NAZARBAYEV UNIVERSITY

Undergraduate Exit Survey

Spring 2016 Results (Revised Version)

Institutional Research, Office of the Provost

July 15, 2017

EXECUTIVE SUMMARY

This report presents the results of the 2016 Undergraduate Exit Survey. The survey was designed by the Office of the Provost and administered to 459 potential graduating students (undergraduate level) at Nazarbayev University (NU) from mid-April to mid-June 2016.

Purpose of the Survey

The purpose of the Undergraduate Exit Survey is to promote a data-driven understanding of the educational experiences of NU's graduating students (undergraduate level) and of their post-graduation plans. Data collected through this survey will help shed light on the level/quality of academic support that NU provided to its second cohort of undergraduate students (class of 2016) and support institutional self-evaluation.

Survey Response Rate

Overall, 340 potential graduating students participated in the survey, for a response rate of 74.1%. Response rates were slightly higher for (1) female compared to male students, (2) students with higher academic performance compared to those with lower academic performance, (3) students from the Schools of Science and Technology and Humanities and Social Sciences compared to those from the School of Engineering. Analytical steps were taken to ensure that survey results did not suffer from non-response bias.

Summary of Key Findings

Composite indicators

We constructed 13 composite indicators (Table 5) of student perceptions and experiences based on student ratings on specific items and on the correlation among items that measured a specific dimension. To facilitate interpretation, composite indicators were computed on a scale from 0 to 100. Key findings include the following:

Graduating students had a highly positive perception of NU (average score = 71.5 out of 100). They were also highly positive about the skills and competencies acquired at NU (average score = 73.0) and about how much emphasis NU put on graduate attributes during their undergraduate studies (average score = 72.5).

Graduating students also rated themselves high on key psychological measures, including (1) self-esteem, or perception of one's own worth relative to an "ideal self" (average score = 77.7) and (2) self-concept, or perception of one's competence relative to others (average score = 70.4). They rated themselves relatively high on individual development (how well NU met their career, personal, and intellectual needs (average score = 68.4), and were highly satisfied with campus resources and services (average score = 67.5).

Graduating students were moderately satisfied with their program/major (average score = 64.3), and with their curricular preparation for life after graduation—i.e., career opportunities and postgraduate studies—(average score = 58.3). Students, however, engaged in key academic behaviors (that empirical research has found to contribute to student success) with low to moderate frequency (average score = 45.9).

Students tended to be less dependent on others (family, friends, classmates, faculty, staff) for emotional, social, and academic support (average score = 44.3)—an indication that they tended to be more autonomous. They encountered a relatively low level of difficulties (average score = 36.1) and found their experiences to be moderately stressful (average score = 51.1).

Other experiences

- *Enriching activities completed*: 91.6% of the students reported that they participated in an internship, 74.5% in a volunteer activity, and 30.7% in a study abroad program. Also, 60.2% reported that they completed a culminating senior experience (capstone project, thesis) and 53.9% that they worked on a research project with a faculty member.
- *Writing*: Student reported that they produced, on average, seven shorter (up to five pages) and five longer (more than five pages) papers during the academic year.
- *Class absenteeism and its reasons*: 94% of the students reported that they missed at least one class during spring 2016. Reasons for missing classes included illness (69.5%), using class time to complete assignments from other classes (59.3%), inconvenient class schedule (53.0%), low quality of teaching (52.7%), class attendance not being required (50.5%), course not relevant to the student's interests (44.0%), and need to participate in extracurricular activities (34.2%). Only 12.7% of the students reported course difficulty to be a reason for missing class.
- *Student employment*: 51.5% of the student reported that they worked for pay, at least at some point, during the academic year. Around 80% of these students indicated that they worked 15 hours or less per week.

Post-graduation plans

- The majority of the graduating students (52.6%) expected to pursue graduate or professional degree programs in Fall 2016, whereas 40.6% expected to enter the workforce (and 6.8% to engage in other activities).
- Among the 126 students who expected to enter the workforce, 31% reported that they had received a job offer (as of mid-April to mid-June 2016).
- Key highlights for the 163 students who planned to attend graduate or professional school include:
  - 35.8% had already received an admission offer.
  - 73.6% planned to pursue a master's and 19% a doctorate degree.
  - Engineering was the most popular field of postgraduate study (25%).
  - Nazarbayev University was the most frequently cited prospective institution (20%).

Suggestions for NU, interactions with faculty, and advice to new students

In open ended comments, increasing course availability and variety emerged as the top suggestion for improvement. Advising/mentoring/supervision and out of class interactions emerged as the areas in which students had some of the most positive/meaningful interactions with faculty members. In their advice to new NU students, graduating students stressed the importance of social integration, particularly the need to be socially active and participate in extracurricular activities.

Comparing graduating student perceptions/experiences: 2015 vs. 2016

Five of the 13 composite indicators allow us to compare the perceptions/experiences of 2016 graduating students to those of the previous graduating cohort (2015). Analyses suggested the following:

- Perception of NU was slightly more positive among 2016 graduating students (average score = 71.5) compared to 2015 graduating students (average score = 68.3). This was also true with respect to the development of skills and competencies (average score of 73.0 in 2016 vs. 69.2 in 2015). Whether these small (but statistically significant) differences reflect a genuine improvement in student experiences or, simply, potential differences in student characteristics is an open question.
- 2016 and 2015 graduating students did not differ (statistically) with respect to the level of (1) satisfaction with the program/major, (2) satisfaction with campus resources and services, and (3) individual development.

With respect to post-graduation plans, the proportion of graduating students who expected to pursue graduate and professional degree programs was virtually the same in 2015 (52%) and 2016 (52.6%). The proportion of graduating students who planned to work was slightly higher in 2016 (40.6%) compared to 2015 (37.3).

Summary, Conclusion, and Perspectives

Analyses of the 2016 Undergraduate Exit Survey data suggest that, overall, graduating students had a positive perception of different aspects of their undergraduate experiences. More particularly, institutional-level experience (including satisfaction with NU and perception of graduate attribute emphasis) was rated high, as were skill/competency development, psychological development, individual development, and satisfaction with campus resources and services.

Analyses also revealed that, student perceptions/experiences were a lot more positive on some aspects but also a lot less positive on others. Below are some examples:

- *Perception of NU*: Whereas students were very strongly inclined to recommend NU to other potential students, they were a lot less positive about how effectively student feedback is used to improve learning at NU.
- *Program satisfaction*: Although students tended to be highly satisfied with their instructors' availability out of class, they tended to be a lot less satisfied with the availability and variety of courses in their program.
- *Curricular preparation*: Students tended to be more positive about how well their undergraduate curriculum prepared them for graduate/professional studies; however, they were a lot less positive about a how well the curriculum prepared them for career opportunities.
- *Individual development*: Students were highly positive about how well NU met their needs for personal and intellectual growth; however, they were a lot less positive about how well NU met their overall career preparation needs.

Student success in higher education is not simply a function of the support students receive from the institution. It is also a function of students' own engagement and effort. Graduating students scored relatively low on frequency of key academic behaviors. Low frequency of several academic behaviors particularly affected students' overall performance on this dimension in a negative way. For instance, students appeared to have low levels of interaction with faculty members. Only 22% of the students indicated that they "often" or "very often" discussed their academic performance with faculty members; 23% indicated that they "often" or "very often" discussed course topics and ideas with faculty members outside class. Students, however, rated faculty availability out of class very high. This contrast suggests that many students may not have taken full advantage of the academic support and wisdom that faculty members offer. Empirical research has showed, consistently, that student-faculty interaction is a key determinant of a positive and successful academic experience.

Other academic behaviors that appeared to be problematic are class attendance and study habit. With respect to attendance, 94% of the survey respondents indicated that they missed at least one class (and 63% at least four classes) in spring 2016. Absenteeism, as empirical research has shown, is negatively related to academic success. With respect to study habits, students devoted 16.3 hours per week (seven days), on average, to class preparation (including studying, reading, completing assignments, etc.). This was only 3.2 hours (per week) more than the time they spent socializing with friends. Only about a third of the students spent more than 20 hours of class preparation time per week (at least three hours per day) in spring 2016. Considering that the average graduating student took 28.4 ECTS credits during the term, one wonders whether or not students invested "enough" time into academic activities.

As NU embarks in the processes of Academic Program Monitoring and Institutional Self-Evaluation, we suggest that faculty members, programs, schools, and the University community reflect on (1) the extent to which the University is integrating student voices/input; (2) how well course offerings (availability and variety) meet the demand and what can be done to improve the situation; (3) how well curricular and extracurricular activities prepare students for future careers and what can be done to improve career preparation. We also suggest that student orientations, class periods, and academic advising sessions be used as opportunities to discuss student *academic engagement* and help students maximize the level/quality of engagement (e.g. interaction with faculty, class attendance, study habits, time management, etc.).

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INTRODUCTION

About the Undergraduate Exit Survey

The Undergraduate Exit Survey aims to promote a data-driven understanding of the educational experiences of NU's graduating students (undergraduate level) and of their post-graduation plans. The survey measures different aspects of graduating students' undergraduate experiences and post-graduation plans. Table 1 summarizes the topics covered in the 2016 Undergraduate Exit Survey, and the number of survey items under each topic.

Table 1. Survey Topics and Items

Survey Topic	Number of Survey Items
Perception of NU (institutional level)	8
Program satisfaction and curricular preparation	12
Development of skills and competencies	17
Graduate attribute emphasis	8
Time usage	8
Frequency of academic behaviors	8
Class absenteeism and its reasons	9
Difficulties encountered	10
Writing and other activities completed	8
Psychological dispositions	17
Post-graduation plan	7
Satisfaction with NU services and facilities	12
Student employment during the year	2
Individual development	3
Open-ended comments	3

This survey was developed by the Office of the Provost, with input from undergraduate schools and from relevant support units. Some questions on the survey were adapted from popular U.S. instruments.

The survey was administered electronically, through Qualtrics, from mid-April to mid-June 2016. Reminders were sent to students once or twice a week.

Target Population, Response Rates, and Survey Completion

The Undergraduate Exit Survey targets undergraduate students who are eligible to complete their Bachelor's degree program at the end of the academic year. In spring 2016, The Office of the Registrar provided the Office of the Provost with a list of 459 potential graduates. These students were invited to participate in the survey. Overall, 340 students participated, for a response rate of 74.1%. Of the students who completed the survey, 269 (79%) actually graduated on June 11, 2016. Analyses, however, we conducted using all 340 responses received.

Survey completion rate was also high: 90% of the participants responded to at least 80% of the relevant items on the survey (with 66% of the participants responding to every applicable close-ended item).

Tables 1, 2, and 3 provide response rates (as well as the distribution of students in the population and in the sample of respondents), by school, gender, and prior academic performance.

Table 2. Survey Response Rate by School

	Graduating Students	Survey Respondents	Response Rate (%)
School of Engineering	145	93	64.1
School of Humanities and Social Sciences	146	115	78.8
School of Science and Technology	168	132	78.6
Total	**459**	**340**	**74.1**

Table 3. Survey Response Rate by Gender

	Graduating Students	Survey Respondents	Response Rate (%)
Female	205	162	79.0
Male	254	178	70.1
Total	**459**	**340**	**74.1**

Table 4. Survey Response Rate by Level of Academic Performance (Fall 2015 cumulative GPA)

	Graduating Students	Survey Respondents	Response Rate (%)
Low-achieving (median GPA or below)	234	163	69.7
High-achieving (above median GPA)	225	177	78.7
Total	**459**	**340**	**74.1**

Population and Survey Respondent Distributions

Figure 1. Population and Survey Respondent Distribution by School
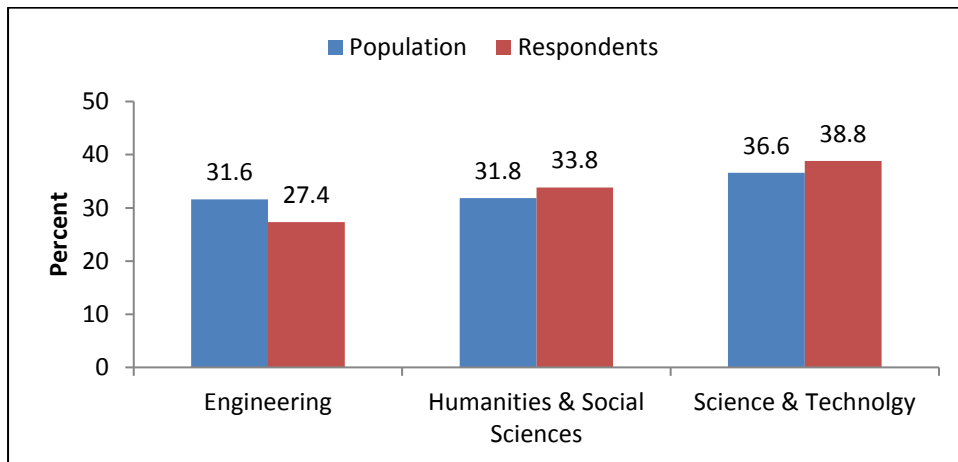
Figure 2. Population and Survey Respondent Distribution by Gender
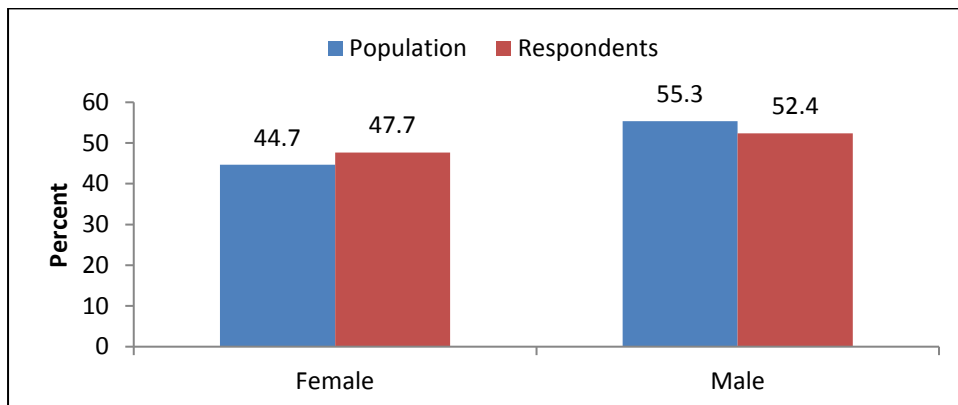
Figure 3. Population and Survey Respondent Distribution by Prior Academic Performance
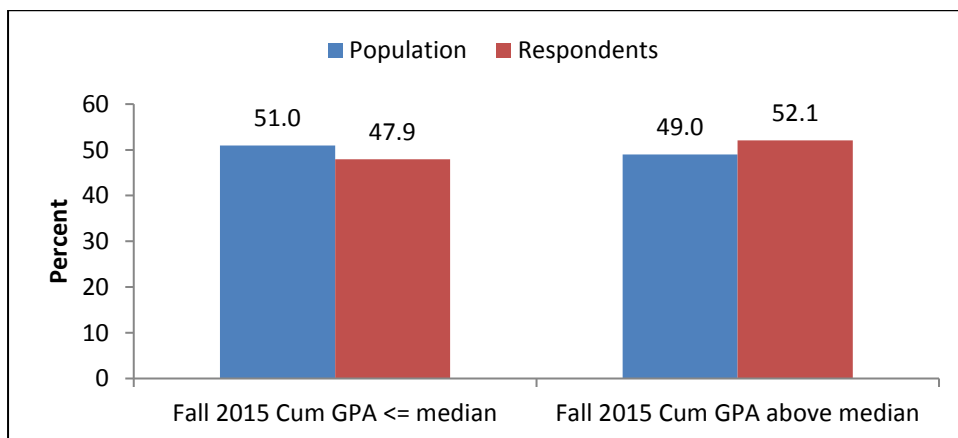
Data Analysis

We used various analytical approaches. (1) We used Exploratory Factor Analysis and reliability analysis to create thirteen indicators that summarized student perceptions and experience. This analysis was based on more than 100 items that involved a rating scale. For each indicator, we created a composite score on a scale from 0 to 100. This step involved reverse-coding negatively worded items before the analysis. (2) We then computed descriptive statistics (mean, standard deviation, median, and number of respondents) for each indicator. (3) We computed relevant descriptive statistics (mean, standard deviation, frequency distribution of responses, and number of respondents, where applicable) for each close-ended item. The aim of this descriptive analysis was to provide a snapshot description of the perceptions, undergraduate experiences, and post-graduation plans of graduating students.

The survey included three open-ended questions that asked students to comment on different aspects of their undergraduate experience. We coded students' comments in order to identify emerging themes.

Non-Response Error

Differences in response rates across sub-groups can lead to non-response bias, particularly if these sub-groups also differ in their responses to particular survey questions (Kalton, 1983; Pike, 2008) . For information on how we addressed non-response error, see Appendix A.

Limitations

Information collected through surveys is almost always prone to error. Different sources of survey error have been documented in the literature, including sampling error, coverage error, non-response error, and measurement error. These errors can present limitations to the accuracy/precision of survey results. For more information, see Appendix B.

Organization of the Report

This report is organized into two main parts. Part 1 provides relevant descriptive statistics on composite indicators (measures) of student perceptions and experiences. Part 2 provides detailed analyses by survey item.

The report includes a series of appendices that provide more detailed information on non-response bias (Appendix A), limitations related to the precision of survey results (Appendix B), and computation of composite indicators (Appendix C).

I. COMPOSITE INDICATORS OF STUDENT PERCEPTIONS AND EXPERIENCES

We derived 13 composite indicators that summarize different aspects of students' perceptions and experiences, based on student responses to over 100 survey items, using a combination of exploratory factor analysis and reliability analysis. Each indicator consists in a composite score on a scale from 0 (low) to 100 (high). The indicators are as follows:

- *Perception of NU*: a measure based on eight items that assessed how positive students were about their NU experience
- *Program satisfaction*: a measure based on 10 items that assessed how satisfied students were with different aspects of their undergraduate program
- *Curricular preparation (for career and postgraduate studies)*: a measure based on two items that assessed how well the undergraduate curriculum prepared students for career opportunities and graduate/professional studies
- *Development of skills and competencies*: a measure based on 17 items that assessed the extent to which students developed certain skills and competencies
- *Institutional emphasis on graduate attributes*: a measure based on eight items that assessed how well NU emphasized each graduate attribute during students' undergraduate studies
- *Frequency of academic behaviors*: a measure based on 9 items that measured how frequency students engaged in certain academic behaviors, as well as the number of hour spent on class preparation and number classes missed during the term
- *Level of difficulties encountered*: a measure based on 10 items that measured how difficult students found different aspects of their undergraduate experience to be
- *Dependence on others*: a psychological measure based on five items that assessed how much the student depended on other people for emotional, social, and/or academic support during undergraduate studies
- *Self-concept*: a psychological measure based on two items that assessed how well students perceived their own competence relative to other students in their program
- *Self-esteem*: a psychological measure based on five items that assessed how well students perceived their own worth or merit, relative to the "ideal" self
- *Stress level*: a psychological measure based on five items that measured how stressful students found different aspects of their experiences to be
- *Satisfaction with campus resources and services*: a measure based on 12 items that measured how satisfied students were with various campus resources, services, and facilities
- *Individual development*: a measure based on three items that assessed how well NU met student needs for personal growth , intellectual growth, and career preparation

Table 6 provides descriptive statistics (mean, standard deviation, median, and number of respondents) on each composite indicator, overall and by school.

Table 5. Descriptive statistics on composite indicators (Scale: 0 –100).

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*Median*	*N*	*Mean*	*SD*	*Median*	*N*	*Mean*	*SD*	*Median*	*N*	*Mean*	*SD*	*Median*	*N*
Perception of NU	71.5	17.3	75.0	339	68.5	16.4	70.0	93	72.6	18.0	75.0	114	72.6	17.1	75.0	132
Satisfaction with program	64.3	17.5	64.4	337	58.4	17.2	57.8	92	66.9	17.3	66.7	115	66.2	17.0	64.4	130
Curricular preparation (for career & postgraduate study)	58.3	18.4	62.5	334	56.5	17.6	50.0	91	60.5	18.1	62.5	115	57.6	19.0	50.0	128
Development of skills and competencies	73.0	13.5	74.1	329	71.6	14.5	70.6	90	74.6	12.3	75.3	113	72.5	13.9	74.1	126
Institutional emphasis on graduate attributes	72.5	17.2	72.5	318	72.1	14.8	70.0	87	74.0	18.6	77.5	111	71.3	17.4	72.5	120
Frequency of academic behaviors	45.9	14.4	44.8	315	46.0	13.9	45.6	86	47.1	15.4	44.8	110	44.8	13.8	43.7	119
Level of difficulties encounted	36.1	16.0	36.0	310	36.1	14.6	38.0	85	34.9	16.9	36.0	108	37.2	16.3	34.0	117
Dependence on others (family, friends, faculty, staff)	44.3	17.9	46.7	310	46.3	17.2	46.7	85	43.4	19.0	46.7	107	43.8	17.3	46.7	118
Self-concept (perception of own competence relative to others)	70.4	20.9	75.0	311	70.3	21.5	75.0	85	70.7	21.2	75.0	107	70.2	20.5	75.0	119
Self-esteem (perception of own worth relative to "ideal" self)	77.7	19.5	80.0	307	76.4	20.1	80.0	83	80.1	19.1	84.0	106	76.6	19.4	80.0	118
Stress level	51.1	19.9	53.3	308	50.8	18.2	50.0	85	53.0	20.7	53.3	106	49.5	20.4	53.3	117
Satisfaction with campus resources and services	67.5	16.5	66.7	299	69.9	14.7	70.0	84	64.8	17.5	66.7	102	68.2	16.7	66.7	113
Individual development (career prep and intellectual/personal growth)	68.4	18.6	66.7	307	65.6	18.1	66.7	85	72.8	17.2	75.0	106	66.3	19.7	66.7	116

Item scale: 0 = "Lowest value", 100 = "Highest value"; SD = Standard Deviation; Median = middle value (half scoring above and half below this value)

Figure 4. Comparing graduating students' perceptions/experiences in 2015 and 2016
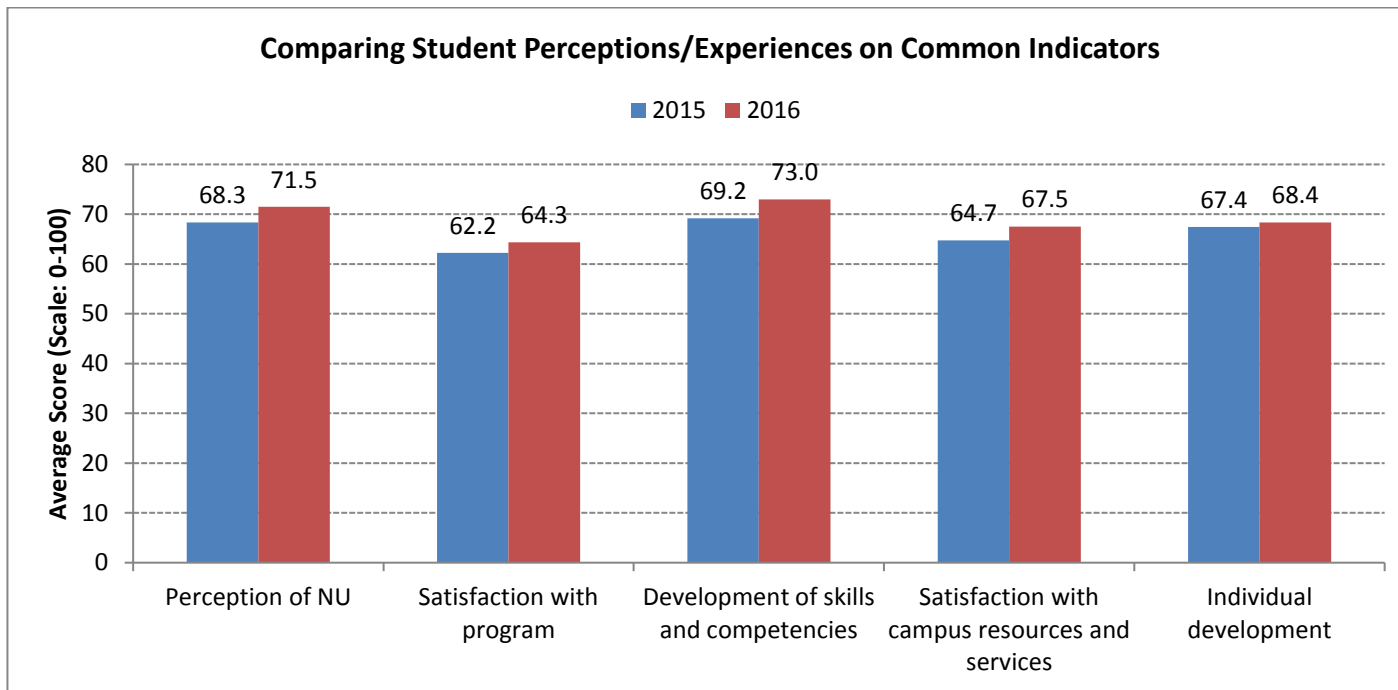
II. DETAILED ANALYSES BY SURVEY ITEM

II.1. Perception of NU Experiences

Table 6. Please indicate the extent to which you agree or disagree with each of the following statements (Scale: 1 – 6).

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*
(1) NU has helped me meet the goals I came here to achieve.	4.50	1.10	53.7	339	4.40	1.10	44.1	93	4.60	1.10	58.8	114	4.60	1.10	56.1	132
(2) My experiences here have helped motivate me to make something of my life.	4.80	1.10	65.5	339	4.60	1.00	59.1	93	4.90	1.20	67.5	114	4.90	1.00	68.2	132
(3) I am proud of my accomplishments at NU.	4.70	1.20	60.5	339	4.70	1.10	59.1	93	4.70	1.20	63.2	114	4.80	1.20	59.1	132
(4) I believe student feedback is used effectively to improve student learning.	3.90	1.40	33.4	338	4.00	1.30	34.4	93	3.80	1.40	27.2	114	4.00	1.40	38.2	131
(5) If I had to start over again, I would still choose to come to NU.	4.60	1.40	61.1	339	4.50	1.40	59.1	93	4.80	1.40	65.8	114	4.60	1.40	58.3	132
(6) If I had to start over again, I would still choose the same field of study.	4.20	1.60	51.0	337	4.10	1.50	48.4	91	4.20	1.70	49.1	114	4.30	1.70	54.5	132
(7) I would recommend NU to other potential students.	5.00	1.10	73.5	339	4.90	1.10	69.9	93	5.10	1.10	76.3	114	5.00	1.00	73.5	132
(8) I am satisfied with the overall education I received at NU.	4.70	1.10	60.5	339	4.20	1.10	37.6	93	4.90	1.00	69.3	114	4.80	1.10	68.9	132

Item scale: 1 = "Strongly disagree", 6 = "Strongly agree"; SD = Standard Deviation; % "5" or "6": Percent who selected the highest two response categories ("5" or "6")

II.2. Satisfaction with Program

Table 7. Please rate your satisfaction or dissatisfaction with each of the following aspects of your major/program (Scale: 1 – 6).

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*
(1) Quality of teaching	4.40	1.00	44.2	337	3.80	1.00	22.8	92	4.70	1.00	55.7	115	4.50	0.90	49.2	130
(2) Assessment procedures	4.30	1.00	42.3	336	3.80	1.00	18.5	92	4.50	1.00	56.1	114	4.30	1.00	46.9	130
(3) Quality of academic advising	4.30	1.20	47.5	337	4.00	1.20	35.9	92	4.50	1.30	52.2	115	4.40	1.20	51.5	130
(4) Availability of courses you wanted to take	3.40	1.40	21.5	335	3.10	1.40	16.3	92	3.30	1.30	18.3	115	3.60	1.30	28.1	128
(5) Variety of courses offered	3.40	1.30	20.2	336	3.20	1.40	19.6	92	3.40	1.20	15.8	114	3.70	1.30	24.6	130
(6) Availability of your instructors out of class	4.70	1.00	63.9	335	4.60	1.00	58.7	92	4.70	1.10	64.9	114	4.80	1.00	66.7	129
(7) Faculty concern for your academic progress	4.10	1.30	40.7	337	3.90	1.30	34.8	92	4.10	1.30	41.7	115	4.20	1.30	43.8	130
(8) Ability to meet the expectations you had at the beginning	4.20	1.10	42.1	337	4.00	1.10	31.5	92	4.30	1.20	50.4	115	4.30	1.10	42.3	130
(9) NU's ability to meet the expectations you had	4.20	1.20	38.3	337	3.90	1.10	27.2	92	4.30	1.20	43.5	115	4.30	1.10	41.5	130
(10) Your overall experience in your major/program	4.40	1.10	45.8	336	4.10	1.00	34.8	92	4.50	1.10	50.9	114	4.40	1.00	49.2	130

Item scale: 1 = "Very dissatisfied", 6 = "Very satisfied"; SD = Standard Deviation; % "5" or "6": Percent who selected the highest two response categories ("5" or "6")

II.3. Curricular Preparation for Career and Postgraduate Study

Table 8. How well has your undergraduate curriculum prepared you for: (Scale: 1 – 5)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*
(1) Career opportunities	3.10	0.90	28.0	336	3.10	0.80	31.5	92	3.10	0.90	27.0	115	3.10	0.90	26.4	129
(2) Graduate/professional studies	3.60	0.80	52.1	334	3.40	0.80	41.8	91	3.70	0.80	63.5	115	3.60	0.90	49.2	128

Item scale: 1 = "Very inadequately", 5 = "Very well"; SD = Standard Deviation; % "4" or "5": Percent who selected the highest two response categories ("4" or "5")

II.4. Development of Skills and Competencies

Table 9. How would you rate yourself in the following skills and abilities? (Scale: 1 – 6)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*
(1) Time management	3.80	1.20	26.0	335	3.80	1.20	28.6	91	3.70	1.20	26.1	115	3.80	1.10	24.0	129
(2) Writing	4.30	1.00	42.1	335	4.10	1.10	34.1	91	4.60	0.90	50.4	115	4.20	1.00	40.3	129
(3) Oral communication	4.50	1.10	54.9	335	4.20	1.10	41.8	91	4.80	0.90	67.0	115	4.40	1.10	53.5	129
(4) Research	4.40	1.00	49.1	334	4.40	1.10	47.8	90	4.50	1.00	52.2	115	4.40	1.00	47.3	129
(5) Presentation	4.70	1.00	64.8	335	4.50	1.10	48.4	91	4.90	1.00	73.9	115	4.80	1.00	68.2	129
(6) Leadership	4.50	1.10	47.5	335	4.40	1.10	41.8	91	4.60	1.00	53.0	115	4.40	1.10	46.5	129
(7) Problem-solving	4.90	0.90	67.5	335	5.00	1.00	70.3	91	4.90	0.90	65.2	115	4.80	0.90	67.4	129
(8) Self-management (e.g. emotions, stress, life challenges)	4.80	1.10	65.1	335	4.80	1.10	62.6	91	4.70	1.20	63.5	115	4.90	1.10	68.2	129
(9) Search and retrieve information using technology	4.90	0.90	73.2	328	4.80	0.90	65.6	90	4.90	0.90	71.7	113	5.00	1.00	80.0	125
(10) Critically evaluate information for decision-making	4.90	0.90	72.3	329	4.80	0.90	65.6	90	5.10	0.70	79.6	113	4.90	1.00	70.6	126
(11) Focus on a task in spite of distractions	4.30	1.10	43.7	327	4.30	1.10	41.1	90	4.20	1.20	39.8	113	4.40	1.10	49.2	124
(12) Work in a team or group	4.80	1.10	66.5	328	4.80	1.10	68.9	90	4.90	0.90	69.0	113	4.70	1.10	62.4	125
(13) Work independently	5.20	0.90	79.8	326	5.10	0.90	76.7	90	5.30	0.90	82.0	111	5.10	1.00	80.0	125
(14) Use techniques, skills, & modern tools for professional success	4.80	1.00	67.7	328	4.70	0.90	68.9	90	4.80	0.90	65.5	113	4.80	1.00	68.8	125
(15) Apply knowledge and skills in real-world settings	4.40	1.10	51.5	328	4.40	1.10	51.1	90	4.50	1.10	51.3	113	4.40	1.20	52.0	125
(16) Confidence in your ability to achieve your goals	4.70	1.00	64.9	328	4.70	1.00	60.0	90	4.90	1.00	69.9	113	4.70	1.10	64.0	125
(17) Motivation to learn new things	5.00	1.00	73.2	328	5.00	1.00	66.7	90	5.20	0.80	79.6	113	4.90	1.10	72.0	125

Item scale: 1 = "Major weakness", 6 = "Major strength"; SD = Standard Deviation; % "5" or "6": Percent who selected the highest two response categories ("5" or "6")

II.5. Institutional Emphasis on Graduate Attributes

Table 10. How much emphasis did NU put on each of the following during your undergraduate studies? (Scale: 1 – 6)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*
(1) In-depth/sophisticated understanding of domain of study	4.20	1.10	39.3	318	4.10	1.10	34.5	87	4.30	1.30	46.8	111	4.30	1.00	35.8	120
(2) Intellectually curious, creative and open-minded	4.60	1.10	57.2	318	4.50	1.00	52.9	87	4.80	1.00	67.6	111	4.40	1.20	50.8	120
(3) Thoughtful decision-maker who knows how to involve others	4.50	1.10	50.2	317	4.50	1.00	48.3	87	4.50	1.20	52.7	110	4.40	1.10	49.2	120
(4) Able to create new opportunities	4.40	1.10	44.2	317	4.40	1.10	44.8	87	4.30	1.20	46.4	110	4.30	1.00	41.7	120
(5) Communicate effectively across cultures and languages	4.90	1.10	65.4	318	4.80	0.90	60.9	87	4.90	1.10	69.4	111	4.80	1.10	65.0	120
(6) Tolerant of people of different beliefs/values/backgrounds	5.10	1.00	73.9	318	5.00	1.00	71.3	87	5.20	1.10	76.6	111	5.00	1.10	73.3	120
(7) Develop high moral values	4.70	1.10	58.2	318	4.80	1.00	58.6	87	4.80	1.20	60.4	111	4.60	1.20	55.8	120
(8) Take a leading role in the development of your country	4.70	1.20	61.9	318	4.70	1.00	60.9	87	4.80	1.30	64.0	111	4.70	1.10	60.8	120

Item scale: 1 = "Weak emphasis", 6 = "Strong emphasis"; SD = Standard Deviation; % "5" or "6": Percent who selected the highest two response categories ("5" or "6")

II.6. Time Usage

Table 11. During the current academic year, about how many hours per week (7 days) did you spend doing the following activities?

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean (hours)	*SD*	*% 26 hours or more*	*N*	*Mean*	*SD*	*% 26 hours or more*	*N*	*Mean*	*SD*	*% 26 hours or more*	*N*	*Mean*	*SD*	*% 26 hours or more*	*N*
(1) Preparing for class (studying, reading, doing homework, etc.)	16.30	8.60	17.9	313	16.60	8.70	20.0	85	16.60	8.70	20.0	110	15.90	8.40	14.4	118
(2) Participating in extra-curricular activities (club/organization)	6.30	7.10	3.8	312	6.40	7.10	3.5	85	6.90	7.50	4.6	109	5.70	6.80	3.4	118
(3) Socializing with friends	13.10	8.40	12.4	314	13.10	7.80	10.5	86	13.70	9.10	17.3	110	12.70	8.10	9.3	118
(4) Participating in physical exercises or sports	7.20	6.60	2.9	313	7.60	6.40	1.2	85	7.70	7.70	5.5	110	6.50	5.60	1.7	118
(5) Watching TV (from any devices)	5.10	7.10	2.5	314	5.90	8.30	5.8	86	4.30	6.10	0.9	110	5.20	7.10	1.7	118
(6) Reading for pleasure (books/materials unrelated to school work)	7.20	6.30	2.2	314	8.00	6.50	2.3	86	7.40	6.40	1.8	110	6.50	6.10	2.5	118
(7) Playing video/computer games	3.20	6.20	1.9	313	4.50	7.50	4.7	86	2.20	5.30	0.9	110	3.20	5.70	0.9	117
(8) Using online social networks (Facebook, Vkontakte, etc.)	10.90	8.40	8.9	314	11.40	9.10	12.8	86	11.60	8.80	10.0	110	10.00	7.60	5.1	118

Original scale: 1 = "0 hours", 8 = "More than 30 hours"; average number of hours was estimated using the midpoints corresponding to the response options; SD = Standard Deviation; % 26 hours or more: Percent who selected the highest two response categories ("26-30 hours" or "More than 30 hours").

II.7. Frequency of Academic Behaviors

Table 12. During the current academic year, about how often have you done each of the following? (Scale" 1 – 4)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*
(1) Study or work with other students on course assignments/projects	2.80	0.80	62.9	315	3.00	0.80	70.9	86	2.80	0.70	64.5	110	2.60	0.80	55.5	119
(2) Work on research projects with faculty members	2.10	0.90	30.8	315	2.40	0.90	40.7	86	1.80	0.90	18.2	110	2.20	0.90	35.3	119
(3) Discuss your academic performance with a faculty member	2.10	0.70	21.6	315	1.90	0.70	16.3	86	2.10	0.80	23.6	110	2.10	0.70	23.5	119
(4) Discuss course topics/ideas/concepts with faculty outside class	2.10	0.80	23.1	312	2.10	0.70	25.9	85	2.10	0.80	25.7	109	2.00	0.80	18.6	118
(5) Prepare 2 or more drafts of a paper/assignment before submitting it	2.10	0.80	27.3	315	2.00	0.80	27.9	86	2.10	0.90	28.2	110	2.10	0.80	26.1	119
(6) Participate in class discussions	2.70	0.80	52.2	314	2.50	0.80	45.3	86	3.00	0.90	66.4	110	2.50	0.80	44.1	118
(7) Use NU library for academic purposes	2.60	0.90	48.6	313	2.50	0.90	43.5	85	2.90	0.90	60.0	110	2.40	0.90	41.5	118
(8) Come to class without completing readings or assignments	2.10	0.80	24.0	313	1.90	0.80	18.6	86	2.30	0.80	31.8	110	2.10	0.70	20.5	117

Item scale: 1 = "Never", 4 = "Very often"; SD = Standard Deviation; % "3" or "4": Percent who selected the highest two response categories ("3" or "4")

II.8. Class Attendance

Table 13. During the current term, about how many times did you miss classes for any reason?

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "6" or more*	*N*	*Mean*	*SD*	*% "6" or more*	*N*	*Mean*	*SD*	*% "6" or more*	*N*	*Mean*	*SD*	*% "6" or more*	*N*
(1) Number of classes missed for any reason during the current term	5.10	3.20	32.9	313	5.00	3.40	32.9	85	5.40	3.10	34.6	107	4.90	3.20	31.4	121

Original scale: 1 = "None", 5 = "10 or more"; however, average number of classes missed was estimated using the midpoints corresponding to the response options; SD = Standard Deviation; % "6" or more: Percent who selected the highest two response categories ("7-9" or "10 or more").

Table 14. For each item below, please indicate if it was a major, minor, or not a reason for missing classes this term.

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Not a reason (%)	*Minor reason (%)*	*Major reason (%)*	*N*	*Not a reason (%)*	*Minor reason (%)*	*Major reason (%)*	*N*	*Not a reason (%)*	*Minor reason (%)*	*Major reason (%)*	*N*	*Not a reason (%)*	*Minor reason (%)*	*Major reason (%)*	*N*
(1) Low quality of teaching	47.3	26.9	25.8	279	39.4	28.2	32.4	71	49.5	26.7	23.8	101	50.5	26.2	23.4	107
(2) Inconvenient class schedule	47.0	26.5	26.5	279	45.9	31.1	23.0	74	49.0	25.0	26.0	100	45.7	24.8	29.5	105
(3) Need to participate in extra-curricular activities	65.8	21.9	12.2	278	64.3	27.1	8.6	70	64.4	14.9	20.8	101	68.2	25.2	6.5	107
(4) Use class time to complete assignments from other courses	40.7	33.9	25.4	280	59.2	31.0	9.9	71	23.8	37.6	38.6	101	44.4	32.4	23.1	108
(5) Course not relevant to my interests	56.0	23.1	20.9	277	54.3	21.4	24.3	70	48.0	25.5	26.5	102	64.8	21.9	13.3	105
(6) Course too difficult for me	87.2	9.1	3.6	274	84.1	11.6	4.3	69	87.0	11.0	2.0	100	89.5	5.7	4.8	105
(7) Class attendance not required	49.5	32.6	17.9	279	60.0	25.7	14.3	70	48.0	34.3	17.6	102	43.9	35.5	20.6	107
(8) Illness	30.5	27.7	41.8	282	38.9	29.2	31.9	72	24.5	20.6	54.9	102	30.6	33.3	36.1	108

II.9. Difficulties Encountered

Table 15. How difficult did you find the following to be during your undergraduate studies? (Scale: 1 – 6)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*
(1) Learning course material	3.40	1.20	17.4	311	3.20	1.20	15.3	85	3.40	1.20	15.7	108	3.50	1.20	20.3	118
(2) Managing your time effectively	3.90	1.40	37.4	310	3.70	1.20	28.2	85	4.00	1.50	41.7	108	4.00	1.30	40.2	117
(3) Interacting with faculty members	2.80	1.30	11.0	309	2.90	1.30	10.7	84	2.70	1.30	10.2	108	2.90	1.30	12.0	117
(4) Living away from home	2.10	1.30	8.7	309	1.80	1.10	2.4	85	2.30	1.50	13.9	108	2.10	1.30	8.6	116
(5) Using English for academic purposes	2.10	1.20	5.2	309	2.20	1.10	3.5	85	1.90	1.20	4.7	107	2.30	1.30	6.8	117
(6) Covering (paying) living expenses	3.00	1.50	15.8	310	3.00	1.50	16.5	85	3.00	1.50	14.8	108	3.00	1.50	16.2	117
(7) Learning effectively on your own	2.70	1.40	11.9	310	2.80	1.50	12.9	85	2.70	1.40	11.1	108	2.70	1.40	12.0	117
(8) Working effectively with others	2.80	1.30	10.4	309	2.90	1.30	11.8	85	2.50	1.20	7.5	107	2.90	1.30	12.0	117
(9) Using technology for academic purposes	2.10	1.10	4.2	310	2.30	1.20	3.5	85	1.90	1.00	1.9	108	2.10	1.20	6.8	117
(10) Meeting deadlines	3.20	1.40	19.7	310	3.30	1.50	21.2	85	3.20	1.50	19.4	108	3.10	1.30	18.8	117

Item scale: 1 = "Not at all difficult", 6 = "Very difficult"; SD = Standard Deviation; % "5" or "6": Percent who selected the highest two response categories ("5" or "6")

II.10. Writing and other Activities Completed

Table 16. During the current academic year, about how many papers, reports, or other writing tasks of the following lengths have you completed?

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "7" or more*	*N*	*Mean*	*SD*	*% "7" or more*	*N*	*Mean*	*SD*	*% "7" or more*	*N*	*Mean*	*SD*	*% "7" or more*	*N*
(1) Up to 5 pages	7.00	3.30	58.2	297	6.70	3.30	52.6	78	7.70	3.10	70.9	103	6.60	3.40	50.9	116
(2) More than 5 pages	4.90	3.30	33.0	294	6.30	3.00	48.2	83	5.30	3.40	36.5	104	3.40	3.00	17.8	107

Original scale: 1 = "None", 5 = "10 or more"; however, average number of papers was estimated using the midpoint corresponding to the response option; SD = Standard Deviation; % "4" or "5": Percent who selected the highest two response categories ("7-9" or "10 or more").

Table 17. Which of the following activities have you done so far?

	All Schools			School of Engineering			School of Humanities & Social Sciences			School of Science & Technology		
	Yes	*No*	*N*	*Yes*	*No*	*N*	*Yes*	*No*	*N*	*Yes*	*No*	*N*
(1) Participate in an internship	91.6	8.4	310	97.6	2.4	85	90.6	9.4	106	88.2	11.8	119
(2) Participate in a study abroad program	30.7	69.3	306	31.3	68.7	83	29.8	70.2	104	31.1	68.9	119
(3) Participate in a volunteer activity	74.5	25.5	310	68.2	31.8	85	78.3	21.7	106	75.6	24.4	119
(4) Hold formal leadership role in student organization/group	45.0	55.0	309	44.6	55.4	83	51.4	48.6	107	39.5	60.5	119
(5) Work with a faculty member on a research project	53.9	46.1	306	64.3	35.7	84	38.5	61.5	104	60.2	39.8	118
(6) Culminating senior experience (capstone, thesis, etc.)	60.2	39.8	309	97.6	2.4	85	43.4	56.6	106	48.3	51.7	118

II.11. Psychological Factors

Table 18. How would you rate yourself on the following factors, relative to other students in your program? (Scale: 1 – 5)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*
(1) Academic ability relative other students in program	3.70	0.90	57.2	311	3.60	1.00	48.2	85	3.80	0.90	64.5	107	3.70	0.90	57.1	119
(2) Motivation to succeed relative to other students in program	3.90	1.00	69.7	310	4.00	1.00	72.9	85	3.90	1.00	67.3	107	3.90	0.90	69.5	118

Item scale: 1 = "Bottom 10%", 5 = "Top 10%"; SD = Standard Deviation; % "4" or "5": Percent who selected the highest two response categories ("4" or "5")

Table 19. How much did you depend on the following groups for support (emotional, social, and/or academic) during your undergraduate studies? (Scale: 1 – 4)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*
(1) Family members	2.80	1.00	61.9	310	2.80	1.00	57.6	85	2.90	1.00	63.6	107	2.70	1.00	63.6	118
(2) Friends	2.80	0.90	67.4	310	2.80	0.90	71.8	85	2.90	0.90	65.4	107	2.80	0.80	66.1	118
(3) Classmates	2.10	0.80	30.6	310	2.30	0.80	37.6	85	2.00	0.90	25.2	107	2.10	0.90	30.5	118
(4) Faculty	2.20	0.90	36.7	308	2.30	0.90	39.3	84	2.10	0.90	30.8	107	2.30	0.80	40.2	117
(5) Administrative staff (department, school, or central level)	1.70	0.80	13.9	310	1.70	0.80	16.5	85	1.60	0.70	9.3	107	1.70	0.80	16.1	118

Item scale: 1 = "None at all", 4 = "A lot"; SD = Standard Deviation; % "3" or "4": Percent who selected the highest two response categories ("3" or "4")

Table 20. To what extent do you agree or disagree with the following statements? (Scale: 1 – 6)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*	*Mean*	*SD*	*% "5" or "6"*	*N*
(1) I feel I am a person of worth, at least on an equal plane with others	4.90	1.30	69.6	306	4.80	1.40	68.7	83	5.10	1.00	75.5	106	4.80	1.30	65.0	117
(2) I take a positive attitude toward myself	5.00	1.10	73.9	307	5.00	1.10	73.5	83	5.10	1.10	75.5	106	5.00	1.20	72.9	118
(3) On the whole, I am satisfied with myself	4.70	1.20	61.2	307	4.60	1.20	60.2	83	4.80	1.20	64.2	106	4.60	1.10	59.3	118
(4) I am able to do things as well as most other people	5.10	1.10	79.8	307	5.00	1.10	75.9	83	5.20	1.00	80.2	106	5.10	1.00	82.2	118
(5) I have high self-esteem	4.70	1.20	59.2	306	4.70	1.20	57.8	83	4.80	1.20	63.2	106	4.60	1.10	56.4	117

Item scale: 1 = "Strongly disagree", 6 = "Strongly agree"; SD = Standard Deviation; % "5" or "6": Percent who selected the highest two response categories ("5" or "6")

Table 21. Below are potential sources of stress that you may have experienced as a student. Please indicate how each has affected you during your undergraduate studies (Scale: 1 – 4).

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*
(1) Managing the workload for your courses	2.60	0.80	56.7	307	2.60	0.70	54.1	85	2.70	0.80	56.6	106	2.60	0.90	58.6	116
(2) Personal difficulties with family or friends	2.40	1.00	43.6	307	2.10	1.00	33.3	84	2.40	1.00	44.3	106	2.50	1.00	50.4	117
(3) Balancing multiple commitments (academic, extracurricular, personal)	2.40	0.90	45.0	307	2.40	0.90	42.9	84	2.50	0.90	52.8	106	2.20	0.90	39.3	117
(4) Concerns about finances	2.20	0.90	36.8	307	2.30	1.00	40.0	85	2.30	1.00	38.7	106	2.10	0.90	32.8	116
(5) Concerns about future plans (e.g., employment, graduate studies)	3.10	0.90	73.3	307	3.20	0.80	78.8	85	3.00	1.00	72.4	105	3.00	0.90	70.1	117

Item scale: 1 = "Not a source of stress", 4 = "Very stressful"; SD = Standard Deviation; % "3" or "4": Percent who selected the highest two response categories ("3" or "4")

II.12. Post-graduation Plans

Figure 5. Primary activity after graduation

Employment: 40.6% (n = 126)	Job offer received and accepted: 15.1%
	Job offer received; not yet accepted: 15.9%
	Currently applying for jobs: 53.1%
	Will apply after graduation: 15.9%

Other activity: 6.8% (n = 21)

Graduate study: 52.6% (n = 163)	Admission offer received and accepted: 23.5%
	Admission offer received; not yet accepted: 12.3%
	Currently applying for admission: 58.6%
	Will apply for admission after graduation: 5.6%

Figure 6. Prospective post-graduate degree to be pursued (N = 163)

Prospective Postgraduate Degree
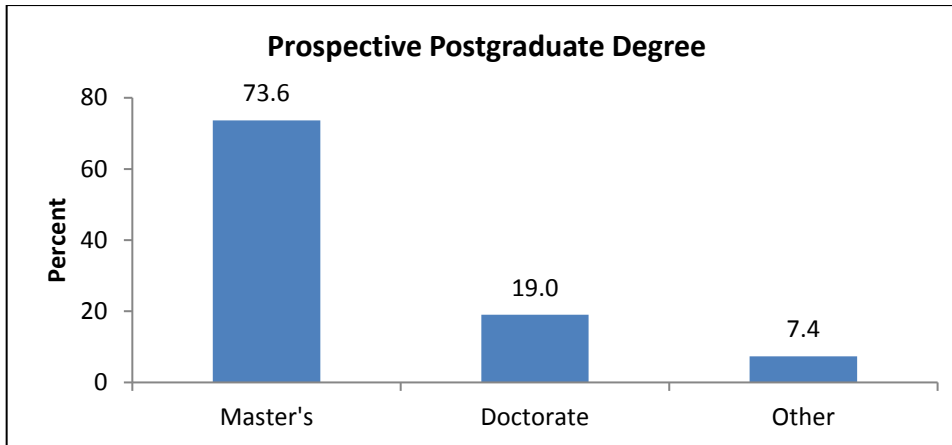
Figure 7. Prospective post-graduate field of study (N = 163)

Prospective Postgraduate Field of Study
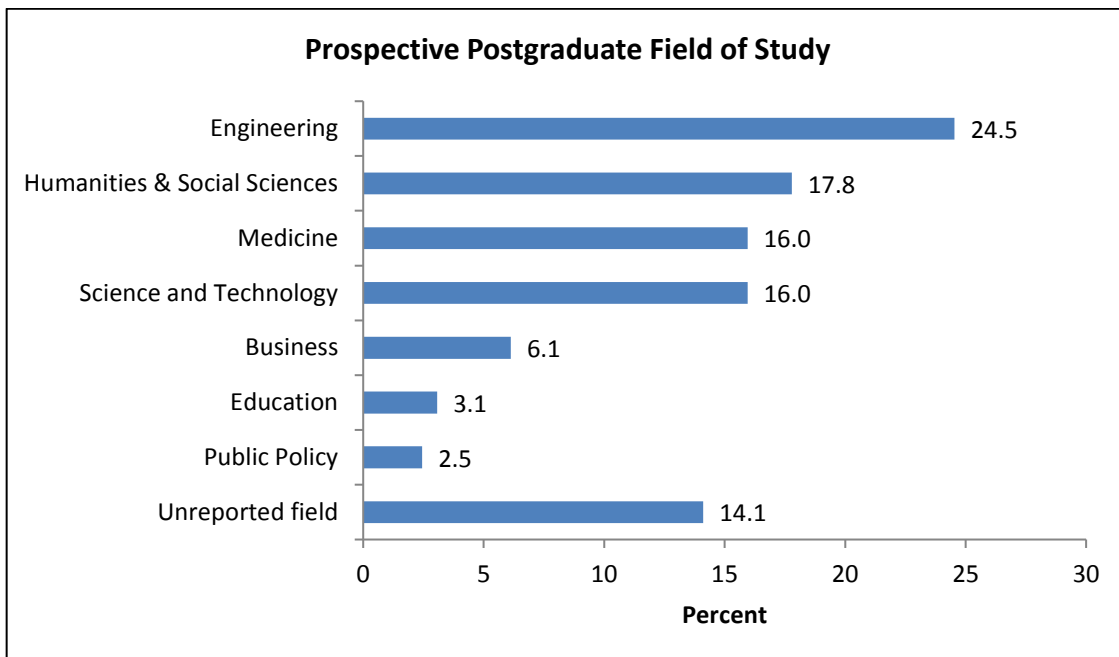
Table 22. Prospective institution for students who plan to pursue postgraduate studies (N=163)

	Count[1]	Percent
Nazarbayev University	61	37.4
King Abdullah University of Science & Technology	5	3.1
Central European University		
University of Illinois		
Norwegian School of Economics		
Polytechnic University of Milan		
University of Alberta		
University of Glasgow		
Boston University		
Bowling Green State University		
Carnegie Mellon University		
City University London		
Columbia University		
Embry-Riddle Aeronautical University		
Eurasian National University		
Flight Training Europe Jerez		
Georgetown University		
Goethe Institute		
Graduate Institute of International and Development Studies		
Higher School of Economics		
Innopolis University		
KTH Royal Institute of Technology		
Lille Catholic University		
Ludwig Maximilian University of Munich		
Luiss Guido Carli University		
Masdar Institute of Science and Technology		
Moscow State Institute of International Relations		
Münster University of Applied Sciences		
National Higher School of Mechanics and Microtechnology		
Okinawa Institute of Science and Technology		
Pantheon-Sorbonne University		
Polytechnic University of Madrid		
Seoul National University		
Stanford University		
Tulane University		
University of Bamberg		
University of Burgundy		
University of California, San Diego		
University of Cambridge		
University of Colorado Boulder		
University of Rochester		
University of Stuttgart		

[1] For confidential purposes, counts (and percentages) are displayed only when five or more students reported a particular institution.

	Count[1]	Percent
University of Sunderland		
University of Toronto		
University of Twente		
Uppsala University		
Unreported institution	*45*	*27.6*
Total	**163**	**100.0**

Table 23. Prospective country of destination for students who plan to pursue postgraduate studies (N=163)

	Count[2]	Percent
Kazakhstan	65	39.9
USA	14	8.6
Germany	6	3.7
Saudi Arabia	5	3.17
UK	5	3.1
France		
Canada		
Hungary		
Italy		
Russia		
Japan		
Netherlands		
Norway		
Spain		
United Arab Emirates		
South Korea		
Sweden		
Switzerland		
Unreported country	*39*	*23.9*
Total	**163**	**100**

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[2] For confidential purposes, counts (and percentages) are displayed only when five or more students reported a particular country.

II.13. Satisfaction with Campus Resources and Services

Table 24. Please rate your level of satisfaction or dissatisfaction with each of the following University services or facilities below. If an item does not apply to you, please select "Not Applicable". (Scale: 1 – 4)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*	*Mean*	*SD*	*% "3" or "4"*	*N*
(1) Library resources and services	3.60	0.70	96.3	305	3.60	0.70	95.2	84	3.50	0.70	95.2	105	3.60	0.60	98.2	116
(2) IT resources and services	3.00	0.80	81.5	305	3.10	0.70	90.1	84	2.90	0.90	74.0	105	3.10	0.80	81.9	116
(3) Classroom and lab facilities	3.10	0.70	82.6	305	3.00	0.70	82.1	84	3.10	0.70	83.2	104	3.10	0.80	82.3	117
(4) Career and advising services	3.20	0.80	86.4	305	3.20	0.70	90.4	84	3.20	0.80	85.3	105	3.10	0.80	84.3	116
(5) Student health services	2.80	0.90	67.0	302	2.90	0.80	74.0	82	2.70	0.80	65.3	105	2.70	0.90	63.5	115
(6) Psychological counseling services	3.10	0.80	86.5	304	3.00	0.70	86.3	83	3.10	0.70	88.5	105	3.20	0.80	84.5	116
(7) Student disability services	2.90	0.80	83.5	303	2.90	0.60	85.3	83	2.80	0.90	81.6	104	3.00	0.80	83.8	116
(8) Sports Center services	3.10	0.80	82.3	303	3.30	0.70	89.2	83	3.00	0.80	79.3	104	3.00	0.80	79.3	116
(9) Food services	2.70	0.80	63.7	304	2.70	0.80	66.3	84	2.60	0.90	58.3	105	2.70	0.80	66.7	115
(10) Student housing facilities	3.30	0.70	91.1	305	3.50	0.60	97.5	84	3.20	0.80	86.1	105	3.30	0.70	91.0	116
(11) Parking services	2.00	0.90	34.6	304	2.20	1.00	50.0	83	1.90	0.90	27.0	105	1.90	0.90	32.0	116
(12) Safety and security on campus	3.00	0.90	76.5	304	3.00	0.90	83.3	84	2.90	1.00	71.0	104	3.00	0.90	76.6	116

Item scale: 1 = "Very dissatisfied", 4 = "Very satisfied"; SD = Standard Deviation; % "3" or "4": Percent who selected the highest two response categories ("3" or "4")

II.14. Employment during the Academic Year

Figure 8. Percent of students who worked for pay at any point during the academic year

Student Employment during the Year
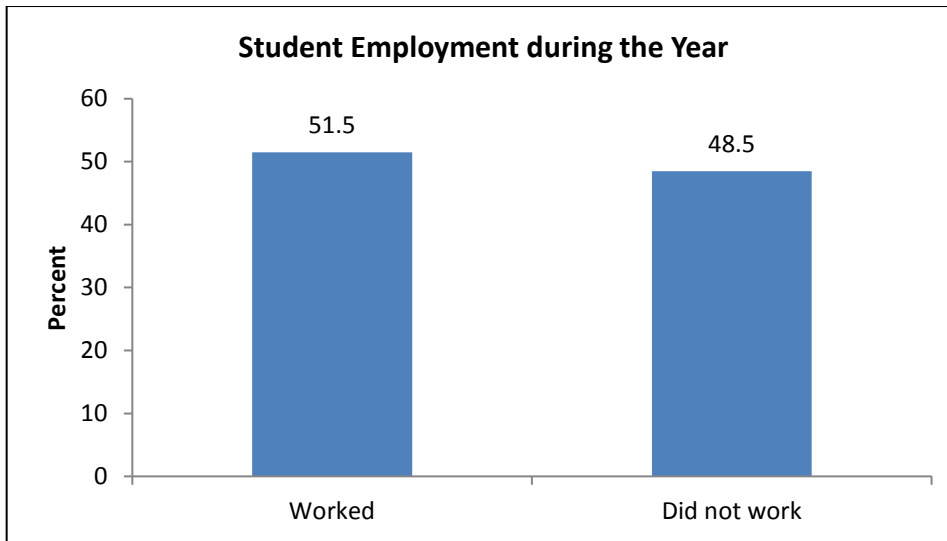
Figure 9. Number of work hours per week (for student who worked for pay during the year)

Number of Work Hours per Week
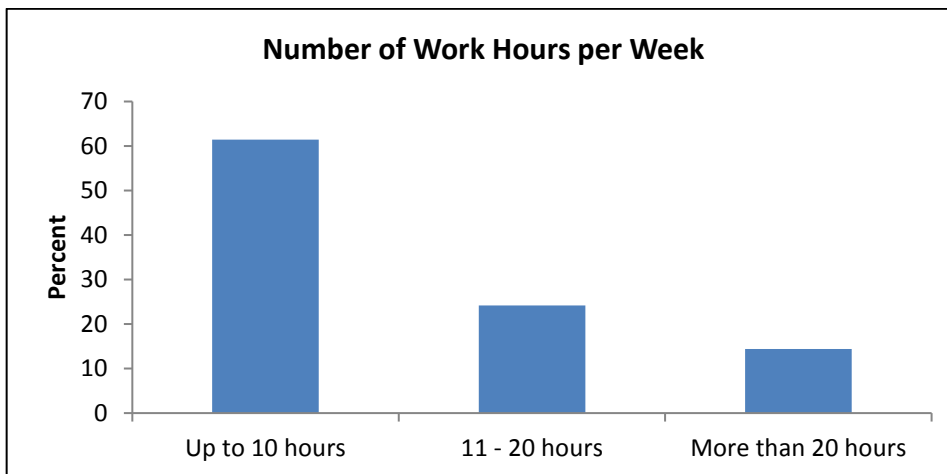
II.15. Individual Development

Table 25. How well has NU met your needs in each of the following areas? (Scale: 1 – 5)

	All Schools				School of Engineering				School of Humanities & Social Sciences				School of Science & Technology			
	Mean	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*	*Mean*	*SD*	*% "4" or "5"*	*N*
(1) Career preparation (curricular and extra-curricular activities)	3.30	0.90	35.5	307	3.20	0.80	35.3	85	3.30	0.90	34.9	106	3.30	0.90	36.2	116
(2) Intellectual growth	4.00	0.90	73.6	307	3.80	0.80	67.1	85	4.20	0.80	87.7	106	3.90	0.90	65.5	116
(3) Personal growth	4.00	0.90	72.9	306	3.80	0.90	65.9	85	4.30	0.90	84.8	105	3.80	1.00	67.2	116

Item scale: 1 = "Very inadequately", 5 = "Very well"; SD = Standard Deviation; % "4" or "5": Percent who selected the highest two response categories ("4" or "5")

II.16. Narrative Comments

Figure 10. Top five themes with respect to what NU could have done/changed to improve students' experience

Theme	Percentage
Increase availability and variety of courses	13%
Improve facilities (labs, dorms, study rooms, etc)	9%
Make courses/programs more relevant	8%
Improve quality of teaching/faculty	8%
Provide more employment opportunities (on and off-campus)	5%
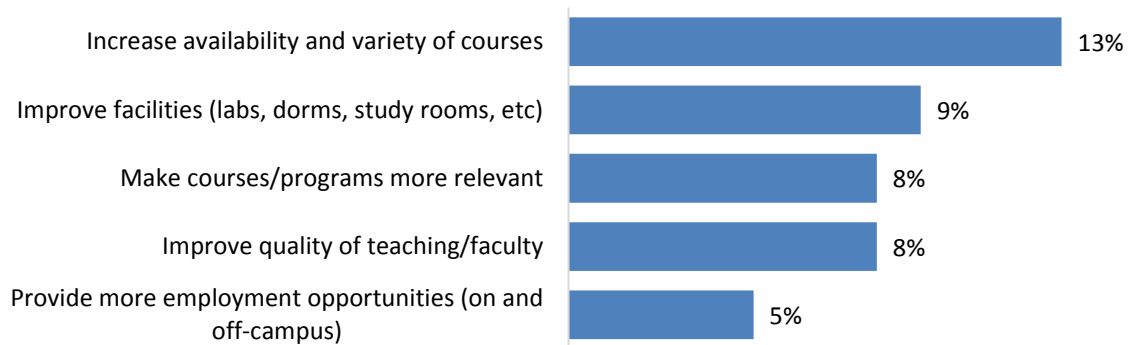
Figure 11. Top five themes with respect to positive, meaningful interactions with faculty members

Theme	Percentage
Advising, mentoring and supervision	27%
Out of class interaction/social outing	26%
Working with faculty on projects (capstone, research and other projects)	22%
Psychological support	11%
Interaction with School administration	7%
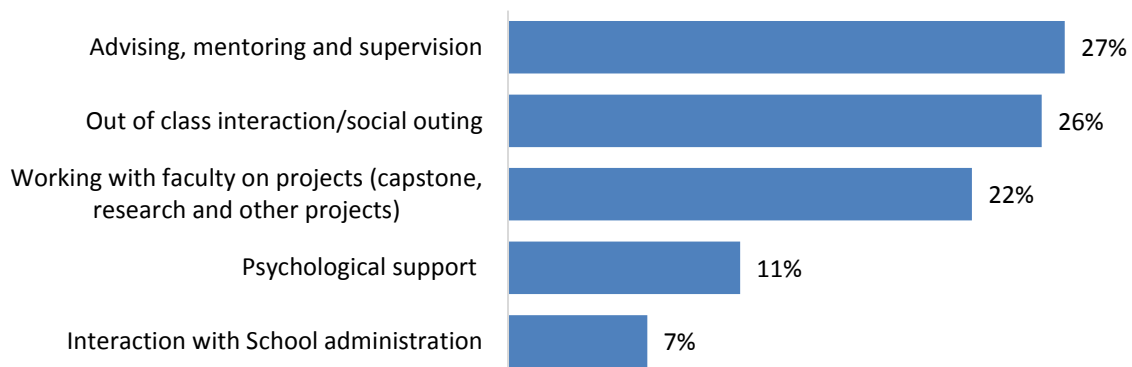
Figure 12. Top five themes with respect to advice to new Nazarbayev University students

Theme	Percentage
Be socially active/Participate in extracurricular activities	19%
Study/work hard	9%
Improve your time management skills	9%
Plan ahead and have a self-management strategy	8%
Develop positive attitude/outlook	8%
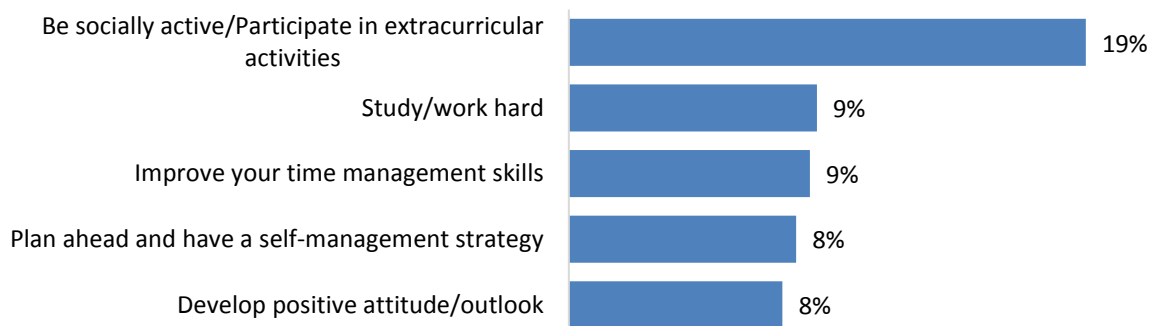
APPENDICES

A. Dealing with Non-Response Bias

Analysis of student participation in the survey revealed small (but not insignificant) differences between engineering and non-engineering students (see Table 2), male and female students (see Table 3), and high achieving and low-achieving students (see Table 4).Female students were more likely to participate in the survey compared to their male counterparts. Engineering students were less likely to participate compared to non-engineering students. Based on students' cumulative GPA in the previous fall semester, high achieving students were more likely to participate in the survey compared to low-achieving students.

Differences in response rates across sub-groups can lead to non-response bias, particularly if these sub-groups also differ on survey variables (Kalton, 1983; Pike, 2008). In fact, we also found differences in student perceptions on some of the key indicators created from survey items, particularly relative to students' gender and level of academic performance. Male and female students differed on 10 out of the 13 composite indicators created from survey items, engineering and non-engineering students differed on one composite indicator, and high achieving and low-achieving students differed on nine composite indicators. Weighting adjustments have been recommended as a solution to non-response bias. In this analysis, we computed and used weights (based on gender, school, and academic performance) to adjust for non-response. We then compared weighted and unweighted results but found negligible differences between the two sets of results. Therefore, we retained and reported unweighted statistics.

B. Limitations: Precision of Survey Results

Information collected through surveys is almost always prone to error. There are different sources of survey error, including sampling error, coverage error, non-response error, measurement error (e.g., Biemer, Groves, Lyberg, Mathiowetz, & Sudman, 1991; Braverman, 1996; Dillman, 2007; Fowler, 2008; Groves, 1989; Groves et al., 2009; Krosnick, 1991; Krosnick, Narayan, & Smith, 1996).

Sampling error was not a concern in this study because the Entering Student Survey was administered to all potential graduating students (and not to a sample of students). Likewise, coverage error was not a concern because all members of the target population had equal chance of being included in the study. Results of our analyses also suggest non-response error was not likely to be a major concern in this study. Although we found differences due to school, gender, and level of academic performance in survey response rates and in some of the survey measures, we determined that adjusting for non-response bias was unnecessary given that summary statistics did not change substantially before and after non-response adjustment (see discussion on non-response bias in *Appendix A*).

Measurement error however, is always a threat in survey research. This error "occurs when a respondent's answer to a survey question is inaccurate, imprecise, or cannot be compared in any useful way to other respondents' answers" (Dillman, 2007, p. 9). Measurement error can result from different sources: the wording or organization of the survey instrument, the respondent, the mode of survey administration, and the interviewer (Braverman, 1996). This last source (interviewer) does not apply to the Entering Student Survey because this survey is self-administered. It is, however, important to recognize that students' responses may have been affected by the survey instrument itself or from respondents' inherent characteristics. With respect to the survey instrument, it is possible for a response to be inaccurate or imprecise because the question was unclear to the respondent or because of issues related to the structure or sequence of the questions (Braverman, 1996). We attempted to minimize this type of error by paying closer attention to the survey design stage (e.g., we adapted some of the questions from existing survey instruments and solicited feedback from multiple stakeholders. With respect to the respondent error, it is possible that some students misreported perceptions and/or facts. For example, a respondent may agree with an assertion in a survey item without regard to content—a phenomenon described as *acquiescence* (Krosnick et al., 1996) and which can be due, among other things, to a tendency to be "polite and agreeable" (Krosnick, 2000). The respondent may also select the response option that appears to be reasonable or acceptable, instead of producing the mental effort necessary to provide an optimal response—a phenomenon called *satisficing* (Krosnick, 1991; Krosnick et al., 1996). Therefore, the precision of the results of this survey may be limited by some of the sources of measurement error discussed here.

Finally, the precision of survey estimates may be affected by item non-response (the percentage of individuals who did not respond to a specific survey question), given that it is unlikely that all participant will respond to every item on the survey. In this survey, item non-response ranged from 0% to 18.5% for close-ended questions that applied to all participants, the survey yielded a high completion rate. According to standards by the American Association for Public Opinion Research (2008), a survey participant responding to more than 80% of applicable questions yields a "complete" rather than a "partial" survey response. In the present study, 90% of the participants responded to more than 80% of the questions on the survey. It is therefore unlikely that item non-response will have a drastic effect on the precision of survey estimates.

C. Computing Composite Indicators

Computation of composite scores involved Exploratory Factor Analysis, reliability analysis, use of the Linear Stretch Method (de Jonge, Veenhoven, & Arends, 2014) to transform original scales to a scale from 0 to 100, and computation of composite scores (on the new scale) by averaging a respondent's scores on relevant scale items, provided that the respondent answered to at least half of the items on that scale. Table 26 displays the composite scores created, along with the number of items and the scale reliability coefficient (a measure of the internal reliability/consistency of scale items). Reliability coefficients were high, and only three coefficients did not meet the 0.7 level suggested by Nunnaly (1978).

Table 26. Composite scores created, number of items used, and scale reliability

Survey Topic	Number of survey items on the scale[1]	Scale reliability (Cronbach's alpha)	Item Listing
(1) Perception of NU (institutional level)	8	0.84	Table 6
(2) Program satisfaction	10	0.92	Table 7
(3) Curricular preparation (career and postgraduate studies)	2	0.67*	Table 8
(4) Development of skills and competencies	17	0.92	Table 9
(5) Graduate attribute emphasis	8	0.91	Table 10
(6) Frequency of academic behaviors	9	0.66*	Table 12**
(7) Level of difficulties encountered	10	0.81	Table 15
(8) Dependence on others (family, friends, faculty, staff)	5	0.60*	Table 19
(9) Self-concept	2	0.72	Table 18
(10) Self-esteem	5	0.89	Table 20
(11) Stress level	5	0.66	Table 21
(12) Satisfaction with campus resources and services	12	0.82	Table 24
(13) Individual development	3	0.80	Table 25

* These values are slightly below the 0.70 level widely used in empirical research. In his earlier work, Nunnaly (1967) had indicated that values ranging from 0.50 to 0.60 were acceptable for early research stages.

** In addition to these items, the analyses also included the number of hours per week the student spent preparing for classes and the number of times the student misses classes during the term.

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[1] Results of Exploratory Factor Analysis revealed that perception of NU, program satisfaction, curricular preparation, graduate attribute emphasis, self-concept, self-esteem, stress level, satisfaction with campus resources and services, and individual development were unidimensional. In other words, items on these scales loaded on a single factor. Although we also retained a single factor for skills and competencies, frequency of academic behavior, level of difficulties, and dependence on others, there was some evidence that these scales may measure more than one construct or dimension. We will examine the factor structure of these scales after we collect additional data.

D. Composite Indicator Summary Statistics by Program

Table 27. Composite indicators: Summary statistics by program (School of Engineering)

Program (SEng)	Composite indicator (scale: 0 - 100)	Mean	Std. Dev.	Median	Minimum	Maximum	N
Chemical Engineering	Perception of NU	67.7	15.2	75.0	32.5	85.0	21
	Satisfaction with program	60.8	14.1	60.0	35.6	93.3	21
	Curricular preparation (for career & postgraduate study)	56.5	17.1	62.5	25.0	100.0	21
	Development of skills and competencies	71.7	11.3	70.6	47.1	90.6	21
	Institutional emphasis on graduate attributes	67.6	15.8	62.5	40.0	95.0	21
	Frequency of academic behaviors	40.9	13.2	37.8	19.2	71.8	21
	Level of difficulties encounted	37.6	12.0	36.0	22.0	60.0	21
	Dependence on others (family, friends, faculty, staff)	43.1	16.9	46.7	6.7	66.7	21
	Self-concept (perception of own competence relative to others)	63.7	24.7	62.5	12.5	100.0	21
	Self-esteem (perception of own worth relative to 'ideal' self)	72.4	21.4	74.0	16.0	100.0	20
	Stress level	46.7	14.1	40.0	20.0	73.3	21
	Satisfaction with campus resources and services	67.5	13.8	66.7	44.4	100.0	21
	Individual development (career prep and intellectual/personal growth)	61.9	20.0	58.3	25.0	100.0	21
Civil Engineering	Perception of NU	68.5	13.7	67.5	52.5	92.5	15
	Satisfaction with program	56.4	15.3	51.1	35.6	80.0	15
	Curricular preparation (for career & postgraduate study)	53.3	12.9	50.0	25.0	75.0	15
	Development of skills and competencies	68.8	20.2	72.9	14.1	96.5	15
	Institutional emphasis on graduate attributes	70.7	16.9	65.0	37.5	100.0	15
	Frequency of academic behaviors	49.8	15.0	53.8	9.0	67.6	15
	Level of difficulties encounted	42.0	19.4	42.0	6.0	80.0	15
	Dependence on others (family, friends, faculty, staff)	48.4	17.7	46.7	13.3	73.3	15

Program (SEng)	Composite indicator (scale: 0 - 100)	Mean	Std. Dev.	Median	Minimum	Maximum	N
	Self-concept (perception of own competence relative to others)	62.5	25.4	62.5	0.0	100.0	15
	Self-esteem (perception of own worth relative to 'ideal' self)	69.3	25.7	68.0	0.0	96.0	15
	Stress level	58.2	19.4	53.3	20.0	86.7	15
	Satisfaction with campus resources and services	72.2	14.1	66.7	51.5	96.3	15
	Individual development (career prep and intellectual/personal growth)	65.0	16.1	66.7	25.0	91.7	15
Electrical & Electronic Engineering	Perception of NU	68.8	18.0	72.5	5.0	100.0	47
	Satisfaction with program	58.6	19.7	57.8	0.0	100.0	46
	Curricular preparation (for career & postgraduate study)	55.6	18.4	50.0	0.0	87.5	45
	Development of skills and competencies	72.0	14.3	70.0	17.6	100.0	44
	Institutional emphasis on graduate attributes	73.6	13.4	72.5	40.0	100.0	41
	Frequency of academic behaviors	47.7	14.2	47.1	9.0	77.1	40
	Level of difficulties encounted	34.5	13.3	36.0	10.0	60.0	39
	Dependence on others (family, friends, faculty, staff)	47.0	18.7	46.7	6.7	100.0	39
	Self-concept (perception of own competence relative to others)	74.7	17.6	75.0	50.0	100.0	39
	Self-esteem (perception of own worth relative to 'ideal' self)	77.9	17.8	80.0	20.0	100.0	38
	Stress level	49.4	19.5	53.3	6.7	91.7	39
	Satisfaction with campus resources and services	69.7	16.7	71.5	0.0	100.0	38
	Individual development (career prep and intellectual/personal growth)	66.0	18.7	66.7	0.0	100.0	39
Mechanical Engineering	Perception of NU	68.9	17.1	70.0	45.0	90.0	10
	Satisfaction with program	55.3	14.7	55.6	26.7	75.6	10
	Curricular preparation (for career & postgraduate study)	65.0	21.1	68.8	37.5	100.0	10
	Development of skills and competencies	74.1	13.2	73.5	50.6	94.1	10
	Institutional emphasis on graduate attributes	77.8	13.6	73.8	52.5	97.5	10
	Frequency of academic behaviors	43.8	10.9	39.2	33.5	61.5	10
	Level of difficulties encounted	30.2	15.1	30.0	8.0	56.0	10

Program (SEng)	Composite indicator (scale: 0 - 100)	Mean	Std. Dev.	Median	Minimum	Maximum	N
	Dependence on others (family, friends, faculty, staff)	46.7	11.8	46.7	33.3	66.7	10
	Self-concept (perception of own competence relative to others)	78.8	16.7	81.3	50.0	100.0	10
	Self-esteem (perception of own worth relative to 'ideal' self)	89.2	7.8	88.0	72.0	100.0	10
	Stress level	53.3	17.2	50.0	33.3	80.0	10
	Satisfaction with campus resources and services	72.0	9.2	73.8	51.9	81.5	10
	Individual development (career prep and intellectual/personal growth)	72.5	14.2	75.0	50.0	91.7	10

Table 28. Composite indicators: Summary statistics by program (School of Humanities & Social Sciences)

Program (SHSS)	Composite indicator (scale: 0 - 100)	Mean	Std. Dev.	Median	Minimum	Maximum	N
Economics	Perception of NU	72.4	20.5	75.0	0.0	100.0	64
	Satisfaction with program	63.5	18.8	64.4	0.0	97.8	65
	Curricular preparation (for career & postgraduate study)	58.5	17.0	62.5	0.0	87.5	65
	Development of skills and competencies	72.4	12.9	72.9	36.5	100.0	64
	Institutional emphasis on graduate attributes	70.5	20.6	70.0	0.0	100.0	63
	Frequency of academic behaviors	44.3	15.3	43.8	16.4	90.9	62
	Level of difficulties encounted	33.0	15.0	34.0	0.0	70.0	61
	Dependence on others (family, friends, faculty, staff)	40.8	18.9	40.0	0.0	80.0	60
	Self-concept (perception of own competence relative to others)	73.3	20.1	75.0	0.0	100.0	60
	Self-esteem (perception of own worth relative to 'ideal' self)	77.9	18.9	80.0	40.0	100.0	59
	Stress level	48.7	20.6	46.7	0.0	93.3	59
	Satisfaction with campus resources and services	63.9	19.3	66.7	0.0	97.2	58
	Individual development (career prep and intellectual/personal growth)	71.2	17.6	75.0	0.0	100.0	59
Political Science & Int. Rel	Perception of NU	73.9	12.9	77.5	35.0	95.0	37
	Satisfaction with program	70.5	12.2	71.1	51.1	95.6	37
	Curricular preparation (for career & postgraduate study)	62.2	16.8	62.5	25.0	100.0	37
	Development of skills and competencies	77.9	11.0	78.8	57.6	98.8	36
	Institutional emphasis on graduate attributes	78.5	15.3	80.0	37.5	100.0	35
	Frequency of academic behaviors	50.1	14.4	45.5	26.6	83.7	35
	Level of difficulties encounted	38.7	19.7	38.0	8.0	100.0	34
	Dependence on others (family, friends, faculty, staff)	46.1	20.7	46.7	0.0	100.0	34
	Self-concept (perception of own competence relative to others)	67.3	24.0	68.8	0.0	100.0	34
	Self-esteem (perception of own worth relative to 'ideal' self)	85.9	16.4	92.0	40.0	100.0	34
	Stress level	58.2	20.0	60.0	6.7	100.0	34
	Satisfaction with campus resources and services	68.1	14.7	70.0	42.9	96.7	31
	Individual development (career prep and intellectual/personal growth)	75.0	18.0	75.0	0.0	100.0	34
Other SHSS programs	Perception of NU	70.0	18.0	75.0	22.5	87.5	13
	Satisfaction with program	74.0	18.4	73.3	44.4	100.0	13

Program (SHSS)	Composite indicator (scale: 0 - 100)	Mean	Std. Dev.	Median	Minimum	Maximum	N
	Curricular preparation (for career & postgraduate study)	66.3	25.7	75.0	25.0	100.0	13
	Development of skills and competencies	75.9	11.0	77.6	60.0	97.6	13
	Institutional emphasis on graduate attributes	78.7	12.6	80.0	55.0	100.0	13
	Frequency of academic behaviors	52.2	17.1	45.0	31.0	92.9	13
	Level of difficulties encounted	33.8	16.8	32.0	4.0	58.0	13
	Dependence on others (family, friends, faculty, staff)	48.2	13.7	46.7	26.7	66.7	13
	Self-concept (perception of own competence relative to others)	67.3	18.1	62.5	50.0	100.0	13
	Self-esteem (perception of own worth relative to 'ideal' self)	75.1	24.1	80.0	8.0	100.0	13
	Stress level	59.0	20.2	53.3	33.3	100.0	13
	Satisfaction with campus resources and services	61.0	15.0	58.3	36.1	86.7	13
	Individual development (career prep and intellectual/personal growth)	74.7	12.6	75.0	58.3	91.7	13

Table 29. Composite indicators: Summary statistics by program (School of Science & Technology)

Program (SST)	Composite indicator (scale: 0 - 100)	Mean	Std. Dev.	Median	Minimum	Maximum	N
Biological Sciences	Perception of NU	72.5	18.0	75.0	20.0	100.0	57
	Satisfaction with program	67.1	17.7	65.6	13.3	100.0	56
	Curricular preparation (for career & postgraduate study)	55.7	19.2	50.0	0.0	100.0	55
	Development of skills and competencies	70.7	15.6	72.9	0.0	97.6	54
	Institutional emphasis on graduate attributes	73.5	18.6	75.0	0.0	100.0	52
	Frequency of academic behaviors	46.5	14.6	47.4	19.2	86.1	50
	Level of difficulties encounted	40.2	17.8	38.0	16.0	100.0	48
	Dependence on others (family, friends, faculty, staff)	43.1	19.2	46.7	0.0	73.3	49
	Self-concept (perception of own competence relative to others)	68.4	18.6	62.5	25.0	100.0	49
	Self-esteem (perception of own worth relative to 'ideal' self)	74.5	19.6	76.0	28.0	100.0	49
	Stress level	53.5	18.8	60.0	0.0	93.3	48
	Satisfaction with campus resources and services	67.9	18.2	66.7	0.0	100.0	46
	Individual development (career prep and intellectual/personal growth)	66.3	20.8	66.7	0.0	100.0	48
Chemistry	Perception of NU	65.4	17.1	67.5	32.5	87.5	12
	Satisfaction with program	58.7	12.4	58.9	40.0	80.0	12
	Curricular preparation (for career & postgraduate study)	52.3	12.3	50.0	37.5	75.0	11
	Development of skills and competencies	69.8	9.6	69.4	51.8	84.7	12
	Institutional emphasis on graduate attributes	65.9	11.7	67.5	45.0	85.0	11
	Frequency of academic behaviors	42.1	12.9	39.4	27.2	66.5	11
	Level of difficulties encounted	32.9	15.1	26.0	16.0	60.0	11
	Dependence on others (family, friends, faculty, staff)	49.7	14.7	46.7	33.3	80.0	11
	Self-concept (perception of own competence relative to others)	58.0	27.0	62.5	0.0	100.0	11
	Self-esteem (perception of own worth relative to 'ideal' self)	82.3	16.0	88.0	60.0	100.0	11
	Stress level	57.9	21.4	66.7	13.3	86.7	11
	Satisfaction with campus resources and services	72.0	16.5	74.1	50.0	95.8	11

Program (SST)	Composite indicator (scale: 0 - 100)	Mean	Std. Dev.	Median	Minimum	Maximum	N
	Individual development (career prep and intellectual/personal growth)	61.4	18.0	66.7	33.3	100.0	11
Computer Science	Perception of NU	79.0	12.0	80.0	55.0	100.0	17
	Satisfaction with program	72.0	13.9	71.1	35.6	88.9	17
	Curricular preparation (for career & postgraduate study)	61.8	12.9	62.5	37.5	87.5	17
	Development of skills and competencies	76.6	9.7	78.8	60.0	91.8	16
	Institutional emphasis on graduate attributes	72.5	12.7	71.3	50.0	95.0	16
	Frequency of academic behaviors	50.6	12.8	47.8	34.9	75.5	16
	Level of difficulties encounted	36.9	12.4	37.9	16.0	58.0	16
	Dependence on others (family, friends, faculty, staff)	45.8	14.4	43.3	26.7	73.3	16
	Self-concept (perception of own competence relative to others)	72.1	19.0	75.0	37.5	100.0	17
	Self-esteem (perception of own worth relative to 'ideal' self)	78.0	28.6	86.0	8.0	100.0	16
	Stress level	54.6	18.6	56.7	6.7	80.0	16
	Satisfaction with campus resources and services	71.3	15.3	71.1	51.5	100.0	16
	Individual development (career prep and intellectual/personal growth)	69.3	13.9	75.0	41.7	91.7	16
Mathematics	Perception of NU	74.8	17.0	77.5	35.0	100.0	30
	Satisfaction with program	67.9	16.5	64.4	22.2	100.0	29
	Curricular preparation (for career & postgraduate study)	65.5	20.8	62.5	25.0	100.0	29
	Development of skills and competencies	73.2	14.0	73.5	31.8	100.0	28
	Institutional emphasis on graduate attributes	69.4	19.5	71.3	0.0	100.0	28
	Frequency of academic behaviors	41.7	11.6	41.7	20.1	78.0	28
	Level of difficulties encounted	36.6	16.5	35.0	0.0	66.0	28
	Dependence on others (family, friends, faculty, staff)	43.3	17.7	43.3	0.0	66.7	28
	Self-concept (perception of own competence relative to others)	73.2	20.6	75.0	37.5	100.0	28
	Self-esteem (perception of own worth relative to 'ideal' self)	76.0	16.8	76.0	44.0	100.0	28
	Stress level	41.2	16.7	46.7	6.7	73.3	28
	Satisfaction with campus resources and services	67.7	16.0	66.7	30.3	100.0	27
	Individual development (career prep and intellectual/personal growth)	69.3	20.5	75.0	16.7	100.0	28

Program (SST)	Composite indicator (scale: 0 - 100)	Mean	Std. Dev.	Median	Minimum	Maximum	N
Robotics & Mechatronics	Perception of NU	67.2	17.1	71.3	22.5	87.5	16
	Satisfaction with program	59.5	19.6	62.2	4.4	88.9	16
	Curricular preparation (for career & postgraduate study)	49.2	20.1	50.0	0.0	75.0	16
	Development of skills and competencies	75.0	13.5	76.5	37.6	96.5	16
	Institutional emphasis on graduate attributes	69.6	17.8	72.5	35.0	100.0	13
	Frequency of academic behaviors	40.1	14.8	40.4	21.7	81.0	14
	Level of difficulties encounted	32.1	15.2	31.0	14.0	70.0	14
	Dependence on others (family, friends, faculty, staff)	40.5	15.1	43.3	13.3	66.7	14
	Self-concept (perception of own competence relative to others)	77.7	20.3	75.0	50.0	100.0	14
	Self-esteem (perception of own worth relative to 'ideal' self)	78.9	14.6	78.0	56.0	100.0	14
	Stress level	40.0	26.5	40.0	0.0	100.0	14
	Satisfaction with campus resources and services	63.3	15.5	63.0	30.6	90.0	13
	Individual development (career prep and intellectual/personal growth)	60.3	21.8	66.7	0.0	83.3	13

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