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ORIGINAL ARTICLE

Public's perceptions of urban identity of Thessaloniki, Greece

Dimitrios Anastasiou[1] · Anastasia Tasopoulou[1,2] · Georgia Gemenetzi[1,2] · Zoe Gareiou[1] · Efthimios Zervas[1]

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Abstract
Urban identity (UI) is a multi-faceted concept that encompasses different aspects of urban environment, built heritage and natural environment and is also related to important properties of the cities. The paper studies the associations between the inhabitants' perceptions of UI and their socio-demographic profile. The city of Thessaloniki is the case study of this research. The research was based on data collection via structured questionnaires, and the results were statistically analyzed using: descriptive statistics, χ^2 analysis, crosstabs method, regression analysis and discriminant analysis. The results show that UI, being a generally unknown term to the public, incorporates the notions of history and culture, urban environment, social behavior and everyday life, and it is influenced by social and economic factors. The perceptions on the city's identity are associated with gender, age and family status, as well as the way people spend their spare time. It emerges that, in Thessaloniki, a policy mix is necessary to preserve and upgrade the historical assets of the city, along with the improvement of its every day functions.

Keywords Urban identity · Socio-demographic characteristics · Questionnaire survey · Discriminant analysis · Regression analysis

Introduction

The concept of urban identity

"Urban identity" (UI) is a popular, but complex notion that many scholars have tried to clarify. Several interpretations have been attributed to this term, including linkages to "place identity" (Proshansky 1978; Proshansky et al. 1983), "sense of place" (Tuan 1980; Buttimer 1980; Relph 1976), "place dependence" (Stokols 1981) (op. cit. Lalli 1988). Identity constitutes an important dimension of social and cultural life, going beyond the physical appearance of place (Kaymaz 2013). In fact, it is argued that the physical structure of urban space is in line with its social-cultural properties as well as with its political processes and its economic structure (Baris et al. 2009).

Lynch (1981, pp. 131–132) defines identity as "the extent to which a person can recognize or recall a place as being distinct from other places", and he attributes to "identity" the meaning of "individuality or oneness" (Lynch 1960). Emphasizing on the physical environment, Lynch (1960) studies the "imageability" of a city, i.e. the quality which is able to evoke a strong image in the observer. Such a city would be "well formed, distinct, remarkable" and "apprehended over time" (Lynch 1960, p. 10). Paths (such as streets, walkways, transit lines, canals, railroads), edges (such as shores, railroad cuts, edges of development, walls), districts (i.e. "the medium-to-large sections of the city … which are recognizable as having some common, identifying character"), nodes (such as "junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another … or a street-corner hangout or an enclose d square") and landmarks ("usually a rather simply defined physical object: building, sign, store, or mountain") constitute, according to Lynch (1960, pp. 46–47), the five types of elements that describe the contents of a city's images.

✉ Efthimios Zervas
zervas@eap.gr

[1] Laboratory of Policy and Technology of Energy and Environment, School of Science and Technology, Hellenic Open University, Parodos Aristotelous 18, 26335 Patra, Greece

[2] Department of Planning and Regional Development, School of Engineering, University of Thessaly, Volos, Greece

Literature review: factors shaping UI

The physical aspects

The literature reveals several elements shaping UI. Urban space, including urban neighbourhoods/districts, the built form, streets and other public urban spaces (which can communicate and interact with each other), plays a crucial role in the formation and transformation of UI (Baris et al. 2009; Oktay 2002; Lynch 1960; Sıramkaya 2019). Recent research showed that space quality (along with walkability) are important influential factors associated with place attachment and place satisfaction (Li et al. 2020). Public urban space acts upon the image of the city and the orientation of people (Lynch 1960) and constitutes major functional and visual factors influencing urban quality (Oktay 2002), providing opportunities for relaxation, recreation, socializing, sports, arts and cultural activities (Kaymaz 2013). This is why Kaymaz (2013) argues that the decline of public spaces impacts on UI, stressing the need for quality urban design. Siramkaya (2019), for example, suggests that squares should be designed in a way that communicate and interact with other public spaces in the city. Gospodini's (2004) research examined the ways specific aspects of urban morphology, among which the innovative design of space, may contribute to place identity in European cities: "by (1) adding or creating distinct urban landscape, (2) synchronizing spatially all the different social/cultural/economic groups; and (3) generating new social solidarities among inhabitants related to their common and/or individual economic future" (Gospodini 2004, pp. 242–243). The examination of private spaces, the analysis of "public–private interface" and the engagement with people are considered important elements in developing "locally appropriate spaces" (Oktay 1998). In this context, people, events and relationships with them should also be considered (Oktay 2002). In Oktay and Bala's words (2015, p. 202), "it is assumed that if a city has some identifiable districts and well-defined public spaces, it can be conceived as a city with strong identity even if there are weaknesses in other aspects of the urban environment".

Another appreciable feature of UI is the built heritage, which is the most apparent reflection of the transformation taking place in cities (Kaymaz 2013; Boussaa 2018). Heritage involves a historic distinctive urban form, architectural style, design solutions and ornaments, providing a unique visual image of the city (Boussaa 2018) and constituting an important aspect of authenticity while involving symbolic meaning and cultural values (Kaymaz 2013). Nevertheless, as Boussaa (2018, p. 14) states, "urban identity does not mean blind copying from the past, but requires deep and thorough research and investigation of its principles. Identity cannot, however, be fossilized as a set of styles, but should rather be considered as a dynamic process like life itself". In this respect, regenerating historic districts is believed to be able to play a significant role in reconstructing or reinforcing a city's identity (Boussaa 2018). It is noted that, academic discussion during the last two decades makes a critique on urban conservation practices which in case have created morphologically standardized urban landscapes that do not contribute to place identity (Kaymaz 2013, following Gospodini 2004). Boussaa (2018) argues that the center of attention in rehabilitation projects should be the incorporation of a historic urban center into the largest context of the city's historic landscape, the community and their needs, and that such work should regenerate the local economy along with the physical conditions.

In addition, Kaymaz (2013) argues that both historical buildings and contemporary ones are in place to add to a city's identity as perceived by citizens and visitors. Gospodini's (2004) research, focusing on Bilbao, led to the conclusion that both innovative design and built heritage contribute to the image and identity of the city equally. However, she also argues that there is some evidence that, in contemporary European societies, built heritage tends to get weaker compared to innovative design of space which appears to be a new means of place identity. Oktay and Bala's (2015) questionnaire research in the island of Cyprus showed that the historical landmarks (outside or at the edge of the city) are very powerful in constructing the urban identity, while the traditional urban tissue was also found significant. On the contrary, new villa-type housing developments which are lacking architectural quality and context, were not appreciated by the participants in the survey. As Oktay and Bala (2015, p. 203) state the city should be "readable and decipherable through the symbols relevant to local lifestyles and through meanings as documentation of history". Tweed and Sutherland (2007) suggest that methods of protecting the built heritage, such as the listing of individual monuments and buildings and the designation of conservation areas, need to be considered in line with other features of the cityscape, such as the street pattern, which give the city its unique character and provide the sense of belonging. Thus, urban design constitutes an important factor effecting urban identity both physically and socially (Baris et al. 2009).

UI is also affected by climatic, topographic and landscape conditions (Knez 2005; Oktay and Bala 2015). Knez's study showed that climate may be a part of the "residents' place identification" (2005, p. 216) and supported the view of previous works (Knez 2003a, 2003b; Parker 1995; Rotton and Cohn 2002) that it is an important perceived component of a place, having an impact on individual social, economic and criminal behavior. As for the landscape, a locally characteristic and identifiable landscape (both natural and artificial) could also be highly effective on UI (Oktay and Bala 2015). Sönmez's (2020) questionnaire research in Central Kadiköy

on the Asian side of Istanbul, showed that direct relation with the nature and natural identity elements such as forest, sea, coastline or stream, positively affect the UI.

The social and cognitive aspects

UI relates to the environmental, social, cultural, historical and spatial characteristics of an urban area, for which an individual forms an opinion through social experiences, evaluations and personal beliefs (Lalli 1988). Kaymaz (2013, p. 747) points out: "Cities are not only physical constructs, but also involve social structures. The citizens are the fundamental elements of cities that keep it alive and functioning. There is a mutual relationship between a city's physical characteristics and its citizens". He interrelates place identity with place attachment and sense of belonging, considering them crucial factors "in order to establish an emotional and cognitive bond with a place, which leads to the feeling of security and sense of community. Thus, identity of a place is more than just the physical appearance, but also involves a "meaning" for the individual and the community" (Kaymaz 2013, p. 740).

Several authors have elaborated on this aspect of UI, i.e. on the complex relationship and interaction between the "physical" elements of a city and the experiences, beliefs, perceptions, preferences and values that the individual holds, as well as the broader social relationships, transactions and functions that develop in a place (e.g. Proshansky 1978; Relph 1976; Clifford 1988; Lalli 1992; Twigger-Ross and Uzzell 1996; Knox and Marston 2004; Cheshmehzangi and Heat 2012; Kaymaz 2013; Kalali 2015). The uniqueness of each place is partly due to the specific interactions that occur (Massey 1992). Relph (1976) in his book *Place and Placeleness* affirms the necessity to explore space in terms of how people experience it. Seamon and Sowers (2008), reviewed and summarized Relph's work. Based on this, Relph identifies (i) "modes of spatial experience that are instinctive, bodily, and immediate—for example, what he calls pragmatic space, perceptual space, and existential space" and (ii) "modes of spatial experience that are more cerebral, ideal, and intangible—for example, planning space, cognitive space, and abstract space". Each of these modes has varying intensities in everyday life. For Relph, the key to place identity is "insideness" referring to the degree of belonging and associating oneself with a place (Seamon 1977). Likewise, Lalli (1992, p. 294) states: "Belonging to a certain place produces a sense of 'we' and provides the comfort and security of a social group".

As it emerges, UI is not given objectively, but it involves subjective dimensions (Lalli 1992; Relph 1976), both individually and collectively (Scheffler et al. 2013). It is "the outcome of individual or social constructions, or attributions", with self-enhancement being an important function of such identity constructions (Lalli 1992, p. 293). It also provides a sense of positive self-regard or self-esteem as well as of fundamental uniqueness for the individual (Lalli 1992). Twigger-Ross and Uzzell's study (1996), focusing on the attachment to a residential environment, provided evidence that place can be used to maintain positive self-esteem, which is closely associated with distinctiveness, as well as to maintain the continuity of self or to establish new selves.

It becomes evident that UI is reliant to the social environment, including psychological and cultural dimensions (such as language, religion, ethnicity, family structure, residence type, food customs, communication patterns, privacy etc.), as well as the people and institutions with whom the individual interacts (Oktay and Bala 2015). In this respect, the identity construction can be achieved through the understanding of "the socio-environmental values of any society as well as the relationship of human and environment. The identity could then create a sense of place or a sense of belonging, not just through certain physical qualities, but through engineered subjective mechanisms" (Cheshmehzangi and Heat 2012, p. 263).

To sum up, identity goes beyond physical, cultural and social characteristics, but also encompasses personal judgments, experiences and perceptions. It is a dynamic process (Nientied 2018) which helps people become attached to the city's environment. In order for it to be used as an asset, it must be considered and managed on the basis of varying perspectives of the various stakeholders (Scheffler et al. 2013). Also, as Nientied (2018, p. 155) claims "there cannot be one accepted portrait of a city's identity".

Figure 1 summarizes the results of the literature review. Both physical and social/cognitive aspects are recognized in the study of UI. The physical aspects relate mainly to the urban space, the climatic, topographic and landscape conditions and the built heritage, as well as the built heritage and its interface with the city scape, economy and community. The social and cognitive aspects relate to cultural and social characteristics. Especially the latter, incorporate information about the way the image of the city is perceived and evaluated by individuals or groups and constitute subjective dimensions.

Scope of the research

To date, there is a lack in studies on the perception of UI from city's inhabitants and the ways that their socio-demographic profile may formulate these perceptions. This paper aims to shed light on the correlation between inhabitants' socio-demographic profile and perception of UI using as empirical field a city with a distinct UI. Therefore, based on a questionnaire survey, the current work studies Thessaloniki, the second major urban pole in Greece after Athens.

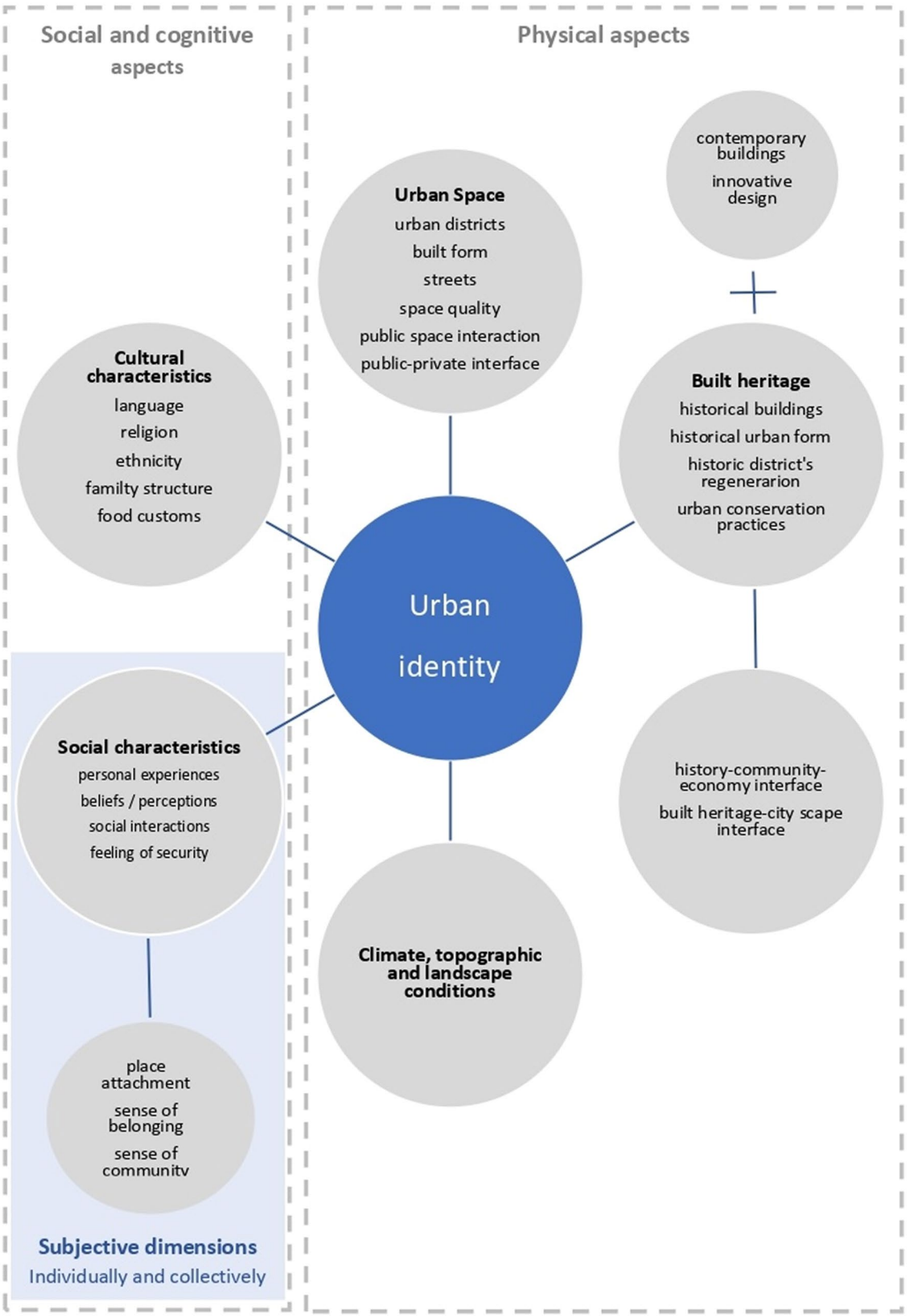


Fig. 1 Factors shaping urban identity

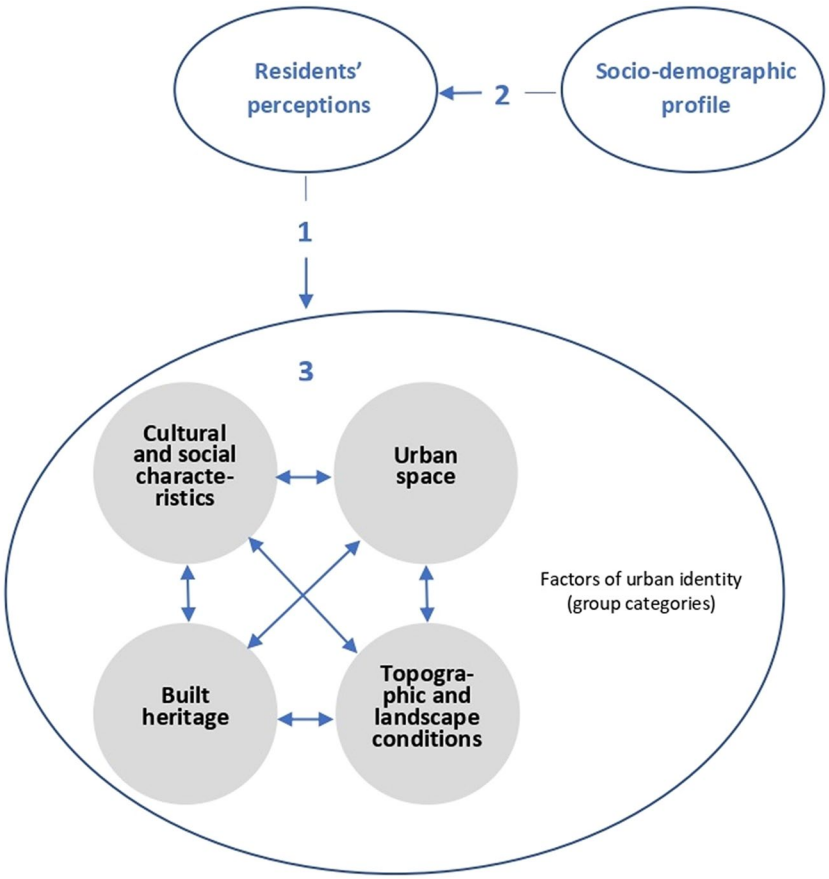


Fig. 2 Main research questions to address the 'knowledge gap'

First, it aims to draw a picture on the components that formulate the city's identity, taking into account that the city may have a monumental urban space and national identity (Lagopoulos 2005), but its identity is constantly retraced by urban policies and different aspects of urban governance (Athanasiou et al. 2015; Athanasiou 2017). Second, this work attempts to associate the residents' perceptions of UI with their socio-demographic profile. Third, it attempts to shed light on whether and in which ways the different variables of UI are correlated with each other.

Figure 2 sets the knowledge gap that was identified during the literature review and the main questions of the research as mentioned above within a simplified rendering of the factors affecting urban identity, as was presented in Diagram 1. The research focuses on both the objective and subjective factors influencing urban identity which relate to the urban space, the topographic and landscape conditions, the built heritage, as well as the cultural and social environment.

The study area: description of Thessaloniki and of its urban identity

Thessaloniki is the second major urban pole in Greece after Athens. Therefore, it is the second economic, industrial, commercial and political center in Greece. The city's population is approximately 800,000 inhabitants, representing more than 70% of the population of Thessaloniki's Regional Unit. Located in the north of Greece, on the northern fringe of the Gulf of Thermaikos, it is sandwiched between the seashore and the mountainous areas of Hortiati, shaping its distinctive urban form. The 5 km long urban waterfront (Fig. 3) and the suburban Seich-Sou hilltop forest to the north and northeast of the city are strong landmarks.

Fig. 3 Thessaloniki waterfront

Fig. 4 Monuments in the city centre: Arch of Galerius and Rotunda (fourth century AD)

Fig. 5 View of Thessaloniki city centre

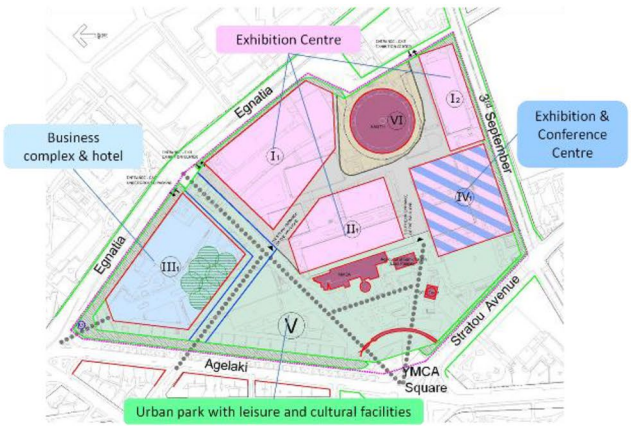
Fig. 6 Aristotelous square and axis

Being a historical city founded in 315 BC, it has significant traits of cultural heritage. In its recent history, it has been characterized by an ambivalent identity as a result of the mixing of new and old urban elements (Hastaoglou-Martinides 1997). Since 1950s, it is a densely populated city that experienced suburbanization trends in the time of prosperity. Lack of open and green spaces, packed built up urban form, typical architecture and monotonous urban design, along with the presence of monuments (Fig. 4), museums and churches in its urban core formulate the city's identity. According to Gemenetzi (2016), the recent financial crisis has affected its image. De-investment trends dominated urban space, suspending new constructions and city projects, whereas urban renewal was strictly confined to the city center including light interventions. The majority of retail stores that closed down in the city center has re-functioned hosting leisure time enterprises (cafes, food courts) and establishing a new model of consumption. Nevertheless, the finest public spaces are still in the central area keeping alive the reformed identity of Thessaloniki along with its monuments, and maintaining Thessaloniki a vibrant and human city (Gemenetzi 2016, p. 93), until the outbreak of the Covid-19 crisis.

The economic activity of the metropolitan area of Thessaloniki is based on the tertiary sector, after a fall in manufacture trends. During the last decade, a shift has been achieved in the direction of urban tourism. The city has a clearly monocentric structure, characterized by the dominance of its urban core (Fig. 5) and a few emerging, but rather weaker, sub-centers in tis suburban areas (Kafkalas 1999; Gemenetzi 2011). The urban core has specialized economic activities of national importance, such as Thessaloniki Exhibition Center that hosts yearly the important institution of Thessaloniki International Fair (TIF) and other events of public life. Since 1960 this significant business activity is adjacent to the cluster of Museums and the University Campus, only ten minutes walking from the urban waterfront and the monumental Aristotelous axis (Fig. 6) of the city.

In general, the urban pole of the city reflects significantly its UI, whereas different urban policies aim at its enrichment through the programming of flagship and urban renewal projects (Fig. 7). The discussion for city's identity has been set off since early 1990s through the protection and highlight of monuments and the regeneration of cultural-based neighborhoods in the historical city. Afterwards, the designation of the city as the Cultural Capital of Europe in 1997 has been accompanied with a set of urban interventions projects in order to enhance its built environment. Recently, the city has promoted its international face with the revamp of its image through place branding and the implemented entrepreneurial development strategy (Katsinas 2019), In parallel, a set of mega-projects have been programmed (such as the Museum of Holocaust, urban renewal of brownfields and transformation into metropolitan urban parks, urban regeneration projects of Thessaloniki' s International Fair site in the city centre, see Figs. 8 & 9), all aspiring to increase

Fig. 7 "New" Thessaloniki waterfront after urban regeneration



Figs. 8 & 9 Thessaloniki International Fair site: existing situation and Master Plan for urban regeneration, Source: https://www.thessaloniki-confexpark.gr/

the competitiveness and visibility of the city in the global context, showing the interest of authorities for place-making and a new city identity. These reflect the official endeavor for the formulation and projection of the city's identity, but it is worth investigating whether the perceptions of its inhabitants about UI are affected by other policies.

Methodology

To investigate the degree of the residents' knowledge of the concept of UI and their perceptions regarding UI in the city of Thessaloniki, a survey was conducted using a structured questionnaire. This questionnaire consisted of closed-ended questions and it was divided into five sections. These refer to: (a) location of residency and frequency of visiting the city center, reflecting the relationship of the respondents with the city, (b) awareness of the concept of "UI" and respondents' perception of its meaning/content, (c) UI characteristics of Thessaloniki, (d) utilization of leisure time in the city and (e) factors that affect the city's UI, its importance and proposals for its enhancement: social, political, economic and environmental factors to personal decisions. Finally, a sixth section of the questionnaire was consisted of questions concerning personal, demographic and socio-economic data of respondents (gender, age, educational level,

Table 1 Structure of the questionnaire

Section	Content
A. Relationship with the city	location of residency frequency of visiting the city center
B. UI concept	awareness of the concept perception of its meaning/content
C. UI characteristics of Thessaloniki	UI characteristics' identification belief of the city's unique UI comparison with other cities factors affecting the city's UI
D. Utilization of leisure time	Utilization of leisure time mode of transport
E. Importance of the city's UI/proposals for improvement	Factors affecting the city's UI importance of the city's UI proposals for its enhancement
F. Personal, demographic and socio-economic data	Gender, age, educational level, marital status, occupation, political preference, family income

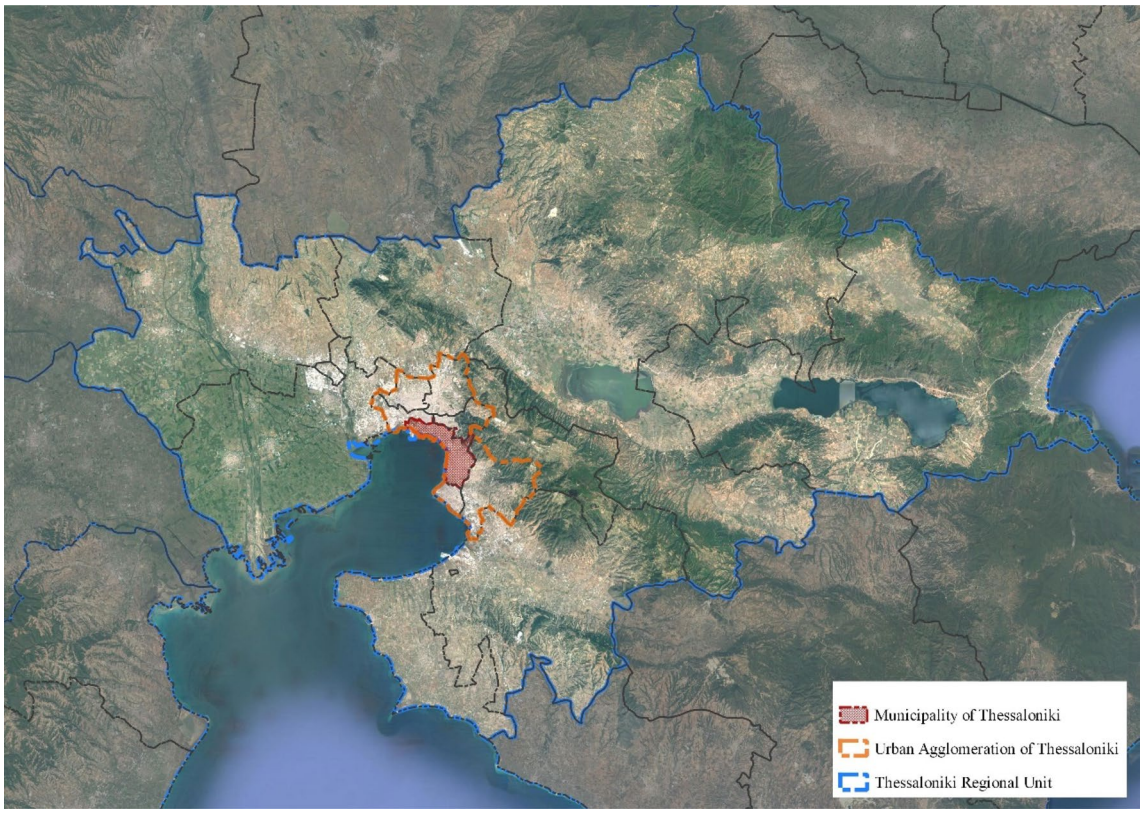


Fig. 10 The study area in the wider spatial context

marital status, occupation, political preference and family income) (Table 1).

Concerning the variables of the third section, they were related to the identification of the most characteristic elements of the city's UI, choosing from a pre-defined list of locations, attractions, landmarks, activities, events, etc. Besides, the respondents were asked about the uniqueness of the city's UI and its resemblance to the identity of other Greek or European city (from a pre-defined list, but also having the possibility of adding a city). They were also asked on the factors that affect the city's UI: social, political, economic and environmental factors to personal decisions. In addition to that, the variables of the fifth section recorded the participants' views on the parameters that could improve the city's UI, the factors that negatively affect it, as well as their opinion on the sector which would primarily be positively affected by an enhanced UI.

In all questions, a Yes/No option or a 5-point Likert-type scale (Not at all/Slightly/Moderately/Strongly/Very strongly)

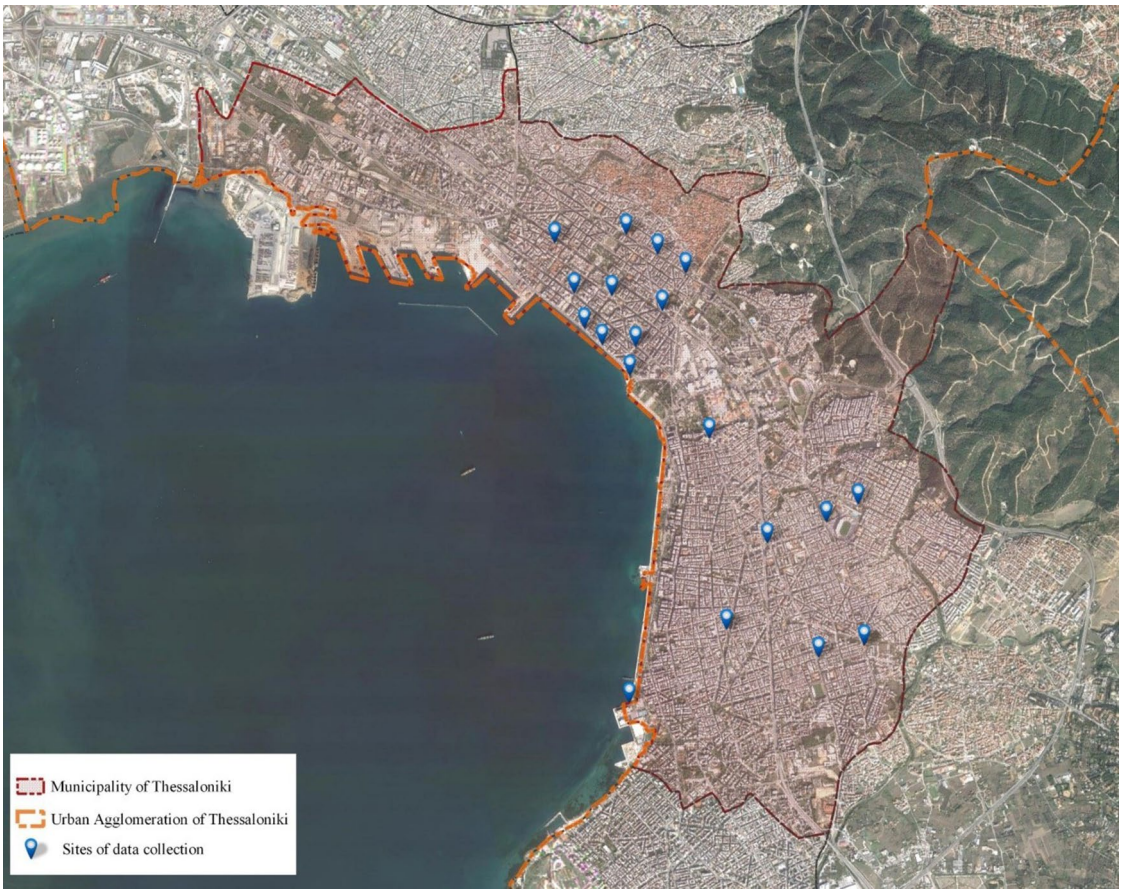


Fig. 11 Sites of data collection

was used, except for the questions where the respondents were asked to choose from a predefined list of answers.

The survey took place from June to July 2018, in eleven different areas of the Municipality of Thessaloniki (Fig. 10 and 11), on different days of the week and hours of the day. The sample was selected randomly and the survey targeted people aged 18 and older, residents of Thessaloniki. 423 valid questionnaires were collected which are used for the statistical analysis.

The error of using this sample is estimated using Eq. (1) (Kothari 1990):

$$n = \frac{z^2 * p * (1-p) * N}{\mathrm{ME}^2 * (N-1) + z^2 * p * (1-p)} \quad (1)$$

where, ME is the desired margin of error, n is the sample size ($n = 423$ in our case), N is the population size ($N = 880{,}346$ adult population of Thessaloniki Regional Unit (20 + years old)[1]), p is the preliminary estimate of the proportion in the population (as the value of p was not known the maximum value of 0.50 was assumed), z is the two-tailed value of the standardized normal deviate associated with desired level of confidence (for 95% confidence interval the value of z was equal to 1.96).

From the above equation, ME is equal to 4.75%, which is less than 5% (for the desired reliability, the acceptable maximum error is 0.05, with an associated 95% confidence interval).

Statistical Package for Social Sciences (SPSS) was used for the data analysis. In a first step, descriptive statistics (mean values, standard deviation and frequency distribution) was applied to all questions. Then, a χ^2 analysis was used to correlate the socio-demographic characteristics (sex, age, family status, educational level, family annual income) of the sample with the public's knowledge and perception of UI.

The variables in which correlation was looked for were grouped in the following four categories:

- the awareness of UI concept,
- perceptions about Thessaloniki's UI,
- use of leisure time in Thessaloniki,

[1] The Hellenic Statistical Authority gives the population of over 20 and not 18 years old (https://www.statistics.gr/).

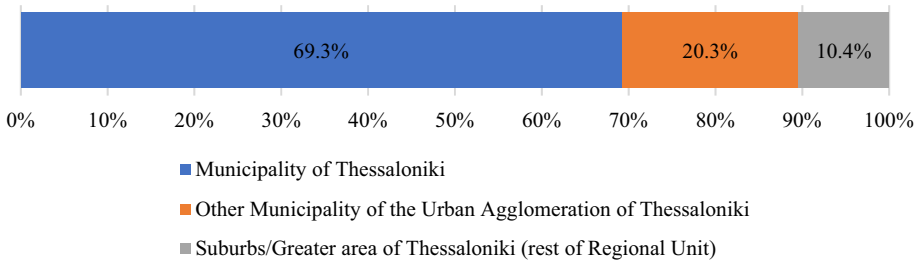


Fig. 12 Location of residency

– factors that negatively affect Thessaloniki's UI and proposals for its improvement.

Correlations among the above variables and the main demographic characteristics have taken place though SPSS using the Crosstabs method. The Pearson's correlation coefficient (Pearson chi-square) has been examined to find out the statistically significant correlations ($p < 0.05$). Then, the coefficient Phi was used to shed light on the type of correlation and its degree (intense or weak). Lastly, regression analysis was applied to detect relationships between different variables, using Binary Logistic Regression. Five regression models were created, as they are analyzed in a following section. In addition, a discriminant analysis is applied to reveal the characteristics of the respondents that think that Thessaloniki has a unique UI.

Results

Sample description

Appendix Table 2 shows the frequency and percentages of the socio-economic profiles of the respondents. As it is clear from this table, the 57.1% of the respondents were female and the 42.9% male (against 52.93% and 47.07%, respectively, for the Thessaloniki Regional Unit according to the last national census (2011)). The average age of respondents was 37.9 years, with a standard deviation of 13.2 years.. Respondents with high school education and university education accounted for almost 30% and 46.4%, respectively. With regard to marital status, 37.9% of the respondents were married (against 48.91% for the Regional Unit of Thessaloniki according to the 2011 national census). The majority of the respondents were employed or retired (75.9%), while 10% were students and 7.9% unemployed. The average income of the respondents was 14,840€, while around 40% earned less than 10,000€.

Finally, seven out of ten (69.3%) respondents live in the Municipality of Thessaloniki (Fig. 12), while 69.1% of the respondents visit the city center every day (Fig. 13).

Urban identity perceptions and correlation with socio-demographic profiles

In questioning whether the respondents were aware of the concept of "UI", it becomes clear that 2/3 of them (64.6%) had not heard this term (Fig. 14). The more educated respondents (with university education) were aware better of this term (Appendix Table 3). In exploring the respondents' perception of its meaning / content, the research showed (Appendix Table 4) that the majority of the respondents (more than 72%) assumed that "history, culture and cultural heritage", "urban environment (buildings, streets, infrastructure, human interventions into landscape etc.)" and "social behavior and everyday life (people's culture, hospitality, relationships, perceptions)" were the most important notions incorporated in the term "UI". "Ethics, customs and the traditions of place" were also important to 60% of the respondents, while 41.8% () attached no relation to "personal experiences and memories" and UI.

As far as it concerns the dependence of variables on gender and age of respondents, a statistical significant finding was that women argued more than men that UI includes urban environment. Respondents aged above 35 years old and married people believed more that UI is a multi-faceted concept that includes elements such as history, culture and cultural heritage, nature, environment and landscapes, personal experiences and memories while respondents over 35 also believe in ethics, customs and the traditions of place and married people in urban environment.

The respondents were asked about the UI characteristics of the city of Thessaloniki, choosing from a pre-defined

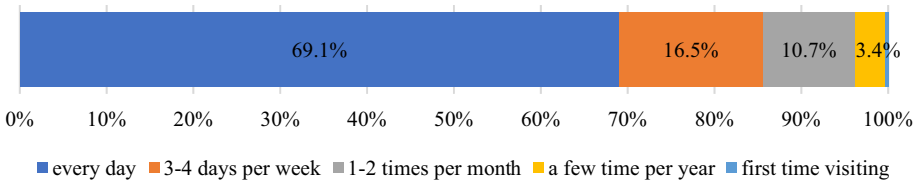


Fig. 13 Frequency of visiting the city centre

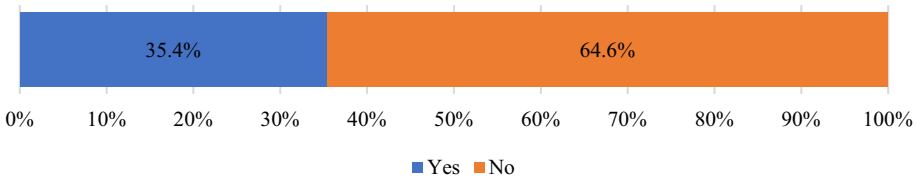


Fig. 14 Awareness of the term 'urban identity

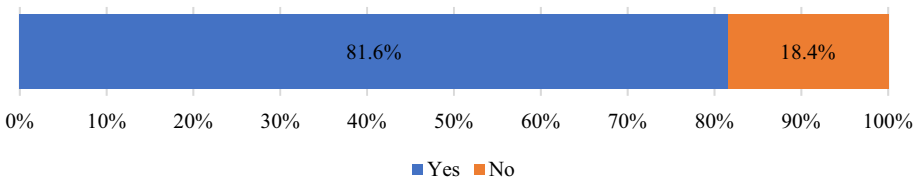


Fig. 15 Belief that Thessaloniki has a unique urban identity

list as it is briefly shown in Appendix Table 5. Museums were selected by 1 out of 2 respondents (51.1%), followed by the ancient roman antiquities (40.7%), Thessaloniki International Fair (39.2%), location and physical geography (36.4%), squares (29.6%),etc.

Concerning the correlation between socio-demographic profile and perceptions about the city's UI, respondents aged below 35 and unmarried accept more that museums and churches are not strong elements of the city's UI. On the contrary, interviewees aged above 35 and married believe less that the cost of living is a strong element of Thessaloniki. Besides, married respondents accept more that the International Exhibition of Thessaloniki is a strong element of the city (, whereas married consider more that students, tourists and visitors are not a strong feature of its UI. Respondents with university education accept more that site and natural geography of the city along with its new urban waterfront are strong elements of the Thessaloniki's UI. On the contrary, more educated interviewees believe that the cost of living and urban public transportation are not Thessaloniki's strong elements. Concerning family annual income, people with higher income (> 10,000€) believe more that museums and squares are strong elements of the city' identity. Instead, people with higher income (> 10,000€) accept that are not strong elements of its UI the architectural heritage, the poor quality and functionality of road network (traffic, behavior of drivers and pedestrians, lack of signage) and the tourist destination of Thessaloniki.

In the question of whether they believe that Thessaloniki has a unique UI (Fig. 15), the vast majority (81.6%) answered positively. The respondents believe that Thessaloniki's identity resembles the identity of other Greek and Mediterranean cities (Appendix Table 4) and mostly: Istanbul (48.5%), Volos (39.6%), Barcelona (37.8%), Athens (27.4%), Heraklion (26.7%), all of which are coastal cities like Thessaloniki.

As shown in Appendix Table 4, the city's identity, according to the respondents, is influenced mainly by social and economic factors (62%), followed by political factors (52.3%). More than half of the respondents (55.5%) declared that the city's identity is influenced by personal decisions/changes. Women believe more than men that UI is more influenced by political modifications, economic reformations and environmental changes. People over 35 years old considered more that UI is strongly affected by personal decisions and choices. In addition, married respondents believe more that UI is more affected by environmental changes.

With reference to the use of leisure time in the city (Appendix Table 4), the majority of people spends their free time at home (64.2%), almost half prefer spending leisure time in restaurants/bars/cafeterias/taverns (46.6%) and doing activities in public open spaces (40.2%). A significant amount said that they are not spending time visiting touristic-cultural sites (70.4%) or attending municipal events (62.7%).

Regarding the correlation between socio-demographic characteristics and use of leisure time, women spend more their spare time in Thessaloniki for walking in the city center and shopping, staying home with family, friends or alone, participating in an event taken place in the city and visiting a cultural-based or tourist place. Respondents over 35 years old use more their leisure-time more for enjoying nature and the city's natural environment (sea, mountainous areas) and visiting a cultural-based or tourist place, contrary to the youngest group that uses more its free time in Thessaloniki in cafe/restaurants/bars. Unmarried respondents have similar attitude to the younger ones, whereas married use more their leisure-time for walking in the city center and shopping. People with higher education level visit more cafe/restaurant/bar and a cultural-based or tourist place in their free hours.

The previous findings indicate that the UI of the city may be perceived in different ways, since different groups tend to spend their spare time in various activities, each one of which is differently place-based.

As indicated in Appendix Table 5, the 78.7% of the respondents declared that the development of the public transport network would improve Thessaloniki's identity, as also architectural and urban design (68.8%), followed by environmental planning for new infrastructure (62.9%) and the provision of more public spaces (60%). A little more than one third of the respondents (34.4%) marked the development of public transport network as the most important intervention that could positively affect the city's UI. Gender and educational level are the two socio-demographic factors that are correlated with variables that may improve the city's UI. Women consider that environmental design of urban infrastructure (renewable resources, recycling, green spaces) would improve it, whereas more educated respondents assume that urban renewal and architectural design would have a positive effect. It should be noticed that respondents with higher income esteem that the development of public transport network would also improve Thessaloniki's UI.

On the other side, the most important factor negatively affecting the city's identity (Appendix Table 4) is the lack of cleanliness, indicated by the 78.1% of the respondents), followed by the poor quality and functionality of the road network (73.2%) and the lack of or no compliance to laws (60.7%). One out of two respondents (51.0%) argued that the low sense of safety is another critical factor affecting UI. The 52.2% of the respondents answered that there is medium to high impact on UI by the presence of refugees' groups in the city center. Regarding demographic characteristics, only gender and age are correlated with this question. Women believe that the low feeling of security affects the negative aspect of Thessaloniki's UI. The same belief have the respondents aged over 35 about the presence of refugees' groups in the city center.

Finally, the respondents agreed that the promotion of UI in Thessaloniki would mainly favor (Fig. 6) the satisfaction of the city's residents (62.8%), followed by the tourism sector (28.0%) and the attraction of new residents (9.2%).

Regression Models detecting relationships between variables

Regression analysis is applied to detect relationships between variables. Binary Logistic Regression was applied to the research and five regression models were created, where they are analyzed separately.

Model M1

The M1 model correlates the utilization of free time in the city of Thessaloniki for walk in the city-center and shopping in the commercial stores, with variables. Appendix Table 6 shows the variables found to be statistically significant to this model. The respondents who utilize their free time in the city of Thessaloniki for walk in the city-center and shopping in the commercial stores, are those who live in Thessaloniki ($B = -- 3.786$, sig. $= 0.000$) and also utilize their free time in the city of Thessaloniki in restaurants, bars, cafeterias and taverns ($B = 1.46$, sig. $= 0.000$) and for visits to touristic-cultural sites ($B = 0.32$, sig. $= 0.007$). In addition, they mention personal decisions/changes as factors affecting Thessaloniki's UI ($B = 0.09$, sig. $= 0.023$). Younger ($B = -0.801$, sig. $= 0.010$) and married people ($B = 1.89$, sig. $= 0.000$) seem to utilize their free time in the city of Thessaloniki for walk in the city-center and shopping in the commercial stores more than older and unmarried people. Binary Logistic Regression shows that the model M1 is significant at statistical significance level (sig. $= 0.000$) and the overall forecast success is 64.30%.

Model M2

The M2 model correlates the utilization of free time in the city of Thessaloniki for enjoying nature and the natural environment (sea, mountain), with variables. Appendix Table 7

shows the variables found to be statistically significant to this model. The respondents who utilize their free time in the city of Thessaloniki for enjoying nature and the natural environment (sea, mountain) are those who live in Thessaloniki ($B = -$ -5.272, sig. = 0.000) and are the same ones who utilize their free time in the city of Thessaloniki for visits to touristic-cultural sites ($B = 0.628$, sig. = 0.013) and they don't utilize their free time for activities in public open spaces ($B = -$ 1.431, sig. = 0.000). Older people seem to utilize more their free time for enjoying nature and the natural environment than younger people ($B = 0.523$, sig. = 0.027). In addition, they are not aware of the terms "UI" ($B = 0.605$, sig. = 0.016); however, they mention environmental changes as factors affecting Thessaloniki's UI ($B = 0.694$, sig. = 0.004). Binary Logistic Regression shows that the model M2 is significant at statistical significance level (sig. = 0.000) and the overall forecast success is 70.20%.

Model M3

The M3 model correlates the lack of cleanliness as factor that negatively affects Thessaloniki's UI, with variables. Appendix Table 8 shows the variables found to be statistically significant to this model. The respondents who mention the lack of cleanliness as factor that negatively affect Thessaloniki's UI, live in Thessaloniki ($B = -$ 3.385, sig. = 0.000) and also mention the low sense of safety ($B = 0.766$, sig. = 0.001) and the poor quality and functionality of road network (traffic, behavior of drivers and pedestrians, lack of signage) ($B = 1.366$, sig. = 0.000) as factors that negatively affect Thessaloniki's UI. Binary Logistic Regression shows that the model M3 is significant at statistical significance level (sig. = 0.000) and the overall forecast success is 71.00%.

Model M4

The M4 model correlates the lack of or no compliance to laws as factors that negatively affect Thessaloniki's UI, with variables. Appendix Table 9 shows the variables found to be statistically significant to this model. The respondents who mention the lack of or no compliance to laws as factors that negatively affect Thessaloniki's UI, are those who live inThessaloniki ($B = -6.205$, sig. = 0.000). In addition, they are the same who mention the low sense of safety ($B = 1.531$, sig. = 0.000), the presence of refugees' groups in the city center ($B = 0.667$, sig. = 0.009) and the poor quality and functionality of road network (traffic, behavior of drivers and pedestrians, lack of signage) ($B = 0.672$, sig. = 0.030) as factors that negatively affect Thessaloniki's UI. Furthermore, they utilize their free time in the city of Thessaloniki at home with family, with friends or alone ($B = 0.695$, sig. = 0.009). Binary Logistic Regression shows that the model M4 is significant at statistical significance level (sig. = 0.000) and the overall forecast success is 72.30%.

Model M5

The M5 model correlates the opinion of the respondents on the social changes as factors affecting Thessaloniki's UI, with variables. Appendix Table 10 shows the variables found to be statistically significant to the M5 model. The respondents who declare the social changes as factors affecting Thessaloniki's UI, are those who live in Thessaloniki ($B = -3.330$, sig. = 0.000) and are the same ones who mention the political evolution ($B = 1.305$, sig. = 0.000) and the economic readjustment as factors affecting Thessaloniki's UI ($B = 0.819$, sig. = 0.001). In addition, they utilize their free time in the city of Thessaloniki at home with family or with friends or alone ($B = -3.330$, sig. = 0.000). Binary Logistic Regression shows that the model M5 is significant at statistical significance level (sig. = 0.000) and the overall forecast success is 71.10%.

Application of Discriminant analysis

Discriminant analysis is a technique used to create a prediction model of the group to which an observation belongs based on the characteristics of each respondent. Appendix Table 11 shows the results of the discriminant analysis. In our case, this method is used to reveal the characteristics of the respondents believing that Thessaloniki has a unique UI.

The respondents participating in the discriminant analysis are classified into two groups: Citizens who believe that Thessaloniki has a unique/special UI and those who do not believe it. Three variables participated in the analysis: (1) Thessaloniki's UI is affected by environmental changes, (2) UI includes history, culture, heritage and (3) Museums (e.g. White Tower) are strong elements of Thessaloniki's UI. The discrimination function measures 28.7% of the variance. The

function is statistically significant at the level of statistical significance (sig = 0.000). The coefficients of the discrimination function, in predicting the view of the participants that Thessaloniki has a unique/special UI, show positive relative importance of the variables: Thessaloniki 's UI is affected by environmental changes (0.543) and UI includes history, culture, heritage (0.609), and negative relative significance of the variable: Museums (e.g. White Tower) are strong elements of Thessaloniki's UI (-0.461). Finally, regarding the accuracy of the classification of observations in the two groups, the participants who believe that Thessaloniki has a unique/special UI, were classified more accurately, as 67.7% of observations were classified correctly. For the second group 57.9% of the observations were classified correctly. Overall, for 65.9% (average of the correct classified observations for the two groups) of the collected data, a correct classification was made.

Discussion

The work studied the following main questions: (a) which are the components that formulate a city's UI and especially which are met in Thessaloniki's UI, (b) in which ways the perceptions of UI are correlated with the socio-demographic profile of the city's inhabitants and (c) whether and in which ways the different variables of UI are correlated with each other. The questions were explored statistically in a stratified sample. Generally, the results confirm the previous findings and provide hints for further research. Concerning the empirical field, they contribute to address policies for the improvement of the city's UI.

First, the research showed that UI is generally an unknown term to the public, except for the more educated people. The interpretations of the content of UI significantly vary. However, most people consider history and culture, urban environment, social behavior and everyday life as the most important notions incorporated in the term, validating the findings of the more recent literature (Kaymaz 2013; Boussaa 2018).

Museums and roman antiquities were considered as the strongest element of the city's identity, additionally highlighting the city's residents' perception of history and culture as core elements of UI, as is observed in the case of monumental cities (Lagopoulos 2005). Unexpectedly, a semi-public space of peculiar urban character -Thessaloniki Exhibition Center, in the core of the city- is considered as the city's second strongest element, probably because of its specialized economic activities of national importance, its central location, proximity to other monuments and museums, as well as to a tower that is considered as a landmark of the greater area. Given that the physical structure of urban space is in line with its economic structure (Baris et al. 2009), it is expected that the urban renewal of this urban space aiming to be a flagship project hosting additional tourist services and innovative buildings of high architectural design will reinforce the city' s UI.

Besides, our results show that the "location and physical geography of the city" is also one of the top characteristic elements of Thessaloniki's identity, as already reported (Oktay and Bala 2015; Sönmez 2020). The importance of natural landscape and the proximity to natural identity elements (forest, sea, coastline) is also highlighted.

Although other authors relate the city's urban environment and design to architecture, appearance of buildings and building density, and public space (Baris et al. 2009; Oktay 2002; Lynch 1960; Oktay 2002; Sıramkaya 2019), these characteristics are not very high on the list of the most characteristic elements of Thessaloniki's identity. This probably is attributed to the fact that the natural environment, landscape and historical character of the city define more its UI than a typical Mediterranean urban environment. However, the majority of the respondents believes that a better architectural and urban design would improve the city's identity.

Contrary to the theoretical attributes of UI that have been detected by the respondents, "social behavior and everyday life", being the third most important attribute of UI according to our results, has not yet been widely and empirically examined. In our research, social behavior and everyday life refers to people's culture, hospitality, relationships, and individual perceptions. One notable relevant research result is that the 6/10th of the respondents acknowledge the lack of or no compliance to laws being a factor negatively influencing UI.

Additionally, this research gives some hints for the correlation between the perceptions of city's UI and the socio-demographic profile. The clearest finding is that only educated people are aware of UI term and people aged over 35 years consider that it is a multi-faceted concept, implying that young people are not so familiar with the concept. It is worth to note that the identification of natural elements as strong elements of the Thessaloniki' s UI is also attributed to more educated people, while less educated and those having lower income consider UI through more practical aspects of everyday life,

such as cost of living, urban public transportation and quality and functionality of road network. In general, gender, age and family status are the most common characteristics that are associated with the perceptions of city's identity. Moreover, the UI may be perceived in different ways since different groups tend to spend their spare time in various activities, each one of which is differently place-based.

Furthermore, our research showed that there is no obvious/explicit relation, according to the public's perceptions, between UI and "personal experiences and memories". Nevertheless "personal decisions/changes" were considered by half of the respondents as a factor influencing the city's identity. As already mentioned in the introduction, several authors have elaborated on the interaction between the "physical" elements of a city and the experiences of the individual, as well as their impact on UI.

According to the respondents in our research, UI is mainly influenced by social and economic factors (i.e. social changes and economic readjustment). This result is in line with the literature focusing on the social aspect of UI, based on which UI is reliant to the social environment, including communication patterns, family structure, residence type etc. (Oktay and Bala 2015). Since the city is for people and their communication, it should be seen as a framework for collective identity (Oktay and Bala 2015; Nientied 2018). Raja (2003, p. 87) uses the term "collective built identity" "to encompass the facets of identity which are represented through the built environment in an urban context", acknowledging that in the context of this collective identity not all the inhabitants share "identical societal values". Besides, the importance of economic factors on UI, implicitly emerges by the selection of the Thessaloniki International Fair as the third most characteristic element of the city's identity.

Summing up, the research results as regards the components that formulate a city's UI are generally in line with the variables that were traced in the literature. Additionally this research brings out elements such as cleanliness, adequate public transportation and functionality of road network, and the sense of safety, impacting urban identity. No evident correlation is traced between different variables of UI. The main lesson learned is that the way the residents of a city perceive UI is affected by (a) certain sociodemographic characteristics, such as age, gender, family status and educational level, (b) the location of residency, being inside or outside the city centre and (c) the way they tend to spend their spare time; the latter being partly related to sociodemographic characteristics. Moreover, the perception of UI for city centre residents is found to be affected by wider social, political and economic situations (social changes, political evolution and economic readjustments), which go beyond the physical aspects of the city.

Taking all the above into consideration, some primary policy implications in Thessaloniki concern the following:

- Urban policies should strongly incorporate the improvement of different aspects of the city: improvement of cleanliness, quality and functionality of the road network and sense of safety, along with reversal of the negative image of the city due to the presence of refugees' groups in the city center. As resulted from the regression models, these are mainly important for those living outside the city center. Besides the development of public transport network was indicated as the most important intervention that could positively affect the city's UI.
- Conflating the two most important 'objective' attributes of urban identity concept, history with urban environment, a policy mix is required which essentially responds to the conservation, restoration and upgrade of the historical assets of the city, along with the necessity to pursue innovative architectural and urban design (Kaymaz 2013; Gospodini 2004; OKtay and Bala 2015).
- The conservation and upgrade of the natural environment and landscape along with the enrichment of the urban environment should also lie at the heart of policy approaches for the enhancement of urban identity.

Developing policies for urban identity enhancement constitutes a composite task. Such policies cannot only emphasize on the physical aspects of the city, but should be combined with other sectoral policies, such as policies to improve transport infrastructure and urban mobility, combat undesirable social phenomena, and advance cleanliness and other municipal services.

Successful urban planning and design should be in place to structure the urban environment in a way that meets the functional and aesthetic qualities of place, and at the same time reinforces the relationship of the residents/users with the physical structure. Since urban planning constitutes a social and political process, the citizens' views and perceptions should strongly be taken into account in the decision-making process, towards enhancing urban identity. Urban policy, planning and design, although might be involved on different scales, should not be isolated from each other,

but they should be associated parts of a coordinated holistic process,

Limitations of this study

This study has some limitations. The first one is that this questionnaire was addressed only once; the possible evolution of the perception of UI of Thessaloniki is not assessed. This work is planned to be re-conducted in a few (2–3) years and also in a more long term (8–10 years). The comparison of the results of the different surveys will reveal if this identity remains quite constant or radically changes over time. The second limitation is that this questionnaire was addressed to the residents of Thessaloniki and the opinion of the visitors is not assessed. It should be noticed that the visitors can belong to very different groups. People for the vicinity of Thessaloniki coming to the town for administrative purposes, affairs, shopping, health issues, education, etc., belong to the first group. Other groups are the students of Thessaloniki (Thessaloniki has a very high student population), or the tourists, either from Greece or from other countries. This study is also planned to be performed in the near future.

Covering the above two issues, a more comprehensive assessment of UI of Thessaloniki will be performed.

Conclusions

The discussion around UI is still evolving. This work analyzes the perception of UI of Thessaloniki and the parameters influencing it. The results show that Thessaloniki's UI us generally perceived as strong, while the different socioeconomic groups have a different perception is several specific aspects of the city's UI.

Recently, some researchers deal with the "city identity crisis" facing cities worldwide by the interruption of historical traditions, the dominance of rapid urbanization, and the decline of economy in reality (Huang 2019). Additionally, the ongoing pandemic crisis has altered the way people perceive and use the urban space, which may also have an effect on their perception of UI. This work contributes to this general discussion.

Future research could be focused on detecting the different perceptions of UI by residents and city's visitors (temporal users and consumers), to develop urban policies to enhance urban identity that fulfill the expectations of all groups of city users.

Appendix

See Appendix Tables 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.

Table 2 Socio-demographic profile of the respondents

Variables		Frequency ($n=423$)	Percentage
Gender	Female	241	57.1
	Male	181	42.9
	Missing values	1	
Age level	18–26	89	21.1
	27–34	127	30.1
	35–44	94	22.3
	45–54	50	11.8
	55–65	36	8.5
	>65	26	6.2
	Missing values	1	
Education	Secondary school	16	3.8
	High school	116	27.9
	Higher education	193	46.4
	Master diploma	74	17.8
	PhD	17	4.1
	Missing values	7	
Marital status	Married	159	37.9
	Non married	261	62.1
	Missing values	3	
Occupation	Employed/retired	318	75.9
	Unemployed	33	7.9
	Student	42	10.0
	Rentier	10	2.4
	Housekeeper	8	1.9
	Other	8	1.9
	Missing values	4	
Family income	0—5,000	70	17.3
	5,001—10.000	91	22.5
	10,001—20,000	155	38.3
	20,001—30,000	47	11.6
	30.001—40,000	26	6.4
	40,000—60,000	11	2.7
	>60,000	5	1.2
	Missing values	18	

Table 3 Urban identity perceptions and correlation with socio-demographic profile

Socio-demographic characteristics	Variable's name	Label	No (%)	Yes (%)	Pearson Chi-square	*p* value
Gender	UI includes urban environment	Male	67.4	32.6	5.409	0.020
		Female	56.1	43.9		
	Thessaloniki 's UI is affected by political modifications	Male	56.8	43.2	5.907	0.015
		Female	44.7	55.3		
	Thessaloniki 's UI is affected by economic reformations	Male	47.7	52.3	7.778	0.005
		Female	33.9	66.1		
	Thessaloniki 's UI is affected by environmental changes	Male	66.5	33.5	7.072	0.008
		Female	53.2	46.8		
	Use of Leisure-time in Thessaloniki for walking in the city centre—shopping	Male	60.0	40.0	18.427	0.000
		Female	38.5	61.5		
	Use of Leisure-time in Thessaloniki for participation in an event taken place in the city	Male	70.3	29.7	5.778	0.016
		Female	58.7	41.3		
	Use of Leisure-time in Thessaloniki for staying home with family/friends/alone	Male	45.1	54.9	9.260	0.002
		Female	30.5	69.5		
	Use of Leisure-time in Thessaloniki for visiting a cultural-based or tourist place	Male	41.8	58.2	6.249	0.012
		Female	29.7	70.3		
	Environmental design of urban infrastructure would improve Thessaloniki's UI	Male	43.6	56.4	6.069	0.014
		Female	32.0	68.0		
	Low feeling of security affects negatively Th/ki' s UI	Male	57.2	42.8	6.576	0.010
		Female	44.2	55.8		
Age	UI includes history, culture, heritage	Younger	32.4	67.6	6.047	0.014
		Older	21.6	78.4		
	UI includes nature, natural environment and landscapes	Younger	61.8	38.2	10.109	0.001
		Older	45.8	54.2		
	UI includes personal experiences and memories	Younger	44.4	55.6	5.105	0.024
		Older	33.5	66.5		
	UI includes ethics, customs and the traditions of place	Younger	49.5	50.5	11.275	0.001
		Older	33.2	66.8		
	Museums are strong elements of Thessaloniki's UI	Younger	54.2	45.8	5.072	0.024
		Older	43.2	56.8		
	Churches are strong elements of Thessaloniki's UI	Younger	88.9	11.1	4.527	0.033
		Older	81.6	18.4		
	Cost of living is strong element of Thessaloniki's UI	Younger	92.6	7.4	4.311	0.038
		Older	97.1	2.9		
	Thessaloniki 's UI is affected by personal decisions and choices	Younger	53.8	46.2	4.484	0.034
		Older	43.2	56.8		
	Use of Leisure-time in Thessaloniki for cafe/restaurant/bar	Younger	47.0	53.0	8.990	0.003
		Older	61.7	38.3		
	Use of Leisure-time in Thessaloniki for enjoying nature and city' s natural environment (sea, mountainous areas)	Younger	49.5	50.5	7.864	0.005
		Older	35.8	64.2		
	Use of Leisure-time in Thessaloniki for visiting a cultural-based or tourist place	Younger	39.6	60.4	4.547	0.033
		Older	29.5	70.5		
	Presence of refugees' groups in the city center affects negatively Thessaloniki' s UI	Younger	54.2	45.8	5.865	0.015
		Older	42.2	57.8		

Table 3 (continued)

Socio-demographic characteristics	Variable's name	Label	No (%)	Yes (%)	Pearson Chi-square	*p* value
Marital status	UI includes urban environment	Unmarried	65.1	34.9	4.418	0.036
		Married	54.9	45.1		
	UI includes history, culture, heritage	Unmarried	31.5	68.5	4.827	0.028
		Married	21.7	78.3		
	UI includes nature, natural environment and landscapes	Unmarried	60.2	39.8	8.660	0.003
		Married	45.2	54.8		
	UI includes personal experiences and memories	Unmarried	46.4	53.6	5.622	0.018
		Married	34.7	65.3		
	Churches are strong elements of Thessaloniki's UI	Unmarried	88.7	11.3	5.098	0.024
		Married	80.8	19.2		
	Squares are strong elements of Thessaloniki's UI	Unmarried	74.4	25.6	4.002	0.045
		Married	65.4	34.6		
	Cost of living is strong element of Thessaloniki's UI	Unmarried	92.0	8.0	8.338	0.004
		Married	98.4	1.6		
	International Exhibition of Th/ki is strong element of its UI	Unmarried	65.5	34.5	5.907	0.015
		Married	53.8	46.2		
	Students, tourists and visitors are strong elements of Th/ki's UI	Unmarried	91.2	8.8	6.557	0.010
		Married	97.3	2.7		
	Thessaloniki 's UI is affected by environmental changes	Unmarried	65.8	34.2	10.801	0.001
		Married	49.4	50.6		
	Use of Leisure-time in Thessaloniki for walking in the city centre—shopping	Unmarried	52.8	47.2	6.896	0.009
		Married	39.7	60.3		
	Use of Leisure-time in Thessaloniki for cafe/restaurant/bar	Unmarried	48.3	51.7	6.752	0.009
		Married	61.3	38.7		
Education	Awareness of UI term	Lower	72.0	28.0	4.766	0.029
		Higher	60.9	39.1		
	UI includes urban environment	Lower	72.7	27.3	10.960	0.001
		Higher	55.4	44.6		
	Site and natural geography of the city are strong elements of Thessaloniki's UI	Lower	71.2	28.8	5.009	0.025
		Higher	59.9	40.1		
	Cost of living is strong element of Thessaloniki's UI	Lower	90.9	9.1	5.581	0.018
		Higher	96.5	3.5		
	New urban waterfront is strong elements of Th/ki's UI	Lower	71.2	28.8	6.262	0.012
		Higher	58.5	41.5		
	Urban public transportation is strong element of Th/ki's UI	Lower	79.5	20.5	12.072	0001
		Higher	91.5	8.5		
	Use of Leisure-time in Thessaloniki for cafe/restaurant/bar	Lower	61.1	38.9	3.905	0.048
		Higher	50.5	49.5		
	Use of Leisure-time in Thessaloniki for visiting a cultural-based or tourist place	Lower	43.5	56.5	5.655	0.017
		Higher	31.3	68.8		
	Urban renewal and architectural design would improve Thessaloniki's UI	Lower	45.5	54.5	17.476	0.000
		Higher	25.0	75.0		

Table 3 (continued)

Socio-demographic characteristics	Variable's name	Label	No (%)	Yes (%)	Pearson Chi-square	*p* value
Income	Museums are strong elements of Thessaloniki's UI	Lower	54.7	45.3	4.537	0.033
		Higher	43.9	56.1		
	Squares are strong elements of Thessaloniki's UI	Lower	77.0	23.0	5.665	0.017
		Higher	66.0	34.0		
	Architectural heritage is strong element of The/ki's UI	Lower	75.2	24.8	4.851	0.028
		Higher	84.0	16.0		
	The City as tourist destination is strong element of Th/ki's UI	Lower	88.2	11.8	5.586	0.018
		Higher	94.7	5.3		
	Poor quality and functionality of road network (trafic, behaviour of drivers and pedestrians, lack of signage) is strong element of Th/ki's UI	Lower	85.1	14.9	3.898	0.048
		Higher	91.4	8.6		
	Development of public transport network would improve Thessaloniki's UI	Lower	28.0	72.0	7.206	0.007
		Higher	16.8	83.2		

Table 4 Understanding the notion of urban identity

	Answers Not at all (1)—absolutely (5) (5 point-scale) as frequency (%)				
	1	2	3	4	5
Notions included in the term 'urban identity'					
History, culture and cultural heritage	3.9	6.8	16.7	43.8	28.8
Nature, natural environment and landscapes	10.6	15.7	27.8	28.9	17.0
Urban environment (buildings, streets, infrastructure, human interventions into landscape etc.)	3.4	6.1	15.3	36.2	39.0
Social behaviour and everyday life (personal culture, hospitality, relationships, perceptions)	3.1	5.1	19.1	42.7	30.0
Personal experiences and memories	17.5	24.3	28.1	20.9	9.2
Ethics, customs and traditions of place	5.1	10.2	24.0	36.4	24.3
Resemblance of other cities' urban identity to that of Thessaloniki					
Athens	27.2	24.2	21.2	18.3	9.1
Patras	13.4	29.2	35.4	18.4	3.6
Heraklion	11.8	26.7	34.8	21.3	5.4
Volos	8.1	18.6	33.7	29.4	10.2
London	59.6	13.3	9.6	10.0	7.4
Barcelona	26.4	16.5	19.3	24.0	13.8
Paris	54.8	15.4	10.0	9.1	10.8
Larnaka	34.2	25.9	25.9	12.0	1.9
Dublin	52.5	14.9	19.9	9.9	2.8
Munich	50.6	21.3	16.7	8.0	3.4
Naples	24.6	22.1	26.2	21.5	5.6
Instabul	13.3	18.6	19.7	29.9	18.6
Other: Kavala, Ismir, Chania, Valencia, Belgrade, Lisbon, Prague …					
Factors influencing Thessaloniki's urban identity					
Social changes	2.3	10.7	23.8	44.6	18.5
Political evolution	6.8	16.2	24.7	37.1	15.2
Economic readjustment	2.8	10.1	24.5	40.6	22.0
Environmental changes	5.7	22.0	29.5	28.8	14.0
Personal decisions / changes	17.2	27.3	22.3	23.1	10.2
Utilization of free time in the city of Thessaloniki					
Walk in the city-centre and shopping in the commercial stores	14,5	32,3	24,9	21,4	6,9
In restaurants/bars/cafeterias/taverns	2,0	19,2	32,2	34,2	12,4
In municipal events, such as speeches, social events, public gatherings etc	30,0	32,7	24,3	8,9	4,1
Enjoying nature and the natural environment (sea, mountain)	13,0	28,9	25,4	25,9	6,8
Activities in public open spaces	15,0	18,2	26,6	26,6	13,6
Visits to touristic-cultural sites	33,4	37,0	19,7	8,4	1,5
At home with family/friends/alone	3,2	9,4	23,2	44,7	19,5
There are not many options in the city	53,2	18,3	15,8	8,1	4,6
Factors that negatively affect Thessaloniki's urban identity					
Lack of cleaniness	2,2	7,9	11,8	43,8	34,3
Low sense of safety	8,4	16,2	24,4	31,7	19,3
Lack of or no compliance to laws	5,2	11,6	22,5	37,7	23,0
Poor quality and functionality of road network (traffic, behaviour of drivers and pedestrians, lack of signage)	0,7	8,5	17,6	42,9	30,3
Presence of refugees' groups in the city centre	24,4	23,4	15,1	18,6	18,5

Table 5 Components that formulate the city' s urban identity

Most characteristic elements of Thessaloniki's urban identity (top five list in the respondents' view)	Selected (%)	Not selected (%)	Selected as the most significant (%)
Location and physical geography	36.4	63.6	11.3
Thessaloniki International film festival	23.6	76.4	1.6
Museums	51.1	48.9	14.5
Waterfront	37.8	62.2	8.0
Public Transport	12.8	87.2	1.6
Thessaloniki International fair	39.2	60.8	6.4
Quality and functionality of road network (proper infrastructre, traffic)	11.1	88.9	2.3
Squares	29.6	70.4	1.9
Listed—neoclassical buildings	19.4	80.6	2.6
Open green spaces	6.9	93.1	0.3
Ease for pedestrian movement	6.1	93.9	1.0
Music hall and cultural events	13.2	86.8	0.6
Urban design (architecture, appearance of buildings, building density)	20.3	79.7	7.1
Ancient roman antiquities	40.7	59.3	8.7
Churches	14.7	85.3	1.9
Theatres and cinemas	4.0	96.0	3.5
Sense of safety	3.8	96.2	1.9
Gastronomy (food, cafeterias, restaurants)	18.2	81.8	
The city as tourism attraction	8.0	92.0	
Distinctive neighbourhoods	22.0	78.0	4.2
Cost of life	5,2	94.8	1.6
University campus and students' areas	20.3	79.7	3.5
Students, tourists and visitors	6.1	93.9	3.2
Cleaniness/attention to hygiene	6.9	93.1	1.6
Local mentality/culture/behaviour	17.5	82.5	9.6
Other (night life, multiculturalism, social structure	0.7	99.3	1.0
Interventions which could improve Thessaloniki's urban identity			
More public spaces	60,0	40,0	19,5
Development of public transport network (tram, metro etc.)	78,7	21,3	34,4
Environmental planning of new infrastructure works (renewable energy resources, recycling, green spaces)	62,9	37,1	15,6
Architectural and urban design	68,8	31,2	25,8
Attraction and arrival of tourists and visitors	38,5	61,5	4,7

Table 6 Model M1

Variables	Utilization of free time in the city of Thessaloniki for walk in the city-centre and shopping in the commercial stores		
	B	Sig	Exp (*B*)
Municipality of Thessaloniki as location of residency	−3.786	0.000	0.023
Personal decisions/changes as factors affecting Thessaloniki's urban identity	0.09	0.023	1.663
Utilization of free time in the city of Thessaloniki in restaurants/bars/cafeterias/taverns	1.46	0.000	2.847
Utilization of free time in the city of Thessaloniki for visits to touristic-cultural sites	0.32	0.007	1.881
Age	− 0.801	0.010	0.449
Marital status	1.89	0.000	3.630
− 2 Long likelihood	480.118		
Chi-square	51.708		
Sig	0.000		
Overall percentage	64.30%		

Table 7 Model M2

Variables	Utilization of free time in the city of Thessaloniki for enjoying nature and the natural environment (sea, mountain)		
	B	Sig	Exp(B)
Municipality of Thessaloniki as location of residency	− 5,272	0.000	0.005
Awareness of the term 'urban identity'	0.605	0.016	1.830
Environmental changes as factors affecting Thessaloniki's urban identity	0.694	0.004	2.002
Utilization of free time in the city of Thessaloniki for activities in public open spaces	− 1.431	0.000	4.182
Utilization of free time in the city of Thessaloniki for visits to touristic-cultural sites	0.628	0.013	1.874
Age	0.523	0.027	1.687
− 2 Long likelihood	442.387		
Chi-square	77.175		
Sig	0.000		
Overall percentage	70.20%		

Table 8 Model M3

Variables	Lack of cleanliness as factor that negatively affect Thessaloniki's urban identity		
	B	Sig	Exp (*B*)
Municipality of Thessaloniki as location of residency	− 3.385	0.000	0.034
Low sense of safety as factor that negatively affect Thessaloniki's urban identity	0.766	0.001	2.151
Poor quality and functionality of road network (traffic, behaviour of drivers and pedestrians, lack of signage) as factor that negatively affect Thessaloniki's urban identity	1.366	0.000	3.918
− 2 Long likelihood	446.316		
Chi-square	52.064		
Sig	0.000		
Overall percentage	71.00%		

Table 9 Model M4

Variables	Lack of or no compliance to laws as factors that negatively affect Thessaloniki's urban identity		
	B	Sig	Exp (*B*)
Municipality of Thessaloniki as location of residency	− 6.205	0.000	0.002
Utilization of free time in the city of Thessaloniki at home with family/friends/alone	0.695	0.009	2.003
Low sense of safety as factor that negatively affect Thessaloniki's urban identity	1.531	0.000	4.622
Poor quality and functionality of road network (traffic, behaviour of drivers and pedestrians, lack of signage) as factor that negatively affect Thessaloniki's urban identity as factor that negatively affect Thessaloniki's urban identity	0.672	0.030	1.957
Presence of refugees' groups in the city centre as factor that negatively affect Thessaloniki's urban identity	0.667	0.009	1.948
− 2 Long likelihood	383.471		
Chi-square	90.050		
Sig	0.000		
Overall percentage	72.30%		

Table 10 Model M5

Variables	Social changes as factors affecting Thessaloniki's urban identity		
	B	Sig	Exp (*B*)
Municipality of Thessaloniki as location of residency	− 3.330	0.000	0.036
Political evolution as factors affecting Thessaloniki's urban identity	1.305	0.000	3.686
Economic readjustment as factors affecting Thessaloniki's urban identity	0.819	0.001	2.268
Utilization of free time in the city of Thessaloniki at home with family/friends/alone	0.477	0.042	1.612
− 2 Long likelihood	456.888		
Chi-square	72.955		
Sig	0.000		
Overall percentage	71.10%		

Table 11 Results of the discriminant analysis

Groups	Citizens who believe that Thessaloniki has a unique/special UI	Citizens who do not believe that Thessaloniki has a unique/special UI
Predicted group membership (total)	254	57
Predicted group membership (correct %)	67.7	57.9
Correctly classified grouped cases (%)	65.9	
Canonical correlation	28.7%	
Wilks' lambda	0.918	
Sig	0.000	
Discriminant function coefficients	Function	
Thessaloniki 's UI is affected by environmental changes *(not at all/absolutely)*	0.609	
UI includes history, culture, heritage *(not at all/absolutely)*	0.543	
Museums (e.g. white tower) are strong elements of Thessaloniki's UI *(yes/no)*	− 0.461	

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