

STUDENTS' SATISFACTION AT JORDANIAN UNIVERSITIES AND ITS RELATION TO SOME VARIABLES

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Abstract – *The purpose of this study is to determine and compare the importance and the various levels of satisfaction related to undergraduate students at public and private universities in Jordan. The study sample consists of 304 students distributed over two groups: public university (n = 120) and private university (n = 184). Means, standard deviations and three-way analysis of variance (MANOVA) are used to compare students' perception to the levels of importance and satisfaction, and the mean difference between the two levels in two different institutions. All significant MANOVAs were followed by one-way ANOVA to determine which group differs significantly from the others. Results of the study reveal that students at public and private universities consider the importance of the Satisfaction Scales to be 'somewhat important'. Students at public universities consider the satisfaction to be 'neutral', while students at private universities consider it to be 'somewhat dissatisfied'. In general, students at public and private universities believe the performance gap levels to be high.*

Introduction

Post-secondary institutions are now faced with a myriad of questions, both from within and without, regarding the value, effectiveness and costs of academic programmes. Moreover, faculty, counsellors and administrators are expressing more concerns when advising students about educational and career options, especially in this heightened era of student consumerism. Given this new context of higher education, it would seem desirable to develop a better understanding of the factors behind students' satisfaction relative to college environment.

For example, in Australia, approximately one-third of all students entering college fail to graduate, and approximately half of those who withdraw do so in their first year (Department of Education, Training and Youth Affairs, 2000). Moreover, a high proportion of these withdrawals or failures are due to adjustment

or environmental factors, rather than due to intellectual difficulties (Williams, 1982). The environmental factors include lack of clearly defined goals on the student's part, mismatch between the student and the course or college culture, as well as the feeling of isolation (Tinto, 1995).

Lack of skills and attitudes, which should have been developed prior to enrolment in higher education, have an impact on students' satisfaction toward the college environment and the decision to remain enrolled in a college (Nora & Lang, 2001). In Jordan, the number of universities has increased from 4 in 1990 (all public) to 24 in 2006, of which only 10 are public. This increase is a direct response to the vast demand on higher education in Jordan and in the surrounding countries. Over the past 15 years, number of university students jumped from 34,984 in 1990 to 194,041 in 2005. Around 23,000 students come from neighbouring countries, the main ones being Saudi Arabia, the Gulf States and Syria (Ministry of Higher Education and Scientific Research, 2006).

Not only has the number of students entering college increased substantially, but the aims and objectives of a college degree have undergone significant changes as well. Today, the combination of changing demographics, advancements in technology and the increased international competition in world trade and tourism make the preparation of workers for the modern workplace a critical issue. Today, more 18 year-olds in Jordan continue their studies after compulsory education, with the expectation that post-secondary education would enhance their employment opportunities.

Sanders & Burton (1996) suggested that the assessment of students' efforts needs to cut across the courses to make the connection with the academic experience. This would create a better understanding of the degree, which is the main aim for attending college, and how it meets the students' educational and social needs. Focusing on the students' satisfaction and experiences puts emphasis on the customer, rather than on the desired ends of the institution. In a highly competitive market, the drive for quality enhancements demands that all higher education sectors work for institutional improvement.

Knox & Lindsay (1992) interpreted student satisfaction as an evaluation of the educational experiences that justify present and past commitments. Given that the individual students are the primary beneficiaries of the college experience, asking students how satisfied they are is an obvious way to measure post-secondary success. Consequently, student satisfaction is an educational outcome over which post-secondary institutions have considerable influence (Gielow & Lee, 1988). One might expect the characteristics of colleges to have a great influence on educational satisfactions and perceptions. Positive attitudes and perceptions of

education, which do not result from the completion of the steps in the process of educational attainment, encourage further pursuit of education (Knox & Lindsay, 1992).

The 2001 National Student Satisfaction Report¹ revealed that good classes and the opportunity of joining those classes without difficulty remains one of the most important aspects of college life for students. Other aspects measure the areas in which institutions are best performing in terms of the quality of instruction, faculty knowledge, and students' ability to register for classes while facing few conflicts. While the performance gaps, financial aid and practices remain problematic for students at all types of institutions, campuses are meeting however their students' expectations with regard to campus parking. The report also addressed the increasing dissatisfaction in the areas of academic advising, the concern for individual students and student-centeredness for students at the four-year private institutions.

Walker (1999) pointed that the major factors influencing the retention rates in a college are related to the activities or processes that take place before matriculation. The goal of these activities is to equip prospective college students with survival skills necessary for succeeding in college, and to enhance the feeling of belonging through the building of personal connections between diverse groups of students. Studies of Australian first-year students revealed that initial experiences on campus are important, and that these experiences influence the students' persistence in higher education (McInnis, James & McNaught, 1995; McInnis, James & Hartley, 2000). Although differences exist among college campuses, each institution must understand the needs and experiences of its own students if it is to address student attrition. As each college environment is different, it will require measures that are appropriate to its own circumstances (McInnis, James & McNaught, 1995).

Nora & Lang (2001) found that skills and attitudes developed prior to enrolment in higher education have an impact on students' satisfaction with the college environment and the decision to remain enrolled in a college. Today's students are indeed diverse, not only in terms of age, ethnicity, socio-economic level, sexual orientation and whether they study part-time or full-time, but also in terms of expectations, attitudes, intellectual capabilities and learning styles (Schroeder, 2003). Upcraft, Gardner & Barefoot (2003) pointed out that colleges and universities have an obligation to create learning environments that are challenging and supportive to students. Colleges should also create a balance between the two, both inside and outside of the classroom. To accomplish this, institutions of higher education should create a first-year experience that is intentional, comprehensive, systematically coordinated and integrated.

As Sanders & Burton (1996) argued, satisfaction is a continuous variable: It captures a range of responses. Although strongly connected to retention, student satisfaction is a more powerful measure as it can continue to improve and develop to guide quality enhancement efforts even in institutions with high retention and graduation rates.

On the basis of the above argument, the following remarks were observed: (i) research on student satisfaction remains highly contradictory; and (ii) research on the relationship among students at public and private universities and other variables still holds value.

In examining previous research, the researchers did not find any studies that address Jordanian students, specifically among students at public and private universities. Therefore, there is a need for additional research on the level of students' satisfaction among students at public and private universities.

Stating the problem

The purpose of this study was to determine and compare the importance and the various aspects of the satisfaction levels of campus life for undergraduate students at public and private universities in Jordan. While research relating to student satisfaction was found for many groups, none was found for the group used in this study. In particular, no research was found that compares the student satisfaction in public and private universities in Jordan.

The following research questions guided this study:

1. What are the scores of the importance, satisfaction and performance gap on the Student Satisfaction Inventory (SSI) among students attending public and private universities?
2. Are there significant mean differences in the perceived level of importance on the SSI among students in relation to the institution type, gender and discipline?
3. Are there significant mean differences in the perceived level of satisfaction on the SSI among students in relation to the institution type, gender and discipline?
4. Are there significant mean differences between the levels of importance and satisfaction (performance gap) on the SSI among students in relation to the institution type, gender and discipline?

Significance of the problem

Higher education administrators, students and scholars are interested in what happens to students' satisfaction in public and private colleges in Jordan. With no existing research addressing student satisfaction in public and private universities in Jordan, this study has the potential of helping institutions to reduce the failure rates in higher education, to promote student-faculty and student-student interactions, and to encourage students' autonomy, combined with appropriate integrated language and learning support that benefits students in colleges and universities in Jordan. In addition, the results of this study provide some valuable information that might change, enhance and challenge the present methods being used to ease the transition students make in public and private colleges in Jordan. It is also desired that this study helps college administrators and faculty in developing activities to assist students in adjusting to campus life.

The information presented in this study will aid us as faculty to better understand the following issues, and to plan for the future accordingly:

- Which aspects of the campus life do our students consider most important?
- Of these, which aspects do our students consider most and least satisfying?
- What are the ways that we as faculty can follow to better meet our students' expectations?

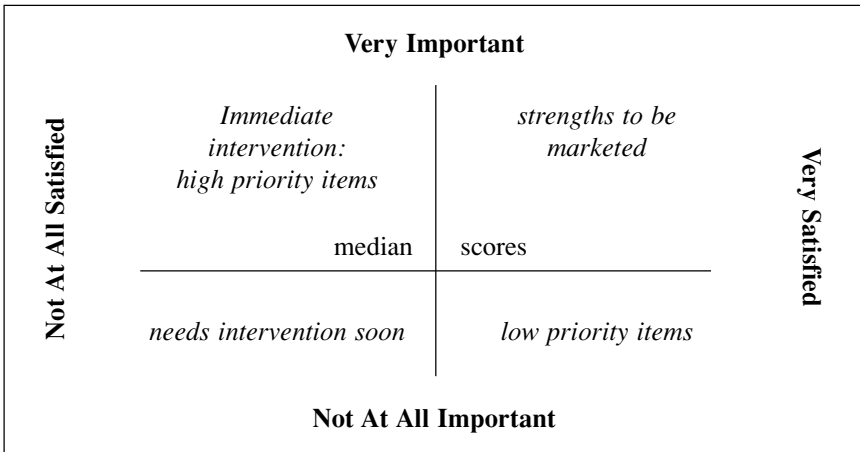
Research framework

One of the most important decisions an institution will make is how to collect information about its students' levels of satisfaction. Although there are several ways of assessing student satisfaction, many instruments lack some critical feature, resulting in incomplete or inaccurate data (Juillerat, 1995). The Student Satisfaction Inventory (SSI) (Schreiner & Juillerat, 1993) is a comprehensive measure that utilises a two-dimensional approach to the assessment of student satisfaction. Each measure criterion is stated as an expectation that a student may have concerning some aspect of college life: Students are asked to rate how important each expectation is to them (which generates an 'importance score'), as well as how satisfied they are that the expectation is being met (which generates a 'satisfaction score'). A difference score, called the 'performance gap score', is also calculated by subtracting the satisfaction score from the importance score, thus giving an indication on how well the college is meeting a particular expectation. This approach allows institutions to gather data about the level of student expectations as well as about the levels of satisfaction that their

expectations are being met. ‘By utilizing all the scores produced through the SSI, an institution can get a more comprehensive and meaningful picture of its students’ assessment for the institution, as well as how to plan to accurately prioritise those areas for intervention’ (Juillerat & Schreiner, 1996, p. 8).

The data from the SSI scores can be interpreted and utilised in a number of ways. By collecting information from students about how satisfied they are with the aspects of the campus and about how important those aspects are to them, a college can prioritise its interventions. One way in which campuses can begin to interpret their data is by developing a two dimensional quadrant with satisfaction scores along a horizontal axis and the importance scores along the vertical axis, while using the median importance and satisfaction scores as the intersection point of the two axes (see Figure 1). By plotting the coordinates of each SSI item on the quadrant, a system of prioritisation for intervention is provided. For example, items above the median importance score and below the median satisfaction score (the upper left quadrant) represent the areas in need of immediate intervention (areas that are high in importance to students in which they are not satisfied). Items that appear in the upper right quadrant (items that are above the median importance and satisfaction scores) indicate the institution’s strengths, and items in the lower right quadrant represent areas of lesser priority. Items in the lower right quadrant may be the ones for which the budget can be adjusted, because although the campus is doing very well in those areas, they are of little importance to students. This type of data analysis allows an institution to begin a system of prioritisation for effective intervention.

FIGURE 1: *Quadrant approach to analysing SSI data*



Procedures

Population and sample

The Student Satisfaction Inventory (SSI) was administered in the first semester of 2005 in classrooms during class time with the cooperation of faculty in the two selected universities. The target population for the study included all undergraduate students enrolled in one of the elective courses offered by the public Hashemite University and the private Zarqa University. From a total of 1503 registered students representing a variety of academic majors, a random sample of 400 students was chosen. A total of 304 students completed the survey, leading to a response rate of 76%. The resulting sample included 120 students from the Hashemite University and 184 students from Zarqa University. With regard to gender, there were 154 male and 150 female respondents. With regard to discipline, there were 190 students enrolled in a science discipline and 114 in the humanities.

Instrumentation

The Student Satisfaction Inventory (SSI) consisted of 43 student satisfaction statements extracted from the literature (Schreiner & Juillerat, 1993; Juillerat, 1995). Each item of the SSI described the students' satisfaction with their campus experiences (see Appendix A). The students had to rate each of these 43 items against two measures, namely, the 'perceived level of importance' and the 'perceived level of satisfaction'. While the first showed the students' perceived importance on how institutions meet their expectations, the second showed how students perceived the level of satisfaction in terms of how institutions were meeting their expectations. Both were measured using 7-point Likert scales as follows:

- Perceived level of importance: 1 – not important at all; 2 – not very important; 3 – somewhat unimportant; 4 – neutral; 5 – somewhat important; 6 – important; and 7 – very important.
- Perceived level of satisfaction: 1 – not satisfied at all; 2 – not very satisfied; 3 – somewhat dissatisfied; 4 – neutral; 5 – somewhat satisfied; 6 – satisfied; and 7 – very satisfied.

Respondents were provided with statements that relate to all aspects of campus experience. The students were asked first to rate each item according to importance (expectation). The students were requested then to rate each item in

terms of how satisfied they were (performance). These two sources of data permitted a third assessment tool, called the ‘performance gap’. This third rating, which is determined by subtracting ‘performance’ from ‘expectation’, indicates the difference between what students consider important and how it measures up. Scoring is on a seven-point scale, with one as the lowest score and seven as the highest score. A large performance gap score for an item (e.g., 1.5) indicates that the institution is not meeting its students’ expectations, whereas a small gap score (e.g., 0.5) indicates that an institution is meeting its students’ expectations. On the other hand, a negative gap score (e.g., -0.25) indicates that an institution is exceeding its students’ expectations.

The 43 items were analysed ‘statistically and conceptually’ to produce the following five subscales or dimensions:

- Registration Effectiveness (assesses issues associated with registration and billing);
- Academic Advising Effectiveness (academic advisors and counsellors are evaluated on the basis of their knowledge, competence and personal concern for the students’ success, as well as their approachability);
- Academic Services (assesses issues associated with library resources and the adequacy of computer laboratories);
- Instructional Effectiveness (assesses issues associated with the quality of instruction and the care of students as individuals); and
- Admission and Financial Aid Effectiveness (assesses issues associated with financial aid and awards, and the knowledge of admission staff).

Each of these subscales was examined in details with regard to ‘importance’ and ‘satisfaction’.

Instrument standardisation

To ensure equivalence of meaning between the English and Arabic versions of the Student Satisfaction Inventory (SSI), the items were translated both forward and backward. The goal of this process was to produce Arabic items that were equivalent in meaning to the original English items.

The Arabic version of the SSI was pilot tested with a sample of 50 students. Although drawn from the same population, these students were different from those of the study. A reliability coefficient for the SSI was established for the five main dimensions as follows: Registration Effectiveness (.91), Academic Advising Effectiveness (.89), Academic Services (.85), Instructional Effectiveness (.83), and Admission and Financial Aid Effectiveness (.87). In view of the careful

translation process and these reliability estimates, the Arabic translated version of the SSI seemed to be a valid and reliable measure that could be used with a Jordanian population.

Data collection

After acquiring the instructors' permission, the questionnaire was administered during regular class periods to students in the first semester of the 2005-2006 academic year. The students received written instructions that specified the purpose of the study and explained the procedures to be followed while responding to the questions. In particular, the students were told that there were no right or wrong responses. Students were asked to return the survey to the class instructor who passed it on to the researchers. The questionnaire included a brief demographic sheet that required students to provide basic demographic information about themselves. The students were given 20 minutes to complete the questionnaire.

Results

Research question one

The importance, satisfaction and performance gap scores were determined for both public and private universities. Expectation scores (importance) were interpreted using the following measures: 1.00-1.99 – not important at all; 2.00-2.99 – not very important; 3.00-3.99 – somewhat unimportant; 4.00-4.99 – neutral; 5.00-5.99 – somewhat important; 6.00-6.99 – important; and 7.00 – very important. These measures indicated the level of expectation (importance) held by the students with regard to the institutional services according to the selected scale. Respondents were also requested to rate their satisfaction for each of the student satisfaction inventory items. The categories for satisfaction were identical to those for the expectation (importance) scores. These were as follows: 1.00-1.99 – not at all satisfied; 2.00-2.99 – not very satisfied; 3.00-3.99 – somewhat dissatisfied; 4.00-4.99 – neutral; 5.00-5.99 – somewhat satisfied; 6.00-6.99 – satisfied; and 7.00 – very satisfied.

The criterion score that was used to interpret performance gap scores was 1.50. Performance gap scores at or above 1.50 were considered to be high and indicative of the institution's need to focus efforts on improving that specific service area. Performance gap scores between 0.00 and 1.49 were taken to indicate that the institution is meeting the students' expectation (importance) and satisfaction for

the selected services. Finally, negative performance gap scores were taken to indicate that the institution is exceeding the students' expectation for those services.

Table 1 reports the importance, satisfaction and performance gap mean scores for undergraduate students in public and private universities.

TABLE 1: Importance, satisfaction, and performance gap mean scores for public and private undergraduate students

Dimensions	Importance		Satisfaction		Performance Gap	
	Public	Private	Public	Private	Public	Private
Registration Effectiveness	5.95	6.08	3.87	3.74	2.08	2.34
Academic Advising Effectiveness	5.94	6.01	4.26	4.13	1.68	1.88
Academic Services	6.17	6.21	4.02	3.79	2.15	2.42
Instructional Effectiveness	6.17	6.21	3.65	3.68	2.52	2.53
Admission and Financial Aid Effectiveness	5.86	5.95	4.49	4.41	1.37	1.54
Total	5.59	5.61	4.05	3.94	1.54	1.67

- Importance scores:* Study findings reported in Table 1 show that, in all SSI dimensions, the students at a private university had higher expectations (importance) than the students at a public university. The undergraduate students at the private university rated four subscales as ‘important’. These were: Registration Effectiveness (6.08), Academic Advising Effectiveness (6.01), Academic Services (6.21) and Instructional Effectiveness (6.21). The same group of students rated the Admission and Financial Aid Effectiveness subscale as ‘somewhat important’ (5.95). On the other hand, the students at the public university rated two subscales – namely, Academic Services (6.17) and Instructional Effectiveness (6.17) – as ‘important’. These students rated the remaining three subscales – namely, Registration Effectiveness (5.95), Academic Advising Effectiveness (5.94) and Admission and Financial Aid

Effectiveness (5.86) – as ‘somewhat important’. These results indicate that, in general, students at public and private universities consider the five subscales to be either ‘important’ or ‘somewhat important’.

- *Satisfaction scores:* Results reported in Table 1 show that the students at the public university experienced higher satisfaction than the students at the private university in four out of the five dimensions of the SSI – the only exception being Instructional Effectiveness. The undergraduate students at the private university rated three subscales as ‘somewhat dissatisfied’. These were: Registration Effectiveness (3.74), Academic Services (3.79) and Instructional Effectiveness (3.65). The same students rated Academic Advising Effectiveness (4.13) and Admission and Financial Aid Effectiveness (4.41) as ‘neutral’. On the other hand, the students at the public university rated three subscales – namely, Academic Advising Effectiveness (4.26), Academic Services (4.02) and Admission and Financial Aid Effectiveness (4.49) – as ‘neutral’. The remaining two subscales – namely, Registration Effectiveness (3.87) and Instructional Effectiveness (3.65) – were rated by public university students as ‘somewhat dissatisfied’. These results indicate that, in general, while students at public universities consider the satisfaction scales to be ‘neutral’, the students at private universities give them a rating of ‘somewhat dissatisfied’.
- *Performance gap scores:* The performance gap scores of private university students exceeded those of public university students on all subscales. These results indicate that there is a higher level of unmet student expectations at the private university than at the public university. The relatively big gaps for both the public and private universities indicate that the two types of universities need to focus their efforts to improve the specific service areas.

Research question two

Three-way MANOVA were conducted to determine whether there are significant mean differences in the perceived level of importance on the SSI among students in relation to the institution type (public and private), gender (male and female) and discipline (sciences and humanities).

Table 2 presents the three-way MANOVA results. MANOVA results revealed significant differences between institution type (Wilks’ Lambda = .960, $F(5, 292) = 2.413$, $p = .036$) and discipline categories (Wilks’ Lambda = .945, $F(5, 292) = 3.424$, $p = .005$) on the combined dependent variable of students’ importance level. A univariate analysis was conducted as a follow-up test.

TABLE 2: Three-way MANOVA for importance level by institution type, gender and discipline

Effect	Wilks' Lambda Value	F	Hypothesis df	Error df	p
Institution Type	.960	2.413	5.00	292.00	.036*
Gender	.976	1.453	5.00	292.00	.205
Discipline	.945	3.424	5.00	292.00	.005*
Institution Type X Gender	.966	2.045	5.00	292.00	.072
Institution Type X Discipline	.977	1.348	5.00	292.00	.244
Gender X Discipline	.994	0.324	5.00	292.00	.898
Institution Type X Gender X Discipline	.987	0.757	5.00	292.00	.581

* indicates significant result

MANOVA results indicate that gender (Wilks' Lambda = .976, $F(5, 292) = 1.453$, $p = .205$) and interaction between institution type, gender and disciplines (Wilks' Lambda = .987, $F(5, 292) = .757$, $p = .581$) had no significant effect on the combined dependent variable of students' importance level.

Table 3 presents the ANOVA results. ANOVA results indicate that only the Registration Effectiveness dimension ($F(1, 296) = 5.372$, $p = .021$) differs significantly by the institution type.

Table 4 shows that in general, with regard to the Registration Effectiveness dimension, while students at the private university are at the 'important' level, students at the public university are at the 'somewhat important' level.

Research question three

Three-way MANOVA were conducted to determine whether there are significant mean differences in the perceived level of satisfaction on the SSI among students in relation to the institution type (public and private), gender (male and female) and discipline (sciences and humanities).

TABLE 3: ANOVA summary for students' importance level regarding their institution type and discipline

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	p
Intercept	Registration Effectiveness	7486.843	1	7486.843	16241.830	.000
	Academic Advising Effectiveness	7591.209	1	7591.209	9333.780	.000
	Academic Services	7944.000	1	7944.000	12250.110	.000
	Instructional Effectiveness	7944.000	1	7944.000	12250.110	.000
	Admission and Financial Aid Effectiveness	7189.330	1	7189.330	6572.460	.000
Institution Type	Registration Effectiveness	2.476	1	2.476	5.372	.021*
	Academic Advising Effectiveness	1.332	1	1.332	1.638	.202
	Academic Services	1.126	1	1.126	1.737	.189
	Instructional Effectiveness	1.126	1	1.126	1.737	.189
	Admission and Financial Aid Effectiveness	0.826	1	0.826	0.755	.386
Discipline	Registration Effectiveness	0.717	1	0.717	1.556	.213
	Academic Advising Effectiveness	0.511	1	0.511	0.628	.429
	Academic Services	0.502	1	0.502	0.774	.380
	Instructional Effectiveness	0.502	1	0.502	0.774	.380
	Admission and Financial Aid Effectiveness	0.314	1	0.314	0.003	.957
Error	Registration Effectiveness	136.444	296	0.461		
	Academic Advising Effectiveness	240.738	296	0.813		
	Academic Services	191.951	296	0.648		
	Instructional Effectiveness	191.951	296	0.648		
	Admission and Financial Aid Effectiveness	323.781	296	1.094		
Total	Registration Effectiveness	11216.086	304			
	Academic Advising Effectiveness	11118.816	304			
	Academic Services	11882.224	304			
	Instructional Effectiveness	11882.224	304			
	Admission and Financial Aid Effectiveness	10959.000	304			

* indicates significant result

TABLE 4: Means and standard deviations for students' importance level by dimension (Registration Effectiveness) and institution type

Institution Type	Registration Effectiveness	
	<i>M</i>	<i>SD</i>
Public	5.885	.070
Private	6.103	.063

TABLE 5: Three-way MANOVA for satisfaction level by institution type, gender and discipline

Effect	Wilks' Lambda Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	<i>p</i>
Institution Type	.972	1.706	5.00	292.00	.133
Gender	.986	0.845	5.00	292.00	.519
Discipline	.945	3.367	5.00	292.00	.006*
Institution Type X Gender	.968	1.901	5.00	292.00	.094
Institution Type X Discipline	.981	1.127	5.00	292.00	.346
Gender X Discipline	.992	0.480	5.00	292.00	.791
Institution Type X Gender X Discipline	.968	1.940	5.00	292.00	.088

* indicates significant result

Table 5 presents the three-way MANOVA results. MANOVA results revealed significant difference between discipline categories (Wilks' Lambda = .945, $F(5, 292) = 3.367$, $p = .006$) on the combined dependent variable of the students' satisfaction level. A univariate analysis was conducted as a follow-up test.

TABLE 6: ANOVA summary for students' satisfaction level regarding their discipline

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	p
Intercept	Registration Effectiveness	2836.603	1	2836.603	2205.905	.000
	Academic Advising Effectiveness	3489.536	1	3489.536	1623.427	.000
	Academic Services	3042.764	1	3042.764	2626.541	.000
	Instructional Effectiveness	2732.972	1	2732.972	1762.835	.000
	Admission and Financial Aid Effectiveness	4076.000	1	4076.000	1847.351	.000
Discipline	Registration Effectiveness	10.630	1	10.630	8.266	.004*
	Academic Advising Effectiveness	0.878	1	0.878	0.409	.523
	Academic Services	16.341	1	16.341	14.106	.000*
	Instructional Effectiveness	1.901	1	1.901	1.226	.269
	Admission and Financial Aid Effectiveness	1.442	1	1.442	0.653	.420
Error	Registration Effectiveness	380.630	296	1.286		
	Academic Advising Effectiveness	636.248	296	2.149		
	Academic Services	342.907	296	1.158		
	Instructional Effectiveness	458.897	296	1.550		
	Admission and Financial Aid Effectiveness	653.207	296	2.207		
Total	Registration Effectiveness	4771.383	304			
	Academic Advising Effectiveness	5959.449	304			
	Academic Services	4950.893	304			
	Instructional Effectiveness	4560.551	304			
	Admission and Financial Aid Effectiveness	6665.806	304			

* indicates significant result

Table 6 presents the ANOVA results. ANOVA results indicate that only the Registration Effectiveness dimension ($F(1, 296) = 8.266, p = .004$) and the Academic Services dimension ($F(1, 296) = 14.106, p = .000$) differ significantly by the disciplines.

TABLE 7: Means and standard deviations for students' satisfaction level by dimensions (Registration Effectiveness and Academic Services) and disciplines

Discipline	Registration Effectiveness		Academic Services	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sciences	3.916	.105	4.101	.100
Humanities	3.464	.117	3.541	.111

Table 7 shows that in general, with regard to the Registration Effectiveness and Academic Services dimensions, students in science disciplines score higher at the 'satisfaction' level than students in the humanities.

TABLE 8: Three-way MANOVA for performance gap level by institution type, gender and discipline

Effect	Wilks' Lambda Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	<i>p</i>
Institution Type	.956	2.219	6.00	291.00	.041*
Gender	.991	0.428	6.00	291.00	.860
Discipline	.936	3.339	6.00	291.00	.003*
Institution Type X Gender	.964	1.802	6.00	291.00	.099
Institution Type X Discipline	.977	1.143	6.00	291.00	.337
Gender X Discipline	.988	0.582	6.00	291.00	.744
Institution Type X Gender X Discipline	.979	1.028	6.00	291.00	.407

* indicates significant result

TABLE 9: ANOVA summary for students' performance gap level regarding their institution type and discipline

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	p
Intercept	Registration Effectiveness	1106.678	1	1106.678	625.211	.000
	Academic Advising Effectiveness	787.097	1	787.097	261.972	.000
	Academic Services	1153.816	1	1153.816	627.867	.000
	Instructional Effectiveness	1358.017	1	1358.017	589.701	.000
	Admission and Financial Aid Effectiveness	438.520	1	438.520	145.848	.000
Institution Type	Registration Effectiveness	12.045	1	12.045	6.805	.010*
	Academic Advising Effectiveness	7.329	1	7.329	2.439	.119
	Academic Services	13.650	1	13.650	7.428	.007*
	Instructional Effectiveness	1.685	1	1.685	0.732	.393
	Admission and Financial Aid Effectiveness	5.983	1	5.983	1.990	.159
Disciplines	Registration Effectiveness	16.870	1	16.870	9.530	.002*
	Academic Advising Effectiveness	2.728	1	2.728	0.908	.341
	Academic Services	22.572	1	22.572	12.283	.001*
	Instructional Effectiveness	4.357	1	4.357	1.892	.170
	Admission and Financial Aid Effectiveness	1.310	1	1.310	0.436	.510
Error	Registration Effectiveness	523.946	296	1.770		
	Academic Advising Effectiveness	889.336	296	3.005		
	Academic Services	543.952	296	1.838		
	Instructional Effectiveness	681.656	296	2.303		
	Admission and Financial Aid Effectiveness	889.979	296	3.007		
Total	Registration Effectiveness	2081.790	304			
	Academic Advising Effectiveness	1905.449	304			
	Academic Services	2210.750	304			
	Instructional Effectiveness	2634.980	304			
	Admission and Financial Aid Effectiveness	1566.972	304			

* indicates significant result

Research question four

Three-way MANOVA were conducted to determine if there are significant mean differences between the levels of importance and satisfaction (performance gap) on the SSI among students in relation to the institution type (public and private), gender (male and female) and discipline (sciences and humanities)

Table 8 presents the three-way MANOVA results. MANOVA results revealed significant differences between institution type (Wilks' Lambda = .956, $F(6, 291) = 2.219, p = .041$) and discipline categories (Wilks' Lambda = .936, $F(6, 291) = 3.339, p = .003$) on the combined dependent variable of students' performance gap level. A univariate analysis was conducted as a follow-up test.

Table 9 presents the ANOVA results. ANOVA results indicate that the Registration Effectiveness dimension ($F(1, 296) = 6.805, p = .010$) and the Academic Services dimension ($F(1, 296) = 7.428, p = .007$) differ significantly by the type of institution. The ANOVA results also indicate that the Registration Effectiveness dimension ($F(1, 296) = 9.530, p = .002$) and the Academic Services dimension ($F(1, 296) = 12.283, p = .001$) differ significantly by discipline.

Table 10 shows that in general, with regard to the Registration Effectiveness and the Academic Services dimensions, private university students score higher at the 'performance gap' level than public university students.

TABLE 10: Means and standard deviations for students' performance gap level by dimensions (Registration Effectiveness and Academic Services) and institution type

Institution Type	Registration Effectiveness		Academic Services	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Public	2.064	.137	2.097	.140
Private	2.545	.123	2.609	.126

Table 11 shows that in general, with regard to the Registration Effectiveness and the Academic Services dimensions, students in the humanities score higher at the 'performance gap' level than students in the sciences.

TABLE 11: Means and standard deviations for students' performance gap level by dimensions (Registration Effectiveness and Academic Services) and discipline

Discipline	Registration Effectiveness		Academic Services	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sciences	2.020	.123	2.024	.125
Humanities	2.589	.137	2.682	.140

Discussion and recommendations

This study revealed that although university students, from both public and private institutions, think that the factors listed in the Student Satisfaction Inventory (SSI) are all somewhat important, they are largely not satisfied with the related services provided.

This study revealed that the type of institution significantly influenced the perceived levels of importance for Registration Effectiveness. This could expose some issues that students are concerned with and the type of problems students actually encounter. These may include 'Who do students consult when they experience problems?', 'Would they recommend their institution?' and 'How could the quality of their experience be improved?'. The findings of this study are consistent with a study by Gielow & Lee (1988) who believed that students' satisfaction is an educational outcome over which post-secondary institutions have considerable influence. Positive attitudes and perceptions of education not only result from the completion of the cycle of educational attainment itself, but also from the encouragement to further pursue education (Knox & Linsay, 1992).

Another thing that emerged from this study was that public university students rate the Registration Effectiveness, Academic Advising Effectiveness, Academic Services, Instructional Effectiveness, and Admission and Financial Aid Effectiveness to be of less importance than do the private university students. There are two possible main reasons for this finding. The first reason has to do with the fact that the government of Jordan supports the national public universities. Among other things, the good reputation of national public universities, their top ranking, their students' performance in society, and their facilities, budgets, buildings, locations and campus services contribute to the lower perceived importance level and higher satisfaction level. Secondly, the institutions that occupy the top positions in the hierarchy tend to be the same ones

that have the most resources, such as, money, prestigious faculty and high-performing students.

This study also revealed a significant gap between the students' perceived levels of importance and satisfaction according to the institution type and discipline. Moreover, the study pointed out a growing dissatisfaction in the areas of Registration Effectiveness and Academic Services. With regard to these two factors, the issue is whether institutions are performing their best in the quality of instruction, in faculty knowledge and in students' ability to register for classes while encountering few conflicts. In terms of performance gaps, Academic Advising Effectiveness, Instructional Effectiveness, and Admission and Financial Aid Effectiveness remain problematic for students at all types of institutions.

The recognised diversity among today's students extends to their expectations (see Schroeder, 2003). And satisfaction, being a continuous variable, captures a range of responses (see Sanders & Burton, 1996). Although student satisfaction is strongly connected to retention levels, it is a more powerful measure that continues to improve and develop in order to guide the quality enhancement efforts, even in institutions with high retention and graduation rates.

The point is that integrated data, such as the one presented here, provides a comprehensive and informative picture of students' experiences that should help decision-makers develop successful institutional strategies (Sanders & Burton, 1996). Although perceived differences exist among college campuses, each institution should understand the needs and experiences of its own students if it is to address student attrition. Each institution should consequently endeavour to come up with measures that are appropriate to its own particular circumstances (McInnis, James & McNaught, 1995).

Once the satisfaction data are interpreted and prioritised, they may be used for effective change. Yet this is precisely where many campuses falter. Too many researchers analyse, interpret data and make written recommendations, then watch as data and recommendations sit on a shelf. For data to have any impact, it must be *used* effectively. There are many ways in which the satisfaction data can be used to make a positive impact on the campus. The following are some practical recommendations.

- *Market the strengths:* The campus community, as well as the outside community (e.g., donors and prospective students), need to hear about what the campus does well. While prioritising areas for intervention, one should not forget to publicise and celebrate the things that are done right.
- *Address student expectations:* One of the most positive features of the SSI is that it addresses two dimensions. Sometimes, students are dissatisfied because

the quality of a service is genuinely poor. But students may also be dissatisfied because their expectations are not realistic. In some instances, students have unrealistically high expectations regarding what college is supposed to be like; in other instances, their expectations are too low because no one has told them what they should expect from their college.

- *Work on high-priority items:* This is an obvious first step in the intervention process. Target those areas in which importance scores are high and satisfaction scores are low, resulting in large gap scores. These are the areas in greatest need of intervention and which will have the most leverage in changing student perceptions. Satisfaction scores cannot be examined in a vacuum; they must always be evaluated in light of the importance scores.
- *Look for interventions that are low cost, quick fix, or both:* Identify the high-priority items, select the ones that can be remedied quickly or which will not cost a lot of money, and address all those items quickly. Then make these changes and publicize to the students that the faculty has responded to their requests. On one campus, several changes were made in response to the SSI results, but no one told the students that the changes were in response to their requests. As a result, many students did not even notice. Once the changes were pointed out (along with the reasons for them), students' perceptions improved.
- *Use SSI data for reallocating existing funds:* Another way to improve institutional efficiency is to look for items with low importance scores and very high satisfaction scores, and make some budget adjustments.
- *Use SSI data for long-range planning:* Not everything identified as a high priority can be fixed in a short amount of time. Some issues are complex, involving personnel, policies, budget priorities and a significant investment in time and money. Researchers recommend that issues that cannot be addressed within one year should become part of the strategic plan. In this way, changes do not get lost in the shuffle or put off from year to year due to lack of funds. By intentionally including high-priority areas in the strategic plan, institutions are able to have the most impact on students' perceptions over the long run. And because strategic planning is supposed to reflect an intentional effort to improve institutional effectiveness and to meet goals over a five to ten-year period, what better way than to focus that plan around the issues that most dramatically affect students? Assessing student satisfaction is not the only way to improve an institution's effectiveness. However, utilising student

satisfaction data is one of the best ways to get input from students about their perceptions regarding the quality they are receiving at a particular institution. Using this information along with other forms of assessment enables an institution of higher education to plan interventions that can have a significant and positive impact on the campus environment.

- *Encourage communication:* The principal value in a research of this kind, and for that matter the entire SSI assessment effort, is to stimulate discussion and communication among all components of the University. University leadership, from the President to the departments that have access to information, can provide a more insightful focus for planning, budgeting and enrolment management. Student leadership across the campus can use SSI findings when planning student initiatives.
- *Speak up:* Students enrolled in higher education institutions must be self-advocates and communicate with their instructor about the difficulties they are having, seeing, hearing, and/or understanding in the campus. Dissatisfaction can interfere with student learning if the instructor and students are not vigilant in monitoring the communication.
- *Get involved:* It is relatively easy to feel a sense of disconnect in the campus. To remedy this problem, students need to become actively involved in class and campus. Participating in class discussions, posing questions to students in other sites and generally behaving as an active class and campus participant helps in fostering a sense of connectedness with instructor and peers. Feeling part of the class and campus can increase learning and overall satisfaction with the class and campus.
- *Collaboration:* It would be presumptuous to draw conclusions and make recommendations for strategic changes in policy without the benefit of a campus wide dialogue. All parties, armed with common assessment results, should be able to collaborate together for an improved campus environment and ultimately for a better and more successful university for all.
- *Improve the quality:* The outcomes of the study may provide an impetus for leaders of higher education institutions to improve the quality of their institutions' learning environment. They can achieve this while transforming the organisational culture of the institution and improving student retention. All this results in the accomplishment of students' educational goals, including improved graduation rates for both public and private institutions. In addition

to that, university administrators and policy decision-makers may use the findings to revise, improve, and/or create new curricular offerings, educational programmes and student support services.

- *Foster a sense of connectedness*: A positively connected personal relationship among university administrators, faculty members and learners must be present for significant learning to take place. Special emphasis should be placed on improving university authorities' knowledge of students' perceived levels of importance and satisfaction, especially among those in university administration, faculties and personnel.

Suggestions for future research include the following:

- Replicate this study in higher education institutions located in Jordan and beyond. Future research on similar populations in these regions could assist universities in identifying the institutional variables that are unique to their university environment.
- Comparisons of results, university-by-university and region-by-region, could further enhance and increase the understanding of students enrolled in similar institutions. Today, studies of this nature are not conducted in universities. Thus, the opportunity for replication exists.
- Further studies need to consider if other factors (such as, students' entrance scores and the reputation of the schools) lead to some comparable effects on students' perceived levels of importance and satisfaction.
- Future research investigating students' perceived levels of importance and satisfaction with regard to their campus experiences should focus on public and private universities using different student populations in Jordan and in other countries.

Note

1. The findings of this report are cited in a brief article entitled 'Quality access and service remain top priorities for most students' in issue October 11, 2001 of *Black Issues in Higher Education* (see http://findarticles.com/p/articles/mi_m0DXK/is_17_18).

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APPENDIX A

The 43 Items of the Student Satisfaction Inventory

1. Faculty care about me as an individual.
2. The personnel involved in registration are helpful.
3. My academic advisor is approachable.
4. Adequate financial aid is available for most students.
5. Classes are scheduled at times that are convenient for me.
6. My academic advisor helps me set goals to work toward.
7. Financial aid awards are announced to students in time to be helpful in college planning.
8. Library resources and services are adequate.
9. I am able to register for classes I need with few conflicts.
10. The quality of instruction I receive in most of my classes is excellent.
11. Financial aid counsellors are helpful.
12. There are a sufficient number of study areas on campus.
13. Faculty are understanding of students' unique life circumstances.
14. My academic advisor is concerned about my success as an individual.
15. Library staff are helpful and approachable.
16. Faculty are fair and unbiased in their treatment of individual students.
17. My academic advisor is knowledgeable about my programme requirement.
18. Admission counsellors accurately portray the campus in their recruiting practices.
19. Computer laboratories are adequate and accessible.
20. Policies and procedures regarding registration and course selection are clear and well publicised.
21. Faculty take into consideration student differences as they teach a course.
22. My academic advisor is knowledgeable about the transfer requirements of other schools.
23. Admission staff are knowledgeable.
24. The equipment in the laboratory facilities is kept up to date.
25. Class change (drop/add) policies are reasonable.
26. Faculty provide timely feedback about student progress in a course.
27. Counselling staff care about students as individuals.
28. Admission counsellors respond to prospective students' unique needs and requests.
29. Tutoring services are readily available.
30. There are convenient ways of paying my school bill.
31. This school does whatever it can to help me reach my educational goals.
32. Faculty are interested in my academic problems.
33. Academic support services adequately meet the needs of students.
34. The business office is open during hours which are convenient for most students.
35. Nearly all of the faculty are knowledgeable in their fields.
36. Billing policies are reasonable.
37. Faculty are usually available after class and during office hours.
38. Bookstore staff are helpful.
39. Nearly all classes deal with practical experiences and applications.
40. Students are notified early in the term if they are doing poorly in a class.
41. Programme requirements are clear and reasonable.
42. There is a good variety of courses provided on this campus.
43. I am able to experience intellectual growth here.