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The Living Environment's Happiness of Residents in Da Nang City, Vietnam

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KEYWORDS Air Quality. Natural Landscape and Biodiversity. Soil Quality. Safe Security. Social Service. Water Quality

ABSTRACT This study aimed to explore the happiness in the living environment, and well-being of residents of Da Nang city, Vietnam. There are six key dimensions of air environment quality, water environment quality, soil environmental quality, natural landscape and biodiversity, safe security and social service. This research on 1790 residents show that there were no significant gender disparities in the happiness derived from the living environment across all dimensions. The participants reported high levels of satisfaction with air environment quality and water environment quality, more than other items. Education level played a significant role, with postgraduate graduates exhibiting greater satisfaction levels in air, water, and soil environmental quality, natural landscape and biodiversity, safe security, and social services compared to individuals with lower levels of education. These findings imply that efforts to enhance well-being in DaNang should be customised for various age demographics and underscore the advantages of higher education.

INTRODUCTION

Human beings experience happiness as a positive emotional state when their needs are satisfied. People spend their whole lives searching for happiness and doing what they love to achieve happiness (Diener et al. 2018). This study assesses the factors considered in assessing Australia's happiness index including environmental issues, climate, community engagement, health, life satisfaction, values, and satisfaction with local government (Patrick et al. 2022). The prosperity of a nation depends on various factors including economic efficiency, quality of life, environmental conditions, sustainability, equality, and cultural characteristics (Hancock et al. 2017)). The prosperity of a nation depends on various factors including economic efficiency, quality of life, environmental conditions, sustainability, equality, and cultural capital. Pratt (2016) asserts that an increasing number of people acknowledge that gross domestic product does not adequately reflect the overall welfare of a nation's citizens. Veenhoven (2000) introduced indicators of happiness manifested in various areas, like the quality of the environment in which an individual lives, their adaptation to the environment, the amenities available to them, and the individual's assessment of life events. Natural environmental factors include land, water, air, flora and fauna (Veenhoven 2000), favourable natural environment, fertile land, fresh air, clean water sources, no floods (Faraji Sabokbar et al. 1999), safe neighbourhoods, convenience, aesthetics, air pollution, educational level, relationships with neighbours, gender, economic/income status, and governance (Veenhoven 2000). This is also the purpose of this research on the happiness of the people of Da Nang city, Vietnam regarding their living environment.

According to Decision No. 2782/QD-BTNMT of the Ministry of Natural Resources and Environment of Vietnam (2009) criteria for assessing people's satisfaction with the quality of the living environment include ambient air quality around, surface water environmental quality, soil environmental quality, natural landscape and biodiversity (Decision No. 2782/QD-BTNMT 2019).

Objective of the Study

This study aims to assess the happiness of residents in Da Nang City, Vietnam, in relation to their living environment and well-being with six key dimensions of air environment quality, water environment quality, soil environmental quality, natural landscape and biodiversity, safe security and social service. The findings provide insights for urban planning and policy-making to enhance overall life satisfaction.

METHODOLOGY

Documentary Research Method: The researchers synthesize and analyze previously studied documents on the issue of happiness in the living environment.

Survey Research (Questionnaires, Polls): The researchers designed a set of 10 survey questions to assess people's perceptions of happiness regarding their living environment. A self-report questionnaire was created to evaluate participants' perceptions of happiness. The instrument uses a 5-point Likert scale, with responses ranging from (1) "strongly disagree" to (5) "strongly agree." The questionnaire comprises 22 items (in 6 groups). Notably, the instrument showed excellent internal consistency, with a Cronbach's α coefficient of 0.850 (Cronbach 1951). And personal information (sex, age, education level, and district of residence…)

Mathematical Statistics Method: The researchers used SPSS software to analyze the data. After collecting the data, the researchers coded it and imported it into SPSS software for analysis. Descriptive statistics were used to characterize the research sample, and t-tests and ANOVA were then applied to compare differences between demographic groups.

Participants

The researchers collected data from Da Nang city (to carry out scientific tasks of the Da Nang Department of Science and Technology, Da Nang City, Vietnam), by using convenience sampling and snowball sampling methods. The demographic characteristics of the 1,790 participants are summarised in Table 1, categorised by sex, age, education level, and district of residence. The gender distribution was nearly equal, with a slight majority of females (50.1 %) compared to males (49.9%). Regarding age, 13.3 percent were aged 18-25 years, 30.6 percent were aged 26-40 years, 39.1 percent were aged 41-60 years, and 17.0 percent were aged over 60 years. In terms of education, 56.3 percent had a high school education or lower, 16.7 percent attended vocational school or college, and 27.0 percent had a postgraduate degree.

Table 1: Participants' demographics

		n	%
Gender	Male	894	49.9
	Female	896	50.1
Age	18-25	238	13.3
	26-40	548	30.6
	41-60	699	39.1
	> 60	305	17.0
Education	High school or lower	1007	56.3
	Vocational school/College	299	16.7
	Postgraduate	484	27.0

Table 2 presents descriptive statistics for various items across six dimensions of air environment quality, water environment quality, soil environmental quality, natural landscape and biodiversity, safe security, and social service.

For the *air environment quality* dimension, a range from 4.55 to 4.72 indicates a high level of happiness. In contrast, the means in the *water environment* quality dimension were lower, ranging from 4.41 to 4.68. The *soil environmental quality* dimension also shows high means, between 4.26 and 4.50. The mean in the natural landscape and biodiversity ranged from 4.35 to 4.55, while the mean of *safe security* was between 4.31 and 4.63. Finally, the *social service* dimension has relatively median means, ranging from 4.39 to 4.45, which suggests a positive perception of spiritual well-being. One resident, a 40-year-old female, shared in the interview, "*I feel the atmosphere in Da Nang is very wonderful. Da Nang city is close to the sea, river and mountains, the temperature is moderate all year round, it is not hot like the South and not cold like northern weather of Vietnam.*"

Another 55-year-old male participant said, "*Even when storms and floods caused many houses to be flooded, my house was also flooded, I lost many properties, but I still feel happy here. Many tourists must pay a lot of money to get to Da Nang, but I can live right in Da Nang.*"

Among the 23 items of criteria for evaluating people's happiness related to the living environment, the factors considered most important are fresh air environment, M=4.72, domestic water sources are not polluted, M = 4.68, local security and order situation is good, M = 4.63, food safety and hygiene, M = 4.61, and environmental temperature is very good for people's health and activities, M = 4.56.

Table 2: Participants' happiness with their living environment

	Min	*Max*	*M*	*SD*
Air Environment Quality				
1. Fresh air environment	1	5	4.72	.528
2. Environmental temperature is very good for people's health and activities	1	5	4.56	.623
3. Spacious and airy living space	1	5	4.55	.631
Water Environment Quality	1	5		
1. People do not pollute domestic water sources	1	5	4.68	.626
2. No more flooding because of to rain	1	5	4.41	.830
3. We fully provide clean water, and the quality is always stable	1	5	4.63	.628
4. Drainage of domestic water is easy	1	5	4.51	.758
Soil Environmental Quality	1	5		
1. Reasonable planning of residential land and houses.	1	5	4.39	.737
2. Waste or garbage does not pollute the land	1	5	4.50	.703
3. The situation of waste, waste and wastewater treatment has been improved, reducing environmental pollution.	1	5	4.26	.972
Natural Landscape and Biodiversity	1	5		
1. Garbage collection and treatment are very reasonable	1	5	4.55	.649
2. Clean public toilets	1	5	4.53	.658
3. Living area not affected by natural disasters (storms, floods)	1	5	4.35	.865
4. The local landscape and environment are clean and beautiful.	1	5	4.49	.688
Safe Security	1	5		
1. Food safety and hygiene	1	5	4.61	.681
2. Not polluted by surrounding noise	1	5	4.40	.755
3. Local security and order situation is good	1	5	4.63	.952
4. No epidemics occurred	1	5	4.46	.783
5. Receive social assistance	1	5	4.31	.804
Social Service	1	5		
1. Rich and diverse social services	1	5	4.37	.718
2. Convenient, fast and reasonable social services	1	5	4.45	.664
3. Social services ensure quality as required	1	5	4.39	.697
4. Be provided with information and advice on timely response services	1	5	4.41	.672

Notes: M = Mean, SD = Standard Deviation

Mr N., a 45-year-old, shared, "*I grew up here, I witnessed every stage of development and change in the city, and I love this city very much. From the first days of poverty and hardship, the city is now a destination for tourists from all over. I feel very satisfied.*"

Mrs K., a 50-year-old, said, "*I'm from another place, I've lived here for more than 5 years, but I really feel this is like my second home. The city is full of facilities for all residents, the streets are clean and green, and the people are very friendly, interested in helping each other enthusiastically.*"

An independent sample t-test revealed no significant differences in the living environment's happiness between males and females. In each item, there are some differences, like the items *air environment quality* ($t_{(1667)}$ = -0.461, p=0.230), *water environment quality* ($t_{(1672)}$ = -0.771, p=0.933), *soil environmental quality* ($t_{(1695)}$ = -0.476, p=0.369), *natural landscape and biodiversity* ($t_{(1664)}$ = -1.466, p=0.356), and *safe security* ($t_{(1647)}$ = -1.051, p=0.279). However, there were no significant differences in *social service* ($t_{(1647)}$ = -0.951, p=0.022). Table 3 presents the means and standard deviations.

Researchers performed a one-way ANOVA to investigate the relationship between happiness related to the living environment and academic levels. The researchers present the descriptive statistics in Table 4.

The analysis revealed a significant main effect of academic level on the living environment's happiness. The results show that there is a difference between levels of education and the level of happiness in the living environment ($p < 0.001$). People with postgraduate degrees are more satisfied with their living environment with respect to air environment quality (M = 4.7±0.46, $p_{1,2,3}$=0.000), water environment quali-

Table 3: T-test results comparing happiness with the living environment between genders

	Male *M±SD*	*Female* *M±SD*	*p value*
Air environment quality	4.60±0.54	4.61±0.50	p = 0.230
Water environment quality	4.54±0.61	4.57±0.60	p = 0.933
Soil environmental quality	4.37±0.68	4.38±0.64	p = 0.369
Natural landscape and biodiversity	4.46±0.63	4.50±0.59	p = 0.356
Safe security	4.47±0.61	4.50±0.58	p = 0.279
Social service	4.39±0.62	4.42±0.56	p=0.022

Notes: M = Mean, SD = Standard Deviation

Table 4: ANOVA results comparing happiness with the living environment across different academic levels

	High school or lower(1)	*Vocational school/College(2)*	*Postgraduate (3)*	*p value*
	M±SD	*M±SD*	*M±SD*	
Air environment quality	4.57±0.53	4.55±0.55	4.7±0.46	$p_{1,2,3}$= 0.000
Water environment quality	4.52±0.61	4.47±0.67	4.67±0.54	p = 0.000
Soil environmental quality	4.34±0.66	4.29±0.67	4.50±0.64	$p_{1,2,3}$= 0.000
Natural landscape and biodiversity	4.45±0.60	4.41±0.62	4.57±0.61	p= 0.001
Safe security	4.45±0.60	4.43±0.63	4.59±0.54	p= 0.005
Social service	4.33±0.58	4.33±0.58	4.47±0.61	p= 0.000

Notes: M = Mean, SD = Standard Deviation

ty (M = 4.67±0.54, p = 0.000), soil environmental quality (M = 4.50±0.64, $p_{1,2,3=}$ 0.000), natural landscape and biodiversity (M = 4.57±0.61, p = 0.001), safe security (M = 4.59±0.54, p = 0.005) and social service (M = 4.47±0.61, p = 0.000).

The researchers conducted a one-way ANOVA to explore the relationships between the living environment's happiness and age groups. The descriptive statistics for each dimension are presented in Table 5.

The ANOVA results revealed no significant main effect of age group (p>0.05) on air environment quality ($F_{(2, 512)}$ = .674, p = 0.568), water environment quality ($F_{(3, 656)}$ =0.334, p = 0.801), soil environmental quality ($F_{(3, 659)}$ = 0.694, p = 0.556), natural landscape and biodiversity $F_{(3, 650)}$ = 1.960, p = 0.118), or safe security ($F_{(3, 219)}$ = 2.499, p = 0.058). However, a significant main effect of age group was found for social service ($F_{(4, 279)}$ = 2.017, p = 0.010).

Post hoc Tukey HSD tests revealed that the 18-25 age group reported no significantly greater levels of air environment quality, water environment quality, soil environmental quality than did the other age groups. However, there were significant differences in *social service* between

Table 5: ANOVA results of the living environment's happiness between age groups

	18–25 (1)	*25–40 (1)*	*41–60 (1)*	*>60 (1)*	*p value*
	M±SD	*M±SD*	*M±SD*	*M±SD*	
Air environment quality	4.65±0.47	4.6±0.53	4.59±0.54	4.6±0.49	p = 0.568
Water environment quality	4.58±0.6	4.56±0.62	4.54±0.61	4.56±0.57	p = 0.801
Soil environmental quality	4.41±0.69	4.39±0.67	4.38±0.65	4.33±0.64	p = 0.556
Natural landscape and biodiversity	4.55±0.56	4.48±0.62	4.48±0.61	4.42±0.62	p = 0.118
Safe security	4.58±0.54	4.48±0.63	4.48±0.6	4.43±0.57	p = 0.058
Social service	4.52±0.52	4.38±0.6	4.4±0.61	4.35±0.57	p = 0.010

Notes: M = Mean, SD = Standard Deviation

the other age groups ($p < 0.05$). Mr. S, cultural and social manager of the district reported, "*The city has policies to care for all people, ensure security and order, traffic safety, food safety and social security. I love this city very much.*"

DISCUSSION

Feeling happy about the quality of life is the level of people's feelings or emotions about the things they have in life. These things include both material and spiritual factors such as income, health, housing, religion, culture, politics, security and living environment. Only by being satisfied with the quality of life will people feel happy and comfortable in their lives and when the people stick together and contribute to the good and sustainable development of the community and society. The opinions of Urry et al. (2004), Macchia et al. (2020), Zhang et al. (2021), give us more confirmation that the research results of this study are appropriate, there is a close relationship between living environment and happiness. Many studies have also shown that living environment affects feelings of happiness, like living space; climate, environmental and urban conditions; conveniences for life (Brereton et al. 2008), and the ability to live with the environment and good relationships with neighbors (Pekalee and Gray 2023).

This study investigated the living environment's happiness among residents of Da Nang city, Vietnam and revealed no significant gender differences in any of the six dimensions measured, the education level influenced the happiness of the living environment, as well as positive emotions. The participants with postgraduate degrees reported significantly higher levels of positive emotions compared to those with a high school diploma or lower, or a vocational degree. However, the older people (>60 years) feel happier about their living environment than other age groups. This research show that all aspects of an individual's health status, including lifestyle, satisfaction, and mental well-being, collectively reflect the multidimensional nature of quality of life; there are relationship between rural and urban elderly populations, and to explore the association between socio-demographic profiles and quality of life among the elderly. This result is similar to the results of studies by Wang (2015) and Solé-Auró et al. (2018). Researching from a gender perspective, the research shows that women are happier than men in almost all environmental factors, such as soil environmental quality, natural landscape and biodiversity, safe security, and especially women really feel very happy about the social services factor and the wellbeing are physical strength, inner wellbeing, household wellbeing, community relations, economic security and happiness, similar to the research of Zhang et al. (2021), and Graham (2008).

Development planners have highlighted priority goals of social development and proportion of the needs of service quality to people's living conditions. These are also suggestions for Da Nang city that one should follow the latest developments in industry, the necessity of "quality of life" with a focus on community development was introduced to improve social conditions to achieve greater happiness for all people, especially the elderly. The researchers also understand environmental well-being from infrastructural aspects, social assistance, and social security factors. People understand infrastructure as the materials, facilities, and services that serve their daily lives. This factor includes criteria such as water supply, electricity, transportation, telephone service, mail, public transportation and environmental and planetary health initiatives. The research results of this study also show that there is a close relationship between social factors, people's efforts to contribute to sustainable lifestyles, mutual support and feelings of happiness. This result matches with researches of Mudey et al. (2011), Wang (2015) and Petersen et al. (2021).

Researching the level of happiness of people in Da Nang city in terms of education, one can see that the higher the education, the higher the happiness. Interaction between actors in rural community life including government, civil society and people, it is a model through which the participation and cooperation at all functional forces and at all levels geographically can provide sustainable development in rural areas. The most significant factors influencing rural governance are the levels of education, job satisfaction, management styles, and rural population, alongside village administrators' effectiveness, social cohesion, and interactions with neighbouring communities (Silvius 2012).

CONCLUSION

This study provides insights into the living environment happiness of residents of Da Nang city, Vietnam, as measured through air environment quality, water environment quality, soil environmental quality, natural landscape and biodiversity, safe security, and social service. All 23 items in the findings indicate that Da Nang city residents have a high level of happiness about their living environment, with average scores ranging from 4.26 to 4.72. Da Nang is one of three major cities in Vietnam, but perhaps not a "dynamic city" or "financial city" like Hanoi and Ho Chi Minh City, as people aged 18-25 have little opportunity to job search, and fewer opportunities to make money than in the other two big cities, maybe that is one reason why young people are not happy here.

Education level significantly influences the living environment's happiness. Participants with postgraduate degrees reported higher levels of happiness with the living environment than did those with lower educational attainment. This suggests that higher education enhances the living environment's happiness through better psychometric standing, intellectual growth. Understanding the factors influencing the living environment's happiness can help develop targeted interventions to promote well-being among Da Nang residents.

RECOMMENDATIONS

Based on the research findings concerning the impacts of environmental factors (water, air, land, wastewater, safety), social factors (gender, education), and residents' perceptions of happiness in Da Nang city, the researchers have proposed some ways to enhance environmental management, social equity, and happiness. About environmental management, to safeguard water quality in Da Nang, it is essential to strengthen the monitoring and treatment of wastewater. It is important to support projects that protect water sources and educate the public on minimising water pollution. Regarding air, residents of Da Nang City need to enhance emission control measures by enforcing stricter regulations for major emission sources, including industrial facilities and transportation. About land, residents in Da Nang City need to promote land conservation and restoration practices, including erosion control, and having education programs to raise awareness about land protection and management. For environmental safety, residents in Da Nang City make sure that all industrial and residential establishments in Da Nang adhere to environmental safety regulations. For education, it must strengthen environmental education programs at various educational levels to improve understanding of environmental issues and sustainable practices, for having a happy life.

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AUTHOR'S CONTRIBUTIONS

All authors made equal contributions to the study's development and design.

ETHICS

The study was approved by the Ethical Committee of the Da Nang Department of Science and Technology, Da Nang City, Vietnam, on October 3, 2022, under reference number 47/HD-SKHCN.

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