



Baseline Report for Perception on Sustainability in Bornova Municipality

Climate Change Adaptation Grant Programme (CCAGP) TR 2017/ESOP/MI/A3/04)

CCAGP 090 STORMLOG (Sustainable Transportation and Water Management in
Local Governmental Services) Project

Output 6



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Technical References

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¹ PU = Public,

PP = Restricted to other programme participants (including the Commission Services),

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CCAGP 090

STORMLOG (Sustainable Transportation and Water Management in Local Governmental Services) Project



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Versions

TABLE 0-1: CONTRIBUTIONS & VERSIONS OF THE DELIVERABLE

| Version | Person(s) | Partner(s) | Date |
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Abstract

This report contains the results and analysis of surveys conducted for the STORMLOG project. The surveys were conducted to measure the opinions and knowledge of Bornova residents and Municipality staff about sustainability.

This study, conducted between December 2023 and February 2024, constitutes an important place for developing, supporting, and guiding social and managerial sustainability throughout the project period. Although many questions in the two surveys were the same, some questions were asked only for the participants to whom the survey would be conducted. Both tests consist of two parts and have 20 questions.

At the same time, the results of the citizen survey were compared with the results of the PS LifeStyle test conducted to citizens participating in the European Mobility Week events. This test measures the CO₂ produced by participants by looking at their lifestyle and habits.

The results show that Bornova, both in terms of management and society, is generally knowledgeable about sustainability. It is open to guidance, support, and development in this regard.

1. SURVEY ANALYSIS OF BORNOVA RESIDENTS

The survey study aims to elicit the knowledge and opinions of Bornova residents regarding sustainable and smart cities. A survey has been prepared to attain this objective, which will be administered to a representative sample of the Bornova population.

Out of the 807 city residents surveyed, 735 provided valid responses, while 72 surveys were invalid. The survey analysis was conducted based on the answers given by the 735 individuals with valid responses.

The survey's 5-point Likert questions have an α value of 0.8, indicating that the survey can be deemed reliable. The categorical variable's scores are deemed reliable because the Cronbach's Alpha (α) value exceeds 0.72.

This survey conducted on citizens consists of two parts. The survey consists of 20 questions and has two parts:

- The first part contains the first 7 Questions. It was created to determine the general profile of the participants. This section questions the participants' age, gender, education, field of profession, household income, where and why they reside.
- The second part consists of the remaining 13 questions. This part aims to measure the participants' perspectives and knowledge levels about sustainability, urban sustainability, and smart cities that will emerge from these studies.

It is desired to obtain an idea about the habits and practices of society according to the sustainability framework. Thus, while sustainability studies are carried out, local government can become aware of the society's behaviours that need to be changed, reinforced, or supported.

² Alakavuk, E., Umdü, D. C., Koyuncu, A., & Baro, N. D. (2023). Residents' awareness and knowledge of sustainable smart cities. In E3S Web of Conferences, 460, 05006, <https://doi.org/10.1051/e3sconf/202346005006>

1.1. Demographics Questions

The initial segment of the survey aims to gather general information about the participants. This section comprises seven questions about their age, gender, educational background, profession, household income, and the reasons for residing in a particular location. The part contains the first 7 Questions. It was created to determine the general profile of the participants.

1. What is your gender:

The number of male participants is 436 (59.3%), and the number of female participants is 299 (40.7%). The gender distribution is not very equal. To comply with Gender Equality, the 5th goal of the UN SDGs³ women in society should also be given a voice, and women's contribution to urban formation should be included.

2. Please Choose your age range:

THE DISTRIBUTION OF AGES AMONG SURVEY PARTICIPANTS APPEARS TO BE CONVENIENT. HOWEVER, IT IS WORTH CONSIDERING THAT THE 18-30 AGE BRACKET MAY BENEFIT FROM INCREASED INVOLVEMENT IN FUTURE SURVEYS. THIS DEMOGRAPHIC REPRESENTS A SIGNIFICANT AUDIENCE FOR THE UPCOMING GENERATION, AND THEIR INSIGHTS AND PERSPECTIVES COULD PROVE VALUABLE FOR VARIOUS RESEARCH INITIATIVES. THE RESULTS ARE SHOWN IN

Table 1-1. Age range of participants.

TABLE 1-1. AGE RANGE OF PARTICIPANTS

| Age | N | % |
|-------|-----|------|
| 18-30 | 109 | 14.8 |
| 31-40 | 209 | 28.4 |
| 41-50 | 166 | 22.6 |
| 51-60 | 132 | 18.0 |
| 61 ≥ | 119 | 16.2 |

3. Please choose your education level:

Based on the survey participants' educational background, the high school graduates demonstrated the highest level of interest (N: 286-38.9%). Among the 179 (24.4%) participants who had completed a university degree, 160 (21.8%) had graduated from elementary school, and 80 (10.9%)

³ UN. [United Nations]. (2015). Transforming our world: The 2030 agenda for sustainable development. A/RES/70/1 Retrieved August 20, 2021. from www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf



had completed primary school. Additionally, 30 (4.1%) participants had a master's degree or doctorate.

4. Please choose your profession's field:

Table 2 displays participants' professional fields. Although some professional fields show more participation in the survey, the professional fields of the participants vary. This reveals that the Bornova Society has connections with various business sectors.

TABLE 1-2. PARTICIPANTS PROFESSIONAL FIELDS

| Profession Field | N | % |
|---|-----|------|
| Waste-Recycling | 5 | 0.7 |
| Information technologies | 5 | 0.7 |
| I am not working | 82 | 11.2 |
| Consultancy services | 12 | 1.6 |
| Other | 154 | 21.0 |
| Education (High School and Before) | 19 | 2.6 |
| Electrical-Electronics | 9 | 1.2 |
| Energy and Natural Resources | 4 | 0.5 |
| Housewife | 52 | 7.1 |
| Finance | 16 | 2.2 |
| Food Production and Distribution | 59 | 8.0 |
| Aviation | 1 | 0.1 |
| Law | 8 | 1.1 |
| Construction, Architecture, and Real Estate | 29 | 3.9 |
| Government Policy | 32 | 4.4 |
| Materials and Metallurgy | 3 | 0.4 |
| Automotive | 20 | 2.7 |
| Health | 27 | 3.7 |
| Industry and Commerce | 21 | 2.9 |
| Defense and Security | 8 | 1.1 |
| Sport | 16 | 2.2 |
| Agriculture-Livestock and Forestry | 3 | 0.4 |
| Transportation and Logistics | 27 | 3.7 |
| Textile | 61 | 8.3 |
| Telecommunications and Communication Services | 7 | 1.0 |
| Wholesaling and Retailing | 35 | 4.8 |
| Tourism and Entertainment | 12 | 1.6 |
| University and Academy | 8 | 1.1 |

5. Please choose the range of your household's monthly income:



The poverty line for November 2023 has been set at 45,686.81₺ per household, while the cost of living for a single employee is 18,239.8₺. Based on this information, it can be inferred that the figures represent individual incomes or the overall living conditions of those below the poverty line. Citizens need to be economically relieved and supported. Table 3 shows participants households' incomes.

TABLE 1-3. PARTICIPANTS HOUSEHOLDS' INCOMES

| Household monthly income | N | % |
|--|-----|------|
| 11.500 ₺ ≤ | 145 | 19.7 |
| 11.600 ₺-22.000 ₺ | 235 | 32.0 |
| 22.100 ₺-30.000 ₺ | 198 | 26.9 |
| 30.100 ₺ ≥ | 90 | 12.2 |
| I have no income and/or receive social support | 67 | 9.1 |

6. Which neighbourhood do you reside in?

The results of question 6 are given in Table 3. Although participants participated in the survey from every neighbourhood, the three neighbourhoods with the highest participation were Kazım Dirik, Erzene, and Barbaros. This can be considered an indication that the residents of these neighbourhoods want to have more say in the functioning of Bornova.

TABLE 1-4. PARTICIPANTS HOUSEHOLDS' INCOMES

| Neighbourhoods | N | % | Neighbourhoods | N | % |
|-------------------------------|----|------|--------------------------------|-----|------|
| Atatürk Neighbourhood | 38 | 5.2 | Karaçam Neighbourhood | 4 | 0.5 |
| Barbaros Neighbourhood | 56 | 7.6 | Kavaklıdere Neighbourhood | 3 | 0.4 |
| Birlik Neighbourhood | 8 | 1.1 | Kazım Dirik Neighbourhood | 105 | 14.3 |
| Çamkule Neighbourhood | 2 | 0.3 | Kemalpaşa Neighbourhood | 20 | 2.7 |
| Çınar Neighbourhood | 18 | 2.4 | Kızılay Neighbourhood | 22 | 3.0 |
| Çiçekli Neighbourhood | 2 | 0.3 | Koşukavak Neighbourhood | 8 | 1.1 |
| Doğanlar Neighbourhood | 1 | 0.1 | Kurudere Neighbourhood | 1 | 0.1 |
| Egemenlik Neighbourhood | 8 | 1.1 | Meriç Neighbourhood | 26 | 3.5 |
| Eğridere Neighbourhood | 1 | 0.1 | Merkez Neighbourhood | 14 | 1.9 |
| Ergene Neighbourhood | 29 | 3.9 | Mevlana Neighbourhood | 20 | 2.7 |
| Erzene Neighbourhood | 74 | 10.1 | Naldöken Neighbourhood | 5 | 0.7 |
| Evka 3 Neighbourhood | 37 | 5.0 | Rafet Paşa Neighbourhood | 23 | 3.1 |
| Evka 4 Neighbourhood | 14 | 1.9 | Sarıçöğür Neighbourhood | 1 | 0.1 |
| Gazi Osman Paşa Neighbourhood | 45 | 6.1 | Serintepe Neighbourhood | 2 | 0.3 |
| Gökdere Neighbourhood | 14 | 1.9 | Tuna Neighbourhood | 10 | 1.4 |
| Gürpınar Neighbourhood | 39 | 5.3 | Ümit Neighbourhood | 24 | 3.3 |
| Işıklar Neighbourhood | 10 | 1.4 | Yeşilova Neighbourhood | 19 | 2.6 |
| İnönü Neighbourhood | 8 | 1.1 | Yıldırım Beyazıt Neighbourhood | 7 | 1.0 |
| Karacaoğlan Neighbourhood | 15 | 2.0 | Yunus Emre Neighbourhood | 2 | 0.3 |

7. Please peek at your reasons for choosing a place of residence:

Except for the 'Other' option, the city residents' place of settlement is based on distance to the workplace (25.6%), public transportation opportunities (21.8%), and economic conditions (19.6%). Table 4 shows the reasons for choosing a place of residence.

TABLE 1-5. PARTICIPANTS REASONS FOR CHOOSING A PLACE OF RESIDENCE

| Reasons for choosing a place of residence | N | % |
|---|-----|------|
| Distance to workplace | 188 | 25.6 |
| Ease of public transportation | 160 | 21.8 |
| Distance to educational/training institutions | 68 | 9.3 |
| Distance to the city centre | 139 | 18.9 |
| Social and community activities, local services | 61 | 8.3 |
| Being safe | 112 | 15.2 |
| Distance to open green areas | 83 | 11.3 |
| Distance to public areas | 38 | 5.2 |
| Economic reasons | 144 | 19.6 |
| Other | 282 | 38.4 |

1.2. Awareness of Sustainability

The next set of 13 questions is designed to gauge participants' understanding and viewpoints on sustainability, urban sustainability, and smart cities, which will be the focus of this research. The second part consists of the remaining 13 questions.

8. Please choose terms you are familiar with.

It can be said that awareness of Global warming, Climate Change, and Environmental Pollution is low because it has been a struggle for nearly 50 years worldwide. As all these terms are holistic, urban residents should be informed about these concepts. In particular, society needs to understand the concepts of a sustainable society, a sustainable city, and a smart city to maintain social awareness. Table 1-6 shows participants' knowledge of sustainability terminology.

TABLE 1-6. PARTICIPANTS KNOWLEDGE ON SUSTAINABILITY TERMINOLOGY

| Terms Knowledge | N | % |
|----------------------------------|-----|------|
| Global Warming | 449 | 61.1 |
| Climate Changes | 469 | 63.8 |
| Environmental Pollution | 568 | 77.3 |
| Recycle | 492 | 66.9 |
| Energy Crisis | 287 | 39 |
| Sustainability | 225 | 30.6 |
| Sustainable City | 189 | 25.7 |
| Smart City | 189 | 25.7 |
| Circular Economy | 148 | 20.1 |
| Energy efficiency and management | 152 | 20.7 |
| Renewable Energy | 219 | 29.8 |
| Carbon Footprint | 159 | 21.6 |
| Sustainable Society | 148 | 20.1 |
| Smart Data | 115 | 15.6 |
| None | 34 | 4.6 |

5-Point Likert Questions (9-20):

Table 1-7 shows 5-Point Likert questions and their analysis.

TABLE 1-7. POINT LIKERT QUESTIONS ANALYSIS (1 MIN - 5 MAX)

| # | Likert Questions | σ | \bar{X} | Analysis |
|----|--|----------|-----------|---|
| 9 | I separate my waste and garbage according to the recycling categories. | 1.17 | 3.25 | The residents of Bornova sometimes separate their waste. |
| 10 | Climate and energy crises affect my life. | 1.01 | 4.06 | Generally, the residents believe that climate and energy crises have a significant impact on their lives. |
| 11 | I pay attention to the amount of water I use. | 0.79 | 4.36 | Generally, city residents are mindful of their water and electricity usage. |
| 12 | I am careful about the amount of electricity I use. | 0.83 | 4.28 | |
| 13 | I am positive about using electric cars. | 0.95 | 4.07 | Society generally tends to exhibit a positive attitude towards technical and progressive advancements. |
| 14 | I am positive about using renewable energy. | 0.86 | 4.36 | This observation may indicate a societal inclination towards innovation and financial prudence. |
| 15 | Climate change is one of the important problems in the world. | 0.93 | 3.79 | These two questions are interrelated, concluding that the public is aware of the seriousness of climate change. Considering that electricity and water usage amounts are frequently considered, the answers to these questions are compatible. However, the attitude towards waste needs to be improved. |
| 16 | I take precautions against climate change in my own life. | 0.87 | 4.36 | |
| 17 | It is important to me that my neighbourhood and city are sustainable and smart. | 0.87 | 4.24 | In general, sustainable and smart cities are supported. |
| 18 | I support my municipality in working on sustainable and smart cities. | 1.25 | 3.31 | The people are indecisive because they are far from sustainable and smart city concepts (Question 8). It is necessary to explain to the public that municipal work is multifaceted and holistic, and to ensure public support by introducing these terms and educating the public about them. |
| 19 | I support my municipality's environmentally friendly activities. | 0.88 | 4.20 | The public generally has a positive attitude towards an environmentally friendly municipality. |
| 20 | I support my municipality's efforts to involve local people in decision-making and strategy development. | 0.87 | 4.15 | It may benefit the municipality if local people participate in the work and city affairs as stakeholders. The public generally wants to be one of the stakeholders. There are requests in parallel with the municipal staff (notes were left at the end of the surveys under this question, specifically stating that the public was requested to cooperate with the administration). |



Suppose the municipality prioritizes effective communication with the public through various means, such as social media, and considers the survey findings. In that case, the community of Bornova is willing to collaborate with local authorities. Positive outcomes from these studies could enhance public support for management and lay a strong foundation for societal and administrative sustainability. It would benefit both parties if the municipality provided transparent explanations and showcased its work to the public. The analysis indicates that the people of Bornova are receptive to advancements in sustainability.

2. Survey Analysis of Bornova Municipality Staff

The survey study aims to elicit the knowledge and opinions of Bornova Municipality Staff regarding sustainable and smart cities. The survey has been prepared and applied to all Bornova Municipality staff to achieve this aim.

Out of 853 municipal staff members who received the survey, 748 responses were deemed valid, while 105 were considered invalid. Analyses were made based on the results of valid answers.

The reliability of the survey can be considered acceptable as its 5-point Likert questions have an α value of 0.8. This indicates that the scores of the categorical variable are also reliable since the Cronbach's Alpha (α) value exceeds 0.7, as noted by Alakavuk et al. in 2023.

This survey, conducted on staff, has 20 questions in total and consists of two parts:

- The initial section comprises the first 7 inquiries to establish the respondents' overall profile. The questions in this segment relate to the age, gender, educational qualification, unit where the participant works, residential location, and reasons for residing there of the participants.
- The second section of the survey comprises 13 questions that evaluate the participants' understanding and viewpoints regarding sustainability, urban sustainability, and smart cities, which will be the focus of the research.

Understanding the sustainability practices and behaviours of the local management is important. This will help identify which behaviours need improvement, encouragement, or maintenance. By doing so, the local government can become more aware of the areas that require attention to enhance sustainability.

2.1. Demographics

The first part of the survey is designed to collect basic information about the participants. It comprises seven questions about age, gender, education, work unit, and reasons for living in a specific area. This section covers the initial seven questions of the survey.

1. What is your gender?

Of the participants, 63.1% (N = 472) are male and 36.9% (N = 276) are female. To achieve social equality, narrowing the gap in employment opportunities between men and women in the municipality's personnel is crucial. To adhere to the 5th objective of the United Nations Sustainable Development Goals concerning Gender Equality, ensuring that women are empowered to participate in decision-making and that their roles in shaping urban development are acknowledged.

2. Please choose your age range:

Of the participants, 9.4% fall within the 18-30 age bracket, while 41.8% are between 31 and 40 years old. The largest cohort of employees, comprising 40.4%, falls within the 41-50 age bracket, whereas those aged 51-60 and over 61 constitute 7.9% and 0.5%, respectively. Boosting the number of workers aged 18-30 is crucial for achieving economic equality, as it allows fresh talent to enter the workforce and economy. The number of employees aged 31-40 and 41-50 is similar, which suggests that the municipality values their contributions and promotes a more professional work environment. Given their proximity to retirement age, it is normal for the 51 and over age group to constitute 8.4% of the personnel.

3. Please choose your education level:

The data reveals that the municipality is committed to promoting higher education while recognizing the importance of individuals with high school or equivalent education filling intermediate staff positions. Furthermore, the municipality strives to hire educated individuals whenever possible. Among the staff, 42.8% hold a university degree, while 33.8% have completed high school. Additionally, 8.3% have attained a master's or doctoral degree, 8.2% possess a secondary school diploma, and 7.0% hold a primary school diploma.

4. What is your working unit?

The municipality's units with the most staff are the Parks and Gardens Directorate 131 (17.5%), the Coordination Directorate 126 (16.8%), the Directorate of Cultural Affairs 55 (7.3%), and the Constabulary Department 55 (7.3%). Table 7 shows the municipality units where the staff work.

TABLE 2-1. THE MUNICIPALITY UNITS WHERE THE STAFF WORK

| Municipality units | N | % |
|--|------------|--------------|
| Archive Directorate | 4 | 0.5 |
| Press, Publication, and Public Relations Directorate | 24 | 3.2 |
| Information Technology Directorate | 9 | 1.2 |
| Support Services Directorate | 4 | 0.5 |
| Directorate of Foreign Relations | 4 | 0.5 |
| Real Estate and Expropriation Directorate | 7 | 0.9 |
| Survey Project Directorate | 16 | 2.1 |
| Directorate of Technical Affairs | 12 | 1.6 |
| Legal Affairs Directorate | 11 | 1.5 |
| Head of Internal Audit Unit. | 5 | 0.7 |
| Climate Change and Zero Waste Directorate | 3 | 0.4 |
| Directorate of Planning and Urbanization | 26 | 3.5 |
| Human Resources and Training Directorate | 12 | 1.6 |
| Directorate of Women and Family Services | 29 | 3.9 |
| Coordination Directorate | 126 | 16.8 |
| Directorate of Cultural Affairs | 55 | 7.3 |
| Financial Services Directorate | 42 | 5.7 |
| Mukhtar's Affairs Directorate | 2 | 0.3 |
| Executive Assistant | 7 | 0.9 |
| Parks and Gardens Directorate | 131 | 17.5 |
| Plan and Project Directorate | 9 | 1.2 |
| License and Inspection Directorate | 9 | 1.2 |
| Directorate of Health Affairs | 19 | 2.5 |
| Directorate of Social Aid Affairs | 5 | 0.7 |
| Directorate of Sports Affairs | 38 | 5.1 |
| Strategy Development Directorate | 5 | 0.7 |
| Directorate of Agricultural Services | 6 | 0.8 |
| Directorate of Cleaning Affairs | 30 | 4.0 |
| Directorate of Veterinary Affairs | 24 | 3.2 |
| Construction Control Directorate | 7 | 0.9 |
| Editorial Directorate | 12 | 1.6 |
| Constabulary Department + Constabulary Department-Çamdibi Branch | 55 | 7.3 |
| Total | 748 | 100.0 |

5. Which district do you reside in?

Apart from Bornova, the North Izmir line tends to have a higher staff concentration than the South. Those not residing in Bornova typically inhabit areas with robust public transportation options, often featuring a single path leading to Bornova or a rail line. This reinforces the selection of public transportation as the most popular answer among participants for question 7.

6. If you live in Bornova, which neighbourhood do you reside in?

Based on the survey data, it can be inferred that most personnel residing in Bornova are concentrated in the Atatürk, Erzene, İnönü, Ergene, Kazımdirik, and Kızılay neighborhoods. Additionally, the results of question 7 support this observation, indicating a congruence between the responses to these two inquiries. Table 2-2 shows the districts and Bornova neighbourhoods where employees reside.

TABLE 2-2. DISTRICTS AND BORNOVA NEIGHBOURHOODS WHERE EMPLOYEES RESIDE

| District (Q5) | N | % | Neighbourhood (Q6) | N | % |
|---------------|-----|------|--------------------------|-----|------|
| Bayrakli | 68 | 9.1 | Atatürk Neighbourhood | 63 | 12.0 |
| Bornova | 526 | 70.3 | Erzene Neighbourhood | 52 | 9.9 |
| Buca | 24 | 3.2 | İnönü Neighbourhood | 45 | 8.6 |
| Çiğli | 20 | 2.7 | Ergene Neighbourhood | 37 | 7.0 |
| Karabağlar | 20 | 2.7 | Kazımdirik Neighbourhood | 36 | 6.8 |
| Karşıyaka | 42 | 5.6 | Kızılay Neighbourhood | 35 | 6.7 |
| Konak | 21 | 2.8 | Other | 268 | 51 |
| Other | 27 | 3.5 | | | |

7. Please peek at your reasons for choosing a place of residence:

Based on the preferences of the personnel's residence, distance to the workplace and city centre are the most prominent factors, accounting for 32.5% and 31.3%, respectively. The 3rd and 4th places are taken by economic reasons (28.2%) and ease of public transportation (28.1%), which are the most preferred reasons among the crew. Table 2-3 shows reasons for choosing a place of residence.

TABLE 2-3. REASONS FOR CHOOSING A PLACE OF RESIDENCE

| Reason | N | % |
|---|-----|------|
| Distance to workplace | 243 | 32.5 |
| Ease of public transportation | 210 | 28.1 |
| Distance to educational/training institutions | 142 | 19.0 |
| Distance to the city centre | 234 | 31.3 |
| Social and community activities, local services | 137 | 18.3 |
| Being safe | 189 | 25.3 |
| Distance to open green areas | 157 | 21.0 |
| Distance to public areas | 84 | 11.2 |
| Economic reasons | 211 | 28.2 |
| Other | 191 | 25.5 |
| Total | 748 | 100 |

2.2. Awareness of Sustainability

The following 13 questions aim to assess the participants' comprehension and perspectives on sustainability, urban sustainability, and smart cities, which are the primary focus of this study.

8. Please choose terms you are familiar with.

Since all these terms are used with a holistic approach, staff can be trained on them. The concepts of smart city and sustainable city are especially related to sustainable management. It is recommended that municipal employees are familiar with these terms effectively. Table 2-4 shows staff knowledge on sustainability terminology.

TABLE 2-4. STAFF KNOWLEDGE OF SUSTAINABILITY TERMINOLOGY

| Terms Knowledge | N | % |
|----------------------------------|-----|------|
| Global warming | 568 | 75.9 |
| Climate changes | 589 | 78.7 |
| Environmental pollution | 614 | 82.1 |
| Recycle | 552 | 73.8 |
| Energy crisis | 434 | 58.0 |
| Sustainability | 402 | 53.7 |
| Sustainable city | 341 | 45.6 |
| Smart city | 343 | 45.9 |
| Circular economy | 218 | 29.1 |
| Energy efficiency and management | 333 | 44.5 |
| Renewable energy | 410 | 54.8 |
| Carbon footprint | 281 | 37.6 |
| Sustainable society | 270 | 36.1 |
| Smart data | 259 | 34.6 |
| None | 27 | 3.6 |

5-Point Likert Questions (9-20):

Table 2-5 shows 5-Point Likert questions and their analysis.

TABLE 2-5. 5-POINT LIKERT QUESTIONS ANALYSIS (1 MINIMUM - 5 MAXIMUM)

| # | Likert Questions | σ | \bar{X} | Analysis |
|---|--|----------|-----------|---|
| 9 | I separate my waste and garbage according to the recycling categories. | 1.17 | 3.25 | On average, staff sometimes sort their waste. |

| # | Likert Questions | σ | \bar{X} | Analysis |
|----|---|----------|-----------|---|
| 10 | Climate and energy crises affect my life. | 1.01 | 4.06 | They generally believe that the climate and energy crises have an impact on their daily lives. |
| 11 | I pay attention to the amount of water I use. | 0.79 | 4.36 | Staff members generally tend to be mindful of their water and electricity consumption. |
| 12 | I am careful about the amount of electricity I use. | 0.83 | 4.28 | |
| 13 | I am positive about using electric cars. | 0.95 | 4.07 | Staff, in general, is receptive to technical and progressive advancements. This suggests that there is a team that endorses both technological advancements and cost savings. |
| 14 | I am positive about using renewable energy. | 0.86 | 4.36 | |
| 15 | I take precautions against climate change in my own life. | 0.93 | 3.79 | These two questions are related, resulting in the conclusion that staff are generally aware of the seriousness of climate change. Questions related to electricity and water consumption are often interrelated, and their answers are closely tied to each other. Nonetheless, there is a need to improve the perspective towards waste. |
| 16 | Climate change is one of the important problems in the world. | 0.87 | 4.36 | |
| 17 | It is important to me that my neighbourhood and city are sustainable and smart. | 0.87 | 4.24 | The staff supports generally sustainable and smart cities. |
| 18 | I am aware of the projects, grants, and support my municipality is involved in. | 1.25 | 3.31 | Every municipal staff member needs to be aware of municipal projects. According to the employees, they sometimes have information about these projects and studies. |
| 19 | I support efforts to inform, guide, and train the public about the activities carried out by my municipality. | 0.88 | 4.20 | The staff appears to favour engaging with residents and involving them as stakeholders in city affairs. |
| 20 | I support my municipality's efforts to involve local people in decision-making and strategy development. | 0.87 | 4.15 | |

Despite the staff's existing knowledge of the climate and energy crisis, it would be beneficial for the Municipality staff to receive training on the SECAP process. Specifically, the Building, Park-Garden Development, Project Survey, and Technical Works groups should be educated on energy management, sustainable city and smart city issues, and the units responsible for social mechanisms should be informed about sustainable society and carbon footprint. Additionally, the financial units should be knowledgeable about the circular economy. While all terms should be explained in general, it is crucial for units focusing on society, environment, and economy to understand the SECAP process and its associated terminology thoroughly.



3. PS LifeStyle test and SECAP survey results

Based on findings from the PS LifeStyle test and SECAP survey, it appears that female participants tend to be more conscious of their carbon footprint and produce fewer greenhouse gases compared to their male counterparts. Additionally, women seem to have a better understanding of sustainable and smart development concepts than men.

Moreover, the PS LifeStyle test also revealed that residents of Bornova have a significantly higher carbon footprint than the average population of Turkey, exceeding the 2030 1.5°C target by more than threefold. Of all the categories measured, transportation appeared to be the biggest contributor to this higher-than-average carbon footprint, with a total of 3149 kg.

It's worth noting that, on average, a Bornova resident (Bornovian) has a larger carbon footprint than people in Turkey, Slovenia, and Greece. However, residents of Estonia, Italy, Portugal, Germany, and Finland all have lower carbon footprints than those in Bornova. This indicates that Bornova residents may need to be more mindful of their lifestyle choices to reduce their environmental impact.



4. Conclusion

In summary, this report presents the findings and analysis from surveys carried out for the STORMLOG project. The surveys aimed to assess the perceptions and understanding of sustainability among both the residents of Bornova and the Municipality staff. Conducted between December 2023 and February 2024, this study plays a vital role in enhancing, supporting, and directing social and managerial sustainability throughout the project. While many questions in the two surveys were identical, certain questions were specifically directed at participants for each survey. Both assessments are divided into two sections, each comprising 20 questions.

Additionally, the results from the citizen survey were compared to those from the PS LifeStyle test administered to citizens who took part in the European Mobility Week activities. This test assesses the CO2 emissions generated by respondents based on their lifestyle and habits. The findings indicate that the community of Bornova, including its management and its residents, generally possesses a good understanding of sustainability and is receptive to guidance, assistance, and further development in this area.