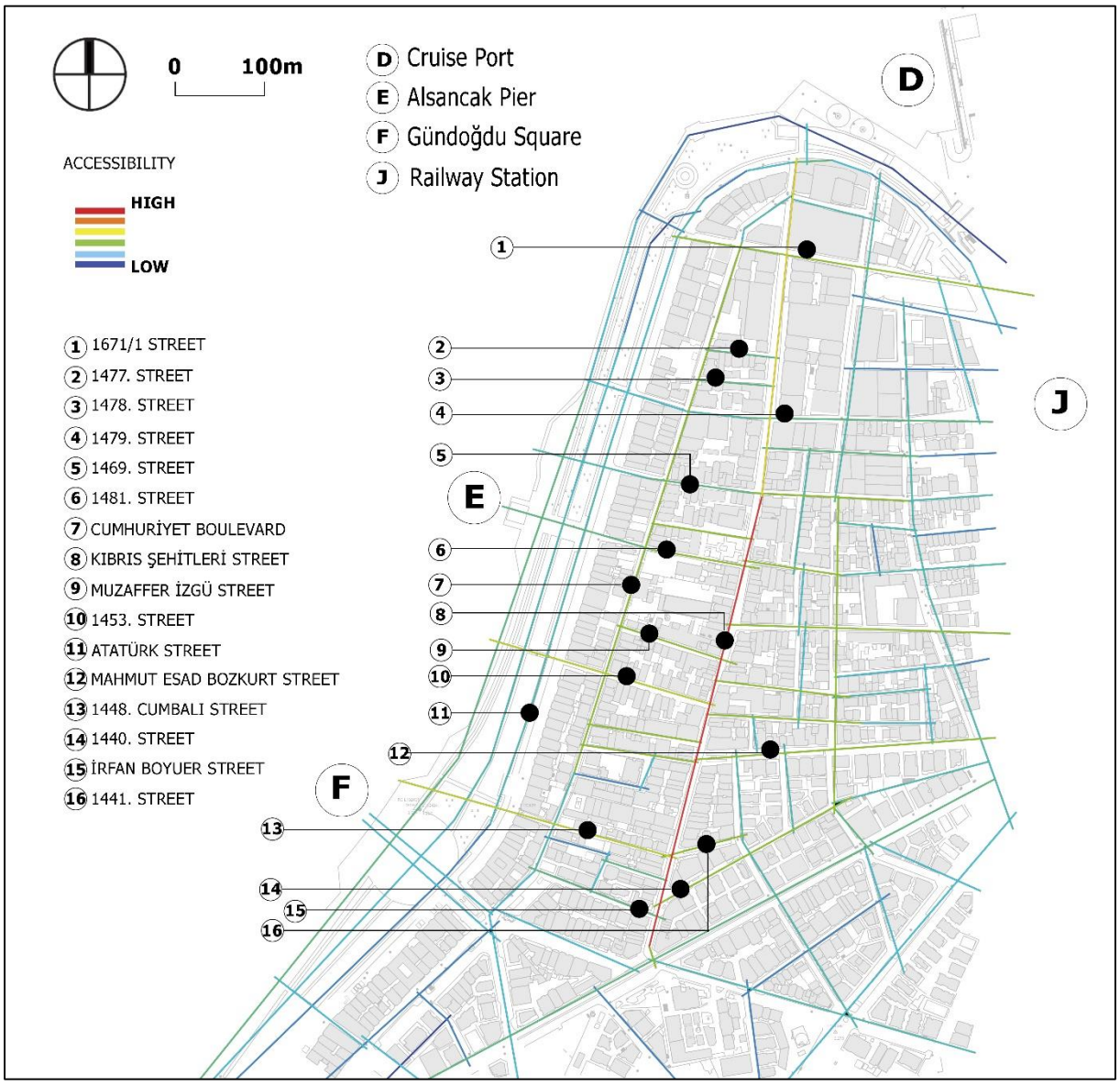


Figure 4. Global integration analysis of Kıbrıs Şehitleri Street

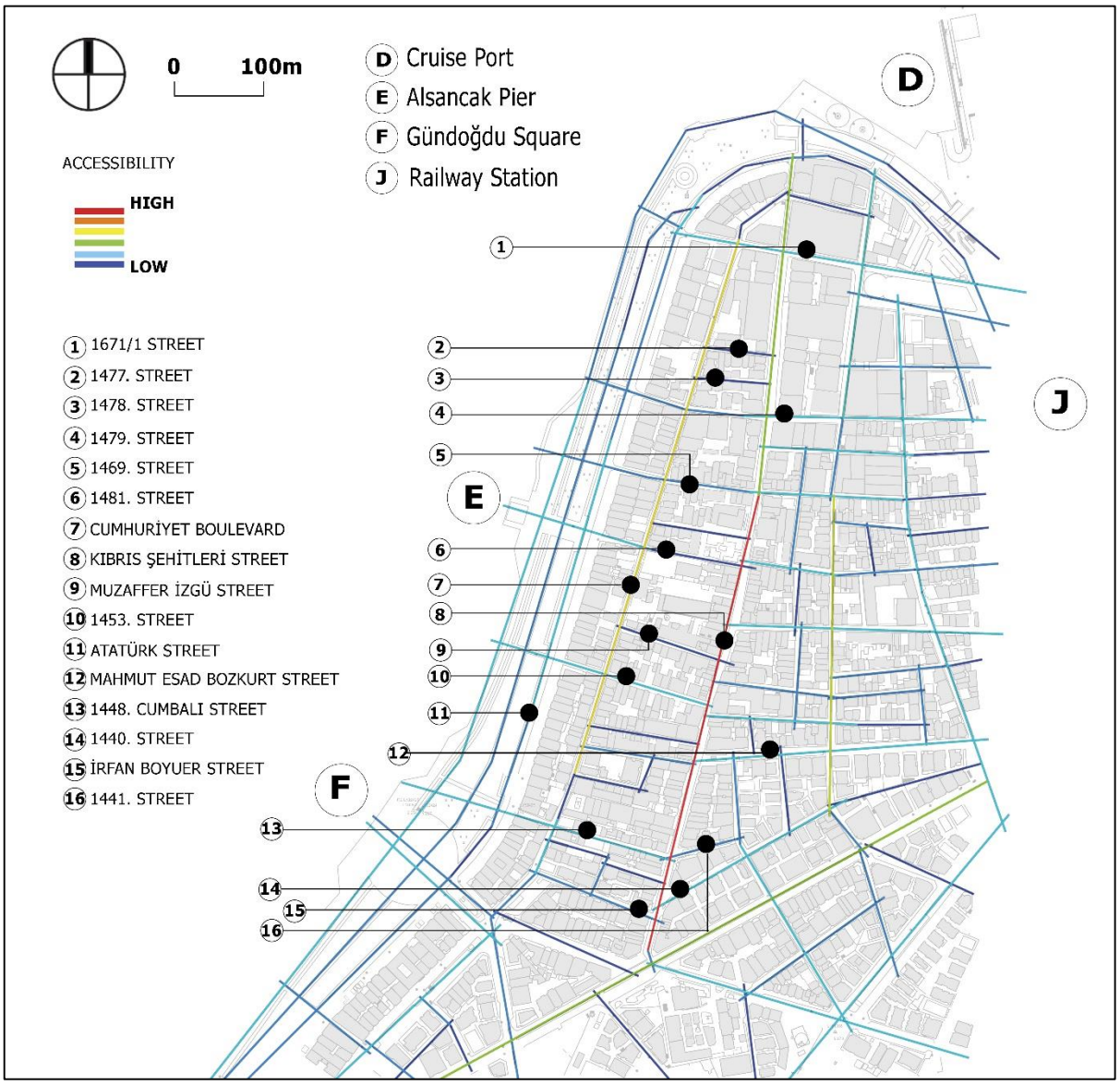


Figure 5. Connectivity analysis of Kıbrıs Şehitleri Street

The high level of global integration of the southern part of KŞS indicates that it is used more by visitors and tourists. The southern part of the city which hosts the meeting and meeting places of the visitors has a high local integration value. This street has important transportation points such as Alsancak pier, cruise ships, train station that connecting with other countries or other parts of the city. Kordon, which is the most important pedestrianized public space created by filling at the junction of the city, is located on the west side of the street. The high global and local integration values of KŞS means that pedestrian mobility is high.

The points where the axes with high connectivity values are selected in the section where the global and local integration value of the KŞS are fed are selected as observation points. The local and global integration values of these points support the observation results. The axes that feed the observation points will be used to compare those with the highest global, local integration and connectivity values. The local and global integration values of these points support the observation results. The axes that feed the observation points will be used to compare those with the highest global, local integration and connectivity values.

3.2. Perceptual mapping

In order to analyze the relationship of the field with cyclic and linear rhythms, different sensory experiences such as pedestrian movements and sound and smell are compared. There are six different types of sounds on Cyprus Martyrs Street: Buzzing, street music, traffic, human sounds, natural sounds and music from cafes and shops. In the area where local integration value is the highest and the interaction is high, human sounds, humming and music sound coming from the places are predominant. Intense human voices were detected at the observation points. The sounds of nature are felt at the northern end of the street. These points are also areas with intense food smell **(Figure 6).**

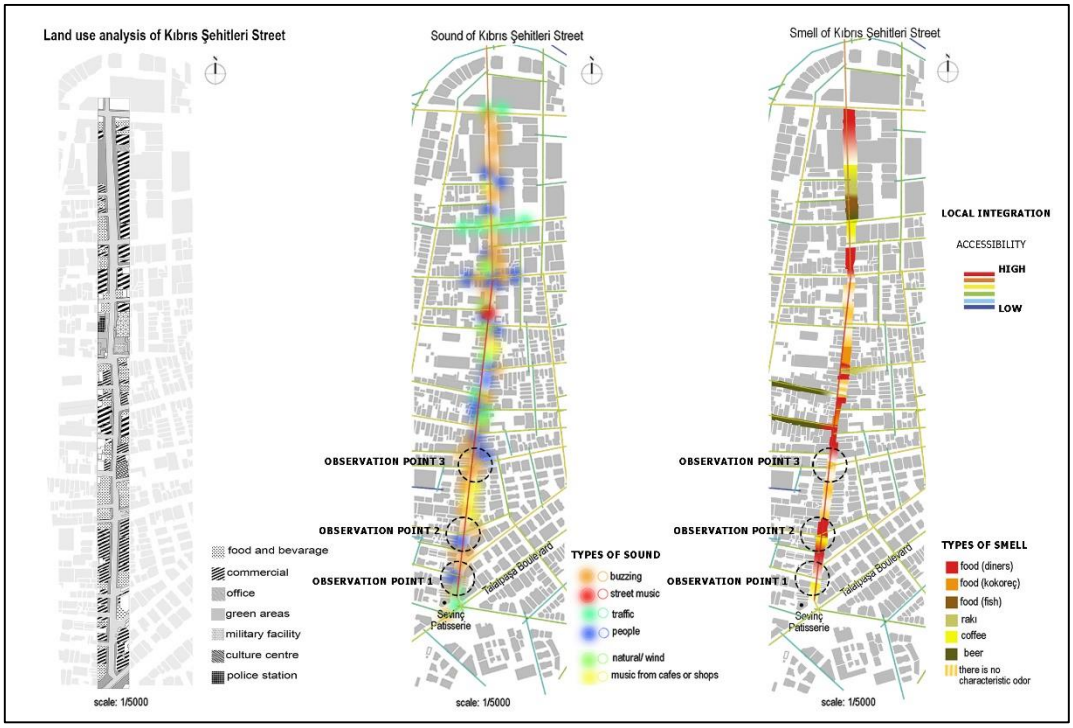


Figure 6. Land use and perceptual mapping (sound and smell) of Kıbrıs Şehitleri Street

3.3. Observations and behavioral mapping

Lefebvre, in the rhythm analysis theory, intervenes in the street, senses the crowd and everyday actors, interacts and observes the rhythm of the street at a fixed point through the window facing the street. In the first step, the rhythm of the street will be measured from three different observation points selected according to the space syntax data. Secondly, the mapping of the whole street will be done by interfering with the daily flow of the street. Thirdly, the actors influencing the rhythm of the street will be discovered. The observational data will be accompanied by cosmic cycles, morning and evening, summer and winter.

3.3.1. Analysis from three fixed observation points – 'seen from the window'

According to the data in Table 2, the points where the axes feeding the KŞS and which have high local, global integration values and connectivity values and KŞS are selected as fixed observation points **(Figure 7).**

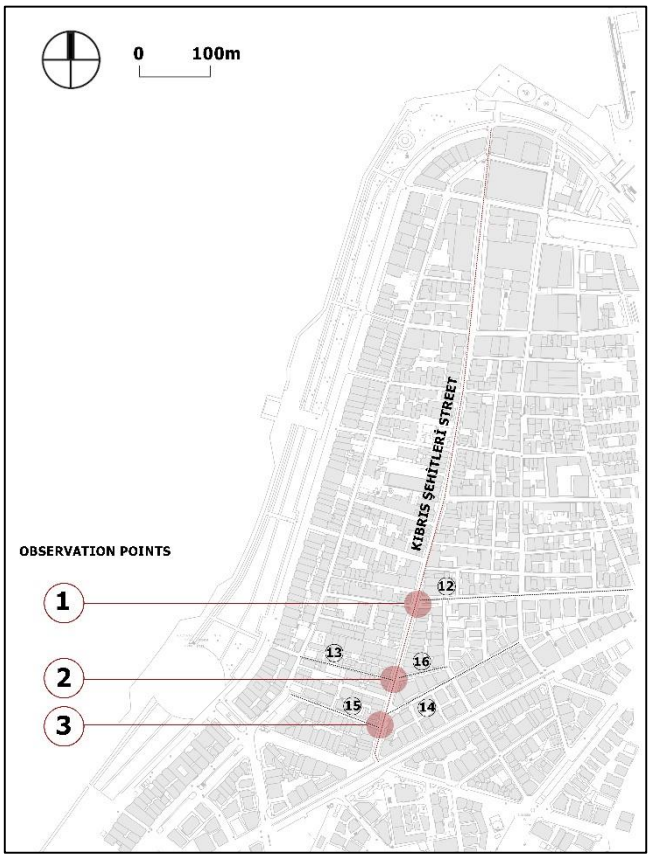


Figure 7. Observation points on Kıbrıs Şehitleri Street

While the total number of people observed at observation point 2 with the highest local integration value (2.56827) was measured as 1379, observation point 3 with 2.54492 local integration value was the second. The observation point with local integration value of 2.51907 ranks third with 1755 people. All three observation points are the axles with the highest connectivity value (6) among the streets leading to the KŞS. According to the space syntax data that supports the observation data, these three points show the areas where the highest social interaction occurs in the part of KŞS with the highest connectivity value. A total of 3,339 people were observed at these points. When we look at the activities at these points, standing, shopping, cycling, riding activities at the first point, sitting, meeting, shopping activities at the second point and sitting, standing, riding, working activities are the majority at the third point. The first observation point is preferred for more dynamic activities, while the second and third points are preferred for stationary activities **(Table 3).**

Table 3. The number of people according to basic activities at three observation points

	Observation Point 1	***Observation Point 2***	***Observation Point 3***
People observed	755	1379	1205
Activities			
walking	679 (%90)	1269 (%92)	1116 (%93)
standing	17 (%2)	9 (%0,6)	18 (%1)
sitting	0	45 (%3)	33 (%3)
meeting	9 (%1)	26 (%2)	19 (%2)
working	4 (%0,5)	8 (%0,5)	7 (%0,5)
shopping	20 (%3)	12 (%0,8)	0
cycling	16 (%2)	4 (%0,3)	3 (%2)
riding	10 (%1)	6 (%0,4)	9 (%7)

3.3.2. Analysis performed as a rhytmanalyst

The characteristics of urban spaces are not only measured by physical and functional analyses, but also observing pedestrian movements. Pedestrian movements and activities are shaped by the physical characteristics of urban spaces and the preferences of individuals. For Bradshaw (1993), factors affecting pedestrian movements should be examined under four main headings: human and social factors, factors related to physical structure, natural structure and time factors. Behavioral mapping techniques also focus on the activities of individuals in urban space to determine their actions. This technique is used to determine the effect of physical characteristics of urban spaces on human behavior. This method demonstrates the effect of the stimulatory factors on the pedestrian movements, depending on the formal and functional elements of urban space.

In this section, the number of activities and the number of people were demonstrated on maps. KŞS was observed twice a day, based on the rhythmanalytical theory. It was observed that cyclical and linear rhythms dominated the urban space. These rhythms caused some points of the street to be owned, used and transformed by actors. Every day repetitive practices created everyday rhythms in this urban space. As a result of the observation on the actors and actions, action maps of the street were created. In addition, actors on the street were compared numerically in seasons and two different times of a day. This quantitative comparison revealed the density of people on the street. As a result, what action transformed which point of the street into a specific place is discovered.
Analyzes were made in the summer and winter, at noon and in the evening. Summer recordings were made in June between 12.00-12.30 and 17.00-17.30; winter recordings were on February 6, 13.00-.13.30 and 16.00-16.30.

According to the observation analysis, as an extension of the indoor spaces in winter, the activity of sitting in the overflowing units of the cafes and the sitting units on the street (341/51%, 328/49%) was high. In summer evenings, this number reached its maximum (708/85%) level. The number of people in motion in winter (1687) is higher than in summer (1084). Summer is more preferred for shopping, while people working on the street increase in winter (48). It can be said that street artists are more numerous in summer (10). These kinds of actions are important data that affect the rhythm and intensity of the street **(Table 4).**

Table 4. Number of people based on behavioral mappings in winter and summer

	Number of people					
	winter			***summer***		
Activities	noon	evening	**total**	noon	evening	**total**
walking	918 (%54)	769 (%46)	1687	454 (%42)	630 (%58)	1084
standing	81(%53)	72(%47)	153	15 (%31)	34 (%69)	49
sitting	341 (%51)	328(%49)	669	129 (%15)	708 (%85)	837
meeting	5 (%16)	25(%84)	30	14 (%48)	15 (%52)	29
working	25 (%52)	23(%48)	48	7 (%70)	3 (%30)	10
shopping	0	17(%100)	17	18 (%62)	11 (%38)	29
cycling	11 (%73)	4(%27)	15	5 (%71)	2 (%29)	7
performing	0	1(%100)	1	0	10 (%100)	10
TOTAL	**1381 (%53)**	**1239 (%47)**	**2620**	**642 (%31)**	**1413 (%69)**	**2055**

At noon in winter, at the beginning of Kıbrıs Şehitleri Street, there was a heavy traffic noise. People were waiting for the traffic lights to cross the street. At that time, lottery seller and stable florist were at the beginning of the street. Although there were several walking people, motor bikers and cyclists were also encountered. At the beginning of the street, two cyclists passed. There was no outdoor usage of the cafes due to the season. There were people sitting in front of the kiosk on the right of the street and many different stable actors on the way to the junction of two streets.

In addition to these actors, municipality's street cleaner, recyclable material collectors and UNICEF employees were strolling as active actors. There were people eating in open spaces of the restaurant at the corner. Beyond the restaurant, the 'bagel seller', a stable actor at the intersection of KŞS and the street on the left, stayed there during these hours of the day. After passing through the intersection of the streets, it was observed that people were sitting in semi-open seating areas of the cafe and bakery shops on the left. A few people were waiting at the corner. An increase in human voices and the smell of coffee was detected. A shoeblack was on the opposite side of these cafés. A few people were standing next to him. After a few steps, the intensity on the street decreased. After crossing the intersection of the streets, the density of people increased again. There was a shoeblack on the left of the street. A few steps later, the actors were diversified. Two more lottery sellers emerged there. Grocery Cumhur, was carrying goods with his tricycle. A few mobile peddlers were passing by. A little further ahead, at the intersection of the three streets, there was a fortune-teller named Nurella on the left. This outstanding actor had been on this street for a long time. She had her own tactics and created her own personal space.

Then the rhythmanalyst came across with a small square where three streets intersect. There were seating areas where the open space extended. Many actors gathered in this small square. Bagel seller and shoeblack were constant actors. There were also different mobile actors such as two recyclable material collectors, two water container carriers, and a policeman. At the same time, this area was a waiting and meeting place for people. Food smells and human voices arose from the restaurants where the street narrowed. There were many different rhythms such as the sound of walking people, people at restaurants, and the smell of the street in this area. The niches at the intersection of the bookstore and the optician shop on the right were proper for waiting.

In the evening, the density of the street reduced. People were sitting in the cafes on the left of the street. After the second niche on the right, smell of food from the restaurant was felt. Walking and waiting people on the street were observed. Then, the number of people walking on the streets and sitting in the cafes increased. At the intersection of four streets, human voice and music sound were high. There were markets, business centers and ATMs were in rest of the street. For this reason, the number of people waiting and standing increased in this area.

The second analysis was made on Wednesday, August 17 in the evening and at noon in summer. At noon, this street was generally used as a transition area. Weather condition was not suitable to perform different activities. One of the black actors was selling watches at the intersection point of Kıbrıs Şehitleri Street and the ancillary road towards Izban. The lottery seller was in front of the shop where a crowd was observed. In different points of the street, UNICEF employees were trying to ask people some questions. During this period of the day, there were no street performers. Lunchtime activities were observed in the lunch-break. Cafes and restaurants were full of people. However, when compared to other seasons, summer noon was very silent and population was low in cafes and restaurants.
In the summer evening, there were different actors constituting the rhythm of the street. The traffic noise was similar to that at working hours. As this region hosts many entertainment venues, Kıbrıs Şehitleri Street is one of the places to have fun at night. The florists, constant actors, had already closed their shops. The number of people in restaurants was high. On the street, there were many people waiting to meet their friends. Especially on the right, there was intense smell of food at the beginning of the first and second ancillary roads. Some shopping areas were crowded.

At night, the rhythm began to change. People were mostly sitting in the restaurants and cafes. Some people were shopping on the street. In front of the square, the musicians were playing violin. The rest of the street hosted many street musicians. After passing through the square, at the intersection point of the optician and the bookstore, the Syrian children played music with sticks and empty boxes. At this point, the intense smell of food and human voices came from the restaurants on the left.

Figure 8. Images from observation points

The places where the rhythm was detected in maximum level were the points where the musicians were located. The cafes were quite full. There was also a loud music sound coming from the ancillary roads where the bars were located. The toy dealer, located a little further ahead of Doğa Cafe, was noticed for the first time. While passing by the green area, the number of people increased. At the same time, this area was crowded because of being close to train line. In addition, this area is the shortest way to reach Kordon (public green space). The voice of human and the sound of music from the cafes were high. In addition, the smell of alcohol was also perceived on the street with the smell of food **(Figure 8).**

3.3.3. Interaction with people: Discovering the actors of the Street

The actors on the street are another factor that changes the rhythm of the street. The actors on the Kıbrıs Şehitleri Street were identified during the observation periods. There were six actors on the street at noon in the summer, two in the evening in winter, fifteen at noon in the winter and fifteen different actors in the summer. Field work was carried out in the morning and evening of summer and winter. Location of commercial units and cafes on the street affected the position of the actors on the street and the time when they were active.

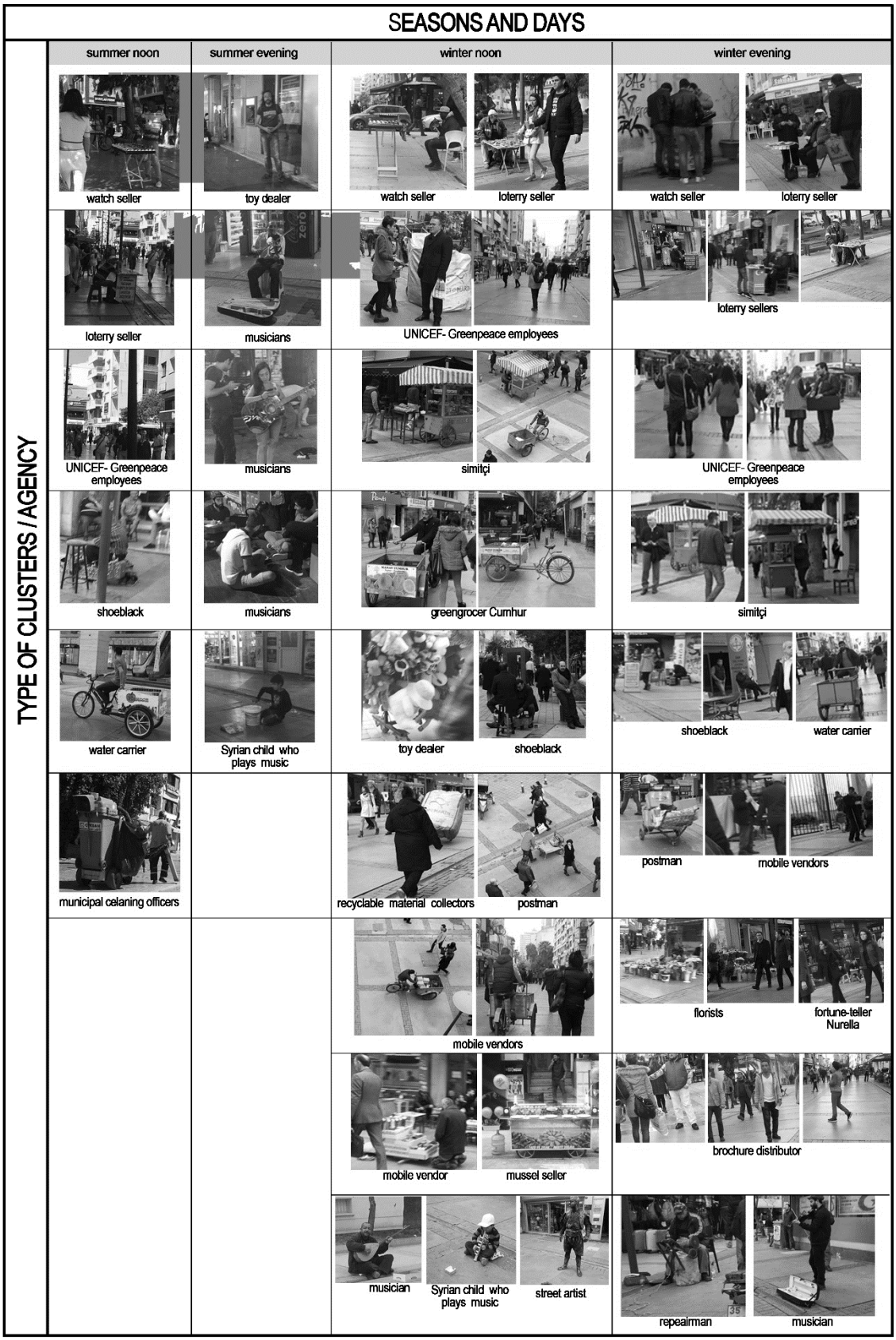
Table 5. Type of agency of Kıbrıs Şehitleri Street

type of agency	***seasons and days***			
	summer noon	*summer evening*	*winter noon*	*winter evening*
watch seller	✔		✔	✔
lottery seller	✔		✔	✔
UNICEF- Greenpeace employees	✔		✔	✔
bagel seller			✔	✔
greengrocer Cumhur			✔	✔
toy dealer		✔	✔	
shoeblack	✔		✔	✔
water carrier	✔		✔	✔
recyclable material			✔	
postman			✔	✔
mobile vendor			✔	✔
mussel seller			✔	
florist				✔
fortune-teller Nurella				✔
brochure distributor				✔

repairman				✔
municipal cleaning officers	✔			✔
musicians		✔	✔	✔
Syrian child who			✔	
street artists			✔	

The actors on the street at noon in the summer were watch seller, lottery seller, UNICEF-Greenpeace employees and municipal cleaning officers. At evening in summer, toy dealer and musicians were on the street. The actors at noon in the winter were watch seller, lottery seller, UNICEF- Greenpeace employees, bagel seller, greengrocer Cumhur, toy dealer, shoeblack, water carrier, recyclable material, collectors, postman, mobile vendor, mussel seller, musicians, Syrian children and street artist. At evening in winter watch seller, lottery seller, UNICEF- Greenpeace employees, bagel seller, greengrocer Cumhur, toy dealer, shoeblack, water carrier, recyclable material collectors, postman, mobile vendor, mussel seller, florist, fortune-teller Nurella, brochure distributor, repairman, municipal cleaning officers, musicians were on this street **(Table 5, 6).**

Table 6. Images of agencies of Kıbrıs Şehitleri Street



KŞS, a quite rich street in actors, is an urban space where people of all ages and income groups were observed. It was not only the physical boundaries and functions of structures

determining the identity of the street, but also the everyday actors making the street a vivid urban space. The following table shows the types of users on the street by season and hours.

4. Results of layers of rhythm analysis

This study analyzes the KŞS on the basis of rhythm analysis and using different methods. The variables were determined as the factors affecting the rhythm of the street and their effects were analyzed in the study **(Figure 10).**

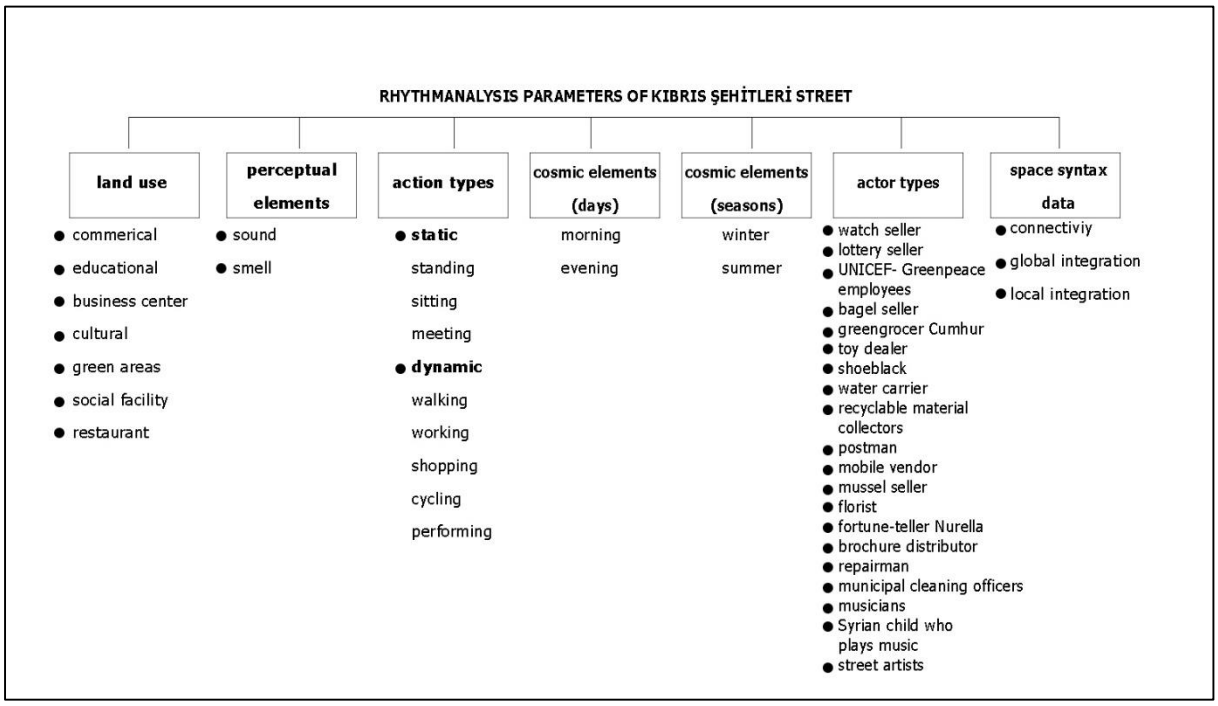


Figure 10. Parameters of rhythm analysis theory for Kıbrıs Şehitleri Street

- Land use. This street includes many business centers, cafés, restaurants, health centers, professional rooms, training facilities, special education institutions and offices. Among the factors determining rhythm, function is of great importance.

-Action types. The units on the ground floor and the commercial functions highly affect the rhythm of the street. Actions such as clustering, gathering, passing, meeting, waiting and sitting differ according to the functions of the buildings on the street**.**

-Actor types. KŞS also brings social actors together. These social actors are street artists, peddlers, flower sellers, businesspeople, people taking part in musical and theatrical events, and children playing music. For this reason, this street has been chosen to observe city's rhythms and everyday life activities by rhythmanalysis method.

-Cosmic elements (seasons). Seasons have a significant impact on commercial and social activities on the street. At the end of the summer, the density of people in schools and workplaces causes an increase and diversification in the number of actors and actions. The number of people on the street reaches the highest level in winter.

-Cosmic elements (days). By 10-min. recordings made by walking along the street, it was observed that 454 people walked at noon and 630 people in the evening in the summer. The degree of temperature affected the walking activities during summer time. The number of people walked or passed through KŞS decreased with the increasing temperature at noon. In the evenings, musicians and other street artists were seen in different spots of the street. The sound of music spread throughout the street.

It was observed that there were 1239 people in winter and 1413 people in summer on the street. In summer evening, many ancillary roads were quite crowded. Muzaffer İzgü Street and Gazi Kadınlar Street were the examples where bars and cafes are located. People

preferred KŞS both in the evenings and at noon in the summer. Activities on foot also depended on cosmic cycles. In the evenings, the number of people standing was doubled when compared to noontime. Shopping activities at noon were more than in the evenings. People preferred to sit in the cafes in the evening and at night rather than at noon in summer. The number of people working on the street in summer was fewer than other seasons. The street was calm during the day; on the contrary secondary streets intersecting KŞS were hectic at night. It could be deduced that the residents of the towns visited the city center less because of the low level of work intensity during the summer.
In winter, the number of people at cafés was quite low. The cyclical (cosmic) rhythms suppressed the capitalistic (linear) rhythms. Street artists were in few places on the street. The street was not alive compared to other seasons. During the winter season, this street was used extensively as a transit route.

The total number of people on the street was 1381 people at noon in winter and 642 people in summer. For long-term activities such as listening to street music or watching street artists, weather conditions should be appropriate. Also, people needed to carry out activities such as sitting on the street, standing, waiting, etc. The areas of reciprocal interactions between street performers and citizens took place in the evening in summer. Music rose from cafés in winter evening. The cafes with semi-open seating areas were mostly crowded.

-Perceptual element- sound. The level of sound on the street depends on the natural cycles such as the wind and the capitalist cycles. The increasing and decreasing sounds of human and traffic, that is, the type of sounds dominating the street are listed below.
-Perceptual element- smell. The functional diversity of the street ensures the perception of different odors. Altering odor types across the street provide information about the products and types of food. Variable odor sources allow the street to be adopted as a "place", while giving direction to the actions of people by for the eating and drinking at the same time.
-Space syntax outcomes. It is found that social interaction is high in areas with high global, local integration value and connectivity value. Space syntax values are consistent with observational data. These values show the rhythm of the street depending on the spatial configuration.

5.Conclusion

This study has demonstrated the systematic reading of the Rhythmanalysis Project by integrating Lefebvre's theoretical concept of rhythmanalysis with the methods used in urban studies. The space syntax method (Hillier, 1984), which demonstrates the effect of spatial configuration on human behavior, constitutes the first step of the Rhythmanalysis Project.

Thanks to this study, space syntax method was used for the first time in accordance with Lefebvre's rhythmanalysis project. The morphological nature of the urban space has been proven through the syntactic values of the KŞS and the surrounding streets, where it cannot be considered independent of the urban rhythms. However, the rhythm of the street, which is a living element of the city, varies according to the seasons and hours of the day. Therefore, space syntax values are inadequate in explaining the rhythm that varies according to the days and seasons.

In the second stage, the researcher, who becomes a rhythmanalyst, intervenes in the street to grasp the rhythm of the street at different times in different seasons and interacts with the actors.

The subjective experience deepens the space syntax values, revealing the locations of changing rhythms on the street. Different senses become a value reflecting the local characteristics of street and sensory experiences form another component of the rhythm analysis project. Secondly, the fixed observation points determined by the researcher

based on the space syntax values are also the breaking points of the rhythm of the street. The second stage is completed with passive and active observation types. In the third stage, the types of interacting actors and behavior maps are revealed and stratified reading of the rhythm analysis project is completed.

This three-layered reading has shown that urban space rhythms are very complex. To understand this rhythm, you must first observe it remotely and then take part in this rhythm. While physical boundaries and elements perceived by different senses constitute spatial experience, this study is interpreted as components of the Rhythm Analysis Project. This analysis on Izmir KŞS has developed the linear and cyclic rhythms of Lefevbre's rhythmanalysis project and turned it into a systematic reading model that can be adapted to urban space studies.

This study reveals the relationship of İzmir, a Mediterranean city, with parameters such as coast, climate, function, user diversity. At the same time, it shows us the rhythm of the living streets of Mediterranean cities by contributing to urban science. Cultural, morphological and social transformations can be observed over the years by making rhythmic analysis maps of the whole Mediterranean cities.

Future Studies

The multilayered structure and morphological character of the Mediterranean cities, together with the data sets developed after this study, can be studied as a field of application for the rhythmanalysis project.

Limitations

The study was carried out in summer and winter due to time constraints. Pedestrian counts were made during the day at noon and evening hours. More comprehensive results can be achieved if this study is conducted at three different times of the day throughout the year.

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LIST OF CAPTIONS