

Analysis of respondents ' opinions on the efficiency of green spaces on campus: Tikrit University case study

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Abstract

Green spaces are an essential element in the campus environment, due to their role in improving psychological and physical well-being, and providing a comfortable and attractive learning environment. This study aims to evaluate green spaces at Tikrit University by analyzing the opinions of respondents who are students and employees from the faculties of agriculture, pharmacy, and science. The research was based on a field questionnaire distributed to 250 respondents, and the data were statistically analyzed to extract indicators of satisfaction and aspirations. The most important results can be summarized that there is a disparity in the evaluation of the quality of green spaces between colleges, where the highest value of the arithmetic mean in the College of Agriculture (2.99) when evaluating the general quality, in Pharmacy (2.98), and in science (2.74). On the other hand, the lowest values were related to the question of increasing the number of trees with large crowns (1.13-1.08), reflecting broad agreement on the need to improve shading. The results also showed that a large percentage of respondents use green spaces daily or several times a week, indicating their functional and social importance. The results also showed high approval for the use of solar energy in irrigation systems, and a clear desire to increase plant diversity and improve the distribution of trees and shrubs to achieve aesthetic and environmental balance. It is noteworthy that this study is based solely on the opinions of respondents across questionnaires, and does not include direct field measurements of environmental or design performance, which calls for more comprehensive future technical assessments.

Keywords: green spaces, campus, psychological well-being, sustainability, Tikrit University .

Introduction

Green spaces play an important role in improving the quality of urban life. Their benefits are not limited to aesthetics, but include promoting psychological well-being, reducing stress, regulating the microclimate, and supporting biodiversity. In university environments, these spaces are essential to

provide a healthy and attractive learning environment, encourage social interaction, and strengthen students' sense of place. However, continuous urban growth and pressures on university lands may lead to the decline or deterioration of green spaces, which needs to be evaluated and improved in line with sustainable design standards and users' needs [1]. [2] noted the need to develop a green

campus and improve urban transportation services to enhance access to green spaces, which contributes to supporting healthier and more socially inclusive communities, A study [3] recommended to focus on the development of open spaces, landscapes and sports facilities in university dormitories, as pivotal elements in improving the quality of student experience and making it more efficient and attractive. Green spaces on campus are an important area for the positive health and well-being of the university environment. A study [4] also showed a marked decrease in emotional disorders and an improvement in the Heart Rate Variability Index (HRV) after exposure to green spaces on campus, pointing to clear differences by gender and level of Education, which reinforces the importance of these spaces in achieving significant psychological and health benefits for students and the university community as a whole. However, many universities in Malaysia have undergone many physical changes due to the need for more spaces for parking, new buildings and an off-campus housing area. [5]. University green spaces contribute to lowering temperatures by providing shade and the process of transpiration, as plants release water vapor that cools the surrounding air, and studies show that cultivated areas are about 2 to 5 degrees Celsius colder compared to paved areas, an extremely important effect in hot and dry areas such as Iraq [6]. Green spaces are an essential component in improving air quality on campus, as plants absorb carbon dioxide and release oxygen, and the leaves of trees and shrubs help capture polluting particles such as dust and heavy metals. Vegetation belts surrounding universities close to busy roads are also an effective way to reduce pollution thanks to their insulating and purifying capacity [7]. Green spaces contribute mainly to promoting public health, both in cities and on campuses, by improving air and water quality, reducing noise levels and regulating the local climate in ways that support environmental sustainability [8]. these spaces are vital ecosystems that provide services such

as biodiversity support and temperature regulation, which contribute to improving the quality of life and meeting the needs of urban and university communities [9]. Green spaces on campus, recognized as an important component of urban Multiple researches have addressed the importance of green spaces in promoting mental health and a sense of belonging among university students [10]. greening and providing many benefits to university students, have gained very limited attention. Where the researcher concluded how to make suggestions on how to meet the requirements of students and improve the attractiveness and accessibility of green spaces on campus so that they can report on the growth of colleges and universities emerging in other cities and countries undergoing the peak of campus construction. [11]. Parks and green spaces are important and necessary areas to reduce the psychological and moral stresses of citizens more than ever. Consideration of factors influencing (namely, socio-psychological, physical and structural, economic and environmental) the functioning of these areas as an environment for the social behavior of citizens is fundamentally important. The study concluded the importance of taking into account the complex needs of the population in the process of designing and implementing urban parks and green spaces [12]. Studies have shown that high biodiversity in the design of these spaces contributes to psychological and physiological recovery [13]. Other research has called for optimizing and maintaining these spaces to meet the needs of students, and relying on sustainable irrigation systems such as solar energy [14]. Previous research has also pointed to the role of green spaces in reducing stress and promoting positive social experiences [15]. On the other hand, studies have addressed the tendency of universities to promote sustainability as a competitive advantage due to its long-term environmental and economic benefits [16]. Recently, policy makers and researchers have turned their attention towards the concept of sustainability

and green finance, coinciding with the increasing global focus on Environmental Protection, climate change mitigation, and sustainable development. Integrating sustainability practices and green finance has emerged as a critical strategy to address climate change, advance the Sustainable Development Goals, and build a resilient global economy in the face of pressing environmental challenges [17]. Singh [18] also noted that environmental considerations and sustainability have become an essential part of manufacturing, management and product development processes, and [19] discussed the concept of "green ethics", defining it as "including knowledge, attitudes and behaviors aimed at preserving the quality of life and living space at the individual and global levels, and emphasized the importance of efficient use of resources to achieve sustainable development". Özbek [20] addressed the relationship between sustainability and green finance, defining the latter as investment decisions that direct financial resources to achieve sustainable development, making it an essential tool in facing future environmental risks. [21] reviewed the role of innovation in supporting the sustainability of smart cities, through the development of low-emission green vehicles powered by renewable energy, stressing the importance of this trend in creating environmentally friendly smart cities. Cultivated soils play an important role in absorbing rainwater and reducing runoff, reducing the risk of flash floods and supporting groundwater recharge, and the sustainable design of University green spaces includes solutions such as biological pits and water collection tanks, enabling rainwater to be collected and used in more efficient and sustainable ways [22]

Material and Methods

Green spaces on campus suffer from low aesthetic and functional efficiency and uneven

distribution, which negatively affects students' use and satisfaction with them. The issue lies in the absence of a balanced design that takes into account the needs of students and ensures environmental sustainability. Universities face challenges in designing and maintaining green spaces on campus, including limited space, uneven distribution of vegetation, and poor maintenance. This affects the aesthetic and functional efficiency of these spaces and impacts student satisfaction and use, as well as their ability to promote mental health and environmental sustainability. This study seeks to analyze the opinions of beneficiaries to reveal shortcomings and propose sustainable solutions to improve the campus environment.

Research hypotheses

-The level of student satisfaction with green spaces is expected to be moderate to low.

-Differences in evaluating the quality of green spaces are expected between colleges.

-Students are expected to recommend increasing shade, improving the distribution of green spaces, and adopting sustainable irrigation

Research Methodology

The study adopted the descriptive-analytic approach using the field questionnaire tool. 250 questionnaires were distributed to Tikrit University students in three locations: Faculty of Agriculture (100 questionnaires), Faculty of Science (100 questionnaires), and Faculty of Pharmacy (50 questionnaires). The questionnaire included 33 questions divided into multiple axes, such as level of satisfaction, usage patterns, aesthetic preferences, and proposed level of sustainability. The data was collected during the academic year 2024-2025 and analyzed statistically to calculate the percentages and the arithmetic mean for each question, allowing the extraction of basic indicators to evaluate the green spaces and identify areas for improvement. The questionnaire was

distributed to all students at the designated sites for the purpose of collecting the necessary data for the study (250 questionnaires were distributed, 50 for the College of Pharmacy and 100 for each of the Colleges of Agriculture and Science separately due to the number of students and the large area). After distributing the questionnaires to the respondents at the study sites, the data were collected and subjected to statistical procedures for the purpose of inferring and

supporting the results [23]. It should be noted that the study is based only on the opinions of the beneficiaries without conducting direct field measurements of the shadow area or vegetation density, which necessitates supplementing the research with future technical studies .

Environmental Information :

Table (1) Agro-environmental Characteristics of the Study Sites

No.	Description	College of Agriculture	of College of Pharmacy	College of Science
1	Location	Tikrit University / Salah Al-Din	Tikrit University / Salah Al-Din	Tikrit University / Salah Al-Din
2	Geographic Coordinates	Latitude: 34°40'49" N	Latitude: 34°40'51" N	Latitude: 34°40'47" N
3	Elevation above sea level	Longitude: 43°38'40" E	Longitude: 43°39'17" E	Longitude: 43°39'01.5" E
4	Green space area	Approximately 129 m	Approximately 129 m	Approximately 129 m
5	Number of students	24,350 m ²	11,149 m ²	8,626 m ²
6	Soil type	819	705	1,770
7	Soil pH	Gypsiferous soil	Gypsiferous soil	Gypsiferous soil
8	Average annual temperature	6.4	7.2	6.7
9	Average annual rainfall	24.7 °C	24.7 °C	24.7 °C
10	Location	185 mm	185 mm	185 mm

Table (2) Plant Species Found in the Gardens of the Study Sites

No.	Plant Name	Scientific Name	General Notes
1	Date Palm	<i>Phoenix dactylifera</i>	Drought-tolerant, needs full sun, grows in well-drained soil, both ornamental and fruit-bearing.
2	Acacia	<i>Acacia farnesiana</i>	Drought-resistant, fast-growing, used as windbreaks.
3	Eucalyptus	<i>Eucalyptus camaldulensis</i>	Fast-growing, salt-tolerant, needs wide space, strong roots.
4	Jujube	<i>Ziziphus spina-christi</i>	Heat- and salt-tolerant, pest-resistant, used for food and medicinal purposes.
5	Bottlebrush Tree	<i>Callistemon citrinus</i>	Tolerates drought and heat, needs full sun, attracts birds and bees.
6	Hopbush	<i>Dodonaea viscosa</i>	Drought-tolerant, used as a hedge, requires regular pruning.
7	Myrtle	<i>Myrtle communis</i>	Aromatic plant, used for hedges and ornamental landscapes.
8	Thuja	<i>Thuja orientalis</i>	Evergreen, needs regular watering, suitable for hedging.
9	Roses	<i>Rosa spp.</i>	Used for ornamentation, requires regular pruning.

Objectives of the questionnaire :

-To find out the attitudes and preferences of beneficiaries and experts alike in order to provide as much information as possible in order to take them into consideration when developing the proposed designs.

-Improving the landscape of the campus to ensure that it positively affects the psychological state and increases their sense of satisfaction with the place so that it is ideal.

-Obtaining location data for study sites [24.]

Results and Discussion

This study represents a scientific attempt to assess the reality of green spaces on campus in three different locations: College of Agriculture, College of Pharmacy, and College of Science. The study adopted a questionnaire addressed to the respondents to monitor their satisfaction levels and their perceptions about the quality of the design, plant elements, and accompanying services. The following is a detailed presentation and discussion of the results from an academic perspective.

First, the College of Agriculture website

Data from the College of Agriculture website shows a relatively good level of satisfaction, but there are clear demands to improve quality, increase shade, and develop sprinklers using sustainable energy. Student trends give important design cues for future planning: Enhancing plant diversity, increasing shaded areas, and improving the quality of plant components, taking into account the balance between open and cultivated areas, as the values shown in Figure (1) were as follows:

Respondents' satisfaction with green spaces was within the average level, with the highest percentage of "satisfied" (45%), with an

arithmetic mean of 2.31, reflecting a positive but not high overall satisfaction.

As for the quality of the plant components (trees, shrubs, grass), the majority of students indicated that it is "good" (33%) with an arithmetic mean of 2.99, which indicates that the quality is acceptable but lacks excellence, especially with the percentage of "needs improvement" which amounted to 32%.

Regarding the suitability of the design of green spaces for students' needs, the results were encouraging, with 65% agreeing that it meets their needs, with a low mean (1.35), reflecting the compatibility of the current design with educational and recreational requirements.

Students clearly supported sustainable trends, with 76% supporting the use of solar energy for irrigation (mean 1.28), and there was a strong desire to promote plant diversity, with 85% agreeing on the importance of diversity in tree sizes and planting purposes (mean 1.18.)

As for the allocation of open spaces without trees, opinions were divided (41% yes, 41% no, mean 2), indicating a divergence in desires and highlighting the need for balanced planning.

On the subject of sports areas, 61% were in favor of their coverage (mean 1.59), reflecting a trend to improve conditions for sports activities. When it comes to urban furniture, 71% favored iron and wood benches (mean 1.36), steering design choices towards durability and aesthetic appeal.

Finally, the results showed a very strong desire to increase the number of shade trees (87% yes, mean 1.13), while 50% considered the current spaces to be "somewhat" sufficient (mean 2.18), indicating the need for expansion and gradual improvement.

Table (3) Results of the questionnaire at the College of Agriculture website

Q1 / How satisfied are you with the green spaces on campus?			
Arithmetic mean	Ratio	Degree	The scale
2.31	%22	22	Very Satisfied
	%45	45	Satisfied
	%15	15	Neutral
	%10	10	Dissatisfied
	%8	8	Very Dissatisfied
		100	Total
Q2: How would you rate the quality of green spaces (plants, trees, grass, etc.) on campus?			
Arithmetic mean	Ratio	Degree	The scale
2.99	%7	7	Excellent
	%25	25	Very Good
	%33	33	Good
	%32	32	Needs Improvement
	%3	3	Very Bad
		100	Total
Q3 / Do you think the current green space design meets the needs of students?			
Arithmetic mean	Ratio	Degree	The scale
1.35	%65	65	Yes
	%35	35	No, it needs to be optimized
		100	Total
Q4: Do you support the use of solar energy for sprinklers on campus?			
Arithmetic mean	Ratio	Degree	The scale
1.28	%76	76	Yes
	%20	20	Somewhat
	%4	4	No
		100	Total
Q5: Do you think that the variety of tree sizes and the purpose of planting them is an attractive factor for the campus?			
Arithmetic mean	Rati	Degree	The scale
1.18	%85	85	Yes
	%12	12	Somewhat
	%3	3	No
		100	Total
Q6/ Would you like to allocate open green spaces without trees and shrubs?			
Arithmetic mean	النسبة	Degree	The scale
2	%41	41	Yes
	%18	18	Somewhat
	%41	41	No
		100	Total
Q7: Are you in favor of covering sports areas in green spaces?			
Arithmetic mean	Ratio	Degree	The scale
1.59	%61	61	Yes
	%19	19	Somewhat

	%20	20	No
		100	Total
Q8/ What types of benches do you prefer to have in campus parks?			
Arithmetic mean	Ratio	Degree	The scale
1.36	%71	71	Iron and wood
	%22	22	Pressed polyethylene
	%7	7	Stone
		100	Total
Q9: Would you like to increase the number of shade trees (with large crowns) from the current situation?			
Arithmetic mean	Ratio	Degree	The scale
1.13	%87	87	Yes
	%13	13	No
		100	Total
Q10: Do you think the current green spaces on campus are sufficient?			
Arithmetic mean	Ratio	Degree	The scale
2.18	%16	16	Yes
	%50	50	Somewhat
	%34	34	No
		100	Total

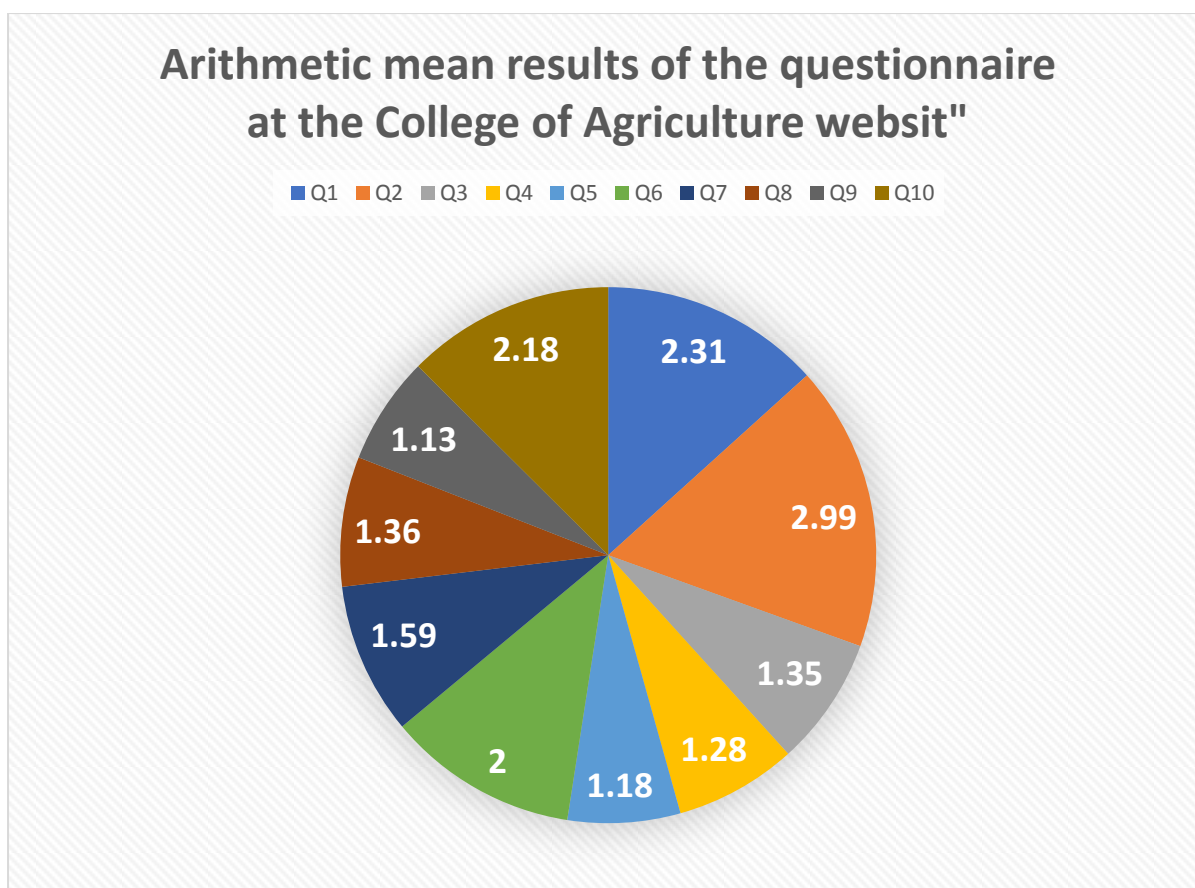


Figure 1. Results of the questionnaire at the College of Agriculture website.

The College of Pharmacy site

The results of this site reveal moderate satisfaction with clear criticisms of the space design, calling for a planning intervention focused on improving distribution, quality, and shade, as well as incorporating sustainable energy initiatives. These findings provide a practical guide for an environmental redesign that is responsive to users' desires. Figure (2) shows the values of the questionnaire as follows:

At the College of Pharmacy site in Figure (2), the degree of student satisfaction is also moderate, with the highest percentage of "satisfied" responses reaching 42% with an arithmetic mean of 2.18. This reflects a general acceptance but also highlights the

need to enhance the attractiveness of the green spaces.

The quality of plant components was mostly rated as "good" (44%), with an arithmetic mean of 2.98, reflecting an acceptable level but not without room for improvement, especially with "needs improvement" (32%).

The design of the green spaces faced more criticism at this site, as 58% felt that it needs improvement (mean 1.58), highlighting the need to review the distribution of plant elements, movement paths, and open spaces to suit the privacy of pharmacy students.

On the other hand, 62% of students supported the use of solar energy for irrigation (mean 1.44), reflecting a clear openness towards

sustainable environmental solutions. 76% agreed on the importance of diversity in tree sizes and purposes (mean 1.24), emphasizing an aesthetic and functional awareness of the importance of landscape design.

Desire for tree-free open space was mixed (32% yes, 50% “somewhat”, mean 1.86), suggesting a diverse audience in their preferences. Support for covering areas for sports was also moderate

%52)yes, mean 1.66), reflecting a desire to improve the convenience of use.

In terms of urban furniture, 58% favored iron and wood seating (mean 1.46), providing a clear design cue. Finally, the desire to increase the number of shade trees was very high (90% yes, mean 1.1), while 60% felt that the current spaces are “somewhat” adequate (mean 2.16), indicating relative acceptance but accompanied by calls for improvement.

Table (4) Results of the questionnaire at the College of Pharmacy website

Q1 / How satisfied are you with the green spaces on campus?			
Arithmetic mean	Ratio	Degree	The scale
2.18	%20	10	Very Satisfied
	%42	21	Satisfied
	%24	12	Neutral
	%10	5	Dissatisfied
	%4	2	Very Dissatisfied
		50	Total
Q2: How would you rate the quality of green spaces (plants, trees, grass, etc.) on campus?			
Arithmetic mean	Ratio	Degree	The scale
2.98	%10	5	Excellent
	%14	7	Very Good
	%44	22	Good
	%32	16	Needs Improvement
	%0	0	Very Bad
		50	Total
Q3 / Do you think the current green space design meets the needs of students?			
Arithmetic mean	Ratio	Degree	The scale
1.58	%42	21	Yes
	%58	29	No, it needs to be optimized
		50	Total
Q4: Do you support the use of solar energy for sprinklers on campus?			
Arithmetic mean	Ratio	Degree	The scale
1.44	%62	31	Yes
	%32	16	Somewhat
	6	3	No
		50	Total
Q5: Do you think that the variety of tree sizes and the purpose of planting them is an attractive factor for the campus?			
Arithmetic mean	Ratio	Degree	The scale
	%76	38	Yes

1.24	%24	12	Somewhat
	%0	0	No
		50	Total
	%38	19	Somewhat
Q6/ Would you like to allocate open green spaces without trees and shrubs?			
Arithmetic mean	Ratio	Degree	The scale
1.86	%32	16	Yes
	%50	25	Somewhat
	%18	9	No
		50	Total
Q7: Are you in favor of covering sports areas in green spaces			
Arithmetic mean	Ratio	Degree	The scale
1.66	%52	26	Yes
	%30	15	Somewhat
	%18	9	No
		50	Total
Q8/ What types of benches do you prefer to have in campus parks?			
Arithmetic mean	Ratio	Degree	The scale
1.46	%58	29	Iron and wood
	%38	19	Pressed polyethylene
	%4	2	Stone
		50	Total
Q9: Would you like to increase the number of shade trees (with large crowns) from the current situation?			
Arithmetic mean	Ratio	Degree	The scale
1.1	%90	45	Yes
	%10	5	No
		50	Total
Q10: Do you think the current green spaces on campus are sufficient?			
Arithmetic mean	Ratio	Degree	The scale
2.16	%12	6	Yes
	%60	30	Somewhat
	%28	14	No
		50	Total

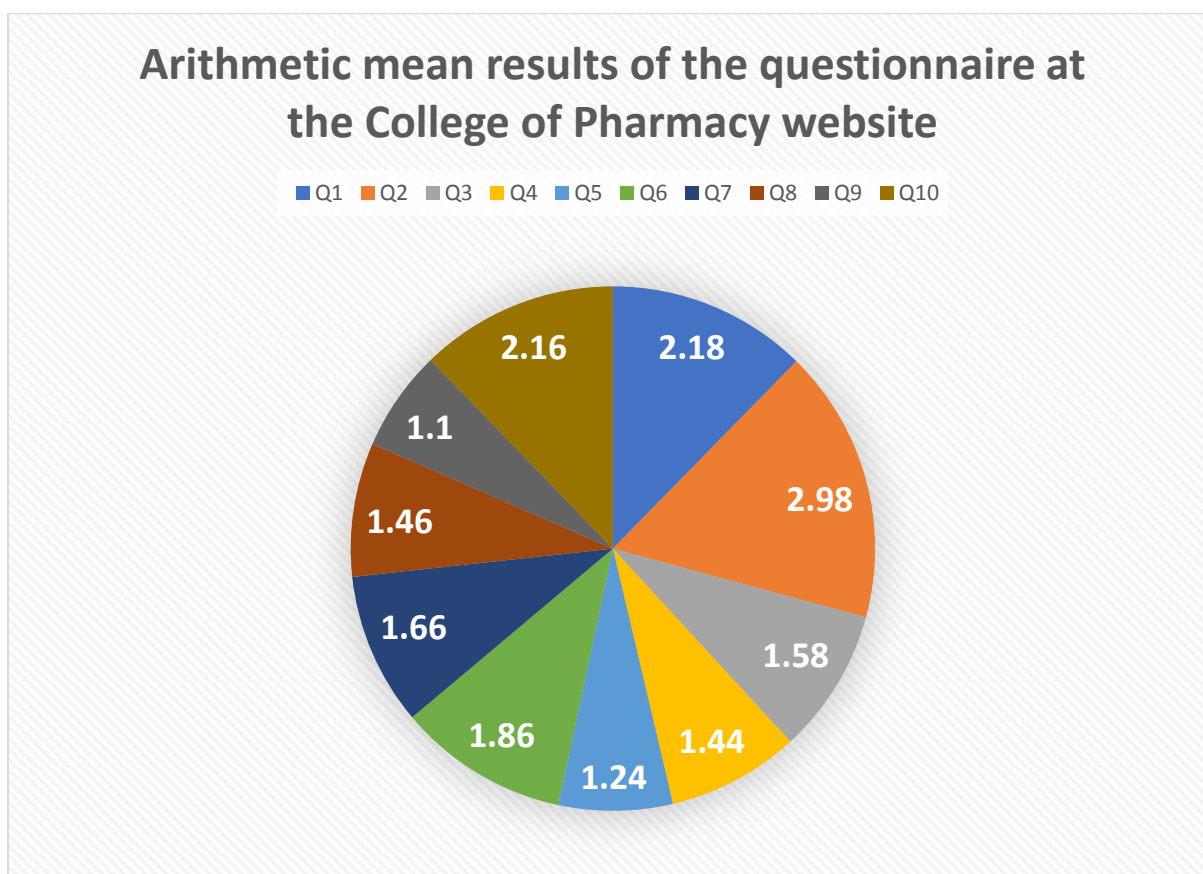


Figure 2. Results of the questionnaire at the College of Pharmacy website

Faculty of Science website

The results of the Faculty of Science show relatively higher overall satisfaction, with broad acceptance of the current design but accompanied by clear requests to improve shade, quality of vegetation, and exercise conditions. Planning recommendations include increasing shade, improving infrastructure, and diversifying urban furniture to respond to student preferences.

The results of the Faculty of Science site questionnaire (Figure 3) showed that the level of satisfaction is high, with 34% “very satisfied” with a mean of 2.01, reflecting acceptable overall satisfaction.

The evaluation of the quality of plant components also came in the “good” category (34%) with a mean of 2.74, indicating an acceptable level but needs to be strengthened in terms of variety, cleanliness, and maintenance.

The suitability of the design to students' needs received a significant positive rating, with 77% answering “yes” (mean 1.43), reflecting the success of the current design in serving educational, social, and recreational requirements.

Support for the use of solar energy for irrigation was strong (68% yes, mean 1.4), confirming a steady trend towards environmental sustainability.

In terms of diversity in tree sizes and purposes, approval was overwhelming (85% yes, mean 1.15), demonstrating a deep understanding of the importance of ecological and aesthetic diversity.

On the desire for tree-free spaces, opinions were split (34% yes, 43% no, mean 2.09), reflecting a difference in preferred uses and requiring a flexible design solution.

Support for the coverage of sports areas was relatively high (58% yes, mean 1.59), indicating the importance of improving comfort and climatic conditions for sports.

Regarding the type of seating, 58% favored “iron and wood” (mean 1.51), with significant acceptance of pressed polyethylene (32%), suggesting the need to diversify urban furniture.

The desire to increase the number of shade trees was very clear (92% yes, mean 1.08), confirming a clear priority for students. Regarding the adequacy of green spaces, the overwhelming opinion was “somewhat” (42%, mean 1.91), reflecting an acceptable overall satisfaction with clear calls for improvement.

Table (5) Results of the questionnaire at the College of Science website

Q1 / How satisfied are you with the green spaces on campus?			
Arithmetic mean	Ratio	Degree	The scale
2.01	%34	34	Very Satisfied
	%31	41	Satisfied
	%16	16	Neutral
	%18	8	Dissatisfied
	%1	1	Very Dissatisfied
		100	Total
Q2: How do you assess the quality of green spaces (plants, trees, grass, etc.) on campus?			
Arithmetic mean	Ratio	Degree	The scale
2.74	%16	16	Excellent
	%22	22	Very Good
	%34	34	Good
	%28	28	Needs Improvement
	%0	0	Very Bad
		100	Total
Q3 / Do you think the current green space design meets the needs of students?			
Arithmetic mean	Ratio	Degree	The scale
1.43	%77	77	Yes
	%33	33	No, it needs to be optimized
		100	Total
Q4: Do you support the use of solar energy for sprinklers on campus?			
Arithmetic mean	Ratio	Degree	The scale
1.4	%68	68	Yes
	%24	24	Somewhat
	%8	8	No
		100	Total

Q5: Do you think that the variety of tree sizes and the purpose of planting them is an attractive factor for the campus?			
Arithmetic mean	Ratio	Degree	The scale
1.15	%85	85	Yes
	%15	15	Somewhat
	%0	0	No
		100	Total
Q6/ Would you like to allocate open green spaces without trees and shrubs?			
Arithmetic mean	Ratio	Degree	The scale
2.09	%34	34	Yes
	%23	23	Somewhat
	%43	43	No
		100	Total
Q7: Are you in favor of covering sports areas in green spaces			
Arithmetic mean	Ratio	Degree	The scale
1.59	%58	58	Yes
	%25	25	Somewhat
	%17	17	No
		100	Total
Q8/ What types of benches do you prefer to have in campus parks?			
Arithmetic mean	Ratio	Degree	The scale
1.51	%58	59	Iron and wood
	%32	33	Pressed polyethylene
	%10	10	Stone
		102	Total
Q9: Would you like to increase the number of shade trees (with large crowns) from the current situation?			
Arithmetic mean	Ratio	Degree	The scale
1.08	%92	92	Yes
	%8	8	No
		100	Total
Q10: Do you think the current green spaces on campus are sufficient?			
Arithmetic mean	Ratio	Degree	The scale
1.91	%29	29	Yes
	%42	42	Somewhat
	%29	29	No
		100	Total

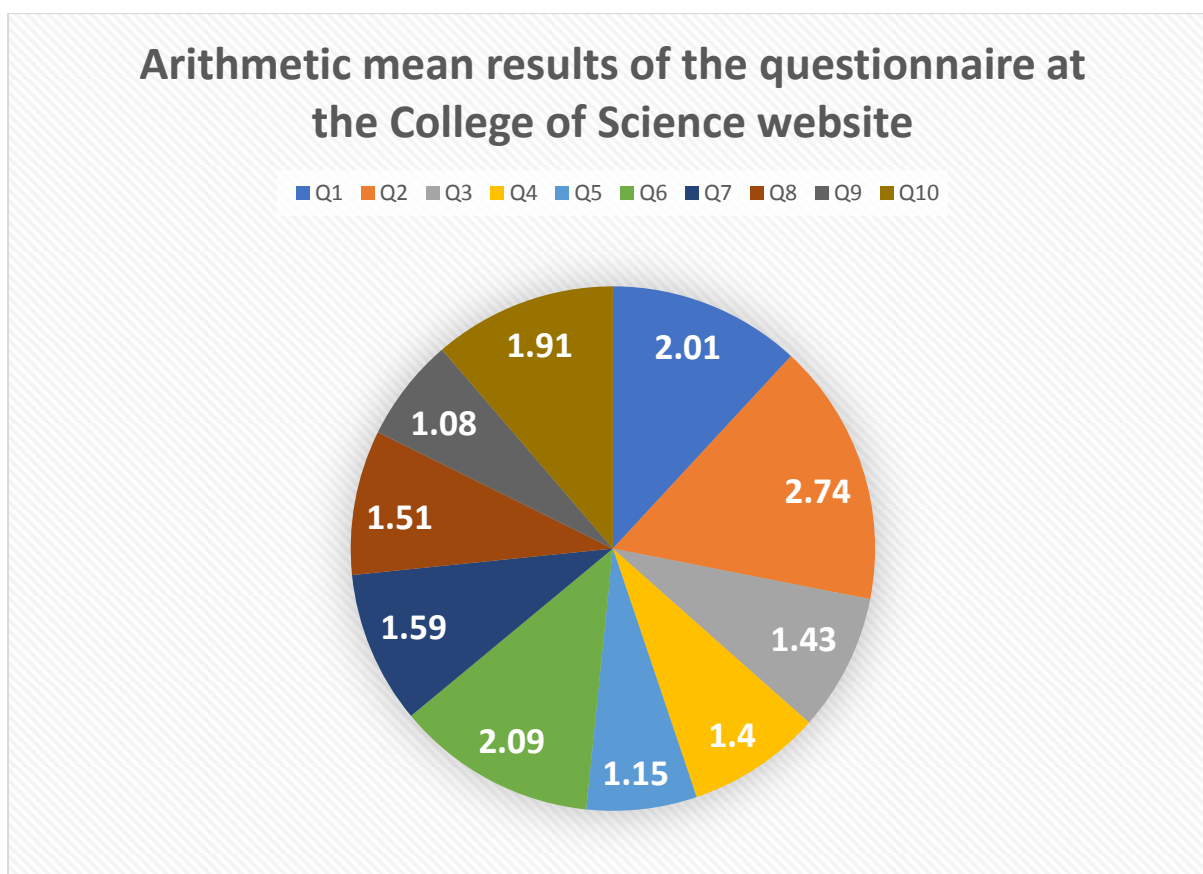


Figure 3. Results of the questionnaire at the College of Science website

The results in the three locations studied above emphasize the importance of green spaces as a vital element in improving the campus environment. The variation in student ratings reflects differences in the design and maintenance of spaces between colleges. Students' support for the use of solar energy reflects a growing environmental awareness, which requires practical plans for sustainability. Compared to other studies, it appears that Tikrit University's programmers share with their global counterparts an appreciation for the benefits of these spaces, but face functional design challenges that require intervention. The results of the study reflect the growing awareness among university students and staff of the importance of green spaces in their university life. Mediocre levels of space quality indicate an

urgent need to reconsider their design and maintenance. Repeated requests for more trees with large crowns emphasize the importance of providing adequate shading, especially in hot climates.

These findings are consistent with previous studies that emphasized the role of biodiversity in improving mental health, and the importance of adopting sustainable irrigation methods such as solar energy to reduce costs and achieve environmental goals. The students' desire for outdoor recreational and study activities indicates the need for a flexible and inclusive design that meets their diverse needs.

This evaluation points to the need to involve beneficiaries in the design and planning processes and to adopt sustainable design

criteria in the creation and maintenance of

Conclusion

This study confirms that green spaces at Tikrit University represent an essential element in improving the quality of university life, but they need radical development to raise their aesthetic and functional efficiency. The results

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university green space

of the questionnaire showed a general agreement among students on the need to increase shade trees, improve the distribution of vegetation, and adopt sustainable irrigation techniques such as solar energy.

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