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URBAN INFRASTRUCTURE PREFERENCES OF TOWNSFOLK: AN EMPIRICAL SURVEY WITHIN THE FRAMEWORK OF SOCIO-ECOLOGICAL MODEL OF THE CITY

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Abstract. *The article presents the results of an interdisciplinary (psychological, behavioral, sociological, urban) survey of residents of elite residential complexes of Odessa regarding theirs urban infrastructure preferences, as well as the degree of satisfaction with their place of residence. It was found that respondents are characterized by a high level of satisfaction with their place of residence. It was also revealed that the security criterion of the district is the main one for choosing a place of residence, which indicates the unmet townspeople need for the general safety of the urban environment. Based on the obtained empirical data, an analysis of significant factors affecting the urban infrastructure preferences of residents from the point of view of the systemic concept of the social ecology of the city is conducted. Obtained data viewed that living in high-rise (multi-storey) buildings correlates with a low level of satisfaction, while low-rise buildings positively correlate with such significant aspects as the view from the window, a small number of neighbors, proximity to the sea, and effective house management. Multivariate regression revealed a positive relationship with such infrastructure objects as shopping and entertainment centers, postal services, places of family leisure, etc., which indicates the dominance of the consumer strategy in the behavior of the city resident. The collected empirical material served as the base for identifying the behavioral trends of the townspeople and allowed to simulate a qualitative profile of the activity of everyday support and personal development.*

Keywords: *city, urban, social ecology, townsfolk preferences, infrastructure, behavior, factor analysis, correlation analysis.*

And not only does a city consist of a multitude of human beings, it consists of human beings differing in kind.

Aristotle [1]

Introduction

In the modern world, the concept of city and urban space has changed significantly. Modern architects, developers, urbanists - all those are involved in the development and planning of cities are in a conceptual and methodological crisis. The ideas of what a modern city should be like, what value needs it should respond to and what human needs it should be oriented to remain blurred, and all practical decisions are often made on the basis of intuitive choices.

At the same time, increase of the urban population is observed everywhere, and it is quite possibly, that in the near future a significant part of the world's population will turn out to be city residents included in all the processes taking place in cities. The change of the natural environment to the urban one leads to phenomena that are just beginning to be studied by researchers. For example, the so-called «urban neurosis» observed in recent years, is typical for large, actively developing cities. The sources of this phenomena should obviously be sought at a deep, psychological level: «The involuntary suppression of the individual principle, according to Carl Jung, initiates a dangerous mental response. The Unconscious Self "takes revenge" on the disobedient consciousness for separation from instinctual roots and tries to destroy it with the help of a wide variety neurotic and psychotic behavior» [2].

Based on the presented situation, the relevance of researching the current state of needs, values, lifestyle of residents of big cities and using of rigorous methodological tools for analyzing and forecasting urban trends is a priority.

The construction of the concept of urban space would contribute to a productive solution of the accumulated problems, however, such task cannot be carried out without relying on a rational methodology, supported by empirical data. This work is just such first theoretical and methodological intelligence services.

Materials and methods

The methodological basis of the study:

- a method of expert assessments, as a result of which, six residential complexes of Odessa were selected as objects of research, and parameters that affect the choice of an

apartment, house or district for living were selected too. Also, based on expert estimates, a list of the most significant urban infrastructure facilities was compiled;

- the method of sociological questioning (Vystavkina & Snitsarenko [4]), which made it possible to collect data according to research tasks;
- Mathematical and statistical tools «SPSS: IBM», which were used to conduct correlation and factor analysis;
- analytical tools of the systemic concept of the city's social ecology, which made it possible to explain the observed trends in the urban environment at structural and conceptual levels.

The purpose of the presented interdisciplinary (psychological, behavioral, sociological, urban) survey was to identify the current preferences of townspeople living in modern residential complexes related to luxury housing. The main **tasks** that were set and solved during the study:

- Identification of the optimal area of the apartment for living.
- Identification of preferences regarding the floor of residence.
- Determining the degree of satisfaction with living in your home.
- Identification of significant factors for choosing an apartment, house and district for residence.
- Identification of the importance of the close proximity of urban infrastructure objects.

The empirical basis of the presented studies is the results of an interdisciplinary survey that takes into account preferences regarding housing complexes and urban infrastructure needs of townsfolk, which were held from December 4 to December 18, 2019 in Odessa (Ukraine) in six elite residential complexes (RC «Arcadia Palace», RC «Armeiskii», RC «New Arcadia», RC «Tiras», RC «French Boulevard, 22», RC «Marseilles») by Think Tank Prostranstvo (Shymko, Vystavkina, Ivanova and Snitsarenko [3]).

The total number of respondents is 164 people. During the conducted survey, 57% of women and 43% of men were interviewed. The age number of respondents: up to 22 years old - 10%, 23-35 years old - 37%, 36-50 years old - 31%, 51-65 years old - 16%, over 65 years old - 6%.

Results and discussion

Modern housings have ceased to fulfill the sole function of shelter from the dangers of the surrounding world, their functionality has expanded significantly over the past decades [5], and new homes are increasingly called «residential complexes», which suggest a developed

system of not only life support, but also relaxation, self-development, healthcare, nutrition, education, sports and more.

An idea about what is the optimal yardage of a living space and on which floor is preferable to live has changed in different eras. The functionality of the house, its appearance and dimensions are reflection the worldview of the people who built them and lived in them. No wonder that the Chinese philosopher Hong Zicheng said: «The size of space is determined by our consciousness». Therefore, modern townsfolk determine and form new standards for comfortable housing based on their, at most, collective unconscious states of consciousness.

So, in the course of the research, it was found that for most of the respondents the optimal area of residence is 51-75 m² and 76-100 m² (51-75 m² - 32% of respondents, 76-100 m² - 36% of respondents).

It should be borne in mind that 71% of respondents are owners and 29% are tenants. If the majority of owners prefer to live in apartments from 76–100 m², then for tenants the optimal area is 51–75 m² (see Table 1).

Table 1

		Optimal area					Total
		to 30 m²	31-50 m²	51-75 m²	76-100 m²	over 100 m²	
Resident status	Owner	5%	9%	28%	40%	18%	100,0%
	Tenant	7%	20%	39%	25%	9%	100,0%

Most of the owners – 38% – are between the ages of 36 and 50, while the majority of tenants – 64% – are between the ages of 23 and 35 (see Table 2). Here it is possible to put forward a hypothesis that the possibility of acquiring their own real estate for Odessa townsfolk appears, as a rule, at the age of 36 and older. At the same time, by the time of acquisition, real estate buyers already have experience in renting and formed preferences for choosing home. Indirectly, this is indicated by the fact that significant differences in the criteria affecting the choice of housing by owners and tenants were not found. This indicates that the form of ownership does not significantly affect the preferences and well-being of townsfolk.

Table 2

		Age					Total
		to 22	23-35	36-50	51-65	over 65	
Resident status	Owner	10%	28%	38%	17%	7%	100,0%
	Tenant	11%	64%	14%	11%	0	100,0%

Obtained data in general terms indicate pragmatic anthropomorphism, which serves as a criteria for choosing a space for life. In the V century B.C. the ancient Greek philosopher Protagoras said that «Man is the measure of the all existing things, that they are, and of things that are not exist, that they are not» [6], and in this case, the obtained empirical data confirms this principle of proportionality to person, when space is understood as utilitarian: the area of the apartment is optimal exactly, when it meets the terms of the lease or purchase, the sufficiency of the urban infrastructure around and other relevant criteria.

The study also found that the preferred floor of the residence depends on the size of the optimal area. This pattern lies in the fact that the larger the area of the apartment, the higher the preferred floor (see Table 3).

Table 3

Optimal area	Medium floor	N (number of cases)
to 30	5	8
31-50	8	19
51-75	9	52
76-100	9,5	59
over 100	12	26
Total	9	164

Obviously, this is due to the fact that the more expensive the real estate, the higher the expectations of apartment owners. So, the high floor of house correlates with such parameters as

panorama windows and the view from the window. In turn, panorama windows and a beautiful view from the window correlate with such parameters as: design of the building's facade, aesthetics of the house adjoining territory, architecture and landscape design of the area, proximity to the sea, parks, and cultural objects. That is with those criteria that are markers of «elite» housing (see Table 4).

Table 4.

Pearson Correlation	Panorama windows	The cardinal point	a beautiful view from the window
The high floor of house	,261**	,165*	,172*

In this regard, the phenomenon of demand for the «low-rise» parameter is interesting, which also correlates with the design of the building's facade, the esthetics of the house adjoining territory, the district prestige, the building density, the architecture and landscape design of the area, proximity to the sea, parks, and cultural objects (see Table 5).

Table 5

Pearson Correlation	the building' s facade	the esthetics of the house adjoining territory	the district prestige	the building density	the architecture and landscape design of the	Proximity to the sea	Proximity to the paarks	Proximity to the cultural objects	Proximitz to the infrastructure
The «low-rise» parameter of house	,209*	,185*	,206*	,167*	,190*	,196*	,222**	,257**	,173*

Behind the apparent contradiction is the need of home buyers to have an attractive view from the window, which is possible either with a very high floor in a dense building district or with a low-rise building with the corresponding house territory and urban infrastructure.

In general, the multivariate regression showed a positive correlation with such urban infrastructure objects as: postal service, shopping and entertainment centers and places for family leisure, library, jewelry stores and notary services. Negative correlation is seemed with such objects as gas stations, cinemas and language courses (see Chart 1).

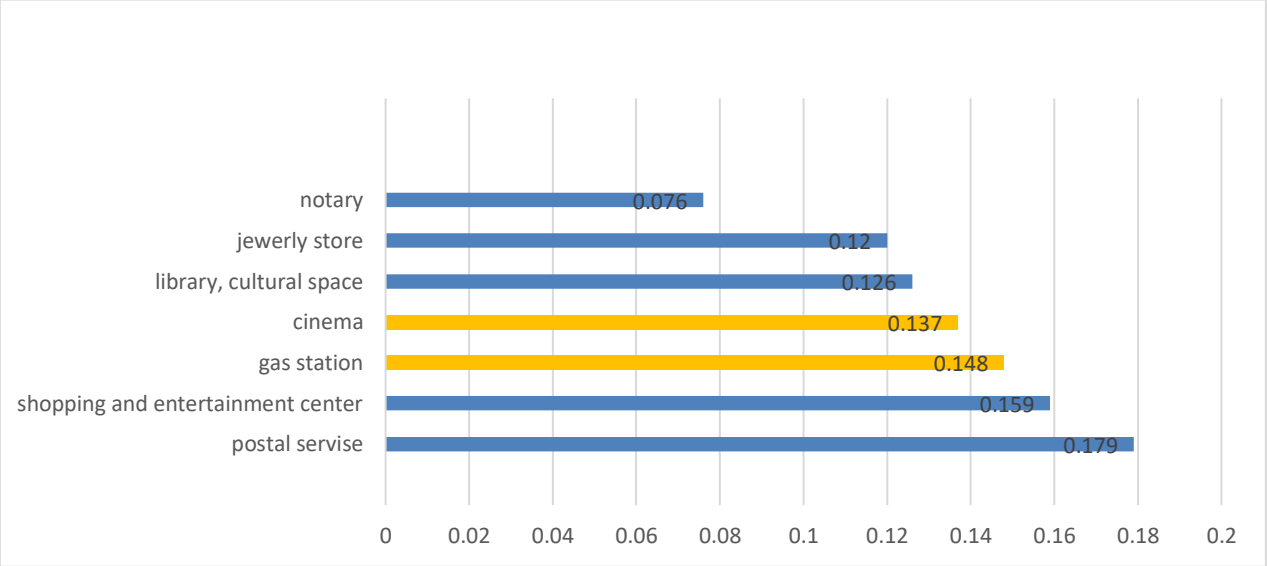

Chart 1. Parameters importance

Postal services, shopping and entertainment centers indicate the dominance of the consumer component in the behavioral strategies of the modern townifolk. Postal services provide virtual shopping, while a visit to the shopping center is a real shopping, so-called «flirting with objects», which, from the point of view of the famous French philosopher J. Baudrillard, is a kind of «symbolic exchange» in which person is included [7, p.76].

This profile of the city resident suggests that we are observing a new value vector that was not characteristic of the axiological systems of the past. So, the philosopher A. Panarin describes it as «the paradox of tired Prometheus: firstly to create your own subjective world, equal to the Cosmos and even more significant than it, then agree to the role of an autonomous sand of the universe, which, however, is allowed to play any games, but only because they occur in the void» [8, p.133-134]. According to Panarin, modern homo ludens often interprets freedom «as the right to live without any tension» and it brings closer the «entropy of asociality» [8, p.134]. Agreeing with this conclusion, the domestic philosopher and methodologist A. Tsofnas notes the next: «Today on the Earth a huge number of people consider leisure, one way or

another filled, and rest (which although was valued in previous eras, was considered only as a necessary means of relaxation) as the main value and main goal of life. It is already impossible not to notice the hypertrophied tourism industry, the gigantic show business, Olympic and other super-mass shows. Hundreds of millions of people work only to “relax” in the stadium, in a computer or other game at the time of traveling» [9].

In the end, city residents are increasingly discovering the behavioral profile of people, who have a rest in an «all inclusive» sanatorium. Townsfolk want quality service, good food, luxury goods and elitism. It is noticeable that all economic aspirations are understood not as the possibility of intense and creative work, but as a dream of living for one’s own pleasure in a «brave new world» without material worries.

The next profile obtained by using multivariate regression (see Chart 2) shows a positive correlation to low buildings through such parameters as: a small number of apartments per floor, proximity to the sea, convenient traffic interchange for public transport, house management efficiency, while a negative correlation is observed by such parameters as: traffic interchange for cars, age and aesthetic appearance of the local area. It is worth noting that the younger the age of the tenant/owner of the housing, the more significant the low-rise factor for him. Probably, there is a new trend in the housing market, which primarily young people «catches». The phenomena of «low-rise» buildings includes focus on the desire for a quiet life: effective house management and a small number of apartments on the floor; environmental friendliness: proximity to the sea, using of public transport as opposed to using a personal car (possibly young people do not yet have a personal car, or this is a manifestation of such an emerging trend as the lack of the need to own their own car).

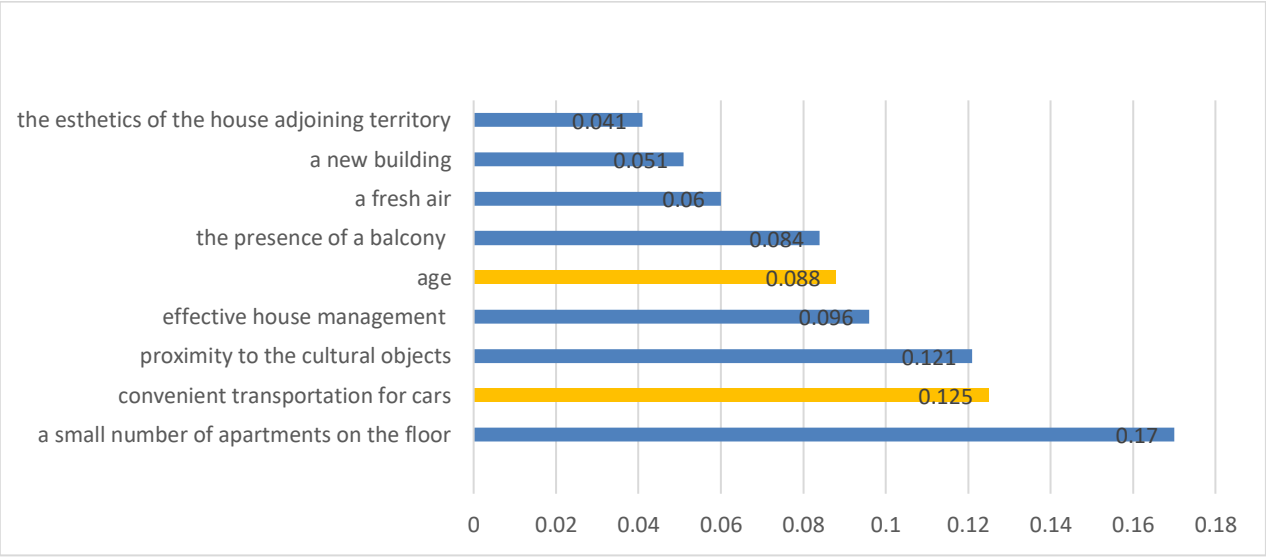

Chart 2. Parameters importance

Indicators regarding the **degree of satisfaction** with residence evidence the overall satisfaction of the respondents, which range from 7 to 10 points and correspond to a high degree of satisfaction (see Table 6).

Table 6

	Satisfaction with residence										Total
	1	2	3	4	5	6	7	8	9	10	
Frequency	1	0	1	4	16	14	26	39	16	25	142
Total, %	1%	0	1%	3%	11%	10%	18%	27%	11%	18%	100%

The average satisfaction rate by living in elite complexes is 76%. Satisfaction level of 7-8 points is more common among owners - 49% of surveyed apartment owners versus 38% of tenants. Satisfaction level of 9-10 points is more inherent in tenants - 35% of tenants versus 27% among owners.

The analysis also showed that the priority parameters for choosing a home and, accordingly, affecting the cost per square meter, are (see Chart 3):

• security of the area;

• optimal area;

• satisfaction level with residence;

• proximity to parks;

• floor of residence.

The security factor of the region is dominant and indicates the unmet need of Odessa townsfolk for a sense of security and the general well-being of the urban environment. The general level of anxiety significantly affects the neurotization of living space, which ultimately forms an «urban neurosis».

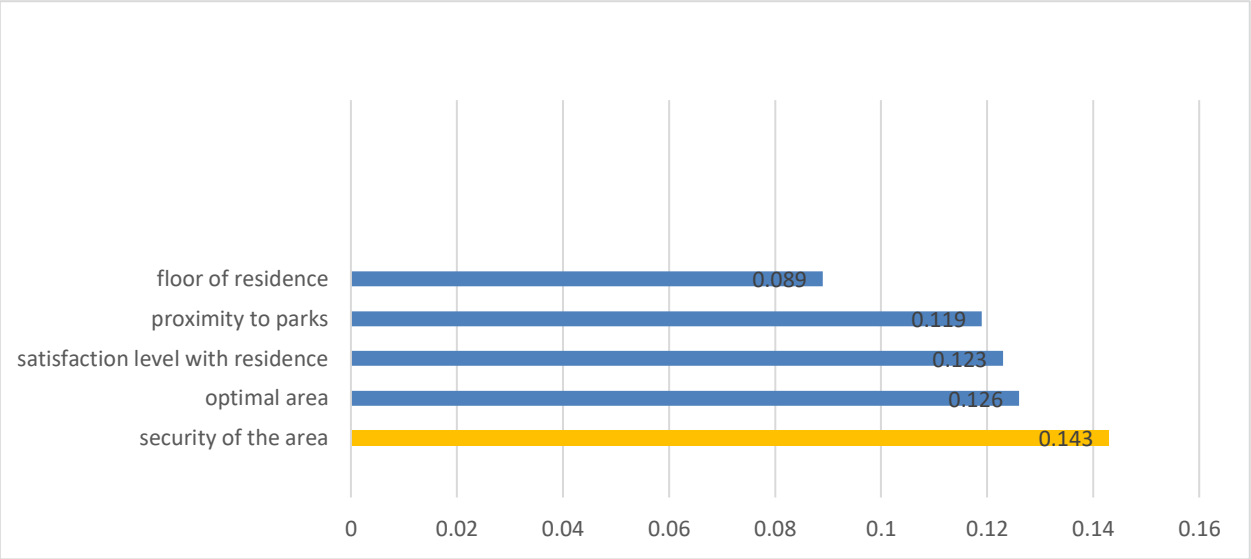

Chart 3. Parameters importance

This phenomenon is characteristic of most large and growing cities, where people come from different places and for different purposes. Back in 42, the Roman philosopher and statesman Seneca described Rome in such a way that many modern townspeople will see their city in this image: «Look at the large population that barely fits in the buildings of this huge city; most of this crowd has no fatherland, and these people gathered here from different places and generally from around the world. Some brought ambition here, others – state affairs, third – the embassy assigned to them, fourth – luxury, which seeks a convenient place, that full of vices, fifth – passion for education, sixth – spectacle, seventh – friendship, eighth – enterprise, which need a wide field of activity; some brought their corrupt beauty here, others brought their corrupt eloquence. All people flock to this city, in which virtues and vices are well paid» [10].

From the point of view of the systemic concept of the social ecology of urbanism, the intersection of vectors of such dynamic factors as values – needs and the collective unconscious – historical and cultural experience «... allows us to create an idea of which infrastructure components of urban life require maintaining balance in the process of everyday city management» [2]. In order to obtain relevant information about the weight distribution of these guides, **a factor analysis** was carried out, which allows to find the relationship between the variables (parameters), to reduce the number of variables, and also allows to discover the meaningful characteristics of the studied aspects and recreate the lifestyle of townspeople.

So, **a factor analysis of the district parameters** revealed the following relationships:

The 1-st factor describes 32% of dispersion and covers the components that are associated with the improvement and environmental friendliness of the area. This factor was

grouped by the following parameters: safety, illumination, freshness and cleanliness of the air, ennobled district, building density and proximity to parks.

The 2-nd factor describes 13% of dispersion and covers components that are related to the prestige and access of the district to the main advantages of the city. This factor is formed by the following parameters: prestige, proximity to the center, proximity to the sea, proximity to cultural sites, proximity to parks.

The 3-rd factor describes 9% of dispersion and covers the components of the convenience of location and aesthetics of the area. The inverse component is building density. This factor includes such parameters as convenient traffic interchange for personal cars and public transport, the architecture and landscape of the district, its ennoblement and proximity to the green zone.

In turn, **the correlation analysis of satisfaction with the place of residence and housing parameters** (see Table 7) showed that the degree of satisfaction with living in the apartment depends on such parameters as: floor, prestige of the area and proximity to the sea.

Table 7

Satisfaction with residence	**Floor**	**Prestige of the area**	**Proximity to the sea**
Pearson Correlation * Correlation is significant at 0.05 (one-tailed) ** The correlation is significant at the level of 0.01 (two-tailed)	.151* **Panorama windows** Pearson Correlation ,261** **View from the window** Pearson Correlation ,172*	.189**	.132*

Factor analysis of the apartment parameters made it possible to identify the following factors:

The 1-st factor describes 18% of dispersion and includes components that create an atmosphere and aesthetic filling of life. This factor combined the following parameters: view from the window, a small number of apartments on the floor, prosperous neighbors/contingent, panorama windows, high ceilings, clean entrance. This factor may reflect the needs of the esthete-resident, whose motivation was very accurately expressed by Oscar Wilde: «Or I, or these nasty floral wallpapers. I am for living and dying at the aesthetic space! ».

The 2-nd factor describes 12% of dispersion and includes components of the utilitarian characteristics of the apartment. This factor combines the following aspects: noise insulation, wall insulation, clean front door, which may be leading in the preferences of a pragmatic consumer.

The 3-rd factor describes 10% of dispersion and includes components that represent the lighted side (illumination), high ceilings, which are a reflection of the consumer, who strive for spaciousness, freedom, relaxedness and ease.

The 4-th factor describes 9.6% of dispersion and includes components that facilitate visual contact with the outside world that does not disturb peace: the presence of a terrace/balcony, panorama windows, sound insulation, which may be characteristic of a person who seeks harmony, who loves beauty and appreciates silence.

The 5-th factor describes 9% of dispersion and includes components of household comfort. This factor is formed by such parameters as the presence of the air conditioner, the quality of repair, which is characteristic of people who do not care so much what is outside their apartment.

The 6-th factor describes 8% of dispersion and includes the components of «club» living with «friends»: favorable purchase/residence conditions, satisfaction with neighbors.

Factor analysis of the house parameters displayed the following groups:

The 1-st factor describes 37% of dispersion and includes components that indicate the importance of aesthetics and the closeness of the internal area: the esthetics of the house territory, the greening of the house territory, the presence of an adjoining territory, the presence of parking, the improvement of the territory, the efficiency of house management, the presence of several elevators, the design of the building’s facade, the enclose of territory, security.

The 2-nd factor describes 9% of dispersion and includes components that indicate the importance of a closed and modern house space: a new house and construction technology, building facade design, closed territory, and autonomy of power supply.

The 3-rd factor describes 8% of dispersion and includes the components of the improvement of the house territory and autonomy, which guarantees independence from utilities: autonomy of electricity supply, independent heating, efficiency of house management, the presence of an adjacent territory/yard, improvement of the house territory.

The 4-th factor describes 7% of dispersion and includes the components of comfort and openness: low-rise buildings and the presence of an adjacent territory. The inverse component is the presence of security and access control.

The results of the study regarding **the demand for urban infrastructure** showed that the following objects are most in demand (score 9-10 points): supermarket, pharmacy, ATM. Demand is above average (7-8 points): convenience stores, market, cafes/restaurants, fitness clubs, beauty salons, medical diagnostic centers, development sections for children, animal walking area, places for family leisure, language courses for adults, a bank and a car wash. A polyclinic, a school/kindergarten, a fire department and the police were also given priority in the infrastructure close to home and received a higher than average rating (7-8 points).

Thus, the conducted survey made it possible to collect empirical material that can serve as a basis for identifying the behavioral trends of city residents. Based on a systemic approach implemented via creating of the structural and ontological matrix of urban space (Shymko [11]), we obtained a qualitative profile of behavioral activity, which corresponds to the first (I – activity of daily maintenance) and the second (II – personality development) segments of the matrix.

The study of the third (III – cultural and humanitarian infrastructure of the city) and fourth (IV – economic and technocratic structure of the city) segments is a priority for further research.

Conclusions

The results of the study are preliminary and suggest further analysis and interpretation. Considering the nature of the sample, which is not representative of all Odessa residents, the findings of the study cannot be extrapolated to other totalities except presented ones in this paper.

The following findings can be attributed to the main results of the presented study:

Firstly, it was found that residents of elite residential complexes are characterized by a high level of satisfaction with their place of residence, and the security criterion for the area is the main one for choosing a place of residence, which indicates an unmet need for general safety in the urban environment.

Secondly, living in high-rise (multi-storey) buildings correlates with a low level of satisfaction, when low-rise buildings positively correlate with such significant aspects as the view from the window, a small number of neighbors, proximity to the sea, and effective house management. While the multi-storey building correlates with such parameters as an attractive view from the window and panorama windows.

Thirdly, the view from the window, a small number of apartments on the floor, good neighbors/contingent, panorama windows, high ceilings, clean entranceways are significant factors for choosing an apartment; for choosing a house it is aesthetics and closeness of the internal space; for choosing an area –safety, improvement and environmental friendliness.

Fourth, from the point of view of close proximity to the place of residence, the most significant objects of urban infrastructure are supermarkets, pharmacies, ATMs.

The prospect of further research is to ensure representativeness of the sample, as well as an analysis of not only the subjective assessments of respondents, but also the objective parameters of the city's infrastructure.

References

[1] Aristotle. (1944). "Politics", 2.1261a, translated by H. Rackham. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. http://data.perseus.org/citations/urn:cts:greekLit:tlg0086.tlg035.perseus-eng1:2.1261a

[2] Shymko, V. (2016). Sotsialnaia ekolohyia urbanizma. Obytaemost horodov [The social ecology of urbanism. Urban habitability]. *LIGA.net*. https://blog.liga.net/user/vshimko/article/23872 [in Russian]

[3] Shymko, V., Vystavkina, D., Ivanova, I. & Snitsarenko, K. (2020). Issledovanie predpochtenii horozhan: kvartyra, dom, kvartal [Research citizens preferences: apartment, house, quarter]. *Zenodo*. http://doi.org/10.5281/zenodo.3608896 [in Russian]

[4] Vystavkina, D. & Snitsarenko, K. (2020). Anketa pilotnoho oprosa sobstvennikov i arendatorov zhylykh pomeshchenii [Questionnaire for a pilot survey of owners and tenants of residential premises]. *Zenodo*. http://doi.org/10.5281/zenodo.3634385 [in Russian]

[5] Seleznova, Y. Funkcii publichyh horodskih prostranstv [Functions of public urban spaces]. *DOXA*, 2019, №2 (32), pp. 122-128. http://doksa.onu.edu.ua/article/view/188638 [in Russian]

[6] Plato. (1921). Plato in Twelve Volumes, Vol. 12 translated by Harold N. Fowler. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. P.152a. http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg006.perseus-eng1:152a

[7] Baudrillard, Jean. (2006). Obshchestvo potrebleniya: Mify i struktury [The Consumer Society: Myths and structures]. Publishing house "Cultural Revolution"). [in Russian]

[8] Panarin, A. (2001). Filosofiya istorii [Philosophy of history]. Publishing house "Gardariki". [in Russian]

[9] Tsofnas, A. (2005). Pechal Fukuyamyi v prostranstve aksiologicheskih koordinat [Fukuyama sorrow in the space of axiological coordinates]. *Voprosy filosofii*, № 11, pp. 106-118. [in Russian]

[10] Seneca, Lucius Annaeus. "The letter to Helvia", VI, 2 (Ad Helviam matrem, De consolatione). https://www.thelatinlibrary.com/sen/sen.consolatione3.shtml [in Latin]

[11] Shymko, V. (2019). Gorodskoe prostranstvo: strukturno-ontologicheskiy eskiz [Urban space: structural-ontological sketch]. *Zenodo*. http://doi.org/10.5281/zenodo.3520459 [in Russian]