

嘉南藥理科技大學專題研究計畫成果報告

高等教育之不同學制新鮮人對於學校 整體滿意度分析調查

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ABSTRACT

The purpose of this study was to determine and compare the importance and satisfaction levels of various aspects of campus life by freshmen at public, private, and technical colleges in southern Taiwan. The population consisted of 299 freshmen who were divided into three different groups: National Public University (NPU) ($n = 99$), Private University (PU) ($n = 100$), and Technical College (TC) ($n = 100$).

One-way analyses of variance (ANOVAs) were used to compare research questions regarding the freshmen's perceived levels of importance, satisfaction, and mean difference between the two levels in three different institutions. All significant ANOVAs were followed by Tukey's (HSD) test to determine which group differed significantly from others. The .05 level of significance was used for all ANOVAs and paired t tests.

Results of this study revealed that perceived levels of importance and satisfaction of freshmen were influenced by the type of institution. National public university freshmen believed academic advising, concern for the individual, instructional effectiveness, recruitment and financial aid, registration effectiveness, safety and security, service excellence, and student centeredness to be less important than did the private university and technical college students. With the exception of student centeredness, NPU freshmen also were more satisfied with the above factors than PU and TC freshmen. The results also revealed that all freshmen from the three institutions perceived that all factors of campus life were important, yet they were not satisfied. There was a significant gap between importance and satisfaction for each factor of their campus life no matter which institution they attended.

This study also revealed that the factors comprised of campus climate, campus support service, instruction effectiveness, recruitment and financial aid, registration effectiveness, student centeredness, PU freshmen showed the largest difference between the perceived levels of importance and satisfaction; TC freshmen indicated the second largest difference, while the NPU freshmen had the smallest gap between importance and satisfaction.

Findings

The purpose of this study was to determine and compare the importance and satisfaction levels of various aspects of campus life by freshmen at public (NPUG), private (PUG), and technical colleges (TCG) in southern Taiwan. The following research questions guided this study:

1. What differences are there in the perceived level of importance among public, private, and technical college freshmen regarding each of the following factors:
 - a. Academic advising effectiveness,
 - b. Campus climate,
 - c. Campus life,
 - d. Campus support service,
 - e. Concern for the individual,
 - f. Instructional effectiveness,
 - g. Recruitment and financial aid,
 - h. Registration effectiveness,
 - i. Safety and security,
 - j. Service excellence,
 - k. Student centeredness,
 - l. Responsiveness to diverse population, and
 - m. Student decision to enroll?
2. What differences are there in the perceived satisfaction levels among public, private, and technical college freshmen regarding each of the following factors:
 - a. Academic advising effectiveness,
 - b. Campus climate,
 - c. Campus life,
 - d. Campus support service,
 - e. Concern for the individual,
 - f. Instructional effectiveness,
 - g. Recruitment and financial aid,
 - h. Registration effectiveness,
 - i. Safety and security,
 - j. Service excellence,
 - k. Student centeredness,
 - l. Responsiveness to diverse population, and
 - m. Student decision to enroll?
3. What differences exist among freshmen attending institutions of higher education in their perceived levels of importance and satisfaction for the following

aspects of campus life:

- a. Academic advising effectiveness,
- b. Campus climate,
- c. Campus life,
- d. Campus support service,
- e. Concern for the individual,
- f. Instructional effectiveness,
- g. Recruitment and financial aid,
- h. Registration effectiveness,
- i. Safety and security,
- j. Service excellence,
- k. Student centeredness,
- l. Responsiveness to diverse population, and
- m. Student decision to enroll?

4. What differences exist between the levels of importance and satisfaction of the following aspects of campus life among students attending public, private, and technical colleges:

- a. Academic advising effectiveness,
- b. Campus climate,
- c. Campus life,
- d. Campus support service,
- e. Concern for the individual,
- f. Instructional effectiveness,
- g. Recruitment and financial aid,
- h. Registration effectiveness,
- i. Safety and security,
- j. Service excellence,
- k. Student centeredness,
- l. Responsiveness to diverse population, and
- m. Student decision to enroll?

A summary of the demographic data is provided, followed by results of the data analysis used to answer each of the research questions. The findings are summarized in narrative and tabular form. Groups in the tables are labeled as Technical College Group (TCG), Private University Group (PUG), and National Public University Group (NPUG). The summary provides information from the importance and satisfaction levels of various aspects of campus life perceived by freshmen presented in terms of the research questions that guided the study.

Return of the Survey Instrument

Survey instruments were distributed to approximately 300 students at Eastern Technical College (TCG), Chia Nan University (PUG), and National Cheng Kung University (NPUG) in Southern Taiwan in the early June 2003. The *Student Satisfaction Inventory* was administered in two classes settings at each institution. The administration of the *SSI* resulted in a return of 299 usable surveys for a 99.7% response rate, TCG ($n = 100$), PUG ($n = 100$), and NPUG ($n = 99$).

Research Findings

The Perceived Level of Importance of Student Satisfaction Inventory

Data analysis for research question one, perceived levels of importance for various aspects of the campus experience at TCG, PUG, and NPUG was answered by computing means and standard deviations for each related statement. One-way analyses of variance (ANOVAs) were used with the type of institution as the independent variable, and the composite mean for each importance aspect as the dependent variable. The results of these analyses are illustrated in Table 1.

Academic Advising Effectiveness

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of academic advising effectiveness, $F(2,296) = 7.06, p = .001$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that PUG students ($M = 5.97$) believed academic advising effectiveness to be significantly more important than did TCG students ($M = 5.72$) or NPUG students ($M = 5.69$). No significant difference regarding academic advising effectiveness was found between the TCG and NPUG students.

Campus Climate

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of campus climate, $F(2, 5080) = 13.87, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that PUG students ($M = 5.82$) believed campus climate to be significantly more important than did TCG students ($M = 5.54$) or NPUG students ($M = 5.63$). No significant difference regarding campus life was found between the TCG and NPUG students.

Campus Life

A one-way analysis of variances (ANOVA) indicated a significant difference among the three student groups regarding importance of campus life, $F(2, 4482) = 7.00, p = .001$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that both TCG students ($M = 5.62$) and PUG students ($M = 5.66$) believed campus life to be significantly more important than did NPUG students ($M = 5.45$). No significant difference regarding campus life was found between the TCG and the PUG students.

Table 1

ANOVA Contrasts in Means for the Importance Levels Among TCG, PUG, and NPUG

Item	TCG (Group A)	PUG (Group B)	NPUG (Group C)	<i>F</i>	<i>p</i>
Academic advising effectiveness	5.72±1.55 (B)	5.97±1.07 (A,C)	5.69±1.21 (B)	7.06	.001*
Campus climate	5.54±1.57 (B)	5.82±1.93 (A)(C)	5.69±1.26 (B)	13.87	.000*
Campus life	5.62±1.51 (C)	5.66±1.98 (C)	5.45±1.29 (A,B)	7.00	.001*
Campus support service	5.70±1.50 (C)	5.79±1.12 (C)	5.53±1.25 (A,B)	7.00	.001*
Concern for the individual	5.60±1.57	5.76±1.13 (C)	5.56±1.16 (B)	3.91	.020*
Instructional effectiveness	5.79±2.41	5.92±1.09 (C)	5.67±1.22 (B)	7.72	.000*
Recruitment and financial aid	5.59±1.56 (B)	5.85±1.09 (A,C)	5.46±1.20 (B)	13.21	.000*
Registration effectiveness	5.72±1.51	5.90±1.08 (C)	5.65±1.18 (B)	5.28	.005*
Safety and security	5.80±1.54 (B)	6.05±1.13 (A,C)	5.74±1.23 (B)	6.29	.002*
Service excellence	5.68±1.49 (C)	5.79±1.10 (C)	5.52±1.24 (A,B)	8.76	.000*
Student centeredness	5.30±1.63 (B)	5.69±2.85 (A)	5.55±1.26	5.65	.004
Responsiveness to diversity	N/A	N/A	N/A	N/A	N/A
Student decision to enrollment	5.57±1.56 (C)	5.67±1.27 (C)	5.36±1.49 (A,B)	9.07*	.000

* $p < .05$. *± = Standard Deviation.

Note: If (A,C) in column of Group B = have a significant difference with Group B.

Campus Support Service

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of campus support service, $F(2, 2090) = 7.00, p = .001$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG students ($M = 5.53$) believed campus support service to be

significantly less important than did TCG students ($M = 5.70$) and PUG students ($M = 5.79$). No significant difference regarding campus support service was found between the TCG and PUG students.

Concern for the Individual

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of concern for the individual, $F(2, 1791) = 3.94, p = .020$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that PUG students ($M = 5.76$) believed concern for the individual to be significantly more important than did NPUG students ($M = 5.56$). No significant difference regarding concern for the individual was found between the TCG students ($M = 5.60$) and PUG students ($M = 5.76$). Also, there was no significant difference between the TCG and NPUG students.

Instructional Effectiveness

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of instructional effectiveness, $F(2, 4183) = 7.72, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that PUG students ($M = 5.92$) believed instructional effectiveness to be significantly more important than did NPUG students ($M = 5.67$). No significant difference regarding instructional effectiveness was found between the TCG ($M = 5.79$) and PUG students. Also, there was no significant difference between the TCG and the NPUG students.

Recruitment and Financial Aid

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of recruitment and financial aid, $F(2, 1791) = 13.21, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that PUG students ($M = 5.85$) believed recruitment and financial aid to be significantly more important than did TCG students ($M = 5.59$) or NPUG students ($M = 5.46$). No significant difference regarding recruitment and financial aid was found between the TCG and NPUG students.

Registration Effectiveness

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of registration effectiveness, $F(2, 1492) = 5.28, p = .005$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that PUG students ($M = 5.90$) believed registration effectiveness to be significantly more important than did NPUG students ($M = 5.65$). No significant difference regarding registration effectiveness was found between the PUG and TCG Students ($M = 5.72$). Also, there was no significant difference between the TCG and NPUG students.

Safety and Security

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of safety and security, $F(2, 1193) = 6.29, p = .002$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that PUG students ($M = 6.05$) believed safety and security to be significantly more important than did TCG students ($M = 5.80$) or NPUG students ($M = 5.74$). No significant difference regarding safety and security was found between the TCG and NPUG students.

Service Excellence

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of service excellence, $F(2, 2389) = 8.76, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that TCG students ($M = 5.68$) and PUG students ($M = 5.79$) believed service excellence to be significantly more important than did NPUG students ($M = 5.52$). No significant difference regarding service excellence was found between the TCG and PUG students.

Student Centeredness

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of student centeredness, $F(2, 1791) = 5.65, p = .004$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that TCG students ($M = 5.30$) believed student centeredness to be significantly less important than did the PUG students ($M = 5.69$). No significant difference regarding student centeredness was found between TCG and NPUG students ($M = 5.55$). Also, there was no significant difference between the PUG and NPUG students.

Student Decision to Enroll

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding importance of student decision to enroll, $F(2, 2389) = 9.07, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that both TCG students ($M = 5.57$) and PUG students ($M = 5.67$) believed student decision to enroll to be significantly more important than did NPUG students ($M = 5.36$). No significant difference regarding student decision to enroll was found between the TCG and PUG students.

The Perceived Level of Satisfaction of Student Satisfaction Inventory

Data analysis for research question two, perceived levels of satisfaction on various aspects of the campus experience at TCG, PUG, and NPUG was answered by computing means and standard deviations for each related statement. One-way analyses of variance (ANOVAs) were used with the type of institution as the independent variable, and the composite mean for each satisfaction aspect as the

dependent variable. The results of these analyses are illustrated in Table 2. All measured scales indicated satisfaction.

Academic Advising Effectiveness

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of academic advising effectiveness, $F(2, 1492) = 18.51, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG students ($M = 4.60$) felt academic advising effectiveness to be significantly more satisfied than did TCG students ($M = 4.01$) or PUG students ($M = 4.23$). No significant difference regarding academic advising effectiveness was found between the TCG and PUG students.



Table 2

ANOVA Contrasts in Means for the Satisfaction Levels Among TCG, PUG, and NPUG

Item	TCG (Group A)	PUG (Group B)	NPUG (Group C)	<i>F</i>	<i>p</i>
Academic advising effectiveness	4.01±1.80 (C)	4.23±1.51 (C)	4.60±1.30 (A,B)	18.51	.000*
Campus climate	3.88±1.66 (C)	3.92±1.51 (C)	4.64±1.31 (A,B)	133.68	.000*
Campus life	3.96±1.64 (C)	4.02±1.42 (C)	4.31±1.75 (A,B)	20.37	.000*
Campus support service	4.25±1.72 (B,C)	3.96±1.41 (A,C)	4.53±1.32 (A,B)	24.98	.000*
Concern for the individual	3.82±1.68 (B,C)	4.07±1.41 (A,C)	4.34±1.28 (A,B)	18.09	.000*
Instructional effectiveness	4.03±1.66 (C)	3.91±1.49 (C)	4.57±1.22 (A,B)	77.71	.000*
Recruitment and financial aid	4.07±1.66 (C)	4.11±1.39 (C)	4.47±1.19 (A,B)	14.35	.000*
Registration effectiveness	4.08±1.60 (B,C)	3.84±1.41 (A,C)	4.33±1.34 (A,B)	13.95	.000*
Safety and security	3.93±1.65 (B,C)	4.16±1.42 (A,C)	4.46±1.35 (A,B)	17.86	.000*
Service excellence	4.06±1.66 (C)	4.15±1.41 (C)	4.40±1.28 (A,B)	11.40	.000*
Student centeredness	3.82±3.79 (C)	3.79±1.49 (C)	4.53±1.37 (A,B)	46.99	.000*
Responsiveness to diverse	4.43±1.53	4.52±1.22	4.40±1.16	1.25	.288
Student decision to enrollment	N/A	N/A	N/A	N/A	N/A

$p < .05$. *± = Standard Deviation.

Note: If A and C are in the Group B column, there is a significant difference with Group B.

Campus Climate

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of campus climate, $F(2, 5080) = 133.68, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG students ($M = 4.64$) felt campus climate to be significantly more

satisfied than did TCG students ($M = 3.88$) or PUG students ($M = 3.92$). No significant difference regarding campus climate was found between the TCG and PUG students.

Campus Life

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of campus life, $F(2, 4482) = 20.37, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that both TCG students ($M = 3.96$) and PUG students ($M = 4.02$) felt campus life to be significantly less satisfied than did NPUG students ($M = 4.31$). No significant difference regarding campus life was found between the TCG and PUG students.

Campus Support Service

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of campus support service, $F(2, 2090) = 24.98, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG students ($M = 4.53$) felt campus support service to be significantly more satisfied than did TCG students ($M = 4.25$) or PUG students ($M = 3.96$). TCG students ($M = 4.25$) also felt significantly more satisfied regarding campus support service than did PUG students ($M = 3.96$).

Concern for the Individual

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of concern for the individual, $F(2, 1791) = 18.09, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG ($M = 4.34$) felt concern for the individual to be significantly more satisfied than did PUG students ($M = 4.07$) or TCG students ($M = 3.82$). PUG students also felt significantly more satisfied regarding concern for the individual than did TCG students.

Instructional Effectiveness

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of instructional effectiveness, $F(2, 4183) = 77.71, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that both TCG students ($M = 4.03$) and PUG students ($M = 3.91$) felt instructional effectiveness to be significantly less satisfied than did NPUG students ($M = 4.57$). No significant difference regarding instructional effectiveness was found between the TCG and PUG students.

Recruitment and Financial Aid

A one-way analysis of variance (ANOVA) indicated a significant difference

among the three student groups regarding satisfaction of recruitment and financial aid, $F(2, 1791) = 14.35, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG students ($M = 4.47$) felt recruitment and financial aid to be significantly more satisfied than did TCG students ($M = 4.07$) or PUG students ($M = 4.11$). No significant difference regarding recruitment and financial aid was found between the TCG and PUG students.

Registration Effectiveness

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of registration effectiveness, $F(2, 1492) = 13.95, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG students ($M = 4.33$) felt instructional effectiveness to be significantly more satisfied than did TCG students ($M = 4.08$) or PUG students ($M = 3.84$). TCG students also felt registration effectiveness to be significantly more satisfied than did PUG students.

Safety and Security

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of safety and security, $F(2, 1193) = 17.86, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG students ($M = 4.46$) felt safety and security to be significantly more satisfied than did TCG students ($M = 3.93$) or PUG students ($M = 4.16$). PUG students also felt significantly more satisfied than did TCG students regarding safety and security.

Service Excellence

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of service excellence, $F(2, 2389) = 11.40, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that both TCG students ($M = 4.06$) and PUG students ($M = 4.15$) felt service excellence to be significantly less satisfied than did NPUG students ($M = 4.40$). No significant difference regarding service excellence was found between the TCG and PUG students.

Student Centeredness

A one-way analysis of variance (ANOVA) indicated a significant difference among the three student groups regarding satisfaction of student centeredness, $F(2, 1791) = 46.99, p = .000$. Results of Tukey's Honestly Significant Difference (HSD) test indicated that NPUG students ($M = 4.53$) felt student centeredness to be significantly more satisfied than did TCG students ($M = 3.82$) or PUG students ($M = 3.79$). No significant difference regarding student centeredness was found between the TCG and PUG students.

Responsiveness to Diverse Population

A one-way analysis of variance (ANOVA) indicated no significant difference among the three student groups regarding satisfaction of responsiveness to diverse population, $F(2, 1791) = 1.25, p = .288$.

Difference Between Importance and Satisfaction Levels for All Subjects

The measurement of the difference between importance and satisfaction levels for all subjects at TCG, PUG, and NPUG was the objective for research question three. Data analysis used paired t tests to compare importance and satisfaction levels for each aspect. The results of this inquiry are illustrated in Table 3.

Academic Advising Effectiveness

There was a significant difference between the importance and the satisfaction in academic advising effectiveness, $t(2988) = 28.56, SE = .052, p = .000$. Students' perceived value for importance ($M = 5.79$) was significantly higher than that for satisfaction ($M = 4.28$).

Campus Climate

There was a significant difference between the importance and satisfaction levels in campus climate, $t(10164) = 48.45, SE = .031, p = .000$. Students' perceived value for importance ($M = 5.67$) was significantly higher than that for satisfaction ($M = 4.14$).

Campus Life

There was a significant difference between importance and satisfaction levels in campus life, $t(8968) = 43.06, SE = .034, p = .000$. Students' perceived value for importance ($M = 5.57$) was significantly higher than that for satisfaction ($M = 4.10$).

Campus Support Service

There was a significant difference between importance and satisfaction levels in campus support service, $t(4184) = 32.62, SE = .043, p = .000$. Students' perceived value for importance ($M = 5.67$) was significantly higher than that for satisfaction ($M = 4.24$).

Concern for the Individual

There was a significant difference between the importance and satisfaction levels concerning the individual, $t(3586) = 33.51, SE = .046, p = .000$. Students' perceived value for importance ($M = 5.64$) was significantly higher than that for satisfaction ($M = 4.08$).

Instructional Effectiveness

There was a significant difference between importance and satisfaction levels in instructional effectiveness, $t(8370) = 46.48, SE = .034, p = .000$. Students' perceived value for importance ($M = 5.79$) was significantly higher than that for

satisfaction ($M = 4.17$).

Table 3

Difference Between Importance and Satisfaction Levels for All Subjects

Item	Importance	Satisfaction	<i>t</i> value	<i>p</i>
Academic advising effectiveness	5.79±1.30	4.28±1.57	28.56	.000*
Campus climate	5.67±1.61	4.14±1.54	48.45	.000*
Campus life	5.57±1.62	4.10±1.62	43.06	.000*
Campus support service	5.67±1.31	4.24±1.51	32.62	.000*
Concern for the individual	5.64±1.31	4.08±1.48	33.51	.000*
Instructional effectiveness	5.79±1.69	4.17±1.50	46.48	.000*
Recruitment and financial aid	5.63±1.30	4.21±1.44	30.92	.000*
Registration effectiveness	5.75±1.27	4.08±1.47	33.15	.000*
Safety and security	5.86±1.32	4.15±1.50	29.52	.000*
Service excellence	5.66±1.29	4.20±1.47	36.47	.000*
Student centeredness	5.51±2.04	4.04±1.54	24.30	.000*
Responsiveness to diverse	N/A	N/A	N/A	N/A
Student decision to enrollment	N/A	N/A	N/A	N/A

$p < .05$. *± = standard deviation.

Recruitment and Financial Aid

There was a significant difference between importance and satisfaction levels in recruitment and financial aid, $t(3586) = 30.92$, $SE = .045$, $p = .000$. Students' perceived value for importance ($M = 5.63$) was significantly higher than that for satisfaction ($M = 4.21$).

Registration Effectiveness

There was a significant difference between importance and satisfaction levels in registration effectiveness, $t(2988) = 33.15$, $SE = .050$, $p = .000$. Students' perceived value for importance ($M = 5.75$) was significantly higher than that for satisfaction ($M = 4.08$).

Safety and Security

There was a significant difference between importance and satisfaction levels in safety and security, $t(2390) = 29.52$, $SE = .057$, $p = .000$. Students' perceived value for importance ($M = 5.86$) was significantly higher than that for satisfaction ($M = 4.15$).

Service Excellence

There was a significant difference between importance and satisfaction levels in service excellence, $t(4782) = 36.47$, $SE = .040$, $p = .000$. Students' perceived value

for importance ($M = 5.66$) was significantly higher than that for satisfaction ($M = 4.20$).

Student Centeredness

There was a significant difference between importance and satisfaction levels in student centeredness, $t(3586) = 24.30$, $SE = .060$, $p = .000$. Students' perceived value for importance ($M = 5.51$) was significantly higher than that for satisfaction ($M = 4.04$).

Mean Difference Between Importance and Satisfaction Levels of SSI

Data analysis for the fourth research question regarding differences that exist between the levels of importance and satisfaction of each aspect of campus life among students attending public, private and technical colleges was answered by using one-way analyses of variance (ANOVAs). The type of the institution was the independent variable, and the mean difference between the importance and satisfaction levels for each composite mean aspect as the dependent variable. This question was answered by composite means and standard deviations for each of the relevant sub-scale for importance-satisfaction mean difference. The results of this inquiry are illustrated in Table 4. The mean difference between the levels of importance and satisfaction are defined as importance minus satisfaction.

Academic Advising Effectiveness

The mean difference scores between importance and satisfaction levels for the aspect of academic advising effectiveness in the different institutions were significantly different, $F(2, 1492) = 17.36$, $p = .000$. The TCG students ($M = 1.70$) and PUG students ($M = 1.72$) had significantly higher mean difference scores for academic advising effectiveness than did NPUG students ($M = 1.08$). No significant difference in academic advising effectiveness mean difference was found between the TCG and PUG students.

Campus Climate

The mean difference scores between importance and satisfaction levels for the aspect of campus climate in the different institutions were significantly different, $F(2, 5080) = 91.22$, $p = .000$. The TCG students ($M = 1.64$) and PUG students ($M = 1.88$) had significantly higher mean difference scores for campus climate than did NPUG students ($M = 1.01$). In addition, the PUG students had a significantly higher value than did TCG students.

Table 4

Mean Difference Between Importance and Satisfaction Levels of SSI

Item	TCG (Group A)	PUG (Group B)	NPUG (Group C)	<i>F</i>	<i>p</i>
Academic advising effectiveness	1.70±2.29 (C)	1.72±1.78 (C)	1.08±1.67 (A)(B)	17.36	.000*
Campus climate	1.64±2.19 (B)(C)	1.88±1.84 (A)(C)	1.01±1.68 (A)(B)	91.22	.000*
Campus life	1.65±2.21 (C)	1.61±1.80 (C)	1.16±1.87 (A)(B)	28.04	.000*
Campus support service	1.49±2.16 (B)(C)	1.84±1.79 (A)(C)	1.02±1.68 (A)(B)	33.29	.000*
Concern for the individual	1.78±2.29 (C)	1.69±1.70 (C)	1.24±1.65 (A)(B)	13.77	.000*
Instructional effectiveness	1.71±2.78 (B)(C)	1.98±1.83 (A)(C)	1.08±1.59 (A)(B)	65.09	.000*
Recruitment and financial aid	1.47±2.20 (B)(C)	1.74±1.62 (A)(C)	.97±1.52 (A)(B)	27.28	.000*
Registration effectiveness	1.64±2.05 (B)(C)	2.07±1.88 (A)(C)	1.23±1.83 (A)(B)	23.94	.000*
Safety and security	2.02±2.17 (C)	1.87±1.69 (C)	1.21±1.77 (A)(B)	20.61	.000*
Service excellence	1.62±2.10 (C)	1.65±1.72 (C)	1.09±1.73 (A)(B)	22.61	.000*
Student centeredness	1.50±2.12 (B)(C)	1.82±1.79 (A)(C)	1.05±1.72 (A)(B)	24.80	.000*
Responsiveness to diverse	N/A	N/A	N/A	N/A	N/A
Student decision to enrollment	N/A	N/A	N/A	N/A	N/A

**p* < .05. *± = standard deviation.

Note: Mean difference levels = Importance – Satisfaction.

Campus Life

The mean difference scores between importance and satisfaction levels for the aspect of campus life for different institutions were significantly different, $F(2, 4482) = 28.04, p = .000$. The TCG students ($M = 1.65$) and PUG students ($M = 1.61$) had significantly higher mean difference scores for campus life than did NPUG students ($M = 1.16$). No significant difference in campus life mean difference was found between the TCG and PUG students.

Campus Support Service

The mean difference scores between importance and satisfaction levels for the aspect of campus support service for different institutions were significantly different, $F(2, 2090) = 33.29, p = .000$. The TCG students ($M = 1.49$) and PUG students ($M = 1.84$) had significantly higher mean difference values for campus support service than did NPUG students ($M = 1.02$). In addition, the PUG students had a significantly higher value of campus support service mean difference than did TCG students.

Concern for the Individual

The mean difference scores between importance and satisfaction levels for the aspect of concern for the individual in different institutions were significantly different, $F(2, 1791) = 13.77, p = .000$. The PUG students ($M = 1.69$) and TCG students ($M = 1.78$) had significantly higher scores of mean difference regarding concern for the individual than did NPUG students ($M = 1.24$). No significant difference in concern for the individual mean difference was found between the TCG and PUG students.

Instructional Effectiveness

The mean difference scores between importance and satisfaction levels for the aspect of instructional effectiveness in different institutions were significantly different, $F(2, 4183) = 65.09, p = .000$. The PUG students ($M = 1.98$) had a significantly higher value of mean difference for instructional effectiveness than did TCG students ($M = 1.71$) and NPUG students ($M = 1.08$). In addition, the TCG students had a significantly higher instructional effectiveness mean difference than did NPUG students.

Recruitment and Financial Aid

The mean difference scores between importance and satisfaction levels for the aspect of recruitment and financial aid in different institutions were significantly different, $F(2, 1791) = 27.28, p = .000$. The TCG students ($M = 1.47$) and PUG students ($M = 1.74$) had significantly higher values of mean difference for recruitment and financial aid than did NPUG students ($M = 0.97$). The TCG students also had a significantly higher recruitment and financial aid mean difference than did NPUG students.

Registration Effectiveness

The mean difference scores between importance and satisfaction levels for the aspect of registration effectiveness for different institutions were significantly different, $F(2, 1492) = 23.94, p = .000$. The TCG students ($M = 1.64$) and PUG students ($M = 2.07$) had significantly higher scores of mean difference for registration effectiveness than did NPUG students ($M = 1.23$). The PUG students had a significantly higher registration effectiveness mean difference than did TCG students.

Safety and Security

The mean difference scores between importance and satisfaction levels for the aspect of safety and security for different institutions were significantly different, $F(2, 1193) = 20.61, p = .000$. The NPUG students ($M = 1.21$) had a significantly higher value of mean difference for safety and security than did the TCG students ($M = 2.02$) or PUG students ($M = 1.87$). No significant difference regarding the mean difference of safety and security was found between the TCG and PUG students.

Service Excellence

The mean difference scores between importance and satisfaction levels for the aspect of service excellence for different institutions were significantly different, $F(2, 2389) = 22.61, p = .000$. The TCG students ($M = 1.62$) and PUG students ($M = 1.65$) had significantly higher values of mean difference for service excellence than did NPUG students ($M = 1.09$). No significant difference in service excellence mean difference was found between the TCG and PUG students.

Student Centeredness

The mean difference scores between importance and satisfaction levels for the aspect of student centeredness for different institutions were significantly different, $F(2, 1791) = 24.80, p = .000$. The TCG students ($M = 1.50$) and PUG students ($M = 1.82$) had significantly higher scores of mean difference for student centeredness than did NPUG students ($M = 1.05$). The PUG students also had a significantly higher student centeredness mean difference than did TCG students.

Discussion

The responses convened from the survey reflected the perceptions of freshmen from three different higher education institutions in southern Taiwan regarding various factors of campus life. The results from this study can help institutions identify what really matters to freshmen and how induction and on-going services can be improved.

The first result revealed that the perceived levels of importance and satisfaction for campus climate, campus life, campus support service, concern for the individual, instructional effectiveness, recruitment and financial aid, registration

effectiveness, safety and security, service excellence, and student centeredness were significantly influenced by the type of institution. It did expose some issues that freshmen are concerned about and what problems they actually encountered. Who do they consult if they do experience problems? Would they recommend their institution? How could the quality of their experience be improved? This finding is consistent with a study by Gielow and Lee (1988) who indicated that student satisfaction is an educational outcome over which postsecondary institutions have considerable influence. Positive attitudes and perceptions of education not only result from the completion of steps in the process of educational attainment itself, but also encourage the further pursuit of education (Knox & Linsay, 1992).

The finding in this study also indicated that national public university freshmen believe academic advising, instructional effectiveness, recruitment and financial aid, registration effectiveness, safety and security, service excellence, and student centeredness to be less important than do the private university or technical college freshmen. In addition, national public university freshmen also felt more satisfied the aforementioned factors except student centeredness. The negative relationship between the students' perceptions of importance and satisfaction suggested that the most satisfied students (in this case, freshmen from a national public university) had the least importance perception for their campus life. There are several possible reasons for the phenomena. First, national public universities are supported by Taiwan's government. The good reputation of national public university, top 10 ranking, students' performance in society, the facility, budget, building, location, campus service, among others, contributed to the lower perceived importance level and higher satisfaction level. Second, the institutions that occupy the top positions in the hierarchy tend to be the same ones that have the most resources: money, prestigious faculty, and high-performing students (Astin, 1985).

According to Ratcliff (1991), student attitudes about going to college, values, sense of purpose and sense of independence have a direct influence on academic achievement. The high level of satisfaction in academic success at NPU was supported by Pascarella and Terenzini's finding (1980) that successful students who persisted through graduation were found to successfully integrate into the academic and social culture of the institutions they attend. Students' commitment to meet individual goals and the willingness to comply with the academic and social demands of the institution would be another important factor for them to successfully adjust to college during the first year.

Another finding was that private university freshmen believed academic advising effectiveness, campus climate, recruitment and financial aid, safety and

security, and student centeredness to be more important than did the technical college freshmen. Too, private university freshmen were less satisfied with campus support service and registration effectiveness than those at the technical college. However, they felt more satisfied in the aspects of concern for the individual and safety and security than did the technical college freshmen. The results are valuable for providing the two colleges with information about why students' outcome preferences in certain institutions deviate from what would be expected from their input characteristics. As Astin (1991) pointed out, an institution's assessment practices are a reflection of its values. Most of us buy the notion that the higher education system has three basic goals: education, research, and public or community service. The three basic functions are frequently seen as competing with each other, there are many ways in which they can be complementary and mutually reinforcing (Astin, 1991).

This study did reveal that all freshmen from the three institutions indicated that all factors of campus life were important, yet they were not satisfied. There was a significant gap between the perceived levels of importance and satisfaction for their campus life no matter which institution they attended. This finding is supported by Boulter's (2002) citation that recent surveys report a number of recent trends that suggest freshmen are experiencing increasingly more stress. Between 1987 and 1997, the percent of freshmen who reported being overwhelmed by "everything I have to do" increased steadily from 16.4% to 29.4%, and the percent who sought personal counseling after entering college increased from 34.7% to 41.1% (Astin, Parrott, Korn, & Sax, 1997). The results of this study also showed the growing dissatisfaction in the areas of academic advising, concern for the individual, and student-centeredness of students at four-year private institutions. For the factor of academic advising effectiveness, the important issue is whether institutions are performing their best in the quality of instruction, in faculty knowledge, or in students' ability to register for classes with few conflicts. In terms of performance gaps, financial aid availability and practices remain problematic for students at all types of institutions. Also, campus parking is another area where campuses are meeting students' expectations.

A final finding indicated that in some aspects of campus life, private college freshmen showed the largest difference between the perceived levels of importance and satisfaction; freshmen from the technical college indicated the second large difference between the two levels, and the national public university freshmen indicated the smallest gap between perceived importance and satisfaction levels.

Today's students are indeed diverse, not only in terms of age, ethnicity, socioeconomic level, sexual orientation, and part-time or full-time status, but also in terms of expectations, attitudes, intellectual capabilities, and learning styles

(Schroeder, 2003). As Sanders and Burton (1996) pointed out, satisfaction is a continuous variable; it captures a range of responses. Although strongly connected to retention, student satisfaction is a more powerful measure that can continue to be improved and developed that will guide quality enhancement efforts even in institutions with high retention and graduation rates.

In summary, the integrated data provided a comprehensive picture of the freshmen experience and helped decision makers with more useful information for developing successful institutional strategies (Sanders & Burton, 1996). Although perceived differences exist among college campuses, each institution must understand the needs and experiences of its own students if it is to address student attrition. Each institution's situation is different and will require measures that are appropriate to its own circumstance (McInnis, James, & McNaught, 1995).

Recommendations from the Study

The following recommendations for practice emerged from the results of data analysis and findings of the study:

1. Special emphasis should be placed on improving knowledge for the students' perceived levels of importance and satisfaction to school authorities, especially to school administrators, faculties, and personnel.
2. In order to increase students' satisfaction, school administrators should encourage their faculty and staff to offer a good learning environment, especially in the academic advising effectiveness, campus climate, campus life, campus support service, concern for the individual, instructional effectiveness, recruitment and financial aid, registration effectiveness, safety and security, service excellence, and student centeredness.

Recommendations for Further Research

The following recommendations for further study emerged as the result of this study:

1. Further studies need to consider if other factors such as university ranking list, students' entrance examination scores, and the reputation of schools lead to some comparable effects on students' perceived levels of importance and satisfaction.
2. Future research could focus on public and private schools from other student populations in Taiwan and in other countries and associated with students' perceived level of importance and satisfaction on their campus experiences.