

Urban Happiness and Gardening Relationship: The Case of Ankara Capital

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Abstract

The main problem of this research is that the majority of the Ankara residents' satisfaction with life is low in their daily life. Urban happiness is a contemporary subject due to industrialization and its problems, which leads individuals to find new coping strategies towards food security and sustainable cities. In this context, the main research question aimed to be answered is: What is the relationship between gardening and individual happiness in Ankara? McFarlane's non-human and Latour's ANT as relational sociological theories are used to explain plants as "actants" and gardening as a function to increase happiness in cities. In this research, a mixed method was used combining quantitative and qualitative research techniques that contribute to relational sociology. Online surveys with gardeners and non-gardeners of 69 participants in Ankara were conducted. Statistical analyses showed that gardening activities are influential in greater satisfaction with life, which is reversely correlated with citizens' will to migrate. In contrast to expectations, there was no significant relationship between gardening and environmentalist concerns, and no difference was found when gardeners and non-gardeners were compared. This may be interpreted by commodification of the gardening activity or the hedonistic lifestyle of Turkish society as well as the consumerist base of Islamic culture and social differences in addition to economic concerns that undermine environmental concerns. In order to understand the effects in specific, qualitative research was conducted with 14 participants. Through axial coding and word cloud analyses, it was revealed that the environmentalists' dance with nature can be categorized into three as "humanists", "holistics" and "activists" regarding their human centralization perspective.

Keywords

Urbanization, Happiness, Gardening, Actor-Network Theory, Mixed Design, Turkey

1. Introduction

Comte and Durkheim's understanding of morality and anomie in modern life, Weber's discussion of the Protestant ethic and disappointment in modern life, the concept of alienation, and Simmel's metropolitan and spiritual life approach have always been concerned with the happiness of individuals living in the city. With the Frankfurt school movement, the effect of modern capitalism on human life has been examined. Marcuse and Adorno argue that today people are encouraged to consume through artificially constructed needs and are induced by superficial lifestyles. According to Certau, modernity and everyday life are intertwined and form a socio-cultural space. The way individuals spend their free time is effective on their daily life and the level of their happiness (Çetin, 2018). It is claimed that today's lifestyle pushes individuals to be introverted, individualistic, narcissistic and consumption oriented (Cieslik, 2017). The phenomenon of urbanization accelerates this process and plays an important role on happiness. There are academic studies showing that relative life satisfaction is lower in metropolitan areas where urbanization is especially crowded (Winters & Li, 2015). Urban happiness researches present that crowded population is related to a higher dissatisfaction with life, as opposed to the cleanliness of the city and the diversity of activity areas that have a positive impact on happiness (Pringle & Guaralda, 2018). Moreover, it is argued that urbanization decreases the level of satisfaction gained through health, friendship, leisure activities and the environment (Tampieri, 2017). In addition to work, life satisfaction, economic status, family, socialization and relationships, leisure activities are also included in the happiness research of current sociology (Ambrose et al., 2020). Leisure time activities during retirement (Wong, 2019) and stress rehabilitation (Adevi & Martensson, 2013) present that they play an important role in self-value and quality of life improvement.

Based on the combination of the sociology of everyday life and the theories of happiness, the idea of gardening in cities emerges as a strategy to combat urban pressure. Gardening, which contributes to sustainable food system and organic food, can enhance life satisfaction of individuals by creating a sense of environmental justice. It can be said that in these spaces, individuals create an area of relaxation and freedom by producing new meanings as against the extreme control of contemporary lifestyle. The most recent research in horticulture suggests that especially vegetable growing has a positive impact on emotional well-being (Ambrose et al., 2020). Gardening is also considered important among the United Nations' Sustainable Development Goals, as it overlaps with the goals of ending hunger, accessing clean water, achieving sustainable, healthy cities and communities, stopping climate warming and improving quality of life. As a result, today gardening, can be beneficial for creating livable, fairer, sustainable cities, that improves quality of life and supports food security in particular. For this reason, it should be included in urban planning exercises and more studies should be done in this field.

Upon modernization and urbanization, migration from rural to urban began to increase in Turkey similar to the rest of the world. Together with the industrial revolution, technological improvements and mechanized agriculture the unemployed workers began to migrate to cities with the aim of finding occupation, better education, health and infrastructure opportunities especially after 1950s in Turkey (Kongar, 1972). The concept of modernization changed individual lifestyles promptly through the growth in population, rapid living standards, spatial decomposition and occupational specialization that increased dependency on one another. Usually during this period, a linear relationship was accepted to explain the development of capitalism and consumption society established through Fordist mass production and materialization of values (Yalçın, 2019). Also, it was discussed that together with the change in the mode of production, the family structure transformed from extended to core family. Through rapid lifestyles and increasing migration there appeared security problems in cities as a result of increase in population that led individuals face alienation. Besides, many studies in the literature show that industrialization and uncontrolled population growth cause urban sprawl, traffic, noise, pollution, rivalry, environmental disasters, mechanization, and corruption (Cansaran, 2018; Deviren & Yıldız, 2015; Deniz, 2017). This brings together the problems of individualization, alienation, standardization, mass consumption, environmental matters, climate change, equality, and freedom (Kavuran & Dede, 2013). The purpose of this study is to examine the role of gardening relationship on happiness from the modernization perspective that brings a critical standpoint to the classical approaches. Specifically, the topics that will be discussed in this paper is the following: urbanization, from rural to urban migration, gardening, happiness / life satisfaction, responsible environmental behaviors, spare time activities, urban pressure, and alienation.

The concept of happiness has been discussed since the ancient philosophers until today that began to have a significant effect on our lives with modernization and urbanization. It is argued that the modern way of life and capitalism that has brought fast lifestyle and competition, turned individuals into introvert, individualistic and consumption centered living things (Cieslik, 2017). The recent literature presents that as the cities get more crowded individuals get detached from nature and the lack of their activity landscapes on their free time as well as socialization opportunities reduce their level of happiness (Winters & Li, 2015; Pringle & Guaralda, 2018; Tampieri, 2017). All these views are in accordance with the argument that the level of life satisfaction in cities decreases and individuals' desire to live in a small, natural, and peaceful environment increases. As a result, today there appears a concept of reverse migration from big cities to rural areas.

It may be argued that the gardening activity is important due to its ability to help individuals to cope with urban pressure and reconnect to nature (Bhatti & Church, 2001). Besides, there are some researches on gardening that show how it

rejects industrial standardization and increases ecological consciousness through contributing biodiversity. Urban gardening, which is a contemporary free time activity, has a reformative role against the harms of cities and increases the level of life-satisfaction through establishing an area of freedom (Hondagneu-Sotelo, 2010). In addition, it is thought that gardening may contribute to the secure food chain in sustainable cities and support fair food access (Ambrose et al., 2020). In this regard, gardening may be explained with the function of increasing the quality of life and creating sustainable cities through food security.

In this study reverse migration and gardening concepts are examined through Latour's ANT (Actor Network Theory) and analyzed with McFarlane's de-human perspective to unveil the contemporary conflicts. The role of gardening, as a spare time activity, on struggling with urban pressure and improving quality of life is discussed. The purpose of this study is to measure the life satisfaction, environmental awareness, and thoughts of migration among those who are engaged in the activity of gardening in crowded cities. The quantitative results of this study show that sustainable policies to improve life standards and especially recreational free time activities such as gardening reduce the will to migrate from urban to rural areas. Besides, the effect of plants on individuals as non-human actors has been presented and in the qualitative research the environmentalists' dance with nature is categorized in this perspective.

Research Problem: Individuals are generally in the search for solving their problems that decrease their level of happiness emerging as a result of the urbanization process (Kavuran & Dede, 2013). It is believed that happiness which is a concept that has been discussed since the ancient philosophers, has contemporarily become more important due to urbanization and its problems (Cieslik, 2017; Çetin, 2018; Winters & Li, 2015). Among the measures of happiness there appears work life, economic status, health, and family as well as socialization, spare time activities and the environmental conditions (Ambrose et al., 2020). Gardening appears as a free time activity that increases life satisfaction where individuals may socialize and get closer to nature (Bhatti & Church, 2001). Additionally, in an age where environmental problems expand, for some the food preferences and the mode of production play a crucial role (Şahinöz, 1990; Stănescu, 2010). In sum, when the urbanization, urban happiness, environmental problems, food security, reverse migration and gardening literature is examined the main scope of the research appears as finding out the main motivations of gardeners in engaging with this activity and understanding their will to reverse migrate from cities.

It is discussed that together with industrialization from 1950's to 2000, migration from rural to urban (urbanization) resulted in economic and social problems in cities. By 2017, migration from urban to rural in Turkey has been observed up to 70% (<https://www.tuik.gov.tr/>, Kepenek & Uğuzman, 2018). Especially beginning with 1970's, there appeared problems of unemployment, economic scarcity, urban sprawl, squatting, alienation, and cultural conflict in Turkey (İslamoğlu, 2014). In cities, together with pulling factors that caused urba-

nization, there emerged pushing factors as a result of urban problems. Urban sprawl, overcrowding, concretion, traffic, pollution, noise, and stress began to lower down the individuals' quality of life. Together with this, governments began to invest in the suburbs to lower down the level of urban migration and initiate a socio-economic transformation. In total, the movement from rural to urban that had been growing until 90's, began to decline with these policies. In fact, it has been discussed that recently there appeared a new trend of migration from urban to rural (U-turn, J-turn, return).

Among masses that reverse migrate are those who are unemployed in cities, have economic hardships, yearn for hometown and are deserved pensioners as well as urbaners that have been born and raised in the cities but are against the negative impacts of urbanization. Those are generally among high income groups, educated, career owners, and believed to have environmental concerns. Some of those get involved in gardening activities in cities, some prefer to migrate to suburbs, and some are occupied with agriculture in villages through government incentives. After 1980s in Turkey, there have been a massive urban migration through rapid economic development and industrialization. The cities that got behind fast technological improvements began to exert pressure on the habitants as a result of the negative factors such as urban sprawl, overcrowding, concretion and pollution. This led individuals to dream of a peaceful, decent, simple, and slow lifestyle based in the suburbs. The recent questionnaires present that the satisfaction with life decreases with the growth in cities. The problem of this research is that the majority of the Ankara residents' satisfaction with life is low in their daily routine that also involves their nature and environmental concerns. In other words, the main question aimed to be answered is: What is the relationship between gardening and individual happiness in Ankara?

Importance of the study: Several aspects that make this study important are:

- Trying to show the relationship between migration, individual happiness / life satisfaction, environmentalism, and gardening,
- Being a mixed design method based on the combination of qualitative and quantitative research,
- Theoretically designed with Relational Sociological principles,
- The research process is in compliance with the Grounded Theory Methodology.

Limitations: The most important limitations of this research are:

- 1) Conducting the research only with those who are engaged in gardening and those who do not, in certain neighborhoods of Ankara,
- 2) Establishing a web-based connection instead of face-to-face meetings with the participants due to the epidemic known as Covid-19.

Another limitation of quantitative research is the difficulty of obtaining an appropriate sample, collecting sufficient data, and achieving ideal measurement conditions. The small sample size is a limitation, and this research can be strengthened by repeating it with larger populations in provinces other than

Ankara. The measurement tool also reflects the bias. It does not deal with data outside the model. In order to avoid all these limitations, the researchers tried to obtain richer data by using qualitative research techniques. Since the research was conducted through internet survey and interviews, the technical problems experienced are among the limitations of the study.

2. Methodology

The research is carried out in accordance with a “sequential mixed design”, first quantitatively and then qualitatively planned (Plano Clark & Creswell, 2008). In the research, the principles of the Grounded Theory Methodology, which is compatible with Relational Sociology is preferred because it is not essentialist and unidirectional. The mixed model is used when a quantitative or a qualitative method only is not sufficient to understand the research problem. Qualitative research serves to decipher the meaning of concepts used by individuals, while quantitative research generalizes findings to the population. The mixed method brings a more holistic understanding by connecting and combining positivist and interpretive methodological approaches. The mixed method, which is also in harmony with relational sociology, creates an inclusive model and rejects dualities in this way.

Relational sociology, on the other hand, reinterprets theories based on the philosophy of “everything in the world is related to each other” (Kasapoğlu, 2016). It rejects rigid cause-effect judgments and essentialism, focuses on dynamic and fluid everyday relationships, prefers the combination of qualitative and quantitative methods. In addition, this perspective conducts uncertainty studies and reveals the importance of anti-humanism (non-human), avoids objectivity and subjectivity, and deals with macro and micro scales together. It attaches importance to space and place, uses an emancipatory language, and seeks models for interdisciplinary work. In this sense, it is compatible with the mixed model. Quantitatively, the survey questions aim to make inferences by statistically comparing the actions, attitudes and demographic data of gardeners and non-gardeners. Qualitative research, on the other hand, uses grounded theory to understand realities that quantitative data cannot enlighten (Creswell, 2013). The use of these two methods together creates a comprehensive bridge between the two perspectives, complements each other’s shortcomings and presents richer findings.

In the quantitative part, total of twenty nine questions were asked to the survey participants. The questions were composed of demographic, gardening, life satisfaction and environmentalism contents where two scales were used. The first measure used in the quantitative research is the happiness scale. Satisfaction with Life Scale (SWLS), which was introduced by Diener, Larson and Griffin in 1985, is used to measure the level of happiness. This scale, which is graded between 1 and 5, consists of five questions and between 21 - 25 is very satisfied, 17 - 20 is satisfied, 15 - 16 is undecided, 10 - 14 is somewhat dissatisfied, and 5 - 9 is

very dissatisfied (Pavot & Diener, 1993). The scores of the statements in the scale are determined as 1) I totally disagree, 2) I slightly agree, 3) I agree at a moderate level, 4) I agree mostly, and 5) I totally agree. The validity and reliability tests of the Turkish scale, which was translated by Yetim in 1991, were tested by Dağlı and Baysal (2016) and proved to be an appropriate measurement tool. The scale, which was originally a seven-point scale, was reduced to five degrees in line with the preferences of the respondents.

The other measure used in the study is the environmental scale. The New Ecological Paradigm Scale (NEP) was first developed by Dunlap et al. in 1984 and revised in 2000. Cruz and Manata (2020) gathered four items under the sub-headings of rejection of exemptionism, fragility of nature's balance, and possibility of an eco-crisis as a scale of "concern about environmental damage" (NEP 3, 5, 9, 15). 4 - 9 were determined as insensitive to the environment, 10 - 14 were less sensitive to the environment, and 15 - 20 were environmentally sensitive. In addition, the seven-degree scale designed by Dunlap was reduced to five degrees by Cruz and Mantana on the grounds that it was more appropriate. On the 5-point scale, 1) is strongly disagree, 2) is disagree, 3) is undecided, 4) is agree, and 5) is strongly agree. The items in this scale were translated into Turkish by Ak (2008). The Turkish versions of these two scales are taken from the Turkey Assessment Instruments Index (TOAD).

Grounded theory is used in the qualitative part of the study. Thirteen open-ended semi-structured questions are asked to the participants, detailed answers are collected and structured under general classification. In qualitative research, variables are complex and intertwined (Kaptan, 1991). It is difficult to measure the relationships between them. The advantage of qualitative research is that it reflects the "reality" of the particular situation. The results contribute to the theory and are applicable to the field. The purpose of grounded theory is to create or explore the abstract analytic schema and theory of a situation or phenomenon (Creswell, 2013). This method provides the opportunity to conduct a comprehensive cultural research that includes the individual, the structure and the culture. In this way, it brings the theoretical and applied methods closer and provides a holistic perspective.

Universe and Sample: In the quantitative research "Quota Sampling", which is a purposive sampling, was used (Neuman, 2007). For comparison purposes, a total of 69 participants, 36 of whom are gardeners and 33 are not, took part in Ankara. The research group is the gardeners, and the rest is the comparative group. In the qualitative research 14 people dealing with gardening were interviewed in Ankara, which was selected with the "Theoretical Sampling". It should be noted that the research data cannot be generalized to the wider population other than the samples taken. In the qualitative and quantitative research, two demographically similar middle, upper class groups were contrasted. Gardeners consist of owners of hobby houses in Golbaşı neighborhood in Ankara, community gardeners at ODTU, Çiğdem and Berkin Elvan Orchards, and gardeners in

their detached houses outside the city.

3. Findings and Discussion

According to the results of the study, many participants bear the opinion that gardening reduces anxiety. It is seen that horticulture in Ankara has emerged with the feature of increasing urban satisfaction, in line with other studies in the literature. Especially the Turkish agenda and the problems of insecurity, freedom and justice created by the pandemic increase the anxiety of individuals. In this way, it is revealed that gardening provides a function by providing relaxation, spiritual peace and feeling of security to the participants. It has been observed that individuals envy the quiet, peaceful, safe, clean and natural life in a small place, but they do not want to leave the city's blessings such as education, work, accessibility, infrastructure and social opportunities. For this reason, it has been understood that as a tool of horticulture, gardening is a facilitator that replaces the desire for reverse migration. When the quantitative and qualitative data are analyzed together within the framework of relational sociology, it is observed that the participants' approaches to environmentalism vary along with the perspectives they develop towards plants. The data is interpreted in the light of the concepts of coping with urbanization, environmentalism, happiness and plants as actants.

Demographic Characteristics: In the quantitative research while the mean age of 69 participants is 50, the standard deviation is 13.5. Most of them are university graduates, married and have children. In the qualitative research the average age of 14 participants in total is 47 and the standard deviation is 17.4. Except for one, most of them are university graduates, married and have children. It should be noted that the large standard deviations indicate that the groups are quite heterogeneous (young and older participants together) and comparable.

In the following subsection, the quantitative and qualitative data of the research, which is carried out as a mixed design, is presented respectively in certain sub-problem areas. Findings are presented in the form of quantitative and then qualitative data under five (5) main titles:

- 1) Reasons for Participants to Start Gardening (SPSS, Open Coding)
- 2) Immigration Plans (SPSS, Open Coding)
- 3) Life Satisfaction (SPSS, Open Coding)
- 4) Environmentalism (SPSS, Open Coding)
- 5) Synthesis of Analysis (Axial Coding, Core Concept)

3.1. Reasons for Gardening

3.1.1. Reasons for Gardening Quantitative Data

In the quantitative part, when before and after T tests are conducted for gardeners, significant differences are observed. To summarize in **Table 1**, it is observed that life satisfaction, urban satisfaction, environmental awareness, healthy nutrition, vegetable consumption, consumption savings, socialization, and the feeling of being a member of civil society have increased after gardening. Stress reduction is observed in the expected direction.

Table 1. Comparisons of before and after gardening (N = 36).

		Mean	Std. Dev.	T-Test	P
1	Life Satisfaction 1	3.50	.561	-2.023*	$p < .05$
	Life Satisfaction 2	3.69	.467		
2	Stress 1	3.11	.667	5.565*	$p < .05$
	Stress 2	2.39	.728		
3	City Satisfaction 1	2.75	.554	-1.557*	$p < .05$
	City Satisfaction 2	2.94	.754		
4	Healthy Nutrition 1	2.92	.649	-5.869	$p > .05$
	Healthy Nutrition 2	3.61	.549		
5	Socialization 1	3.08	.732	-1.268	$p > .05$
	Socialization 1	3.28	.779		
6	Will to Migrate 1	2.11	.979	-.422***	$p < .001$
	Will to Migrate 2	2.17	.971		
7	Member of Civil Society 1	2.50	1.000	-2.311***	$p < .001$
	Member of Civil Society 2	2.75	1.180		
8	Consumption Savings 1	3.06	.674	-3.848*	$p < .05$
	Consumption Savings 2	3.53	.654		
9	Vegetable Consumption 1	3.11	.667	-5.202**	$p < .01$
	Vegetable Consumption 2	3.64	.487		
10	Environmental Awareness 1	3.28	.849	-4.301**	$p < .01$
	Environmental Awareness 2	3.81	.401		

* = $p < .05$, ** = $p < .01$, *** = $p < .001$.

3.1.2. Reasons for Gardening Qualitative Data

In the qualitative research, it is observed that gardeners are generally divided into two groups as individual gardeners and those engaged in collective gardening activities. While those who do it in their detached house, weekend house, hobby garden or balcony are considered as individual; neighborhood gardening in the orchards is considered as a collective activity. Some answers from individual gardeners, namely an academic and a business woman, are given below:

“I do it for fun. The cycle of nature and time gives us a cognitive awareness. To cultivate is to sow, to plant, to wait for it to grow, to watch the time required for it to sprout. Nature gives us the concept of time. Nature responds to us. There is hard work and patience here. Integration with nature. Back to yourself ... We are trying to hold on to life with nature and garden. But you don't need to have a big garden. Balcony or houseplant gives the same feeling.” (R1, Female, 60)

“When I am in nature, I feel spiritually closer to the creator/god. I can see all the miracles in nature. I can say that I got stronger spiritually.” (R2, Female, 44)

When asked about the reasons for engaging in gardening, the answers of the

participants are gathered under ten headings among individual and community gardeners. It is observed that the participants started gardening for similar reasons and are exposed to parallel effects with the quantitative research findings. Relaxation, health, awareness, and environmental responsiveness are common motivations. While habit and spirituality are at the forefront of “individual gardeners”; among “community gardeners” education, socialization, ideology, and pragmatism gain more importance. **Figure 1** shows the differences for reasons of gardening between them.

3.2. Gardening and Migration Plans

3.2.1. Gardening and Migration Plans Quantitative Data

In the linear regression analysis, the dependent variable desire to migrate from city reveals a significant inverse relationship (-0.539) with the urban satisfaction among gardeners. There is a negative relationship between satisfaction with urban life and the idea of migration. Naturally, as satisfaction with city life increases, the desire to migrate decreases inversely. According to the Regression Analysis in **Table 2**, the relationship between the desire to migrate and gardening is also negative. In other words, gardeners are less willing to migrate. Since the R square of this model is 0.774 and its significance is 0.001, it can be considered a significant and powerful model. **Table 2** presents the results of this model.

3.2.2. Gardening and Migration Plans Qualitative Data

In the qualitative section, the participants state that the city satisfaction is high in general, and they don't lean towards the idea of migration. At the same time, all the participants mention that they are satisfied with their neighborhood. Neighborhood satisfaction emerges as one of the major factors that support city satisfaction. One retired community gardener's answer is presented as follows:

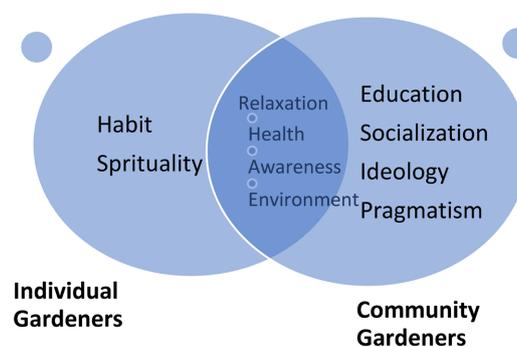


Figure 1. Reasons for gardening.

Table 2. Linear regression analysis on migration plans of gardeners.

Model	Unstandardized Coefficients		Standardized Coefficients	Significance
	Beta	Std. Error	Beta	
(Constant)	2.935	2.151		.198
Age	.015	.011	.239	.182
Gender (W:1)	-.105	.246	-.063	.677
University	-.027	.484	-.010	.956
Married	-.260	.303	-.137	.408
Child Number	.077	.144	.092	.601
Economic Wellbeing	.055	.210	.040	.798
Life Satisfaction	-.046	.036	-.182	.223
Neighborhood Satisfaction	.180	.194	.157	.373
Job Satisfaction	.183	.214	.152	.409
Urban Satisfaction	-.539**	.162	-.470	.006
Village Life Admiration	.249	.145	.261	.112
Environmental Awareness	-.045	.077	-.094	.570
Single House	.608	.419	.354	.172
Number of Rooms	-.178	.313	-.107	.580
Ground Floor	-.669	.439	-.401	.153
Household Number	.052	.263	.031	.845
Summer House	-.339	.294	-.197	.271
Gardening Length	.209	.288	.122	.482
Gardening Work Intensity	-1.000*	.358	-.383	.016
Suburb Gardening	-.383	.369	-.226	.319
Gardening in Neighborhood	.008	.390	.005	.984
Private Garden	.329	.336	.173	.347

Dependent Variable: Desire to Migrate. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

*“If someone born in the city says they are not satisfied, it is not sincere. I also know village life. I grew up in Ankara, but we used to go to the village in the summer. We didn’t make any effort other than climbing a tree or going to the field. Actually, we did not experience the difficulties of the countryside. **Village life is really hard. A person who is used to the city cannot live in the village; it is not easy. I do not consider immigration. Hobby gardens are popular these days.** However, a hobby garden requires effort. It takes a lot of work and time. After a **while, it gets harder and becomes a burden.** In time, it gets un-fertile due to neglect and turns into a barren land.” (R4, Male, 60)*

The respondents differentiate between the positive and negative aspects of the cities. Gardeners are not satisfied with the city life due to crowding, pollution, concretization, traffic and being disconnected from nature. However, they state that they don't want to migrate because of the convenience of urban life. They mention that there are facilities such as heating, telephone, water, internet and transportation in the city and gardening brings them closer to nature in the city. **Figure 2** presents the differences of opinions on city life among the respondents.

3.3. Life Satisfaction

3.3.1. Life Satisfaction Quantitative Data

The Chi-square non-parametric statistical analysis presents that as the education of gardeners and city satisfaction increase, so does life satisfaction. These findings can be attributed to the increase in professional success and income level as the level of education increases. Also their satisfaction with the urban life, that is their life style, is related to their life satisfaction. As opposed to the literature no relation was determined between gardening and life satisfaction in the chi-square tests. **Table 3** and **Table 4** present the results of education, urban satisfaction and life satisfaction.

Table 3. Life satisfaction and education relationship of gardeners.

		Cross Tabs			Total
		Education			
		Highschool	University	Masters or Higher	
Life Satisfaction	2.00	50.0%	.0%	13.3%	11.1%
	3.00	25.0%	41.2%	.0%	22.2%
	4.00	25.0%	35.3%	53.3%	41.7%
	5.00	.0%	23.5%	33.3%	25.0%
	Total	100.0%	100.0%	100.0%	100.0%

(Chi-square Results) Chi-square: 15.849 Df: 6 $p < .012$.

Table 4. Life satisfaction and urban satisfaction relationship of gardeners.

		Cross Tabs				Total
		Urban Satisfaction				
		1	2	3	4	
Life Satisfaction	2.00	40.0%	14.3%	.0%	.0%	11.1%
	3.00	20.0%	21.4%	18.8%	100.0%	22.2%
	4.00	40.0%	57.1%	31.3%	.0%	41.7%
	5.00	.0%	7.1%	50.0%	.0%	25.0%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%

(Chi-square Results) Chi-square: 17.523 DFd: 9 $p < .041$.

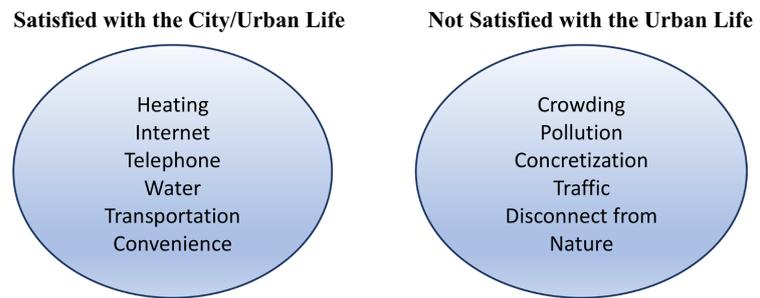


Figure 2. Urban satisfaction.

3.3.2. Life Satisfaction Qualitative Data

In the qualitative study, in addition to the life and job satisfaction questions, freedom, trust, power, anxiety, justice and belonging are included in the questions based on the literature (Buyan Kop & Kasapoğlu, 2015). Among the responses, the opinions of the participants on life satisfaction are quite different. There are individualistic or social approaches as well as positive or negative. One of those who defined life positively explained this with the level of consciousness and the other with low expectation and gratitude (minimalism). Others have associated life satisfaction with the pandemic, emphasizing that the epidemic lowers satisfaction. One community gardener's answer is presented below to reflect the level of life satisfaction.

*“My answer is no, I am negative. I can say from the personal to the general. There is no certain future for the garden. **We are worried about what will happen tomorrow.** There are financial problems over water and seeds. We are trying to survive by our own efforts. There is insecurity. It will be difficult to establish a human-nature bond. In general, it is not clear what will happen in an hour in society. There is a threat of foreign dependency. Alienation, people are stuck between concrete, asphalt roads. **The country actually has great power. But there is climate change and drought, anxiety. The train is running away to adapt. Water war and famine await us.**” (R8, Male, 28)*

Most of the participants state that their life satisfaction is high and that they feel a belonging in this society. In spite of this positive attitude, they answered other questions as they don't feel freedom or justice in the country, and they are worried about the future. In the Word Cloud (<https://wordart.com/create>) answers of the question on worries about the future are expressed in terms of Turkey, climate, children's future, economy, politics, and pandemic. Additionally, the respondents answers to the question on sense of justice are presented through the concepts of Turkey, the legal system, news, politics, and freedom. **Figure 3** and **Figure 4** present word cloud shapes that summarize the answers obtained from the future and justice questions.

3.4. Environmentalism

3.4.1. Environmentalism Quantitative Data

In the quantitative study, no statistically significant relationship was found between

More detail will be given in the next section about environmentalism and gardeners through analyzing the qualitative data. An example of a holistic perspective is a social scientist researcher in a community garden:

*“Harming or destroying the environment is actually cruelty or barbarism. Capitalism is also influential. It is wrong to think that human being is the most valuable. I think we will end up badly. I’m pessimistic. We do not control ourselves and we keep destroying. The results are not fully understood. The outcomes are negative. It’s obvious what will happen. Administrators don’t care either. **We are almost destroying ourselves, together with the planet.**”* (K11, Male, 31)

3.5. Axial Coding and Core Concept

The results of the gardeners’ qualitative data that is analyzed in detail with grounded theory are presented in this section. In line with the information obtained from the interviews with fourteen gardeners in Ankara, differences were observed in their approaches towards environmentalism. The data analysis method of grounded theory follows the steps of open coding, axial coding, selective coding, and conditional matrix (Creswell, 2013). In open coding, firstly categories of information are created, and descriptions are made, in axial coding the data are gathered together in a new way and categories are associated and classified, in selective coding, a story is written that combines the categories, and finally, a structure of the phenomenon is developed in the conditional base structure that explains the social and temporal conditions. Satisfaction point is reached when data is repeated, details are formed, and categories are structured. In this process, a story is written with the focus of the core concept and a diagram, graph or table is drawn. Core code is the basic concept emphasized in the phenomenon. This concept is determined by the frequency of the codes in line with the patterns and themes. A story is created by forming a logical chain in line with the metaphors built on this basis. This narrative style moves writing away from mechanics and contributes to cultural sociology. Contrasts or similarities are revealed by comparing the obtained data with the literature. Results are presented with a visual model to facilitate interpretation. **Table 5** presents the axial coding results of the data gathered which is analyzed under three categories: gardening, migration, and life satisfaction.

Table 5. Axial coding.

AXIAL CODING	Gardening	Migration	Life Satisfaction
Synthesis of Open Codings	Relaxation	Convenience	Anxiety
	Health	Transportation	Turkey
	Awareness	Crowding	Politics
	Spirituality	Pollution	Law
	Ideology	Concretization	Pandemic
	Environmental Responsibility	Environmental Responsibility	Environmental Responsibility

In this study, as a result of axial coding the repeating core concept is found as environmental responsibility. Later, the respondents' approaches towards environmentalism are categorized. At this stage of the grounded theory methodology, three groups have now been identified as the sub-categories for *environmental responsibility*:

- a) Humanist
- b) Holistic
- c) Activist

According to the grounded theory principles, environmental responsibility categories are retold through a story with metaphors. These categories are classified regarding their relationship with each other. The first group, humanists define environmentalism with a human focus and are actually similar to the *Seed*. They have not yet sprouted from the soil and are in the development stage. Their color is brown. Holistics see environmentalism as a part of the ecosystem by removing it from the human focus. They resemble a *Sprouted Plant* because they came to life and are developed from seed with soil. Their color is green. Activists are those who fight for nature in organizations such as orchards, associations, NGOs or Instagram that are now taking action. They can be metaphorically compared to plants that have grown from the ground and have given *Fruit*. That's why their color is red. While the humanistic category is more individualistic, materialistic and utilitarian; holistics and activists are those who are more spiritual. The actant theories describe non-human beings as having spaces in relation to humans. These theories that criticize humanism, reject human superiority and centeredness. As revealed in this study, nature and plants are emerging as actants (non-human actors) that affect people, especially today. **Figure 5** presents a visual model of the environmental responsibility metaphors and the circular process of environmentalism in relation to actant theories.

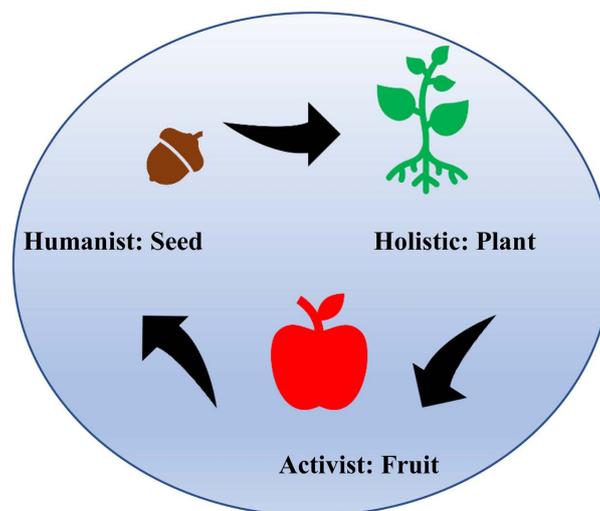


Figure 5. Environmental responsibility metaphors.

4. Conclusion

This study is based on three different theoretical frameworks grounded on the sociological approach it rests on. In the quantitative research, Ed Diener's "Theories of Happiness and Wellbeing" and Dunlap's "New Ecological Paradigm" (NEP) are used. In the qualitative research, McFarlane's "non-human" and Latour's Actor Network Theory (ANT) are implemented. And finally, the findings and discussion are framed by the relational sociologist Raymond Murphy and his view of "plants" as "non-human actants".

In the quantitative section, a questionnaire consisting of 29 questions is applied. Larson and Griffin's "Satisfaction with Life" to measure happiness and Cruz and Manata's "New Ecological Paradigm" scales are used for environmental awareness. In the analysis of the data, parametric and nonparametric significance tests are applied with SPSS 25. Based on Strauss and Corbin, grounded theory methodology is tried to be applied with all its stages in the qualitative part. In other words, open coding, axial coding, and selective coding are done precisely. The data collected with 13 open-ended questions are then shown with the Word Cloud and Axial Coding.

In the qualitative analysis, ANT theory is applied. According to this perspective Craig McFarlane explains the issue of de-humanism (inhumanism) and the inhuman (Powell & Depelteau, 2013). Critical humanism rejects anthropocentrism and is valued in relational sociology because it opposes the dualism of (wo)man and others. It is now said that a new kind of relationship has begun between humans and non-humans. An example of this is animal rights and their evolving laws. Today, this phenomenon can also be observed in plants. Finally, it is mentioned that there is no social human relationship which is not based on non-humans such as animals, plants, and things. In this area, one can talk about the ANT (Actor Network Theory) theory, in which Bruno Latour explains ants and actants (Latour, 1996). According to him, while actors are people, actants are not. But emphasis should be given to their relationship that needs to be analyzed independently. These relationships are stable but heterogeneous. Latour, like McFarlane, is against the dualism of nature and society. ANT theory focuses on the study of process and rejects dualism. Latour tries to overcome the structure-culture distinction by using the concept of hybrid. According to him, people, objects, and places are in relation with each other and cannot be separated. These need to be analyzed in a holistic approach. Therefore, he is against the dualism of nature and society and their separate evaluation. Social constructions are hybrid creations of the relationship between human and nonhuman. Impartiality, using abstract words and rejecting the distinction between social, natural and technology are among the components of ANT. The whole heterogeneous network of relations arises from this ever-changing dialectic, that is, the unity of opposites. Consistent with relational sociology, this view emphasizes the importance of the connection and coexistence of human and nonhuman, rejects dualities, and underlines the perception of uncertainty and integrity. Raymond

Murphy explains that plants as non-humans are actants and that people should be careful in their dance with nature (Eryılmaz, 2017). According to him, non-humans also act independent of people and exert influence on them. Based on the theory mentioned above, this study interprets the data with an approach that perceives nature and plants as actants.

Today, it is thought that fast life, competition, consumption, and risk society caused by urbanization and modernization reduce life satisfaction by alienating individuals from nature. Under these circumstances where environmental concerns have increased, gardening in the city has started to play a role in increasing the life and city satisfaction of individuals. In this context, the main purpose of the research is to understand the thoughts of gardeners in Ankara about life satisfaction, environmental awareness, and migration, and to try to grasp the motivations of gardeners in this activity. In the research in which mixed design is used, quantitative and qualitative methods are used together. Combining positivist and interpretive approaches, this method rejects dualities and creates an inclusive model. Qualitative data serve to decipher the meanings that individuals attribute to concepts, while quantitative data generalize them to the population. This method, which is in harmony with the relational approach, that forms the theoretical basis of the research, rejects essentialism, and associates these two perspectives. According to relational sociology, sociology should also include non-human factors. In this sense, relational sociology helps to overcome the duality of structure and individual, based on critical realism. This view argues that reactionary humanism must be abandoned for progressive reasons because one cannot speak of human relations without considering the nonhumans.

As a result of quantitative analyzes, it is presented that gardening is influential in greater life satisfaction, healthy habits and stress reduction. Gardening also reduces the will to migrate through enhancing the quality of life in the city. Contrary to expectations, no significant relationship is found between horticulture and environmental awareness. As discussed in the horticultural literature, this can be interpreted as urban gardening is actually a different type of capitalist consumer society, a form of human domination over nature and the commodification of nature (Bhatti & Church, 2001). The hedonistic structure of society in Turkey and the consumption-based, materialistic and the worldly preferences of Islamic culture can also explain this situation (Kasapoğlu & Ecevit, 2004). In addition, conservative cultural beliefs focused on development, growth and social division in society also prevent environmental mobility (Özler & Obach, 2019). Nevertheless, the intensification of gardening activity can be expected to create environmental awareness over time. For these reasons, it has become necessary to explore the reasons behind gardening by enriching the research with qualitative methods. It is crucial to understand the reasons of the respondents and to find out the information missed by the surveys.

To summarize the qualitative part, the concept of environmentalism finds voice especially among the educated people in Turkey and they are divided into

categories within themselves. This outcome supports the foresight that environmentalism is a process and can develop over time. Gardening certainly benefits to fight against urban pressure, modernization, stress, anxiety and leads to increasing life satisfaction while offering an alternative in the city for those looking for small, natural habitats. Overall, the research supports the claim that gardening plays an important role in combating urban pressure. By engaging in gardening, individuals can create new meanings for happiness by re-establishing relationships with plants and nature. According to the ANT (Actor Network Theory) which forms the theoretical basis of this study, *plants are non-humanal actors, namely actants*. Thus, the relationship between “non-humanal” and “humanal” is also shown theoretically. When interpreted with the ANT, it can be concluded that while “gardening” is a solution created by individuals who yearn for nature in modern cities, “plants” are also independent “actants” standing as non-humanal agents that affect “human happiness”. “Urban Gardening” should be supported as it seems to have the potential to provide benefits in line with “human happiness” and “sustainable city goals”. The “Mixed Method Methodological” and “Relational Sociology Theoretical” approaches are recommended to be used in further studies as they provide a deeper interpretation outside of anthropocentrism in this study.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix 1: Scales

Concern about Ecological Damage (New Ecological Paradigm: NEP)

- 1) When humans interfere with nature it often produces disastrous consequences. [NEP 3]
- 2) Humans are severely abusing the environment. [NEP 5]
- 3) Despite our special abilities, humans are still subject to the laws of nature. [NEP 9]
- 4) If things continue on their present course, we will soon experience a major ecological catastrophe. [NEP 15]

Satisfaction with Life Scale (SWLS)

- 1) In most ways my life is close to my ideal.
- 2) The conditions of my life are excellent.
- 3) I am satisfied with life.
- 4) So far I have gotten the important things I want in life.
- 5) If I could live my life over, I would change almost nothing.