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RESEARCH ARTICLE

CAMPUS SATISFACTION DETERMINANTS OF UNIVERSITY STUDENTS:
CASE OF ITU.

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Abstract

Higher education has a client-focused structure regarding the students, on account of the changes globalization brings. Satisfaction of university students is an important indicator for institutions that provide higher education. Campus life environment presents a unique opportunity for university administrations to contribute in the student's educational experience, and support it.

Nowadays, the issue of human-environment interaction is noticed, and studies are being made for location organisations concerning user requests. In this study, the goal is to determine students' satisfaction of the physical and social environment in campus, and their expectations regarding service locations; and to present the findings that will help improve the organization of open and closed locations which increase student satisfaction, and the inter-location accessibility.

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Introduction:-

Universities have no difficulty in competing with other universities due to a wide range of opportunities they offer their students and staff. As a result of the effect of globalization on higher education, universities moved to a client-focused structure aiming at students.

The satisfaction of university students is a key indicator for institutions offering higher education. The difficulties, such as low financial sources to attract students in a competitive setting or public accountability, that these institutions have been facing spotlight the need for the evaluation of student view and behavior in today's world (Elliott & Shin, 2002).

Higher education has a client-focused structure regarding the students, on account of the changes globalization brings. Satisfaction of university students is an important indicator for institutions that provide higher education. Campus life environment presents a unique opportunity for university administrations to contribute in the student's educational experience, and support it (Elliott & Shin, 2002).

Satisfaction is defined as the perception that a service is satisfactorily fulfilled (Oliver, 1999). Customer satisfaction is the key factor in the maintenance of customer loyalty. (Appleton-Knapp & Krentler, 2006). That is the reason that universities are increasingly showing a deeper interest in the practices of customer satisfaction as well as the principles of total quality management. Universities basically aim at the highest level of student satisfaction.

Student satisfaction is defined as university students' subjective and positive evaluation of various experiences and outcomes regarding their university education. (Oliver & DeSarbo, 1989). Sweeney and Ingram (2001) define student satisfaction as 'the perception of enjoyment and accomplishment in the learning environment'. Similarly,

Schreiner and Juillerat (1984) define student satisfaction as: "the condition that emerges when students' perceived campus reality meets or goes beyond their expectations."

Research on student satisfaction is important due to many aspects. A number of universities regularly evaluate student satisfaction in order to adapt to the rapid changes in this competitive environment and improve the institutional quality. As students are regarded as clients, student satisfaction plays the primary role on the success of the institution. The purpose of attracting more students in time, the change in the student profile, the improvement in the quantity and quality of the services offered to students and the development of educational models in parallel with the changing conditions are some of the reasons indicating the need for the evaluation of student satisfaction (Marozzi, 2012).

The process of identifying student satisfaction level at universities is considered to have a relation with the effort to improve the institutional quality (Schuh & Upcraft, 2000). Universities, within the framework of total quality management process, try to improve the campus conditions through gathering the data concerning the identification of their students' satisfaction level and demands (Beltyukova & Fox, 2002).

The satisfaction of a university student is not only related to the educational quality, but it is also dependent on the physical and social quality of the life environment inside the campus.

The studies have shown that student satisfaction is related to a number of variables. The variables that affect student satisfaction are apparently dependent on the services and facilities that the university offers as well as socio-demographic attributes of the students.

The socio-demographic attributes that affect student satisfaction can be listed as; gender, age, class, academic success, social relations, income, living conditions and the time spent at university (Burbach, Cnaan & Denson, 2010; Elliott & Healy, 2001; Elliott & Shin, 2002; Helmich, 1999; Kane, Williams & Cappuccini-Ansfield, 2008; Marozzi, 2012; Mavondo, Tsarenko & Gabbott, 2004; Şahin, 2009; Thomas & Galambos, 2004; Wiers-Jenssen, Stensaker & Grøgaard, 2002).

The studies that focus on the effects of the services and facilities offered by the university on student satisfaction inform us about the dimensions such as academic staff, administrative staff, the infrastructure of libraries and labs, the use of technology and computer labs, physical quality of dining halls and canteens, socio-cultural activities and campus environment.

The studies on the effect of life satisfaction in campus on student development have revealed that living in the campus helps students to increase their chance of stepping towards graduation level and enjoying a positive life and learning. Those who accumulate positive experiences have higher probability of completing a programme; besides, it is observed that these students are highly satisfied with the university experience in general (Telford & Masson, 2005; Nasser et al., 2008; Erthman, 2002; Temple, 2008; Uline & Tschannen-Moran, 2008).

Today, as the human-space interaction gains importance, the efforts are directed towards improving the quality of spaces taking the user demands into account. The effects of a certain place on the users and the productivity of the work done in that place are considered to have a relation. Therefore, the design of spaces should be held in accordance with their effects on the individuals who will live there and physical modifications should offer positive contribution to the intended use of that space. At that point, not only the needs but also the demands of the user start to play an important role.

University campuses are characterized as multi-dimensional and heterogeneous learning environments due to the various facilities and services they have (den Heijer, 2011). The buildings and open areas inside the campus play a role on the realization of institutional aims and functions of the university.

The multi-dimensional facilities that universities possess support essential functions of universities, which are teaching, learning and doing research. Therefore, identifying the satisfaction level of students and the academic staff as to the facilities and services offered by a university is of great importance (Telford & Masson, 2005; Nasser et al., 2008).

The researchers studying on the role of campus facilities on learning hold different views (Temple, 2008). Despite the belief that physical environment and learning has a complicated relation in higher education, there are a good number of studies revealing the relation between the quality of university facilities and student success (Berner, 1993; Erthman, 2002, Temple, 2008; Uline & Tschannen-Moran, 2008).

A number of studies on the effect of in-campus life satisfaction on student development have revealed that if students live inside the campus, their chances of stepping towards graduation and enjoying a positive life and education increase. Students with a positive experience show higher rates in completion of their coursework, besides, it is observed that these students are highly satisfied with their university experience in general.

It is better for university administrations to aim at rectifying the quality of students' life environment during their higher education, a period that covers a significant part of their life and that affects their life satisfaction in general, through research on physical and social environment variables and the expectation level of students.

This study aims at revealing the data that will help to improve the inter-spatial accessibility and the modifications of closed and open spaces in a way that will enhance student satisfaction through service spaces bound data gathering which identifies students' satisfaction and expectation levels in physical and social environment of the university campus.

Research area and methodology:-

This study defines the population as I.T.U. undergraduate students. The target population consists of the students studied in Istanbul Technical University in 2014-2015 academic year. The chosen study field is ITU Ayazağa Main Campus and Maçka, Taşkişla and Gümüşsuyu campuses as the downtown campuses. ITU Ayazağa campus is the main campus which is inside the developing part of the city center; whereas downtown campuses are inside Istanbul's Central Business District (see Figure 1). Educational activities take place in the buildings in Taşkişla, Maçka and Gümüşsuyu; these buildings are historical military barracks dating back to Ottoman period. 1747 questionnaires are given in these campuses within the scope of the sample. The sample is determined according to the 3000 questionnaires in proportion with the number of ITU students and their distribution to the faculties and classes (Stratified sampling method). However, 1747 questionnaires are found applicable.



Figure 1. Location of ITU Campuses in Istanbul Metropolitan Area

The questionnaires are used to determine the lifestyles of university students, the variables that effect their satisfaction with campus life environment as well as their demands, needs and expectations. The evaluation of the questionnaires will help determine the variables of in-campus life environment satisfaction that increase their life satisfaction. The data set obtained through questionnaires will be used in inferences directly regarding the place.

In the first part of the questionnaire form, students were supposed to answer questions identifying their student profile. In the second part of the form, which includes 35 questions, students are asked 'to what extent they are satisfied with various features of the campus'. Students are requested to evaluate each statement over a five-degree scale that shows "Completely dissatisfied" (1)(2)(3)(4)(5) "Completely satisfied".

Evaluation of the questionnaire outcomes university student profile:-

In order to evaluate the questions targeting the identification of student profiles, their frequency distribution is followed. The total number of questionnaires given in university in general is 1747. The percentage of female students who participated in filling in the questionnaire form is 38%; that of male students is 62%. The number of students enrolled in ITU associate and undergraduate programmes in 2013-2014 Academic year is 21.214. This total number consists of 6.752 female students and 14.462 male students. The percentage share of female students enrolled in all ITU associate and undergraduate programs is 32%; whereas that of male students is 68%.

In 1741 questionnaires, the percentage of students in 18-24 age range is 94,5%. This distribution corresponds to the age range of the university students in Turkey in general and it comprises the 94.5 per cent of total number of questionnaires.

Grade distribution of students reveals a failure with a general average of 0-1,00 and this constitutes 41,9 percent of the general distribution. The students whose grades are below the success average comprise a group of 5 per cent. Those who are moderately successful comprise the 18,6 per cent with a grade range of 1,81-2,50, while the 18,8 per cent is the group of successful students with a grade range of 2,51-3,00. The students whose general grade average is between 3,00 and 4,00 comprise 15,7 per cent and they might be regarded as high achievers. 1509 students in total stated their general grade average, while 258 students preferred not to answer this question.

The results obtained from 1732 questionnaire forms reveal that 87,7 per cent of the students willingly enrolled at the department or faculty.

42,8 per cent of the students who participated in the questionnaire live with their families and 23,6 per cent live with their friends. This proportion shows that 66,4 per cent students live in a house and 33,6 per cent live in a dorm.

Among the students staying in dorms, those who live in ITU Dormitories comprise the majority with 70 per cent; the number of those who stay in private dorms is 16 per cent, while those who stay in Higher Education Credit and Hostels Institution form the 14 per cent.

Student satisfaction with various features of ITU campuses:-

Campus satisfaction questions are analyzed under the headings of satisfaction with the campus design, satisfaction with accessibility, satisfaction with the physical environment conditions, satisfaction with the services, satisfaction with campus security and satisfaction with natural environment (see Figure 2).

The four questions about design satisfaction can be listed as architectural design of campus buildings, design of open areas inside campus and the convenience of open and closed areas for the use of the disabled. When the four questions are evaluated in general, it is observed that the majority of the students participating in the questionnaire are satisfied with the design of the campus, however, they think that this design is not convenient for the disabled.

About accessibility, the students are asked 8 questions which include the practicality of access to the campus, the planning of in-campus motor-roads, the planning of in-campus pedestrian walk, means of transport inside the campus, accessibility to dorms and sport facilities inside the campus, convenience of the links between the buildings, the convenience of public transport to the campus site. As regards to the students' satisfaction level of transport and accessibility of the campus, majority of the participant students are observed to be satisfied with access to the campus by means of public transport and in-campus access to functional areas (health center, sports areas, dormitories, faculties, general library, laboratories and dining hall). Students stated that they are satisfied with the accessibility to the campus from different districts of the city by public transport as well as the pedestrian links between the various in-campus functional areas and faculties.

Students are supposed to answer 3 questions about technical infrastructure and equipment; these are general laboratory equipment and infrastructure, general library use and web connection. The answers given to 3 questions show that majority of the participant students are satisfied with technical infrastructure and equipment services.

The 8 questions asked about the maintenance and cleanliness of the campus buildings and physical environment control include physical conditions of dining halls and canteens, hygiene in dining halls, maintenance and cleanliness conditions of the campus environment, maintenance and cleanliness of faculties, noise level, heating and

air-conditioning of the campus buildings. The evaluation of their satisfaction with the conditions of physical environment control of the campus buildings shows that the majority of participant students hold positive views about the physical environment control conditions in campus and they are satisfied. What is more, it has been observed that the level of satisfaction with the maintenance and cleanliness of faculties, classrooms, lecture halls and shared spaces is far higher than their satisfaction level about the other topics.

Students are asked 6 questions about the services and facilities inside the campus; these are sports facilities, shopping facilities, parking lot facilities, health facilities and services in general provided by the university. The evaluation of the student satisfaction with the services and facilities in service shows that although most of the participant students are satisfied with the services and facilities, they think that the student car park and shopping facilities inside campus are insufficient. Participant students are highly satisfied with health and sports facilities; however, there is a need to increase the variety and number of shopping facilities.

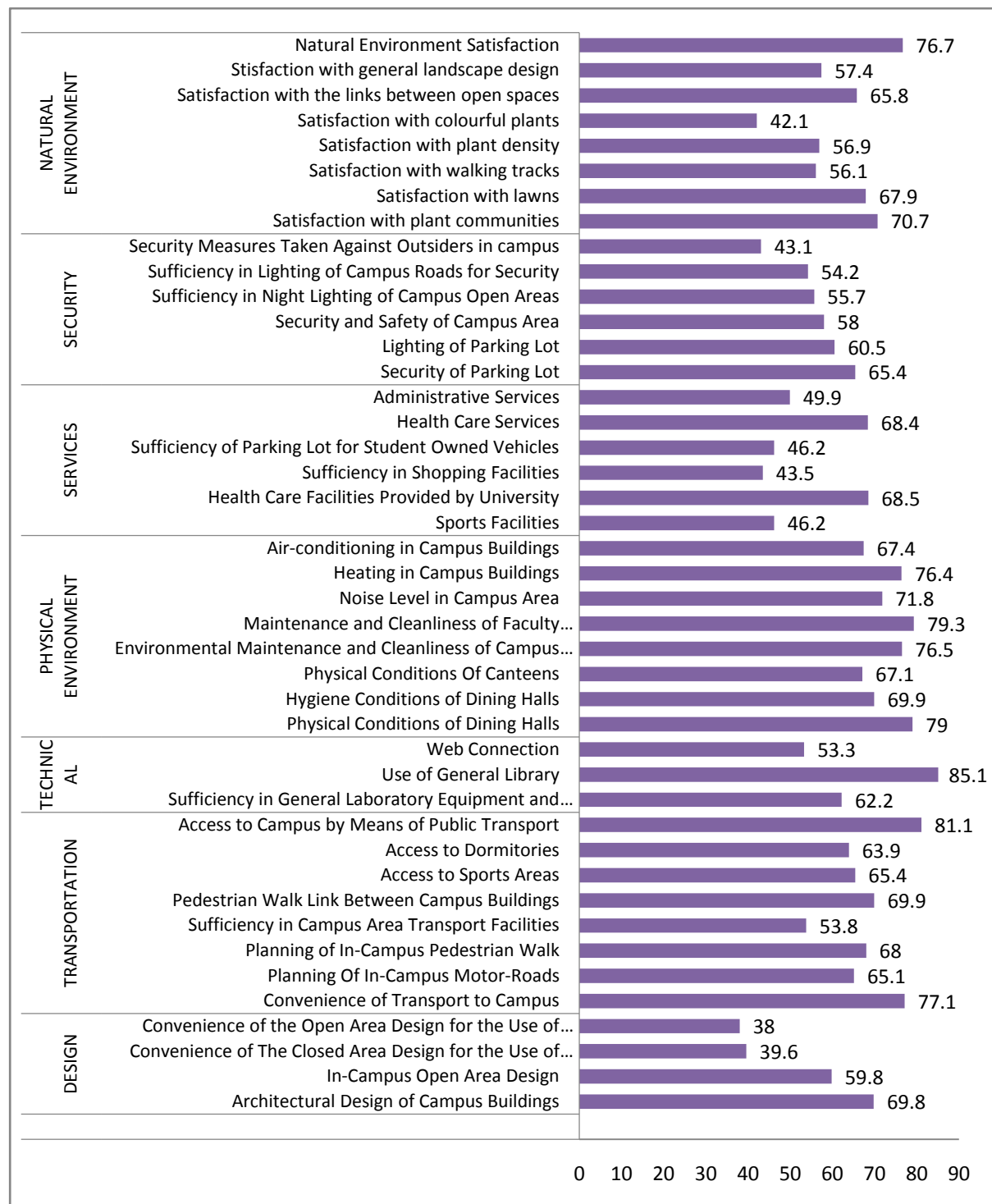


Figure 2. Student Satisfaction with Various Features of ITU Campuses

In order to determine the satisfaction level of students about the security and safety of the campus, we asked 6 questions to the participant students; these include the lighting of roads, open spaces and parking lot, parking lot security, security measures taken for outsiders and security and safety provided by the university in general.

Factors influencing students' satisfaction with ITU campuses:-

Factor Analysis has revealed the factor groups that increase the satisfaction level of students with the quality of university campus.

We applied “Principal Component Analysis” as “Factor Extraction Technique” and “Varimax” rotation as “Factor Rotation” to the 41 variables that show the student satisfaction with campus functional areas. In determining the significant factors, we used “Eigen” values and “scree” test. Application of Principal Component Analysis to the data set have displayed that 9 variables are greater than 1, which is the limiting value of eigen values. In this analysis, variables without missing data are used.

“Kaiser-Meyer-Olkin” (KMO) measure is an index value that tests the compatibility of a sampling mass to the factor analysis by comparing the significance level of observed correlation coefficient and partial correlation coefficient. If the KMO value is 0.90, the compatibility of sampling mass to the factor analysis is “excellent”; if it is 0.80, it is “quite appropriate”; 0.70 is “appropriate”; whereas, if it is 0.50 and below, it is not appropriate for the factor analysis (Norusis,1992). The preferred sampling mass to measure the campus satisfaction of university students has a KMO value of 0.89, which is tested as the sampling mass is “excellent” in its appropriateness to factor analysis.

Bartlett’s test is a measure that shows homogeneity of variances. If Bartlett’s test has statistical significance, Bartlett’s test value is determined as 21856 for the correlating matrix of variables in factor analysis. This value is quite high and statistically reliable. It shows there is a homogeneous change among some variables in correlation matrix.

Communality is the number of variances that a variable shares with the other variables in its analysis. In the process of factor analysis, the variables with a low shared variance (below 0,50) are omitted and the factor analysis is repeated (Kalaycı, 2010).

In this analysis, the variables, “architectural design of buildings”, “design of open areas”, “pedestrian walk links” “laboratory technical equipment”, “ease to use library”, “web connection”, “access to dorms” , “shopping facilities”, “noise level”, “satisfaction with the administrative services” are omitted and the analysis is repeated.

Variable groups as a result of factor analysis are observed to be significant. Variables which are related to each other are gathered. Table 1 shows that the satisfaction of students as the users of the campuses with the Various Functional Areas of the Main Campus constitutes a 9-factor structure. According to the outcome statistics, the first factor explains 29,78% of total variance of 31 variables. The explanation proportion of the second factor group is 9,04%; third factor group explains 6,27%, explanation proportion of fourth group is 5,61%, that of fifth factor group is 4,47%, sixth factor group explains 4,16%; seventh factor group explains 3,80; eighth factor group explains 3,54 %, and ninth factor group explains 3,43%. These nine factor groups help explain 70,13 % of the total variance (Table 1).

The first factor is “natural environment satisfaction”. This factor explains 29,78% of total variance. Therefore, natural environment satisfaction can be regarded as the most important factor among the satisfaction factors of different features of the campus. This factor explains 29,78 % of total variance. Six variables on this factor have a factor weight of more than 0,7. These variables are “satisfaction with plant density”, “satisfaction with open grass areas”, “satisfaction with walking tracks”, “satisfaction with colorful plants”, and “satisfaction with the links between open areas”.

The second factor is “satisfaction with the security of campus”. The factor weight of six variables on this factor is over 0,7. These variables are “satisfaction with the night lighting in in-campus open areas”, “sufficiency of campus road lighting for safety”, “security and safety of campus area”. The other variable in this group is “taking measures against outsiders in university”.

The third factor that is effective on campus satisfaction is “satisfaction with accessibility”. This factor explains 6,27%of total variance. On this factor, the factor weight of “satisfaction with ease of transport” and “satisfaction with motorroad planning” is over 0,7. The other variables in this group are “satisfaction with access by public transport”, “satisfaction with pedestrian road planning” and “transport sufficiency”.

The fourth factor that affects the satisfaction of university students is “car park sufficiency”. This factor explains 5.61%of the total variance. All variables on this factor have a factor weight over 0.7. These variables are “the sufficiency of parking lots for students’ cars”, “safety of parking lots” and “car park lighting”.

Fifth factor group is “satisfaction with the dining hall and university canteen”. This factor is explained by 6,13% of total variance. On this factor, “hygiene of dining hall” and “physical conditions of the dining hall” have a factor value over 0,7.

The sixth factor obtained from the results of factor analysis is “satisfaction with the management of campus buildings”. 4,16% of total variance explains this factor. The factor weight of two variables on this factor is over 0,7.

The seventh dimension that affects campus satisfaction of students is identified as “satisfaction with convenience for the use of the disabled”. This factor is explained by 5,40% of the total variance. All variables on this factor have factor weight of over 0,7. These variables are “convenience of the design of open areas in campus for the use of the disabled” and “convenience of closed areas in campus for the use of the disabled”. These two variables have very similar values, because these two variables complement each other.

The eighth dimension is “satisfaction with sports facilities”. The two most important variables in this group is “sports facilities” and “satisfaction with access to sports areas”.

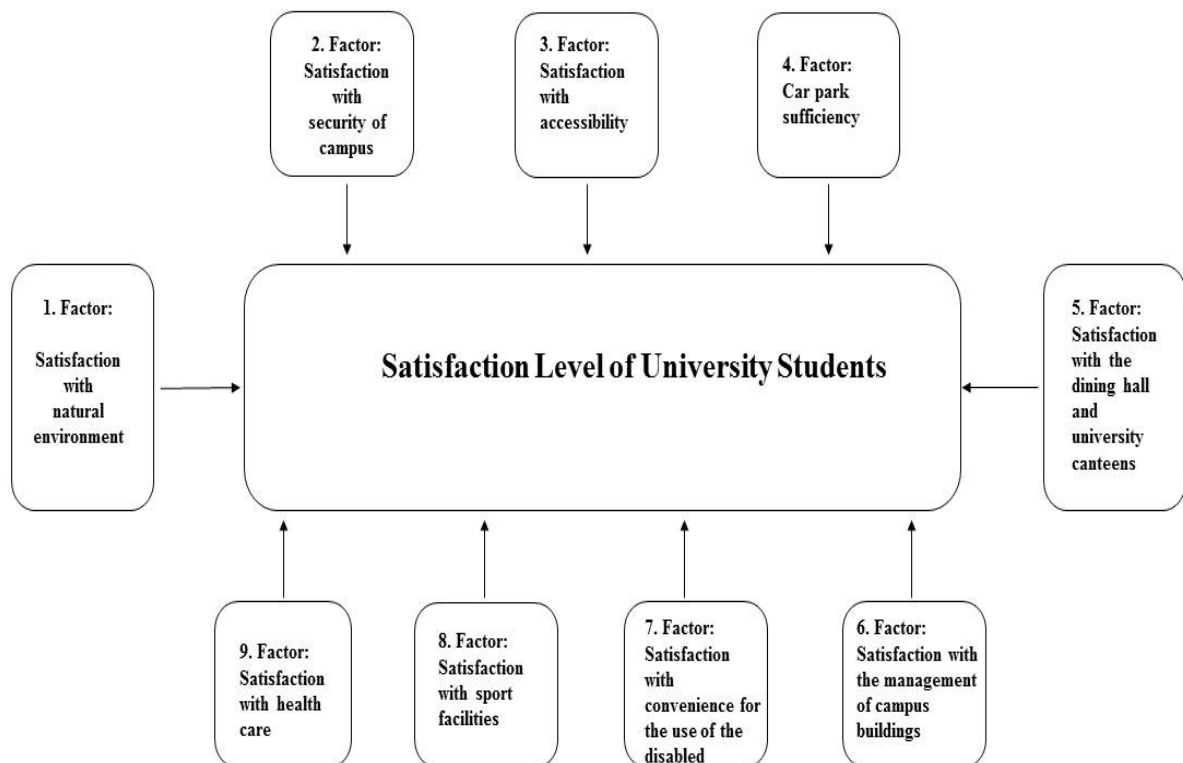


Figure 3. Campus Satisfaction Level of University Students

Ninth factor is related to “health care”. Two variables that are most important in this group are “satisfaction with the health care” and “health care facilities of the university”. The variables in the ninth group are those either that draw the least attention or that create no problem. This factor can be called as “satisfaction with the health care”. The factor weight of variables in this group are both over 0,8 and very close in number. Because these two variables complement each other. The high number of the factor weight reveals how satisfied the students are with the health care given in medico-social centers (Figure 3).

The relationships between campus satisfaction of university students and various features of campus area: -

Bivariate Correlation Analysis is used to determine the correlation between general campus satisfaction of university students and their personality traits; and that between physical environment conditions and participation in social activities.

Hypothesis 1: Campus satisfaction level depends on Students' personality traits and living conditions: -

As a result of the bivariate correlation analysis, it is observed that gender is not effective on campus satisfaction of university students; however, campus satisfaction and age of the student have a negative relation of 18% in number. The correlation between the student's average grade and campus satisfaction is positive at a level of 14,3%. The higher the average grade gets, the higher the campus satisfaction is.

The year spent at university and campus satisfaction has a positive correlation of 14,4%. It has also been observed that the place where the student accommodates and campus satisfaction are negatively related at a level of 5,5%. As the accommodation conditions improve, campus satisfaction of the student decreases.

The Table 2 shows the effect of the class, the time spent in the campus and their willingness to enroll in the program on their campus satisfaction. Students' campus satisfaction is affected by the variables of age, average grade, accommodation and year spent at university. There has been a positive correlation between the satisfaction of main campus and the location of the campus where students' faculty building is at a level of 5,2%.

Hypothesis 2: Level of Campus Satisfaction is Dependent on Satisfaction with Design Features: -

Bivariate correlation analyses reveal that there is a significant relation between general campus satisfaction and design of campus buildings, design of open areas in campus, planning of motorroads, planning of the pedestrian walk, convenience of open areas for the disabled use, satisfaction with the pedestrian walk link between areas of common use such as faculties, laboratories and libraries.

A positive correlation is observed between campus satisfaction and satisfaction with the architectural design of the buildings inside campus at a level of 36,9%; satisfaction with the open area design at a level of 45,2%; satisfaction with the planning of motor-roads at a level of 39,4%; satisfaction with the planning of pedestrian walk at a level of 37,4%; satisfaction with the convenience of the open areas for the disabled use at a level of 33,0%; satisfaction with the convenience of closed areas for the disabled use at a level of 34,4%; satisfaction with the pedestrian walk link between areas of common use such as faculties, laboratories and libraries at a level of 40,6% (see Table 3).

The hypothesis that 'Level of Campus Satisfaction is Dependent on Satisfaction with Design Features' has been confirmed.

Hypothesis 3: The Level of Campus Satisfaction Depends on Satisfaction with Transport and Access to Campus:-

Bivariate correlation analyses show that there is a significant correlation between the general campus satisfaction and satisfaction with the ease of transport to the faculty where the student is enrolled, satisfaction with sufficiency of in-campus transport facilities, satisfaction with access to sport areas, satisfaction with access to dormitories, and satisfaction with the access to the campus by means of public transport.

Positive correlation is observed between general campus satisfaction and satisfaction with the ease of transport to the faculty where the student is enrolled at a level of 26,7%; satisfaction with sufficiency of in-campus transport facilities at a level of 33,0%; satisfaction with access to sport areas at a level of 37,0 %, satisfaction with access to dormitories at a level of 36%; and satisfaction with the access to the campus by means of public transport at a level of 33,4%. The hypothesis that 'The Level of Campus Satisfaction Depends on Satisfaction with Transport and Access to Campus' has been confirmed (see Table 4).

Hypothesis 4: The Level of Campus Satisfaction Depends on the Satisfaction with Services and Facilities in Campus:-

Bivariate correlation analyses reveal a significant correlation between general campus satisfaction and satisfaction with general library use, satisfaction with technical equipment in laboratories, satisfaction with the web connection in campus, satisfaction with the sports facilities, satisfaction with the health care facilities, satisfaction with the health care services, satisfaction with the physical conditions of in-campus dining halls, satisfaction with hygiene of dining halls, satisfaction with the physical conditions of canteens, satisfaction with shopping facilities and satisfaction with administrative services.

Bivariate correlation analyses display a positive correlation between general campus satisfaction and satisfaction with general library use at a level of 42,0%; satisfaction with technical equipment in laboratories at a level of 39,2 %; satisfaction with the web connection in campus at a level of 22,9 %; satisfaction with the sports facilities 38,7%;

, satisfaction with the health care facilities at a level of 35,1%; satisfaction with the health care services at a level of 37,4%; satisfaction with the physical conditions of in-campus dining halls at a level of 39,7%; satisfaction with hygiene of dining halls, at a level of 41,1%; satisfaction with the physical conditions of canteens at a level of 36,4%; satisfaction with shopping facilities at a level of 38,4%; and satisfaction with administrative services at a level of 50,7% (see Table 5).

The hypothesis that 'The Level of Campus Satisfaction Depends on the Satisfaction with Services and Facilities in Campus' has been confirmed.

Hypothesis 5: Level of Campus Satisfaction Depends on Satisfaction with Maintenance and Physical Environment Control in Campus:-

Bivariate Correlation Analyses display a significant correlation between general campus satisfaction and in-campus environment maintenance and cleanliness, cleanliness of areas of shared use, in-campus noise level, heating of campus buildings, air-conditioning in campus buildings, physical conditions of the dining hall, hygiene in the dining hall, physical conditions of the canteens, shopping facilities and sufficiency of parking lot for student-owned vehicles.

Bivariate Correlation Analyses reveal a positive correlation display between general campus satisfaction and in-campus environment maintenance and cleanliness at a level of 38,1%; satisfaction with cleanliness of areas of shared use at a level of 38,1%; satisfaction with in-campus noise level at a level of 39,3%; satisfaction with heating of campus buildings at a level of 38,3%; satisfaction with air-conditioning in campus buildings at a level of 35,1%; satisfaction with physical conditions of the dining hall at a level of 39,7%; satisfaction with hygiene in the dining hall at a level of 41,1%; satisfaction with physical conditions of the canteens at a level of 36,4%; satisfaction with shopping facilities at a level of 38,4; and sufficiency of parking lot for student-owned vehicles at a level of 34,3% (see Table 6).

The hypothesis that 'Level of Campus Satisfaction Depends on Satisfaction with Maintenance and Physical Environment Control in Campus' has been confirmed.

Hypothesis 6: Level of Campus Satisfaction Depends on Satisfaction with In-Campus Area Security and Safety:-

Bivariate correlation analyses reveal significant correlation between campus satisfaction and satisfaction with in-campus area security and safety, satisfaction with night lighting of campus open areas, satisfaction with lighting of parking lot in campus, satisfaction with security in parking lot, satisfaction with security measures against outsiders in university.

A positive correlation has been observed between campus satisfaction and satisfaction with in-campus area security and safety at a level of 41,3%; satisfaction with night lighting of campus open areas at a level of 39,5%; satisfaction with lighting of parking lot in campus at a level of 34%; satisfaction with security in parking lot at a level of 33,0%; satisfaction with security measures against outsiders at university at a level of 38,2 % (see Table 7).

Hypothesis that 'Level of Campus Satisfaction Depends on Satisfaction with In-Campus Area Security and Safety' has been confirmed.

Table 1. Factor groups related to satisfaction in the features of the Various Functional Areas of the Main Campus

Factors	Factor loading	Eigen value	Explained variance (%)
1. Factor: Satisfaction with natural environment		9,234	14,885
Satisfaction with plant density	,873		
Satisfaction with open grass areas	,860		
Satisfaction with group of trees	,832		
Satisfaction with walking tracks	,805		
Satisfaction with colorful plants	,794		
Satisfaction with the links between open areas	,713		
2. Factor:: Satisfaction with security of campus		2,805	9,053
Sufficiency in night lighting in in- campus open areas	,786		
Sufficiency of campus road lighting for safety	,753		
Security and safety of campus area	,716		
Security measures taken against outsiders in campus	,677		

3. Factor: Satisfaction with accessibility		1,946	7,422
Satisfaction with ease of transport	,794		
Satisfaction with motor road planning	,703		
Satisfaction with access by public transport	,599		
Satisfaction with pedestrian road planning	,586		
Transport sufficiency			
4. Factor: Car park sufficiency		1,739	7,268
The sufficiency of parking lots for students' cars	,814		
Safety parking lots	,768		
Car park lighting	,765		
5. Factor: Satisfaction with the dining hall and university canteens		1,386	7,087
Hygiene of dining hall	,791		
Physical conditions of the dining hall	,728		
Physical conditions of canteens	,635		
6. Factor: Satisfaction with the management of campus buildings		1,291	6,705
Heating in campus building	,797		
Air-conditioning in campus building	,685		
Maintenance and Cleanliness of Faculty Buildings, Classes, Lecture Halls, Areas of Shared Us	,538		
Environmental maintenance and cleanliness of campus area	,408		
7. Factor: Satisfaction with convenience for the use of the disabled		1,179	6,445
Convenience of the design of open areas in campus for the use of the disabled	,821		
Convenience of the design of closed areas in campus for the use of the disabled	,780		
8. Factor: Satisfaction with sport facilities		1,099	5,818
Satisfaction with sport facilities	,883		
Satisfaction with access to sports areas	,877		
9. Factor: Satisfaction with health care		1,064	5,454
Satisfaction with health care	,847		
Health care facilities of the university	,817		

KMO: 0,892, Bartlett Testi:21856,407, Sig: 0.000, Df:465

Table 2. Correlation Analysis Between Campus Satisfaction and Socio-Demographic and Economic Traits of Students

Socio-demographic and Economic Traits	Campus Satisfaction	
	Pearson Correlation	Sig. (2-tailed)
Gender	-,004	,886
Age	-,182**	,000
Average Grade	,143**	,118
Years in the University	-,144**	,000
Time spent in campus	-,024	,390
Class	-,028	,264
Accommodation	-,055*	,028
Willingness to enroll in that faculty	,027	,284
The campus of the faculty is located	,052*	,047

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 3. Correlation Analysis Between Campus Satisfaction and Satisfaction with the Campus Design

Satisfaction with the Campus Design	Campus Satisfaction	
	Pearson Correlation	Sig. (2-tailed)
Architectural design of buildings	,369**	,000
Open area design	,452**	,000
Motorroad planning	,394**	,000
Pedestrian walk planning	,374**	,000
Convenience of open areas for the disabled use	,330**	,000
Convenience of closed areas for the disabled use	,344**	,000
Pedestrian walk link between areas of common use such as faculties, laboratories and libraries.	,406**	,000

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 4. Correlation Analysis Between Campus Satisfaction and Satisfaction with the Transport and Access to Campus

Satisfaction with Transport and Access to Campus	Campus Satisfaction	
	Pearson Correlation	Sig. (2-tailed)
the ease of transport to the faculty enrolled	,267**	,000
Sufficiency of in campus transport facilities	,330**	,000
Access to sport areas	,370**	,000
Access to dorms	,360**	,000
Access by means of public transport	,334**	,000

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 5. Correlation Analysis Between Campus Satisfaction and the Satisfaction with Services and Facilities in Campus

Satisfaction with Services and Facilities in Campus	Campus Satisfaction	
	Pearson Correlation	Sig. (2-tailed)
General Library Use	,420**	,000
Technical Equipment of Laboratories	,392**	,000
Web connection in campus	,229**	,000
Sports Facilities	,387**	,000
Health care facilities	,351**	,000
Health care services	,374**	,000
Satisfaction with administrative services	,507**	,000
Physical conditions of dining halls	,397**	,000
Hygiene of dining halls	,411**	,000
Physical conditions of canteens	,364**	,000
Shopping facilities	,384**	,000

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 6. Correlation Analysis Between Campus Satisfaction and Satisfaction with Maintenance and Physical Environment Control in Campus

Satisfaction with Maintenance and Physical Environment Control in Campus	Campus Satisfaction	
	Pearson Correlation	Sig. (2-tailed)
In-campus environment maintenance and cleanliness	,467**	,000
Cleanliness of areas of shared use	,381**	,000
Campus area noise level	,393**	,000
Heating in campus buildings	,383**	,000
Air conditioning of campus buildings	,351**	,000
Physical conditions of dining hall	,397**	,000

Hygiene of dining hall	,411**	,000
Physical conditions of canteen	,364**	,000
Shopping facilities	,384**	,000
Sufficiency of parking lot for student vehicles	,343**	,000

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 7. Correlation Analysis between Campus Satisfaction and Satisfaction with In-Campus Area Security and Safety

Campus Area Security and Safety	Campus Satisfaction	
	Pearson Correlation	Sig. (2-tailed)
Campus area security and safety	,413**	,000
Night lighting of campus open areas	,395**	,000
Lighting of parking lot	,340**	,000
Security of parking lot	,330**	,000
Security measures against outsiders in university	,382**	,000

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Conclusion: -

There is a relation between the effect that places have on users and the productivity of the work done in those places. Therefore, the design of places should be in accordance with individuals who will use them and physical arrangements that will positively affect the aimed use of the place should be taken into consideration while designing. At this point, learning not only needs but also demands of the user stands out.

Satisfaction level of university students is related to physical and social quality of life environment inside campus as well as educational quality. In the competitive educational setting of today's world, as long as university administrations arrange life environment inside campus in accordance with students' needs and demands, they will contribute in educational experience of the students, will raise the student satisfaction to its maximum and also they will find the opportunity to draw more students to university.

This research aims at identifying the satisfaction level of students who study at Istanbul Technical University regarding the social and physical environment of the campus. The study group, 1747 students among those who studied at ITU in 2014-2015 academic year, answered this questionnaire.

The participant university students are asked 41 questions in total under 7 headings about their satisfaction with various features of ITU campus, the answers given have revealed high levels of satisfaction. The number of topics with low satisfaction levels in campus are not many, yet, student parking lot, convenience for the disabled use, shopping facilities, night lighting in campus, security measures against outsiders comprise the indicators of dissatisfaction; those that show partial dissatisfaction are related to general administrative services, web connection and sports facilities.

The factor analysis carried out in this study display a 9-factor structure regarding the satisfaction of students as the users of university campuses with various features of functional areas in main campus.

The satisfaction of university students with the various features of functional areas in main campus is primarily related to "satisfaction with natural environment in campus" and these variables comprise the first factor group. In this group, the first variable is "plant density". The second most important factor is "satisfaction with the security in campus", while "satisfaction with accessibility" stands as the third factor. The fourth factor is the "sufficiency of parking lot". The other dimensions of importance are "satisfaction with dining hall and canteens" as the fifth; "satisfaction with the administration of campus buildings" as the sixth; "satisfaction with convenience for the disabled use" as the seventh; "satisfaction with sports facilities" as the eighth and "satisfaction with the health care services" as the ninth (see Figure 3).

Bivariate correlation analyses display the effect of several of the variables on campus satisfaction of university students: age group, average grade, accommodation and years spent at university. Yet, it is clear that gender, year of

grade, time spent in campus and their willingness to enroll in the current program are not effective on the campus satisfaction of university students.

The results of bivariate correlation analyses have made clear that “satisfaction with the campus design”, “satisfaction with transport and access to the campus”, “satisfaction with the services and facilities in campus”, “satisfaction with the maintenance of campus buildings and physical environment control”, “satisfaction with the security and safety of campus area” are effective on students’ satisfaction with the campus.

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