

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATISFACTION
AND LOYALTY: THE CASE OF NOTRE DAME UNIVERSITY-LOUAIZE

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Master of Science in Business Strategy

by
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Abstract

The study purpose is to assess students' satisfaction on services provided by higher education institutions (HEIs) and consequently their loyalty towards the institution. The research design followed a quantitative approach where a questionnaire was developed based on a seven-point Likert scale. Data was collected from 297 students at Notre Dame University-Louaize (NDU) in Lebanon. The results elucidated that the affective component positively and strongly influences students' satisfaction. Variables related to physical facilities did not stand out in the results so we were not able to conclude about its relationship with student satisfaction. Tuition fees were not a major concern for NDU students. The findings also indicated that among the significant determinants of student satisfaction were Support, Administrative, Academic and Complementary Services. We were not able to conclude for H6 that states student satisfaction significantly and positively affects student loyalty. The study was conducted during the outbreak of COVID-19 where the university has moved to online classes; otherwise, higher sample size could have been collected. Also, students' psychological status might have affected how they responded. Moreover, the study was conducted on a single university; it can be replicated on other universities to compare the outcomes. The results might help NDU leaders, decision makers, administrators, academic staff, and other Lebanese HEIs determine the service quality constructs that are of utmost importance to students. The quality assurance and certification bodies can employ the study results for quality enhancement in favor of setting standards for certifications concerned with HEIs' processes. At the government level, the Ministry of Education and Higher Education (MEHE) can benefit of the study findings acting as a guide to define, formulate and set standards for the provision of HE activities. The originality of the study lies in examining students' satisfaction and accordingly their loyalty with regard to the wide technological

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advancements that different institutions have been integrating into their operations and the ever changing students' needs.

Keywords – service quality, students' satisfaction, students' loyalty, word-of-mouth, higher education institutions (HEIs), affective component, academic services, support services, tuition fees, administrative services, physical facilities, complementary services, antecedents, constructs, perception.

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Introduction

Services sector around the world has become the nerve of life; it is the dynamic element for the social and economic development in a society. Services are fundamental for a nation's development; the World Bank has implied that the growth in the services sector is a higher contributor to poverty reduction than the growth in the agriculture or manufacturing sectors (World Bank, 2010). In today's world, higher education has become a prominent service industry. Most importantly, higher education acts as the protagonist towards the advancement of a nation's socio-economic and technological potentials. With this in mind, the country's performance is highly associated with the quality of education offered by the higher education institutions (HEIs). Given the highly competitive market place in terms of globalization and digitization it has been harder for these institutions to maintain their customer base and build their loyalty. Universities' ranking is getting much attention in global and national university league tables. The students' experience, satisfaction and employment opportunities play a partial role in determining these rankings which trigger on institutional image, brand equity and reputation. To some extent, it is all related to how much the students appreciated and enjoyed their time at the university and how well they interacted and were engaged. (Curtis & Samy, 2014) In a turbulent higher education environment and due to the progress of the knowledge-based economy, perspectives around higher education has changed tremendously in which earning postsecondary degrees is becoming more essential than ever to meet changing Labor market demands. In tandem with this evolution, HEIs are adapting a more business-like approach at the operation and management levels. In light of the global competition, several trends and strategies have been adopted by HEIs that focus on branding and marketing, recruiting and enrollment, and technology (Hanover Research, 2014, March). Pointing out to these terms, adopting the idea of quality of service becomes a key for survival and success and its results are vigorous for HEIs. Customer

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satisfaction is a very important component in the service quality model since fulfilling the customers' desires will encourage future purchase or future enrollment in the case of HEIs. In addition, a satisfied customer is most likely to share his good experience with others promoting positive word-of-mouth. Hence, measuring service quality for HEIs has become substantial to improve their performance and ultimately attract and retain students. Studies have shown that the recruitment of students is several times more expensive than their retention (Noel, Levitz, & Saluri, 1985; Raisman, 2013; Tinto, 2016). Moreover, a satisfied student will likely consider returning to the same institution to pursue other or higher studies, and a dissatisfied one, will probably not recommend the university to another and might disseminate a negative word-of-mouth. Therefore, student satisfaction and loyalty go hand in hand. In fact, it goes without saying; a satisfied student will remain a loyal one.

Many countries have adopted and developed quality assurance (QA) systems for higher education over the past two decades to ensure the quality and cost-effective operations. Quality assurance is a holistic approach to evaluating and regulating the quality of all the processes in a higher education institution including institutional and study programs accreditation, performance funding, and competency-based approaches to professional education and training.

Lebanon's higher education system is one of the oldest and most renowned in the region dating back to 1866. In the year 2000, the Arab Regional Conference on Higher Education (ARCHE) held in Cairo recommending that each Arab State should establish a mechanism for evaluating the quality of its higher education. Accordingly, Lebanon started a national debate on quality assurance in higher education; yet today, more than 20 years after the conference; little progress has been achieved towards establishing and operating QA body responsible for controlling and regulating QA practices at HEIs, in addition to granting accreditation.

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Given an increasingly market-oriented higher education environment, this study embeds lot of value in its purpose to determine the antecedents of service quality, as a way of obtaining competitive advantage, and their influence on provoking students' satisfaction and loyalty. Taking into account the declining enrollment rates due to intensely competitive environment and the rising tuition fees, Lebanese HEIs resided with no option but to develop their own dimensions of service quality and provide higher quality services to satisfy their students. Lebanese HEIs have to increase the number of students, resources, and performance to market themselves in environments of uncertainty (Shah & Sid, 2013).

Although, the literature provides ample studies about service quality in higher education, there is no consensus on the dimensions and antecedents of student perceived service quality (Sultan & Wong, 2012). Till date, no agreed method has been determined that can be used to measure the service quality in higher education (Y. Chen, 2016). This gap in knowledge is a fundamental question for tertiary education institutions. Measuring service quality was hard to define appropriately due to its unique characteristics and intangible nature. In the Lebanese context, very few researches have been undertaken to investigate the relationship between student satisfaction and the stimulating service quality factors and among those studies various models have been exhibited. Previous studies (Nasser et al. 2008; Saad, 2013) that go back to more than a decade, have been conducted on Notre Dame University-Louaize (NDU) tackling the same subject; however, up to our knowledge, the current study is the most recent about this topic in Lebanon. The study is substantial to identify the components of service quality that are perceived as most important by NDU students to complete their education and pursue further studies at the same HEI and recommend it to others.

The purpose of the study is to observe the influence of service quality on student satisfaction and student loyalty at NDU. It aims at gaining a better and more comprehensive understanding of Lebanese students' perceived service quality. It also aims to discover the

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order of importance of the elements that matter to NDU students in terms of perceived service quality and how those elements are grouped together and the order of their ranking. The originality of the study lies in examining students' satisfaction and accordingly their loyalty with regard to the wide technological advancements that different institutions have been integrating into their operations and the ever changing students' needs. This would lead us to the research question of our study:

What are the main service quality factors that are perceived as most important by Lebanese students and how do they impact students' satisfaction and their loyalty?

The study results might help NDU leaders, decision makers, administrators, academic staff, and other Lebanese HEIs determine the needs and desires of students, what they perceive as primary service quality factors. Moreover, the outcomes might give insights for policy makers at HEIs to develop and formulate strategies that are most effective to improve their service quality and ultimately their retention rates. It is also expected to enlighten HEIs recruiters and marketers to develop proactive recruitment methods. The quality assurance and certification bodies can employ the results of the study for quality assurance and quality enhancement in favor of setting standards for certifications concerned with higher education institutions' processes. At the government level, the Ministry of Education and Higher Education (MEHE) can benefit of the study results acting as a guide to define, formulate and set standards for the provision of higher education activities.

The following Chapter 1 presents a synopsis about the Lebanese higher education sector. It defines the service quality in the higher education setting. The Chapter highlights the service quality antecedents in higher education. It concludes by constructing the research questions of the study. The research procedure and methodology are uncovered in Chapter 2 where the research questions are translated into hypotheses. The Chapter justifies the research approach adopted, the instrumentation and data analysis techniques in addition to ethical

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considerations. Chapter 3 sets forth the study findings and discussions vis-a-vis the literature reviewed. The theoretical and managerial implications and recommendations based on our findings, the limitations of the study as well as future research proposals are drawn in the Conclusion.

Chapter 1

LITERATURE REVIEW

1.1 Overview of the Lebanese Higher Education Sector

The Lebanese economy is based primarily on the service sector, which accounts for approximately 83% of GDP (2017 est.). Major subsectors are commerce, tourism and financial services. Other components include health care and higher education. Lebanon was once the regional hub for education, however, its glory has diminished when the large number of universities and higher education institutions has emerged and the Lebanese authorities did not lift a finger to develop and organize the sector in the country. The education sector is one of the major contributors to Lebanon's GDP (The World Fact Book, 2018). Thus, availability of quality services is vital for the well-being of the economy. Higher education services enable a country to improve the quality of human capital thereby increases the productive efficiency of human resources. As an evidence of the importance of education, the World Bank's World Development Report for 2018 was titled "LEARNING to Realize Education's Promise"; it is the first ever devoted entirely to education.

Lebanon's Human Development Index (HDI) for 2018 was 0.730 ranking it in the high human development group and occupying position 93 out of 189 countries and territories. The HDI is an indicator for three major facets of human development: a long and healthy life, access to knowledge and a decent standard of living. Lebanon's HDI of 0.730 scores higher than the average of 0.703 for countries in Arab States but lower than the average of 0.750 for countries in the high human development category (UNDP, 2019).

In fact, the Lebanese society has shown increased awareness to the importance of education, thus the total expenditure on education has been consistently expanding (Bank Med, 2014).

In general, the average fees for studying at a private university or institute start from USD

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3500 and could reach USD 29,000 per year taking into consideration that some disciplines require higher tuition fees per credit than the others. Additional amount is added to account for the cost of living and other relevant expenses like books and courses (EACEA, 2017). Universities in Lebanon have the complete freedom to charge the tuition fees they deem appropriate. Most private universities lend their students a helping hand in the form of work-study grant, loans, assistantships, and scholarships. In the academic year 2009-2010, the Central Bank of Lebanon introduced a subsidized scheme for educational loans through commercial banks.

Lebanon has the oldest universities in the region, American University of Beirut (AUB), founded in 1866 as the Syrian Evangelical College by the American Evangelical Mission (Hasrouny, 2011) which became the AUB in 1920 (AUB, 2019). It was followed by the founding of the University of Saint Joseph (USJ) by the Jesuits, in 1875 (USJ 2019). Then in 1924, the American School for Girls was founded by the same American Evangelical Mission that founded AUB, which is known today as the Lebanese American University (LAU) (LAU, 2019). In 1937, the Lebanese Academy of Fine Arts (A.L.B.A.) was originally established as a stand-alone institute which was not affiliated to any religious or foreign parties. Now, it is one of the faculties at the University of Balamand (UOB) (UOB, 2019). In 1960, the Beirut Arab University was established (BAU, 2017). The Lebanese University (LU), founded in 1951, is the sole public university in Lebanon with branches dispersed across the country (LU, 2019). (EACEA, 2017) The freedom of Lebanese Higher Education is guaranteed by the Constitution which states in article 10 chapter 2: "Education shall be free" and every religious community has the right to have its own schools or universities. The sector is supervised by the Directorate General of Higher Education (DGHE) in the Ministry of Education and Higher Education (MEHE). Lebanon has a very developed and significant private Higher Education sector. It represents more than 60% of the total student enrolment in

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Higher Education. The Lebanese Higher Education System is definitely diverse, today, Lebanon encompasses 48 private higher education institutions (HEIs) of which 36 are officially recognized as universities and the remaining 12 are colleges, applying different educational systems (MEHE, 2020). These institutions have adopted different educational models including the American, British, French, Egyptian and German amongst others (Nauffal & Ouais, 2018). Several differences characterize these models such as: the language of instruction, type of courses offered, style of examinations, duration of study periods, the audience attracted by the university and the cost of education. The most common models are the American and the French models. The American academic model follows a credit-point course system where the language of instruction is English. The programs of studies include both mandatory and elective courses with frequent exams and assessments. The universities adopting the American system of education demand the highest tuition fees which tag it as not affordable compared to the average income of the large majority of the Lebanese people.

The French academic model is built basically on mandatory courses that extend all the yearlong and assessments are based on end-of-year exams; the language of instruction is mainly French with some few courses offered in English. The tuition fees charged by these universities tend to be more affordable to those with average income.

The Lebanese University follows the French academic model in its branches except for the very few of them where recently the American credit system has been adopted. The languages of instruction are French and Arabic, and only some majors are taught in English. The Lebanese University charges very small tuition fees.

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1.1.1 Higher education funding.

Lebanon's economic growth has been deteriorating since 2011 due to several reasons; the Arab springs, the Syrian conflict and internal political tensions. The economic growth experienced a sharp drop in 2019 which has raised demands for social welfare. Estimated at -1.9% in 2018, GDP growth amounted to -6.5% in 2019 and should decrease even more to -12% in 2020, due to the outbreak of COVID-19, according to the updated IMF forecasts from 14th April 2020.

The higher education sector is another sector in Lebanon that is also struggling due to the fragile economic situation of the country. The Lebanese government does not allocate any direct funds to the private HEIs in Lebanon. All direct public funds in Higher Education go to the Lebanese University (EACEA, 2017); whereas, the external or private grants support especially the private HEIs (Nahas, 2009). The tuition fees are the main funding resource for the private sector in addition to some other types of endowments and gifts. The sector has rapidly expanded during the last two decades due to the increase in demand for tertiary studies rendering it a profitable and attractive business. Some universities that follow the American educational model such as the AUB and LAU receive grants and donations that are employed in buildings, equipment, programs and scholarships. As per EACEA 2017, at least 8 higher education institutions, constituting around 33% of the students' enrollment in the private sector, are operated by religious communities. These communities offer the land and the labor cost of the religious order's members who work as instructors or administrative staff.

1.1.2 Quality assurance in the Lebanese higher education system.

Over the last few decades there has been a realization that industry must improve continuously to stay competitive in the global market (Deming1986; Crosby1979). High market competition and employers' job demands require HEIs to ensure quality of their

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programs. Formal quality assurance in higher education was first initiated in a few developed countries (USA and Western Europe) in the 1980s and 1990s (Dill, 2010). Organizations, such as the World Bank, UNESCO, OECD, and international networks (e.g. INQAAHE) and regional organizations as well as professional associations are playing significant roles in the introduction and spread of formal quality assurance in higher education across the globe (Singh, 2010).

The Lebanese higher education system is characterized by diversity, autonomy, openness and competitiveness (El-Ghali & Ghalayini, 2016). Based on these features, Lebanese graduates were enabled to get accepted in distinctive institutions worldwide. The past decade has witnessed an enormous increase in the number of HEIs, accompanied by a large increase in the number of students. It became necessary to regulate the quality of education rendered at these institutions in order to maintain competitiveness within the regional and global market (Jammal, n.d.; Kaissi, Abou Chahine & Jammal, n.d.; Lebanese Ministry of Education and Higher Education, & European Commission Tempus, 2012). A Decree regulating the doctoral studies was issued in 2013. In April 2014, the Parliament adopted a new law for the regulation of the private higher education sector along with many reform standards that matches the international specifications, and trends. The law also sets the structure to establish the National Agency for Higher Education Quality Assurance (NAHEQA). NAHEQA's responsibility is to inspect and audit universities in order to ultimately confer accreditation. Although, it was strongly supported by a number of policy-makers, experts and practitioners in the sector, the law did not see the light due to both political factors and the local political context (El-Ghali & Ghalayini, 2016). As a result, some HEIs took the decision to consult international agencies from Europe, the United States and Australia to secure accreditation.

1.2 Profile of Notre Dame University-Louaize

Notre Dame University-Louaize (NDU) is a private Lebanese non-profit Catholic University that was initially founded as the Louaize College for Higher Education (LCHE), in 1978 by the Maronite Order of the Blessed Virgin Mary. NDU comprises three campuses the Main Campus (MC) in Zouk Mosbeh, the North Lebanon Campus (NLC) in Barsa, and the Shouf Campus (SC) in Deir El Qamar. NDU's Main Campus is characterized by its easy access to the social and economic life of the city and its proximity to Byblos and Beirut. NLC's attractive location is only a short drive away from most Northern villages and SC being located south-east of Beirut in South-central connects Beirut to Sidon in the South, the country's third largest city. With these three campuses NDU is able to sustain the diversity of cultures and religions of its students.

NDU bases its curricula on the philosophy and standards of the American Liberal Arts model of higher education. NDU promotes students to consolidate the diversity of cultures. It has also implemented several initiatives that foster environmental sustainability. NDU has been committed to enhance the university setting to be inclusive for students with special needs. In 2020, a new milestone achieved is the Quacquarelli Symonds (QS) World University Rankings, positioning NDU among the top 5 universities in Lebanon overall and 1st in Lebanon and 8th in the Arab World for Citations per paper.

NDU houses seven faculties The University secured accreditation in 2018 by the New England Commission for Higher Education (NECHE) that was previously named the Commission on Institutions of Higher Education (CIHE) of the New England Association of Schools and Colleges, Inc. (NEASC).

The Spring 2020 enrollment headcount reached 4,491 students in all campuses. The full-time faculty equivalent (FTE) and part-time equivalent (PTE) count is 270 and 127 respectively. All NDU campuses share one unified mission. The administrative departments follow an

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integrated hierarchical structure. NDU provides a centralized system to offer subsidiary services to its students in support of their academic affairs. The academic control and decision-making takes place at the Main Campus to maintain single standardized academic programs, study rules and procedures across all campuses. Thus, under the supervision of the faculty deans, the academic departments work to offer a unified standard in faculty hiring, a common course offering and a common registration. In alignment with this strategy, regional coordinators are assigned to coordinate academic issues with the department chairs to provide the same holistic academic experience to all students across the regional campuses as well. Many year-round activities are organized by student clubs on- or off-campus. It is worth noting that the students' voice is represented through The Student Union which is elected by fellow students and its mission is to communicate on their behalf to propose new or enhance existing university programs, or services. At the community service level, The Department of Community Service and Awareness engages students in social programs and activities for the wellbeing of people in Lebanon. Students are an important constituent in several university standing committees such as The University Financial Aid Committee, University Graduate Committee, University Appeals Committee, etc... Students also take part in the governance process through using the "Blue System" to fill out electronic forms about course, teacher and advisor evaluations. The "Blue system" is the feedback management software system (Explorance Blue) that is intended to help the University with data management.

1.3 Service Quality Models

In today's competitive market, organizations have become more aware of the prominent customer-oriented business strategies and quality management principles to be able to survive and stand out from competitors. Businesses are dedicating a lot of time and resources into defining and tailoring their customers' needs and preferences. With constantly

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evolving customer perceptions and expectations, it is becoming more challenging for service providers to objectively measure service quality. The quality conception was first introduced, in the management field, by Juran (1974) and Deming (1982). However, service-quality is rather a new perception initiated by Gronroos (1984) and Parasuraman et al. (1985). As the service sectors continue to grow rapidly, many experts concur that the most powerful competitive trend currently shaping the marketing and business strategy is service quality (F. Ali, et al., 2012). This advancement requires precise and accurate measurement to assess and monitor the service quality due to its significant influence on customers and organizations (Ali & Zhou, 2013). The extent of the literature has proposed diversified conceptualizations of service quality, yet no standardized common definition has been universally accepted (Sharif & Kassim, 2012). Service quality is simply what the customers gauge when considering the quality of the service they receive when heading out to a restaurant or a store. An ideal expectation of the service to be received rules the customers' minds upon which they judge how well a service is delivered. Researchers have proposed several definitions of service quality such as providing a service that meets or exceeds customer's expectation (Gronroos, 1984; Parasuraman et al., 1985). Juran (1988) described service quality as meeting customer's expectations. Another definition was presented by Zeithaml (1988) as supremacy in service delivery. Crosby (1979) and Berry et al. (1988) referred to service quality as the conformity to customer specifications, which is the extent to which the major features of the service provided meets the customer's requirements and needs (ISO 9000, 2005). According to Hoffman and Bateson (1997) service quality was defined as an attitude crafted by the overall evaluation of a service performance over a long period of time. Customers compare their expectations with the perceived performance of specific service attributes. Over time and in different situations, major change in customers' needs may be encountered since customers' expectations and perceptions are influenced by external

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environmental alterations, past experiences and the competition between service providers (Gronroos, 1984; Parasuraman et al., 1985; O'Neil & Palmer, 2004; Zeithaml et al. 1990).

Researchers have developed several measurement instruments to define general dimensions of service quality (Jain et al. 2011). The last three decades have witnessed the emergence of plenty of service quality evaluation scales. The first model was determined by Lehtinen and Lehtinen (1982) with three dimensions: interactive quality representing the interaction between the services provided and the customer, physical quality referring to the tangible part of the service and corporate quality highlighting the image of the service provider perceived by customers. Gronroos (1984) introduced a three-dimension model explaining that the perceived service quality is the gap between the expected and the perceived service. The model is governed by the technical quality referring to "what" service is provided and functional quality referring to "how" this service is provided and moderated by the image of the service provider.

The service quality scale (SERVQUAL) proposed by Parasuraman et al. (1985) consisted of ten dimensions: Communication, Responsiveness, Tangibles, Access, Reliability, Courtesy, Understanding, Competence, Credibility and Security. The proposed framework indicated that customer satisfaction is related to the quality of service provided. In other words, customers compare their expectations prior to receiving the service to the actual performance of the received service and that is how their perception of the service is formed. The model is depicted in Figure 1. Parasuraman et al. (1991) revised the gap-based SERVQUAL model to include five dimensions: Reliability, Tangibles, Responsiveness, Assurance and Empathy. These dimensions are further illustrated in Table 1. The SERVQUAL framework employed 22-item scale to assess the customers' expectations of the service to be received and identical 22-item scale to assess the perceived performance of the provided service. The model conducted investigation about service quality of appliance repair and maintenance, retail

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banking, securities brokerage, long-distance telephone and credit cards. Although the five dimensions have been generally adopted in almost any kind of service fields, they have been criticized and deemed non-universal and inapplicable to different sectors (Smith et al., 2007). However, in 2018, Singh demonstrated that SERVQUAL framework is a valid instrument to the present-day for measuring quality in the Indian healthcare sector. In fact, each sector has its unique traits and facets, thus, any model should be attuned to the specific sector in which it is to be adopted.

1.4 Service Quality Models in Higher Education

Universities used to have a secured demand for their services, nowadays, remarkable changes have evaded the tertiary education landscape (Chong & Ahmed, 2015; Dennis et al., 2016). Several factors have led to this intensified competition among which are the internationalization of higher education (Harvey & Williams, 2010; Sultan & Wong 2010), the rise of private universities (Halai, 2013), the decrease in state funding for public universities (Quinn et al., 2009) and the increase in tuition fees (East et al., 2014; Nixon et al., 2018). Therefore, service quality excellence in higher education has emerged as the most strategic element for HEIs competence and sustainability where students are the consumers of the higher education process. Universities will be able to acquire knowledge about how student satisfaction is achieved and develop strategies that create a competitive edge and attract prospective students (Hanssen & Solvoll, 2015). Assessing and improving service quality as a means to extend performance, demands utmost transparency and responsibility to society (Elassy, 2015; Sahney, 2016).

In the higher education context, perceived service quality can be derived from students' evaluation of different service experiences, be it with the administrative staff, instructors, librarians or security staff. In this regard, Zeithaml et al. (1990) realized that service quality is

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marked out by the conformance to student specifications meaning that the perceived value of services sticks in students' minds based on their previous experiences with the service delivered. Consequently, the perceived service quality is influenced by students' expectations, the service delivery process and the service overall performance.

Despite the abundant literature about the importance of service quality in higher education, there is no consensus about the dimensions and antecedents of student perceived service quality (Teeroovengadam et al., 2016). This is due to the characteristics of the higher education service quality which can be described as intangible, perishable, heterogeneous and inseparable (Galeeva, 2016). Service quality research in the higher education sector is relatively new, at least when compared to that of the commercial sector (Sultan & Wong, 2012).

Many researchers have successfully implemented the SERVQUAL model in higher education (Afridi et al., 2016; Mansori et al., 2014; Moosavi et al., 2017; Asefi et al., 2017). Imrie et al. (2002) recommended that the SERVQUAL model needs modification in terms of the environment and culture where it is implemented. Malhotra et al. (1994) also debated that the variances between developed and developing countries can affect service quality dimensions for students. Other researchers developed the model to include dimensions that are more appropriate to the field of education. In their study, Cronin and Taylor (1992) reflected that service quality is multidimensional rather than one dimensional and their model ignored the customers' expectations to focus only on customers' perceptions using performance only (SERVPERF model) where Q (service quality) = P (performance). The instrument dimensions were Assurance, Responsiveness, Reliability, Tangibles, Empathy. SERVQUAL compares the perceptions of the service received with expectations whereas SERVPERF model maintains only the perceptions of service quality. Sharing the same concept for perceived service quality, the two models differ with the formulation designed for their

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calculation, the utilization of expectations, and the type of expectations that should be used. In spite of criticism, most researchers tackling the area of HE have embraced SERVQUAL and SERVPERF models (Galeeva, 2016; Teeroovengadam et al., 2016). The Evaluated Performance scale (EP) emerged by Teas (1993a, b) measures the gap between perceived performance and the ideal service quality features neglecting the customer's expectations. Abdullah (2006b) modified his earlier proposed model the Higher Education PERFORMANCE-only (HEdPERF) which has empirically proved to have superiority over the earlier, the new 38-items instrument was more suited to higher education context. The model also considered that service quality is equivalent to the overall performance of the delivered service. and included five dimensions: Non-Academic aspects (this dimension includes the items that are substantial to allow students fulfill their study requirements and it referred to tasks that are carried out by the non-academic staff), Academic aspects (items that are the sole responsibilities of academic staff), Reputation (items regarding the importance of HEIs in projecting a professional image), Access (items related to accessibility, ease of contact, availability and convenience), Program issues (items asserting the significance of offering a wide range of programs that are reputable with flexible structures and study plans). The revised model removed the sixth dimension from the earlier model, "Understanding" (items focusing on understanding students' needs for adequate counseling and health services).

Diverse studies using these scales have shown difficulties in both the conceptual or theoretical as well as the empirical component. Abdullah (2006 c) developed a combined model HEdPERF-SERVPERF. Academic aspects, Non-academic aspects, Empathy, and Reliability formed the dimensions of the new combined model. He compared the HEdPERF scale with that of two alternatives namely SERVPERF instrument and the merged HEdPERF-SERVPERF and found that the HEdPERF model was more suitable for the higher education sector. Furthermore, Ali, Zhou, Hussain, Nair and Ragavan (2016), Duzovic and Ceh Casni

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(2015) and Yavuz and Gulmez (2016) supported the reliability of HEdPERF as an instrument to evaluate the service quality of higher education.

Authors have adopted existing models and added to it some modifications to be more compatible with the culture, environment and the setting of the higher education institution in which the study has been conducted.

These expansive quality service models implemented in higher education served as the foundation of the model developed for our study to investigate the service quality from the students' perspectives in the scope of Notre Dame University-Louaize. The purpose of our developed model is to be inclusive of the whole education process that the students encounter from admission to graduation. The next part will cover the in-depth-literature of service quality factors that was conducted in search for a better understanding of the service quality concept. Mining the literature, many service quality factors were found replicative and repetitive. Thus, it was necessary to filter the collected data to discard the repeating quality factors and preserve solely the models with authentic factors. Our model highlights the more common factors that were included more frequently in the literature. Other factors that were less frequently studied were disregarded as they were judged irrelevant in terms of the Lebanese higher education features and Lebanon's characteristics. Consequently, the relevant hypotheses were presented in the coming section.

1.4.1 Elements of service quality management in higher education.

Higher education is a complex entity that involves different components. Different conceptualizations and measurement issues have been associated with service quality, thus the results are hard to be conclusive (Bassi, 2019; Chong & Ahmed, 2012; Clemes et al., 2013). Nevertheless, it has been inevitable nowadays to evaluate service quality in the field of higher education. Universities are trying to walk the extra mile in order to differentiate

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themselves from their competitors. Several trends and strategies have been adopted by the higher education institutions that focus on branding and marketing, recruiting and enrollment, and technology (Hanover Research, 2014, March). Only universities that have excellent service quality will be able to predict the number of prospective students to be enrolled at the university (Chen, 2016). Thus, higher education providers should definitely direct their endeavors towards dimensions that students recognize mostly rather than concentrating on attributes that they feel are primary determinants of service quality (Abdullah, 2006 a).

(Ahmad & Buchanan, 2017) Malaysian educational institutions charging low tuition fees and which are considered acceptable for the price paid are more likely to be chosen by students for enrollment. (Saleem et al., 2017) Price also has a moderating relationship between service quality and student satisfaction. Leonard et al. (2015) found a significant relationship between price and student satisfaction. However, the results obtained by Azoury et al. (2014) stating that the Middle Eastern societies has more concern for prestige and reputation of the academic institution rather than the value for their money. Hence, a need for assessing the price as one factor of service quality was prevailed and the first hypothesis was formulated:

H1: Tuition fees are a major concern for students.

The major outcome of higher education institutions is the academic knowledge that the students are able to gain during their stay at the institution. Having said this, the quality of the degree programs offered shall be highly considered. (F. Ali et al., 2016) In the Malaysian Universities, the program issues which implies that the range, design and flexibility of programs offered and a well-aligned curriculum are the most essential in figuring the perceptions of service quality. In line with the study conducted in Pakistan by K. F. Latif, I. Latif, Farooq Sahibzada and Ullah (2019), the study conducted in Rio de Janeiro by Arrivabene et al. (2019) emphasized that excellent academic programs and/or specialization courses characterized by a flexible structure had the greatest influence on student satisfaction.

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Shahsavar and Sudzina (2017) showed that 'quality of lecturers' teaching and contribution was the strongest driver similarly to the findings of K.F. Latif et al. (2019) and Noaman et al. (2017). This was supported by Fernandes et al. (2013) and they also indicated that academic support and advice and program management were significant antecedents. Sharabi (2013) also deduced that what really matters for students is their "value of knowledge" where they anticipate maximum value in return for their dedication and money disbursed throughout their education years. It is very important to have relevant and up-to-date courses content for the disciplines that are taught assuring they meet the market demands and job prospects. According to Ozgur, Li, and Rogers (2015), courses in digital or online subjects such as business analytics need special resources such as data sets, case examples, adequate choice of textbooks, software tools, and technical support capabilities. Technology advances in artificial intelligence, augmented reality, simulation techniques, etc... will be increasingly required in classrooms as the world recognize the need to continually update their knowledge and skills (Rainie & Anderson, 2017).

Thus, we consider the second hypothesis:

H2: Academic services positively influence students' satisfaction.

Another aspect of service quality that is critical for students in their pursuit of academic excellence is the student support services. According to Kaur (2016), "Student support services are a cluster of facilities and activities that are provided to make the learning process easier and more interesting for the learner. They serve as the interface between the institution and the learner". Student support services are not explicitly academic however, they are substantial because they enable students to be surrounded by a healthy learning environment and to develop a sense of belonging when they participate in both academic and support services and also demonstrate good relationships with their instructors (Jon, 2000). This is consistent with Martirosyan (2015) who argue that institutions which want to deliver quality

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services to students need to assess many indicators among which are the student support services. Santini et al. (2017) defined support services quality as the perception of quality of available resources for student development in a higher education institution. As per El-Hage (2016), the support facilities include: offering community services, students' extracurricular activities, athletic services, counseling services, health services, social security services, Financial Aid services, students' housing, student lounge resources ... According to Arnold (2018) Student support services, are usually conglomerated under the umbrella of Student Affairs organization. Such services embrace programs that cater for student needs including housing, disability services, career services, and other areas of student life. He also identified other services at a broader frame of Student Affairs, the kind of services that are provided by academic advisors, campus events, clubs, and programs. These activities act as a proxy for students' leadership development and skill building for future careers (Arnold, 2018). The non-academic ancillary support according to Nadiri et al. (2009) such as library, registrar, IT services and halls of residence are expected to positively influence student's satisfaction. However, the study results by Fernandes et al. (2013) indicated that library services and IT resources did not have a significant impact on the overall program satisfaction. Nonetheless, they remain important factors to avoid dissatisfaction.

(Sabatayeva et al., 2017; Machado et al., 2011) Social activities play a key role in predicting student's satisfaction corroborating evidence to the study results by Al-Sheeb et al. in 2018 where it was found that student perceptions of the social and environmental aspects were significantly related to the overall satisfaction with the college experience. The study results by Siming et al. (2015) reflected that the on-campus student support services contribute to the satisfaction of students in higher education. Perez-Encinas and Ammigan (2016) Institutions need to assess the level of satisfaction of students with their support services since support services can be a major determinant in attaining good retention and enrolment

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rates. Nevertheless, some institutions consider these services as noncore services, others might neglect or overlook these services in favor for the academic services. Students require a competent and convenient study environment that will augment their employment opportunities after graduation (Asif & Searcy, 2014; Yeo & Li, 2013). (Herdlein & Zurner, 2015) Students consider attending the university as an opportunity where they not only prepare for a future career but also to grow and develop socially, emotionally, physically, and spiritually. In light of this, provision of quality student support services becomes an important kit for addressing students' different expectations. Thus, we hypothesize:

H3: Support Services positively affect students' satisfaction.

The integration and interaction between all the vital units within the higher education institution is an essential activity to link the whole learning process together. Provision of quality administrative services guarantees that the different vital processes are weld together to form a harmonious whole. Administrative services are the fuel needed by any institution to run and operate efficiently. Administrative services are the complementary services that support the academic services. It includes all the administrative activities the student encounters such as admission procedure, registration, graduation, payment process, providing a timely service, transparency of rules, policies guidelines and accessibility of this information, among many others... Many researchers agree that administrative services have a significant impact of quality of service (K. F. Latif et al., 2019; Teeroovengadum et al., 2016; Arif et al., 2013; Manaf et al., 2013). The administrative service dimension, explained by registration process, payment process, information circulation and examination procedure, has a significant influence on student satisfaction which was consistent with Anantha and Abdul Ghani (2012).

The services can be provided by academic institutions in two ways: traditional and electronic services. (Haskova, 2016, October, p1) "Information and Information systems are important

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significant factors on which higher education institution quality assurance is based on”.

Information systems provide many services for students such as student registration, course registration, exam registration, online exams, issuing results, webmail service, welfare activities, student clubs, electronic learning, electronic library facilities, electronic networks, electronic evaluations, data storage etc. E-services are proliferating as standards within the tertiary education (Gunawardhana & Perera, 2015). Shahsavar and Sudzina (2017) classified perceived ‘quality of software’ as the second most important driver of students’ satisfaction.

Administrative services are not limited to the outcome of the service delivery, they also refer to the collaboration between the administrative staff and the students. The interaction between staff and students delivers either positive or negative emotions towards the university in general. The HEdPERF (Table 2) referred to this relationship in two dimensions namely Non-academic aspects and Access. A study conducted by Duzevic and Ceh Casni (2015) in Croatia and another by Chanaka Ushantha and Samantha Kumara (2016) in Sri Lanka confirmed that the access dimension has the greatest influence in measuring students’ perspectives of service quality. On the other hand, Arrivabene et al. (2019) detected that the non-academic aspects related to the support staff and access did not significantly influence student satisfaction. In this respect, students reflect their needs to be able to communicate with staff at any time using various means of communication. As indicated by Simonson et al. (2012) student’s satisfaction will increase when they receive an email or simple letter providing the necessary information requested by students. It is absolutely important that students feel respected, have easy access to employees, and can express their opinions freely and to take their comments into account to improve the services of the HEI.

The SERVQUAL scale (Table 1) addressed this relationship between staff and students according to Reliability, Responsiveness, Assurance and Empathy where all these dimensions require the interference of the human factor mainly academic and administrative staff.

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(Hwang & Choi, 2019) Students' satisfaction is aroused when they are generally satisfied with the various aspects of service quality (reliability, responsiveness, empathy, and assurance). Azam (2018) examined the academic services formulated of Assurance, Empathy, Reliability, and Responsiveness and their effect on student satisfaction in Saudi Arabian private HEIs. The findings determined first that academic service (except responsiveness) was the best determinant for service quality. This confirms the study results by Khan et al. in 2011 which state that academic empathy, reliability and assurance are necessary factors to attain student satisfaction while responsiveness has no solid effect over it. Parahoo et al. (2016) also found that empathy is a significant determinant of student satisfaction. The way faculty and staff members answer and respond to students' requests highly affects students' satisfaction (Darawong & Sandmaung, 2019).

Based on that, we hypothesize:

H4: Administrative services positively impact students' satisfaction.

Physical facilities and infrastructure of the HEIs have also taken considerable attention in the literature. It takes into account the tangible aspects of the service quality. Physical facilities refer to physical assets of the university such as libraries, computer labs, student accommodation, refectories, sports and recreation facilities etc... A study carried out by Karna and Julin (2015) found that campus facilities has important role in enhancing satisfaction of students in Finland. Hanssen and Solvoll (2015) found out as well that high quality libraries, social areas and auditoriums affected student satisfaction of Norwegian universities. Weerasinghe and Fernando (2018) inferred that in Sri Lanka facilities, such as lecture rooms, library facilities, hostel facilities, student cafeterias, employment and entertainment facilities, work as major determinants of student satisfaction. This result was in alignment with the finding of Yusoff et al. (2015). Similarly, (Winter & Chapleo, 2017) potential students expect aesthetically designed and laid out university buildings. (Azoury et

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al., 2013) In the Lebanese setting, the university relationship with the society mainly affects students' satisfaction where companies will be willing to provide internships for current students and adequate jobs for fresh graduates.

Thus, we derive our fifth hypothesis:

H5: Physical facilities positively impact students' satisfaction.

1.5 Impact of Service Quality on Student Behavior

There are many stakeholders involved in the higher education institutions, whether internal or external. The stakeholders are the ones who experience the different services offered by an institution and for whom quality is vital such as government, employers, students, academic and administrative staff, institutional managers, prospective students and their parents, and taxpayers. As defined by Benneworth and Jongbloed (2010), stakeholders are the individuals who may gain or lose from the university operations. Hence, their perception of the institutions' services is what matters the most. Students, our main concern in this study, are one of the key assets of HEIs. They are able to bridge the gap between the institutions and other stakeholders among which are the parents, employers, and society. Subsequently, the satisfaction of students will influence the satisfaction of these stakeholders. Students feedback will allow the HEIs to improve their service quality (Robinson & Celuch, 2016). (Saleem et al., 2017; Manzuma-Ndaaba et al., 2016; F. Ali et al., 2016) Service quality strongly impacts student satisfaction levels. Results are consistent with the studies carried out by Kordshouli et al. (2016) and Ferdousipour (2016). (Masserini et al. 2018) Quality of service is a major determinant of student satisfaction.

Few renowned universities still have the privilege of picking out the best of applicants, others have to compete to attract students to their institute and gain market share (K. F. Latif et al. 2019). With this in mind, higher education institutions consider their students as their

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customers where they strive to satisfy or even exceed their needs and demands (Malik et al., 2012). However, the contemporary view of service marketing criticizes this outdated marketing approach as attributed to Mark (2013). According to Guilbault (2016), the emerging aspect includes co-creation of quality by engaging customers in the overall delivery of a service. To put it in the frame of higher education, students participating in the service delivery, are the co-creators of quality. As much as their hard work is coveted, the dedication and competencies of the instructors are also required.

Ultimately, educational institutions must study the aspects that would enrich their ability to attract, retain and create strong ties with students. Private higher education institutions generate more profit when student enrollment is high (Fox Garrity, 2012), which is linked to high student loyalty (Perin et al., 2012; Abu Tair & El-Halees, 2012). Additionally, satisfied students will probably spread positive word of mouth about their experience. This is a common practice that people share before purchasing or experiencing a good or service which is also popular in the Middle Eastern society (Jamal & Naser, 2002). Students who manifest positive perceptions of service quality may help the institution recruit new students (Narang, 2012; Sultan & Wong, 2013). Students play an indispensable role in the performance of HEIs, thus it is inevitable to comprehend the correlation between the students' perceptions of service quality and the other constructs student satisfaction and loyalty. Intensive competition, growing internationalization and standardization, costly tuition fees and higher student expectation has led universities to seriously consider student satisfaction knowing that education is a highly marketable service which can be improved drastically on levels of service delivery and student experience.

1.6 Concept of Student Satisfaction

The literature provides various definitions of customer satisfaction including conceptualizations such as experience or quality of service, expectations, perceived value succeeded by evaluation of the service received (Ali & Amin, 2014). (Malik et al. 2010) It depends on the relationship between expectations and the actual performance of the service being rendered. Rojas-Mendez et al. (2009) defines satisfaction as a cumulative judgement established when comparing a service to a standard. Parasuraman, Zeithaml and Berry (1994) claimed that satisfaction depends on how the client perceives the reliability of the service being received and reliability is defined with tangible elements such as a feeling of security, capacity for response and empathy of the service provider.

In the higher education context, a myriad of studies has supported the relationship existing between service quality and student satisfaction (Brown & Mazzarol, 2009; Dericks et al., 2019). (Annamdevula & Bellamkonda, 2016; Hanssen & Solvoll, 2015) Student satisfaction is a complex concept based on complex interactions consisting of several dimensions that should be well understood in order to be able to know why we care about measuring it. Elliot and Healy (2001, p. 2) were pioneers in proposing an adaptation of the concept of satisfaction where the clients are students. They defined student satisfaction as a “short-term attitude resulting from an evaluation of a student’s educational experience” and stated that achieving student’s satisfaction occurs when the student’s actual experiences or performances meets or exceeds their initial expectations. Gruber et al. (2010, p. 108) refers to student’s satisfaction as the “the favorability of a student's subjective evaluation of the various outcomes and experiences associated with education.” Thus, student satisfaction is shaped through repeated practices in the learning environment.

(Aldridge & Rowley, 1998) proposed two categories for student satisfaction evaluations, with the first one focusing on classroom teaching and learning evaluation and the other focusing

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on the comprehensive student experience. Moreover, (Mukhtar et al. 2015) the student satisfaction level can be defined as function of the relative level of experiences and perceived performance of educational services. The educational experiences, services and facilities that the students undergo during their years of study control their satisfaction level with the HEI (Elliott and Shin, 2002; Weerasinghe & Dedunu, 2017; Weerasinghe & Fernando, 2017). Lai et al. (2015) pointed that not only academic quality influences student satisfaction but also the services of the HEI. Weerasinghe and Dedunu, (2017) deduced that university facilities significantly influence student satisfaction levels. This was further confirmed by Yusoff et al. (2015) and Hanssen and Solvoll (2015). The study also concluded that quality of degree programs is a key driver of student satisfaction levels, while insignificant influence was reported by quality of administrators on student satisfaction. (Johnson & Fornell, 1991; Mittal & Kamakura, 2001) Other studies revealed that antecedents and consequences of satisfaction were also affected by some student characteristics such as age, income, and gender. (Parahoo et al. 2013) found that the university reputation was the only significant antecedent behind female students' satisfaction while both reputation and academic faculty competence were significant predictors for male students' satisfaction. Douglas et al. (2015) examined more creative approaches to determine student satisfaction through handwritten narratives targeting the teaching and learning and the support service environment from which derived several new overall quality determinants: motivation, reward, social engagement, usefulness, value for money, and fellow student behavior. Bates et al. (2019) assessed student satisfaction using photographic elicitation, with the thematic analysis of the student interviews indicating that the learning environment, work-life balance, and the wider university community were the major predictors of student satisfaction. Yu and Dean (2001) studied student satisfaction as a relative concept that involves both cognitive and affective components. Cognitive component of satisfaction is determined by the confirmation or disconfirmation of student expectation

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with the perceptions of the perceived performance of the service being provided. The affective component includes the emotions element which is a core attribute of satisfaction. A student's positive emotions (happy, hopeful, motivated, etc.) are positively associated with positive word-of-mouth and willingness to pay more and negatively associated with switching behavior. Likewise, negative emotions (angry, depressed, humiliated, etc.) are negatively associated with positive word-of-mouth and willingness to pay more and may lead to opposite decisions such as to leave or discontinue involvement. The study results showed that the emotional component of satisfaction serves as better predictor of loyalty than the cognitive component.

For the purpose of this study, we adopted the holistic approach for assessing student satisfaction based on the extent of positive ratings related to the education quality and the quality of the different services offered at NDU and is defined as enriching and fulfilling educational experience, as well as student satisfaction, enthusiasm and motivation with the overall university experience, in addition to the overall satisfaction with the service being delivered.

1.6.1 Importance of student satisfaction in higher education.

Student satisfaction is both an indicator of the way institutions respond to students' needs and a measure of institutional effectiveness, success and vitality (Hallenbeck, 1978). Bryant and Bodfish (2014) stated that student satisfaction is a key performance measure for HEIs which are implementing meticulous quality management systems and processes. According to Mestrovic (2017) students' satisfaction with quality services is crucial in higher education institutions in acquiring a competitive edge to attract, maintain and increase student enrolment, manage attrition and retention problems, and make informed decisions about student affairs. Tinto (1982) raised a student integration theory of persistence and retention to

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define the relationship between students and institutions. Therefore, dissatisfied students tend to withdraw from the university and from financial point of view, recruiting new students is much more expensive than retaining current students. This was confirmed by Schertzer and Schertzer (2004) where failure in retaining students was both costly and ineffective. The study by Roberts and Styron (2010) found out that students who withdrew from the university had lower social involvement and satisfaction levels regarding faculty approachability than those who continued their studies. Oja (2011) explored that student performance was significantly related to student satisfaction levels based on several aspects of the institution. Therefore, high level of student satisfaction can influence students to be more motivated, work harder and achieve success till they graduate. Bryant and Bodfish (2014) posited that institutions whose students experience high satisfaction levels have higher graduation rates. The study results by Dhaqane and Afrah (2016) showed that satisfaction boosted both academic achievement and student retention. The reciprocity between satisfaction and performance was examined by Bean and Bradley (1986) where student performance was found out to have no positive effect on overall satisfaction.

1.7 Concept of Loyalty

Customer loyalty has attracted many scholars and marketing practitioners and managers (du Toit & Burns, 2016). Different researchers have assigned different definitions to loyalty depending on the marketing activities, business type, etc. According to Dick and Basu (1994, p. 99) have defined loyalty as “the strength of the relationship between an individual’s relative attitude and repeat patronage”. Oliver (1997, p. 392) presented the most famous definition of loyalty describing it as “a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior”.

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According to Oliver (1997) customer loyalty is comprised of three-dimensional attitudinal component (cognitive, conative and affective antecedents) and one behavioral component (customer retention-repeat patronage) which were referred to by Dick and Basu (1994) as relative attitude and repeat patronage respectively.

As per Ram and Wu (2016) loyal customers repeat purchasing same brands again and again; this emphasizes behavioral loyalty. However, behavioral loyalty often ignores latent loyalty, which means a highly favorable attitude toward product but less frequent purchase due to competitive or social pressure (Dick & Basu 1994). On the other hand, when few options are available, customers repurchase the same product even though they do not prefer the performance of this product or service. Thus, truly loyal customers will repurchase same brand/product and hold a favorable attitude toward it (F. Ali et al., 2018). According to Kotler et al. (2017) customer loyalty was defined as the result of good relationship with customers.

In the higher education context, (Verhoef et al., 2002) defined student loyalty as “psychological attachment to their universities founded upon their feelings of identification and affiliation”. (Tinto, 1993) referred to it as behavioral and attitudinal commitment toward an institution. Student loyalty is influenced by the school climates (Dagnew, 2014; Kythreotis et al., 2010). As cited in the work of Ali and Ahmed (2018), “considering the unique nature of student loyalty, definition given by Oliver (1999), can be adapted as a deeply held commitment to repeat selection of a university for educational needs in the presence of competitive options, advocate in one’s professional and social circle and, as alumni extend cooperation to its alma mater and its graduates”. Giner and Rillo (2016) and Schlesinger et al. (2017) also claimed that loyalty can refer to the time students were enrolled at the university as well as the time after the student has graduated.

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1.7.1 Importance of measuring loyalty.

In any organization, customer loyalty is a crucial index of success (Nyadzayo & Khajehzadeh, 2016). The growing competition has driven the attention of HEIs towards retaining students and decreasing dropout rates. Satisfaction is considered an important factor that precedes customer's loyalty; satisfied customers are faithful and loyal to the organization and promote the organization by exchanging their positive experiences through conversations and social networks (Fernandes & Pedroso, 2017).

Student loyalty comprises both behavioral and attitudinal components (Vianden & Barlow, 2014).

Behavioral student loyalty is the willingness to continue to study at the same university and also prefer the same institution for future educational endeavors (Mohamad & Awang, 2009).

Attitudinal student loyalty can be linked to loyal alumni who may provide support to their alma mater through monetary contributions, providing help to graduates of the same university, placing interns and spreading word of mouth (Henning-Thurau et al., 2001).

(Iskhakova, 2016) Alumni loyalty can really be utilized by engaging them in the university's academic activities to raise the quality of education. (Hsu et al., 2016) Alumni body can provide a helping hand to the university in developing its curriculum and hiring of graduates.

(Yang & Mutum, 2015) has highlighted the importance of word-of-mouth (WOM) communication from both current students and alumni, especially, online, where it directly affects prospective students' enrollment choices. It is definitely possible that loyal students become good advocates who recommend the university to their community. Our study adopts both aspects of the loyalty conception: attitudinal loyalty and behavioral loyalty.

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1.8 Impact of Student Satisfaction on Loyalty

Universities are exhibiting great interest in satisfaction due to its ultimate effect on retention, motivation, fund raising, loyalty and image. Massive literature has put great emphasis on the effect of student satisfaction on loyalty (Annamdevula & Bellamkonda, 2016; Khoo et al., 2017; Subrahmanyam, 2017; Austin & Pervaiz, 2017; Masserini et al., 2018). Many studies have confirmed the mediator role of satisfaction in the influence of service quality on loyalty (Cronin & Taylor 1992; Mosahab et al. 2010; Sultan & Wong 2012, Teeroovengadum et al. 2019). Offering good service quality alone cannot achieve students' loyalty, it should be enhanced by initiatives that increase students' satisfaction (Chandra et al., 2019).

Therefore, it is proposed that:

H6: Student Satisfaction positively impacts student loyalty.

1.9 Conceptual Model

Many scholars have assessed the impact of diverse service quality dimensions of higher education on student satisfaction and loyalty and many models were designed and developed. Our model includes seven main constructs namely Tuition Fees (TF), Academic Services (ACS), Support Services (SUS), Administrative Services (ADS), Physical Facilities (PF), Students' Satisfaction (SS), and Students' Loyalty (SL).

Our measurement/factor model has been formulated based on extensive literature review and five primary dimensions of service quality has been identified. The service quality dimensions in our study were selected also based on their relative prominence to the academic institution where the study is conducted which is in our case NDU. The individual effect of each of the service quality antecedents on students' satisfaction was supported by Usman and Mokhtar (2016) and Bapat (2017). (Annamdevula & Bellamkonda, 2016) In light

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of the improvement of the conceptual foundation and empirical evidence, the majority of recent publications consider service quality as an antecedent to student satisfaction.

Thus, we predict:

H1: Tuition fees are a major concern for students.

H2: Academic services positively influence students' satisfaction.

H3: Support Services positively affect students' satisfaction.

H4: Administrative services positively impact students' satisfaction.

H5: Physical facilities positively impact students' satisfaction.

As per Subrahmanyam (2017), it was found that service quality has only an indirect effect on students' loyalty through students' satisfaction. Consequently, we propose:

H6: Student Satisfaction positively impacts student loyalty.

The following conceptual model reveals the relationship among the independent and dependent variables as well as the research hypotheses.

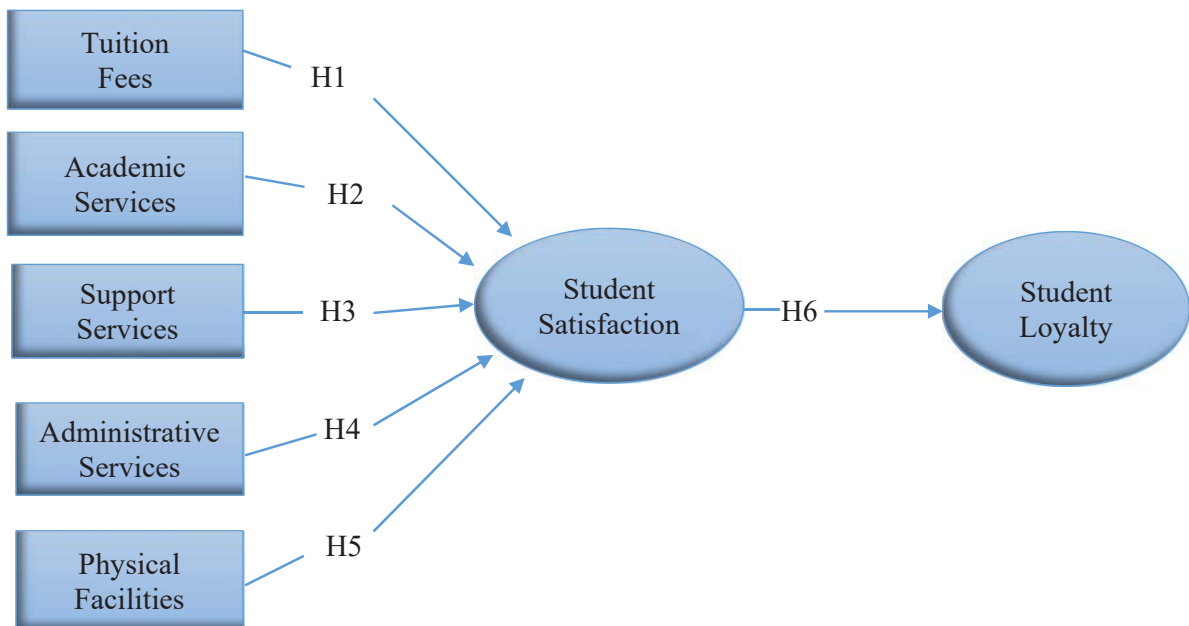


Figure 3: Conceptual Model

Chapter 2

PROCEDURES AND METHODOLOGY

2.1 Introduction

We were able to identify the preliminary framework for service quality in higher education from the existing knowledge in the literature in chapter 2. The theoretical framework introduced and described the different constituents of service quality and their role in affecting student's satisfaction and how student's satisfaction might impact student's loyalty. Within this perspective, the conceptual model, depicting the independent and dependent variables, and the research hypotheses, has been drawn which will be tested on the sample population of this study.

2.2 Research Design

The current section delivers the process of developing the research methods that were adopted to perform the testing needed for the study. What follow is a detailed discussion about the different stages engaged in the methodology development process including the philosophical background of the research method chosen, the data collection strategy with the selection of research instrumentation and sampling, in addition to the tools that will be used to analyze the data collected.

2.2.1 Underlying philosophical assumptions.

A research philosophy is defined by Saunders et al. (2003) as a belief about the way in which data about a phenomenon should be gathered, analyzed and used. The current study chooses positivist assumptions to test the relationships between the dependent and independent variables of our model. Positivism is the approach to the study of society that is

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grounded on scientific evidence, such as experiments and statistics, to get a genuine picture of how society operates. For this approach, the researcher acts as an objective observer who should not be influenced by or influence the subject of research. On the other hand, Constructivism states that reality is socially constructed, meaning that there is no single reality. The reality is a subjective creation based on individual perception.

2.2.2 Scientific reasoning.

There are two main approaches for conducting researches, the deductive reasoning and the inductive reasoning. Following an inductive approach, the researcher begins with specific observations which are used to derive generalized theories and conclusions. From the philosophical assumptions discussed in the previous section, it is imperative to use the deductive approach for the current study. The researcher begins with theoretical considerations from which hypotheses are deduced which will undergo empirical testing. Contradictory to inductive approach, this form of research works from the more general abstract level to the more specific. The processes of the two approaches are illustrated in Figure 2.

2.2.3 Research method.

The quantitative method assumes that there exists only a single reality about a social condition which cannot be influenced by the researcher. Haq (2014) elucidates that quantitative research is able to explain a specific phenomenon by collecting numerical data and then analyzing it through the use of statistical methods. Whereas, researchers use the qualitative approach when they have little or no knowledge about a phenomenon, it assumes that there is no pre-existing reality. It is mostly convenient for small samples, where the out-coming results are not measurable and quantifiable. It is a thorough description and analysis

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of a research subject without limiting the scope of the research and the nature of participant's responses (Collis & Hussey, 2003).

Based on the philosophical assumptions and deductive research approach, a quantitative research was employed in order to meet the objectives of the current study. The quantitative approach is better suited to find the cause and effect relationship between variables generally to either verify or nullify some kind of theory or hypothesis (Creswell 2014; Feilzer 2010; Teddlie & Tashakkori, 2012).

2.3 Independent and Dependent Variables Determination

Variables are identified of being either independent or dependent. They may be perceived in terms of cause and effect relationship. In the social and behavioral sciences, the independent variable is attributed to the presumed cause of a phenomenon the investigator is trying to measure in some way and has a direct effect on the dependent variable. The independent variable refers to the condition of an experiment that is manipulated and measured by the experimenter to test its effect on the dependent variable. It is stable and remains unaffected by the other variables of the research. The dependent variable depends on and is affected by the independent variable(s) that are measured. Since the researcher controls the value of the independent variable, the value of the dependent variable only changes in response to the independent variable.

2.3.1 Selected independent variables.

Several variables were identified as independent variables for our study. A set of studies were identified and several service quality factors were collected that built the foundation of the concept of quality in higher education. These accumulated models were examined and filtered in which the essential quality factors were included in the developed

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set of service quality factors for higher education. Those included factors were considered more compatible with Lebanon's characteristics and the Lebanese higher education traits. The independent variables that constituted the elements of service quality in higher education that are believed to have effect over other dependent variables are: Tuition Fees, Academic Services, Support Services, Administrative Services, Physical Facilities. Students need to receive the best service quality in return for their money paid. It was tested based on the criteria for the student's choice for a specific program in terms of number of credits required to complete the program, overall program duration and credit fees. The academic services are represented by the student's evaluation of diversified programs and specializations offered, instructors knowledge, teaching methods used, convenience of the number of students in class, academic advisor continuing guidance. The support services were examined in term of the academic events and activities being able to provide broader general knowledge and enhanced interest in global issues, recognition of student's achievements, effective career advising, provision of appropriate financial aid packages, provision of good medical services, operating good counseling services, delivering sufficient and up-to-date library resources, reliability of Wi-Fi service, contribution of physical activities and athletic competitions to a better education, and encouraging students to engage in social activities. The administrative services were evaluated by the professional attitude of the admin staff, processing students' requests in a timely manner, convenience of operating hours, promptness and efficiency of automated systems and processes, effectiveness in utilizing and updating various communication channels. Physical facilities are assessed through modernity and classrooms' technical equipment, adequate services for students with physical disabilities, well equipped gym and athletic courts, provision of adequate services by the bookshop on campus, the convenience to eat in the cafeterias, appropriateness of the learning environment provided by student courts, landscaping and green areas.

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2.3.2 Selected dependent variables.

The dependent variables in our model are student satisfaction and loyalty. Student satisfaction acts as a mediating variable between the independent variables that constitutes the factors of the service quality and student loyalty. Student satisfaction is measured by how enriching and fulfilling the student considers his education, how happy the student is with the environment, feeling of motivation and enthusiasm about coming to the institution, the rating of the student's satisfaction with the services available, the satisfaction with the overall experience at the institution.

Loyalty being the dependent variable on student satisfaction is measured by several aspects of the student's behavior; recommending the institution to others, considering returning to the same institution to pursue graduate studies or a second degree, intention to become an active alumna/alumnus, defending the institution against rumors/critics, spreading a positive word-of-mouth.

2.4 The Sampling Technique

Different sampling techniques can be used to create a specific target sample from a population. To be able to draw valid conclusions from the results of the study, the selected sample should be representative of the population as a whole. The two types of sampling methods are the probability sampling and the non-probability sampling.

Probability sampling is based on random selection, giving way to make statistical inferences about the whole population.

The non-probability sampling involves non-random selection criteria where not every individual has a chance of being included. This type might be easier to access, but it has a higher risk of sampling bias. Moreover, it cannot be used to make valid statistical inferences about the whole population.

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The study uses simple random sampling to acquire respondents to participate in the study. This means that every possible sample of the same size is equally likely to be chosen. The selection of the sample was random giving equal chances of participation for different genders, ages, majors and levels of study. NDU students represented the population for this investigation across its three campuses.

The questionnaire was distributed to students who were registered during Spring and Summer 2020. The total number of enrolled students in the three campuses was 4994 for Fall 2019, 4492 for Spring 2020 and 1361 for Summer 2020. The questionnaire was distributed in the beginning of Spring 2020 and collected until end of Summer 2020. During the academic year 2019-2020, many political and social events have culminated; the eruption of the October Revolution in Lebanon and the outbreak of the pandemic Coronavirus disease (COVID-19) all around the world. Amid the on-going anti-government protests, the academic institutions in Lebanon were closed for a long period. As well as the COVID-19 crisis has affected educational systems worldwide where nation-wide lockdowns were enforced to prevent the spread of the virus. Lebanon reported its first coronavirus infection on February 21, 2020. The academic institutions at the time moved to remote learning hindering the data collection process. The sample size that we were able to collect reached 346 respondents, but after discarding incomplete questionnaire or recurring or illogical responses, we were left with 297 responses. The respondents were distributed as follows: 268 Main Campus, 17 NLC, and 12 Shouf Campus. The total number of students that were enrolled for Spring 2020 at the three campuses was 4492 distributed 3726 at Main Campus, 435 at NLC, 331 at Shouf Campus. The total number of students that were enrolled for Summer 2020 at the three campuses was 1361 distributed 1174 at Main Campus, 97 at NLC and 90 at Shouf campus.

In other words, the weighted average of enrolled students for Spring and Summer 2020 was 83.71% at Main campus, 9.08% at NLC, and 7.19 % at Shouf campus (Figure 4). The total

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number of respondents at the Main campus proportionated to 90.23 % of the population, 5.72 % at NLC, and 4.04 % at Shouf campus (Figure 5). Therefore, they are representative ratios of the population.

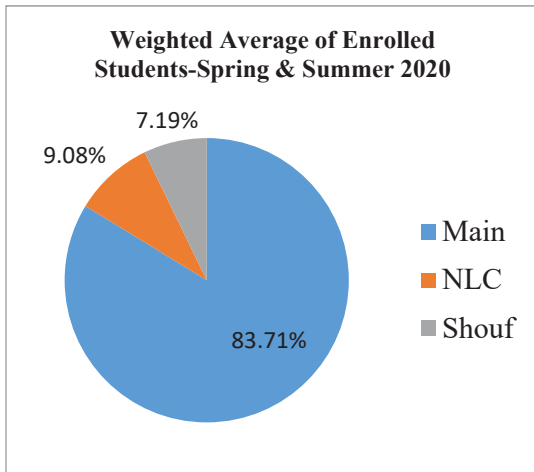


Figure 4: Weighted Average of Enrolled Students-Spring & Summer 2020

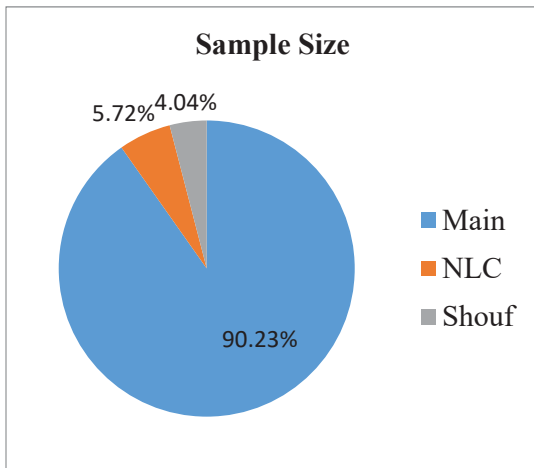


Figure 5: Sample Size

2.5 Data Collection

There are many strategies implemented to collect and obtain data for statistical analysis. However, the strategy chosen should best serve the purpose of the study. The research is a case study that will be conducted at Notre Dame University-Louaize using a new measurement tool and not an existing one perhaps there might be lack of standardization

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of the existing ones. The survey is one of the most familiar methods for collecting primary data which is the case in our study. The primary data is the information gathered directly from the audience. The self-administered questionnaire has been developed to solicit information from our target population which is the students of NDU.

2.5.1 The questionnaire.

In line with the selected philosophical assumptions, deductive approach, and methodological approach; the survey design administered as a questionnaire is considered the best instrument that is constructed for the current study. One of the objectives was to keep the questionnaire as short as possible in order to avoid losing participants' interest and attention. The questionnaire is illustrated in Appendix A. It has a total of four parts, parts I through IV with a total of 48 questions. Each part includes a set of questions with a certain objective consisting of closed end questions that intend to illustrate the demographic constitution of the respondents, the determinants of the service quality at NDU, the level of satisfaction the students experience with the service quality elements offered at NDU, the emotions and behavioral attitude the students convey towards NDU. It was developed in the English language using a seven-point Likert scale ranging from "1-strongly disagree" to "7-strongly agree" to represent students' opinions and "4-neither agree nor disagree" being indifferent or neutral option in order to reflect the respondent's true evaluation. The questionnaire is designed to take 10 to 15 minutes to be filled out by the student. The survey link was sent to students NDU emails, through the "Blue System" that is used by the university, to be filled at their convenience to ensure anonymity and necessity of accurate answers. The questionnaire was pilot tested where 11 students were involved. The pilot test provided information about the time needed to complete the questionnaire and it did not exceed the one required. It also

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provided information about question difficulty, sensitivity, and/or item nonresponse related to specific questions and the questionnaire was amended accordingly.

The questionnaire included a cover letter with an explanatory note that introduced the study and its purpose to the students. They were informed that their participation is entirely voluntary and they may withdraw their consent or discontinue participation at any time. Declining to participate will not involve any penalty or loss of any benefits. Moreover, all information they provide would remain anonymous and will be treated with confidentiality. No names will be used in any reports used for the research. No information about the respondents was collected or published. Data was only examined by the leading researcher and the graduate student and was saved in a protected file. The survey links was left for approximately 79 days from June 13, 2020 till August 31, 2020 to ensure that a maximum number of respondents were able to take the survey.

2.6 Statistical Data Treatment

The collected data is analyzed using Statistical Product and Service Solutions (SPSS), version 20. In this study, Confirmatory Factor Analysis (CFA) was used to determine the construct validity of the survey items. In confirmatory factor analysis, researchers can specify the number of factors required in the data and which measured variable is related to which latent variable. CFA is a tool that is used to confirm or reject the measurement theory. The assumptions of a CFA include multivariate normality, a sufficient sample size, the correct a priori model specification, and data must come from a random sample. In this study, our theoretical model was based on previous research. Thus, a Confirmatory Factor Analysis was used to evaluate our model fitness; testing whether the service quality constructs are consistent with our understanding of the nature of those constructs/factors as expressed in the first five hypotheses. It is theory driven. CFA proves whether the observed variables can be reduced into a smaller number of latent factors that capture most of the covariance.

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Before moving on, two terms shall be defined in order to understand how hypothesis testing works. The significance level also denoted as alpha or α , is a measure of the precision of the parameter estimate, it is the probability of rejecting the null hypothesis. It is used in null-hypothesis testing and testing for statistical significance. We seek an interval of confidence of 90 % and since it is a two-tailed distribution, the significance level is set at $\alpha/2$, therefore at 0.05 (5%). P-Value is defined as the most important step to accept or reject a null hypothesis which states that there is no statistical significance between the two variables in the study which we are doing. The alternative hypothesis states that there is statistical significance between these two variables. Since p-value tests the null hypothesis that its coefficient turns out to be zero i.e. for a lower value of the p-value <0.05 (significance level chosen) the null hypothesis can be rejected and the alternative hypothesis can be accepted, otherwise null hypothesis will hold.

The first step is to examine two important characteristics of measurement: Reliability and Validity.

Reliability refers to consistency; it can be assessed through internal consistency of the instrument and the reliability of the summated scales where several variables are summed or averaged together to form a composite representation of a concept. To measure reliability, Cronbach's alpha or coefficient alpha, developed by Lee Cronbach in 1951, is used which is one of the most common methods for determining reliability, or internal consistency. Cronbach's alpha tests to see if multiple-question Likert scale surveys are reliable. If the survey has good internal consistency, respondents should answer questions that are designed to assess the same variable with the same pattern or consistency. In general, an instrument is considered reliable when Cronbach's alpha is greater than or equal to 0.7. Cronbach's alpha assumes the questions are only measuring one latent variable or dimension (unidimensional) which is the main question of the research.

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Validity is the degree to which an instrument accurately represents what it is supposed to measure. A valid instrument is always reliable; however, a reliable instrument is not necessarily valid. The Kaiser-Meyer-Olkin (KMO) Test is a Measure of Sampling Adequacy (MSA) measures if there are enough correlations among the studied variables. KMO varies from 0 to 1.0, KMO should be 0.5 or higher to proceed with factor analysis. Higher KMO score means the data is better suited for Factor Analysis.

Bartlett's Test of Sphericity is conducted which would indicate if there are strong correlations among the variables or not. If the p-value is < 0.05 , then the null hypothesis that states there is no sphericity should be rejected. Meaning that, there is overall sphericity or relationship among the variables.

The second step is to examine the normality of our data by the visual plot of histogram and the normal probability scatter plot. Kurtosis should be calculated and it is a statistical measure that identifies whether the tails of a given distribution score extreme values. The kurtosis of a normal distribution equals to 3. The distribution is normal when the bell curve of the data distribution is somehow symmetric. This measure of asymmetry of the distribution of a variable about its mean is referred to as skewness. However, Likert scale data are most of the time not normally distributed. This is because Likert scale is ordinal and discrete, it is not a continuous scale, that's why Shapiro-Wilk and Kolmogorov-Smirnov tests will never generate scores that indicates the population the sample represents is normally-distributed. The null hypothesis (H_0) for both tests suggests that the data follows a normal distribution. If the significance values (p-values) of the Shapiro-Wilk and Kolmogorov-Smirnov Tests are greater than 0.05, the data is normal. If they are below 0.05, the data significantly deviate from a normal distribution. As a rule of thumb, we reject the null hypothesis if $p < 0.05$. For the above mentioned reason, the visual data distribution will be used to detect the normality of our data.

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The third step is to discover the correlations existing between our sets of data, which is a measure of how well they are related. The most common measure of correlation between a set of variables is the Pearson Correlation Matrix. Two letters are used to represent the Pearson Correlation: Greek letter rho (ρ) for a population and the letter "r" for a sample. It shows the linear relationship between two sets of data. Pearson's correlation coefficient calculates the effect of change in one variable when the other variable changes. A rho of zero indicates that the two variables in study are independent. A rho value of 1 indicates there is perfect positive correlation meaning that the two variables move in the same direction, and a rho value of -1 indicates that the two variables move opposite to each other.

A Pearson correlation matrix is obtained which gives the correlation coefficients between a single variable and every other variable in the investigation. The correlation coefficient between a variable and itself is always 1; hence the principal diagonal of the correlation matrix contains 1s. The variables with high correlation that is greater than or equal 0.5 are likely to be grouped together under one construct (factor). The anti-image correlation matrix is also obtained which represents the variables that are likely to be grouped together by factor analysis. Anti-image correlation matrix shows the individual KMO. As mentioned earlier if the overall KMO is < 0.5 , then variables with individual KMOs < 0.5 should be omitted from the factor analysis one at a time, then repeating factor analysis with the smallest one being omitted each time.

Now moving to extraction of factors, the extraction method used is Principal Component Analysis. It is a model of the measurement of a latent variable.

The unrotated factor solution is first conducted. An important feature of factor analysis is that the axes of the factors can be rotated within the multidimensional variable space. In other terms, it is what a factor analysis program does while determining the best fit between the variables and the latent factors. The program looks first for the strongest correlations between

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variables and the latent factor. Sometimes, the initial solution results in strong correlations of a variable with several factors or in a variable that has no strong correlations with any of the factors, this is known as cross-loadings. In these cases, factor rotation is used to eliminate cross-loadings. Rotational approaches can be either Orthogonal or Oblique. The orthogonal rotation approach maintains orthogonal vectors at 90-degree angle that are independent of each other assuming no correlation between factors. Orthogonal rotation methods are:

Quartimax Method: it minimizes the number of factors needed to explain each variable.

Varimax Method: it minimizes the number of variables that have high loadings on each factor.

Equamax Method: it is a combination of the Varimax and Quartimax methods.

The Oblique rotation approach allows for correlation between factors and axes are not maintained at 90-degree.

Direct Oblimin Method: tends to do Varimax-looking factors but which are oblique.

Promax Method: tends to produce group factors that look like Direct Oblimin and Varimax.

It is used for large data sets.

To determine the number of factors extracted, first we examine the initial communalities for correlation analysis. They show the proportion of variance accounted for in each variable by the rest of the variables. Small values indicate variables that do not fit well with the factor solution, and should possibly be dropped from the analysis. Communalities range from 0 to 1. Zero means that the common factors do not explain any variance; one means that the common factors explain all the variance.

Second, Total Variance Explained, eigenvalues and scree plots are considered. Factors are listed in the order of the variance they explain. Each factor captures a certain amount of the overall variance (cumulative variance) in the observed variables, and the factors are always listed in order of how much variation they explain.

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Third, the Eigenvalue is a measure of how much of the variance of the observed variables a factor explains. Any factor that has an Eigenvalue of less than one does not represent a unique factor, and is therefore disregarded.

A scree plot visualizes the Eigenvalues, the factors that have Eigenvalues less than one drop off dramatically on the scree plot.

It is convenient now to look into the factor matrix; the relationship of each variable to the underlying factor is expressed by the so-called factor loading. Loadings can range from -1 to 1, according to a rule of thumb in the confirmatory factor analysis; the value of loadings must be 0.35 in order to assure that the independent variables extracted are shown through a specific factor. This value is identified based on our sample size (see Table 3). Similarly, we shall expect that a variable scoring highly on one factor to have very low cross-loadings with other constructs.

The next step is to perform regression to assess whether the variables fit well in the factors. The most common method for fitting a regression line is the method of Ordinary Least Squares (OLS). After a regression line has been computed for a group of data, a point which lies far from the line (and thus has a large residual value) is known as an outlier. Such points may represent erroneous data, or may indicate a poorly fitting regression line. In other words, the residual is the error that is not explained by the regression equation. OLS method calculates the best-fitting line for the observed data by minimizing the sum of the squares of the vertical deviations from each data point to the line (if a point lies on the fitted line exactly, then its vertical deviation is 0).

In regression, we assume there is no autocorrelation. Durbin Watson Test is the test used to detect whether the model is auto-correlated or not. The Durbin-Watson test statistic tests the null hypothesis that the residuals from an ordinary least-squares regression are not

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auto-correlated The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 (between 1.8 and 2) indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation.

A standardized beta coefficient compares the strength of the effect of each individual independent variable to the dependent variable. The higher the absolute value of the beta coefficient, the stronger the effect. Standardized beta coefficients have standard deviations as their units. This means the variables can be easily compared to each other.

The ANOVA is used to test the significance of the linear regression. It compares a model with no predictors to the model that we specify. The Null hypothesis states that the model with no independent variables fits the data as well as our model. If the P-value for the ANOVA, overall significance test, is less than our significance level (0.05), we can reject the null-hypothesis and conclude that our model provides a better fit than the intercept-only model.

R-squared (R^2) is a goodness-of-fit measure for linear regression models. It is a statistical measure of how close the data are to the fitted regression line. In other words, some independent variables (predictors) do not contribute in explaining (predicting) the dependent (target) variable. R^2 is also called coefficient of determination and it should be between 0 and 1. R^2 equals to 1 means that the model explains all the variation of the target variable and vice-versa. Acceptable R^2 value starts at 0.7, the higher the R-squared value, the better the model.

$$R^2 = SSR/SST$$

Where:

SSR– Variations predicted by our model

SST – Total variations

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However, R-squared has some limitations for example; it increases when adding an independent variable to the model even if this independent variable is insignificant. Whereas, Adjusted R-squared measures the proportion of variation from only the independent variables that are significant, and really help in explaining the dependent variable. So we can consider a good model when it has less difference between R-square and Adjusted R-square value.

The demographic section of the survey was analyzed using descriptive statistics. The rank-based non parametric tests used are Kruskal-Wallis H and Mann-Whitney U Tests. The Kruskal-Wallis H test can be used to determine if there are statistically significant differences between two or more groups of an independent variable on continuous or ordinal dependent variable. It is an extension of the Mann-Whitney U Test that allows the comparison of only two independent groups. The null hypothesis for these tests states that there is no difference between the studied groups. If the p-value of the test is < 0.05 , then we reject the null hypothesis indicating that the groups' differences are significant.

2.7 Conclusion

The chapter provided in-depth descriptions of the methods utilized in the current study. The study espoused positivist principles using deductive reasoning from which the hypotheses are drawn to be tested using a quantitative approach. The quantitative approach involved the designing of a survey instrument for data collection. This chapter also comprises the data analysis technique for drawing out the study results. The following chapter will provide the study results as well as their discussion and interpretation.

Chapter 3

RESULTS AND ANALYSIS

3.1 Comparison of Samples

Our collected data is divided between 72 graduate and 225 undergraduate students' responses. We performed Mann-Whitney U Test to compare whether there is statistical differences between the above two groups that would require conducting separate studies and analysis. The results rendered that the two groups are not statistically different for all variables except for three variables that we will highlight and interpret below; in fact, the p-value of all variables is > 0.05 indicating that graduates and undergraduates exerted the same responses over all variables except Q13, Q36, and Q45. That is the 2 groups showed no statistical differences hence, H_0 is not rejected (H_0 : similarity of the 2 groups). Thus, they will be treated as one group or sample.

Q13: Instructors have solid knowledge of their respective field

P-value (Q13) = $0.036 < 0.05$; therefore, we reject H_0 ; the two groups are statistically different with respect to this variable.

The graduate students scored higher than the undergraduate students when they were asked to rank the instructors' knowledge of their respective fields (Q13). It is pretty much obvious that the graduate students can better assess the instructors' knowledge due to the fact that most of them are involved in the market and are able to relate the instructors' knowledge to their job demands. The undergraduate students are still acquiring theory based knowledge without adopting practical approach. Moreover, they have just moved out from school to university life which is a completely different learning experience where they are no more receptors of knowledge but seekers of knowledge. Therefore, this difference between the two groups was disregarded.

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Q36: The bookshop on campus provides adequate service

P-value (Q36) = 0.043 < 0.05; therefore, we reject H₀.

The mean rank for undergraduate students was lower than that of the graduate students. All graduate classes are scheduled between 5:30 till 8:30 PM with a break of 15 minutes in between. So, graduate students rarely use the services of the on-campus bookshop since they arrive just in time for the class due to their work schedule. They are not really acquainted with all the services provided by the bookshop. While as, undergraduate classes are scheduled mainly between 8 AM and 5 PM; during this time the bookshop is open and students can benefit from its services. The opening hours of the bookshop are more convenient for the undergraduate graduate students with respect to their presence in the University. Hence, the two groups scored differently on this variable (Q36).

Q45: I would consider returning to NDU to pursue graduate studies/second degree

P-value (Q45) = 0.000 < 0.05; therefore, we reject H₀.

NDU currently does not offer any post-graduate degrees. NDU used to have a joint Doctorate of Education (EdD) program with Saint Louis University. Rare graduate students pursue a second Master degree or Bachelor degree. May be it is more appropriate to pursue post-graduate studies. However, they still show interest to return to their alma mater after having tried out the job market. This might also be corresponded to that at the graduate level, students make their own choices and can push the limits of knowledge. They are finally able to study that topic they are so passionate about and can bring research to life and are enlivened by research. Thus, the question was irrelevant for graduate students.

Three variables showed statistical differences among 48, and all 3 variables are justifiable so it is perfectly logical to treat undergraduate and graduate as one group or sample. So, we will

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maintain a one sample study based on the fact that we do not have a major difference between the two groups that would deviate from the purpose of our study.

3.2 Descriptive Statistics

3.2.1 Gender.

We had 143 male and 154 female respondents. Both genders had the same opinion towards all the aspects (variables) that were investigated in our study except for Q18, Q32, Q33, Q36, and Q 45. The p-values for these variables were <0.05 which indicated that there is statistical difference between how males and females perceived these variables (see Table B1).

Q18: NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc.)

Females' responses scored higher on this question; female students' performance is usually higher when compared to male students. This can be interpreted as, female students are more serious and more committed toward their studies comparatively to male students and they achieve higher marks. The study by Ullah and Ullah in 2019 attests that boys are being dominated by girls in educational performance, both in the developed as well as developing countries.

Q32: NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc.)

Within this perspective, females have a slight edge over their male counterparts; Findings by Dunaetz et al. in 2015 showed that males have a higher preference for media richness than females. Males are less skilled in communication than are females. Thus for an equal amount of information to be communicated in a given period of time, men need a richer media such as face-to-face communication. Males are less efficient in communication processes due to a greater loss of information.

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Those who are gifted in communication benefit the most from using new, leaner media because it gives them yet another means to efficiently communicate with others. Moreover, females in their nature are more eager and curious to follow up on announcements, news, information, etc.

Q33: Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc.)

Results showed that female students favour equipped classrooms when compared to the male students. Studies suggest that females prefer the concrete learning mode whereas males prefer the abstract conceptualization side of the continuum. Women usually prefer hands-on experiences to learn, they make intuitive or feeling based judgments, they are people oriented, and they typically feel comfortable with ambiguity (Heffler, 2001). Conversely, men take an analytic approach to learning, they think logically and rationally, they enjoy working with symbols and like structure (Heffler, 2001). It may be suggested that the modern tools available in the classroom may contribute better to a hands-on learning experience. Moreover, it is familiar that females take notes and remarks and their male classmates would copy or borrow their notes.

Q36: The bookshop on Campus provides adequate services

Female means scored higher than male means with respect to this aspect; it is probably due to the fact that females are more meticulous and attentive to details. Moreover, usually more female students major in arts and design degrees, therefore, they tend to use more the services of the bookshop when it comes to creating maquettes, dioramas, schematics, miniatures, etc.

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Q45: I would consider NDU to pursue graduate studies/second degree

Female students were more interested in returning to NDU to pursue graduate studies or second degree. Usually male students are more willing to seek instant jobs directly after graduation or continue their education abroad. In the Middle Eastern culture, it is well known that men take the role of the “provider” model of manhood, thus, employment is a prerequisite for marriage; likewise, families consider investing in the education of the male abroad since he is the provider than females.

3.2.2 Nationality.

The data collected involved 276 Lebanese students and 21 Non-Lebanese representing respectively 92.92% and 7.07% of the sample size. The percentage of Lebanese students who were registered at NDU in 2019-2020 was 86.96% and that of Non-Lebanese students was 13.03% (see Table B2).

The two groups showed no significant statistical differences for all variables except Q28 and Q35 regarding their perception of the time frame within which NDU processes their requests and how well the gym and athletic courts are equipped. The Lebanese students agree more than the Non-Lebanese students that NDU processes their requests in a reasonable time frame. Non-Lebanese students are probably new to the system and medium through which the process takes place. NDU does not attract international students except for some students from the nearby Arab countries and some exchange students.

On the other hand, the Non-Lebanese students ranked the gym and athletic courts higher than Lebanese students. This might be attributed to the fact that foreign students are probably staying at the University residences, thus spending most of their leisure time at the University premises taking advantage of the athletic courts and gym facilities.

3.2.3 Campus.

Kruskal-Wallis H test was conducted to investigate if any statistical differences existed among the three campuses. The results showed that there were no significant statistical differences in all variables except for some aspects (Q11, Q12, Q3, Q14, Q15, Q17, Q22, Q23, Q25, Q27, Q35, Q36, Q37 and Q39) listed below (see Table B3):

Q11: Fees per credit at NDU are reasonable (value received)

Main > NLC > Shouf

Definitely the Main campus students mean rank scored higher than the others since the socio-economic status of the people in the geographic region where the main campus is located are higher than those of North Lebanon and Shouf regions. The latter two are more or less situated in rural areas where the mean average salary of families is relatively lower.

Q12: NDU offers diversified programs and specializations

Main > NLC > Shouf

It is obvious that the difference is due to the fact that more programs are available at the Main Campus than the other campuses. For example, Shouf Campus offers Business Administration programs some of which cannot be totally completed in Shouf campus so students have to attend to the Main campus to complete their degrees. For example, Accounting, Economics and Financial Engineering majors, students can complete their first-year of the program only at the Shouf campus, and then they have to attend courses at the Main campus. This also applies for most of the Engineering programs at Shouf campus. Only the first year of the Engineering programs can be completed at NLC and students will have to complete their degrees at the Main Campus.

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Q13/Q14:

Q13: Instructors have solid knowledge of their respective field

Q14: Instructors use suitable teaching methods (ppt, videos, online lectures, etc.)

Both Q13 and Q14 mean ranks are by descending order as follows for the three campuses: NLC > Main > Shouf. This means that NLC students were the most satisfied students regarding the instructors' knowledge and their teaching methods, followed by the Main and Shouf campus students. Students in the three campuses come from different backgrounds and secondary educational institutions. Therefore, what they perceive as good or bad depends on what resources they had access to in their secondary institutions. Of course, in the main campus region, there exist a massive number of reputable schools whereas in the Shouf and NLC regions, quality institutions are limited. This might also be due to a smaller number of students per class which allows for more interaction in the class or may be due to more lenient grade distribution. It can also be explained in terms of the degrees and programs offered at the off-campus since the educational learning methods would differ relative to the majors offered. It is worth noting that new facilities and new infrastructure was built in NLC such as the Hotel Management facility.

Q15: The number of students in class is convenient for an interactive learning environment

The North and Shouf campuses mean ranks scored higher than the main campus, this is actually not surprising since the number of enrolled students at Main campus is much greater than the number of enrolled students at both campuses even when summed up.

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Q17: Academic events/programs (exchange programs, international competitions, MUN, etc.) offered at NDU provides broader general knowledge and enhanced interest in global issues

Main > NLC > Shouf

The main campus is the core entity for major academic events where keynote speakers are invited to hold conferences and debates. Obviously, fewer and less important events take place at the other campuses.

Q22: NDU operates an excellent counseling service (Psychological & spiritual support, etc.)

Main and NLC had equal ranks, except for Shouf where it was much lower than the other two campuses. It is worth mentioning that the Shouf campus students are mainly from the Druze religious sector and since NDU is sponsored by the Maronite Maronite Order (OMM), all spiritual events are Christian's events that are of no interest to the Druze. In addition to that, counseling services are also limited.

Q23: Library has sufficient and up-to-date forms of resources (articles, journals, books ...)

NLC > Main > Shouf

All NDU Libraries collections are accessible at the Library homepage from the NDU website (<http://www.ndu.edu.lb>). Furthermore, NDU Libraries materials may be requested and borrowed from any campus library, regardless of where they are housed.

This rating might be attributed to the library building, environment, furniture or design. The library at Main Campus is a whole building by itself and it is aesthetically designed and furnished. Students usually use the library space to study and read. The Main campus library is vast; however, relative to the number of students at the Main Campus, the library space is congested most of the time. The library at NLC is newly built and the number of students allows it to offer a sole space of respite for students

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where they have the perfect ambience for group or individual study. The Shouf campus library is kind of a smaller entity even when compared to that of NLC.

Q25: Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc.)

Main > NLC > Shouf

As is the case with other kind of events, the main campus remains the most eminent campus for holding events. This can be either due to the vast courts available at the main campus or to that the Student Affairs Office is represented in smaller entities at the off-campus. The academic and non-academic activities are centralized at the main campus for almost all the processes that takes place in the University with representatives of all the Offices in the off-campus.

Q27: Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc.)

NLC>Shouf>Main

The student body at the Main campus surpasses the population of both off-campus together. Thus, the admin staff at the off-campus are more at ease to deal with each student in terms of time allocation for solving issues, person to person relation. On the other hand, students have more access to personnel at the off-campus. In addition, the administrative activities are centralized at the Main campus, for example, the Office of the Registrar at Main Campus is responsible for follow up on the registration process across all campuses, grades submission and transcript and attestations issuance, etc.

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Q35/Q36/Q37:

Q35: NDU has a well-equipped gym and athletic courts

Q36: The bookshop on Campus provides adequate services

Q37: The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc.)

Main > NLC > Shouf

At the Shouf and NLC campuses there exists no gym facility at all, whereas the gym at the main campus runs fitness classes in the afternoon with specialized coaches. Students and staff can exercise using a variety of sports machines and equipment and they are supervised by a personal trainer. The courts at Shouf campus are not available, they outsource their need of Football and Tennis courts for example. At NLC, the sports courts are limited as well. On the contrary, at the main campus, students may choose from a wide variety of sports activities, including, Basketball, Volleyball, Taekwondo, Aikido, Tennis, Soccer, Table Tennis, Chess, etc.

The bookshops at the off-campus are available but with very limited space and services. The Main campus bookshop is much like a busy beehive in which students can get their entire stationary needs in one place.

The cafeterias at the off-campus offers very limited services and are also limited in terms of space, design and furniture. The cafeteria at the Main campus is newly built and furnished characterized by wide space and panoramic view. Moreover, it is also a matter of the number of students existing at the main campus on which the caterer depends on, thus offering more developed services in terms of variety and quality of food and beverage.

Another reason might be the geographic spectrum of the NLC and Shouf campus where students come from the nearby areas. The main campus gathers students from a

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wider geographic spectrum. So it would be easier for them to finish their courses and go home for lunch and rest especially due to traffic jam. Furthermore, Main campus students spend more time on campus than students of NLC and Shouf campus mainly because their course schedule is more squeezed and tighter than the course schedules for the off-campus. Thus, the cafeteria service will be more catered for at the main campus. In addition, the purchasing power and the socio-economic status of the main campus students are higher than the students at the off-campus.

Q39: Overall, I consider my education at NDU very enriching and fulfilling

NLC > Main > Shouf

In conclusion, it seems that NLC stands in the middle between the two other campuses in terms of overall facilities and services available at NDU. However, there are several aspects in which NLC students' satisfaction level either evened or outpaced that of Main campus students namely: instructors' knowledge and their teaching methods, class size, counselling services, Library, and Admin staff attitude. So, the result of Q39 might be attributed to the above mentioned factors. To point out, students consider these factors as the most important for their education experience to be very enriching and fulfilling although other factors might be limited or even not existing. This might also be attributed to NLC's strategy of pragmatism and openness in solving students' issues and problems most specifically financial ones.

3.2.4 Level of Study.

The two groups graduate and undergraduate were considered and examined as one group due to minor statistical differences that were detected between the two groups and this was amply justified at the beginning of chapter 3 (see Table B4).

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3.2.5 Class.

Our data was then compared according to the class of the students where class was classified into four categories (see Table B5): freshman, sophomore (completed 0 to 29 credits), Junior (completed 30 to 59 credits), and Senior (completed more than 60 credits). Among 225 undergraduate respondents two were freshman, 50 sophomore, 55 Junior, and 118 senior students. Not neglecting that only 2 freshman students responded to the questionnaire, they might not provide a solid base/rigid/reliable source of information for our interpretation. Thus, freshman students are going with the sophomore students. The 3 groups showed no significant statistical differences in all variables except for some aspects (Q24, Q33, Q37, and Q38) (see Table B5.1).

Q24: Wi-Fi service at NDU is reliable

Sophomore > Junior > Senior

Freshman students will be happy with Wi-Fi service offered at the University since this option is probably not available to them at the secondary education level. Apparently, for sophomore students the availability of a Wi-Fi service is something they would value. This would decrease with time when in the advanced levels junior and senior students would care less and would be overwhelmed with their study loads.

Q33: Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc.)

Mean ranks: Sophomore > Junior > Senior

It is cloudless that Sophomore students would value more the Information and Communication Technology (ICT) devices available for them at the classroom to foster interactivity in the learning process. Then at the junior and senior levels, students will show less interest or they get used to the idea.

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Q37/Q38: The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc.) / Students courts, landscaping, green areas create an appropriate environment to my education at NDU

Mean ranks for Q37 and Q38: Sophomore > Junior > Senior

Senior students become disinterested in spending time in the University premises, they would prefer to mingle with their peers in the nearby restaurants and cafes that are close to NDU or simply have started working. It is crystal clear that sophomore students would be happy with the new environment that university life might bring about, losing gradual interest when pacing into their junior and senior years.

Then the three groups who have already commenced their Bachelor degree have undergone further investigations, the Sophomore, Junior and Senior classes where each two groups were compared separately.

The results showed that an additional difference was determined which is how the different groups ranked the time frame needed for NDU to process their requests.

Junior students were at the top of the list followed by the senior students then the Sophomore students. This can be corresponded to that newly admitted (sophomore) students are still not acquainted with the processes and channels through which the processes take place. Junior students are able to better assimilate the set system. Senior students may become more arrogant to abide by the processes setup and try to trespass the normal channels.

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3.2.6 Faculty.

The responses were distributed among the seven faculties as follows:

Q6 Faculty	N
FAAD	44
FBAE	94
FE	61
FH	28
FLPS	11
FNAS	40
FNHS	19
Total	297

The outcome revealed that there were no significant statistical differences between them except for Q12, Q14, Q15, Q16, Q21, Q23, Q31, and Q45 (see Table B6).

Q12: NDU offers diversified programs and specializations

The highest mean rank was that of the faculty of FLPS and the lowest was that of FAAD. NDU probably has one of the most renowned Anglophone law schools in Lebanon adding the English language component and the American educational approach to law studies. The FAAD might have long been offering the same traditional degrees with no new majors offered.

Q14: Instructors use suitable teaching methods (ppt, videos, online lectures, etc.)”

The highest rank was for FNHS and the lowest for FLPS. FNHS students probably get the most close to real life training at hospitals and clinics than any other major. Their applied experimental and hands on courses might be best fitted to the reality of their jobs. FLPS students may experience the least tangible experience and their majors demand no computer based programs.

Q15: The number of students per class is convenient for an interactive learning environment.

The highest mean rank goes for FNHS and the lowest to FAAD. This might be due to the fact that FNHS is a small faculty regarding its number of students. The FAAD consists mainly of Architecture, Arts and Design majors which are strongly based on

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projects that may need more time to be discussed, their courses are more experimental than theory based.

Q16/Q21/Q23/Q31/Q45:

Q16: My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc.

Highest Rank: FNHS

Lowest Rank: FE

Q21: NDU provides good medical services (access, availability, coverage, utilization ...)

Highest Rank: FNHS

Lowest Rank: FH

Q23: Library has sufficient and up-to-date forms of resources (articles, journals, books ...)

Highest Rank: FNHS

Lowest Rank: FNAS

Q31: NDU has automated systems and processes to provide prompt and efficient services

Highest Rank: FNHS

Lowest Rank: FAAD

Q45: I would consider returning to NDU to pursue graduate studies/second degree

Highest Rank: FNHS

Lowest Rank: FE

The FNHS is reaping the highest ranks in almost all of the variables discussed above.

This may correspond to the faculty being relatively small in terms of degrees offered and number of students. Therefore, FNHS students would get easier access to the personnel and advisors of their faculty. Thus, they are served promptly and their issues would be solved in no time. It might be also due to the culture of the FNHS that builds on the students and instructors relationship.

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It is remarkable that the FE students are the least satisfied students regarding their advisors guidance and they are the least ones who might consider returning to NDU to pursue graduate studies or second degrees. This might need further investigations and may need face-to-face interviews/focus groups to dig into the reasons behind the result.

3.2.7 Tuition.

The distribution of how students finance their tuition fees is listed below:

Q7_Your tuition fees are mainly financed through:	N
Sponsorship (Government, institution, ..)	9
Family	167
Job	38
Loan	7
Scholarship/Financial Aid	75
Total	296

The five groups showed no significant statistical differences for all variables except for Q11, Q15, Q16, Q17, Q18, Q20, Q27, Q29, Q32, Q45, Q46, Q47, and Q48 (see Table B7).

	Highest Rank	Lowest Rank
Q11. Fees per credit at NDU are reasonable (value received)	Sponsorship (Government, institution, ...)	Loan
Q15. The number of students per class is convenient for an interactive learning environment	Sponsorship (Government, institution, ...)	Family
Q16. My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc.	Sponsorship (Government, institution, ...)	Job
Q17. Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Scholarships/financial aid	Family & Job

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Q18. NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc.)	Scholarships/financial aid	Loan
Q20. NDU offers appropriate financial aid services (work study and sibling grants, etc.)	Scholarships/financial aid	Loan
Q27. Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc.)	Sponsorship (Government, institution, ...)	Loan
Q29. Administrative offices' operating hours are compatible for students to submit a specific request	Sponsorship (Government, institution, ...)	Loan
Q32. NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Sponsorship (Government, institution, ...)	Job
Q45. I would consider returning to NDU to pursue graduate studies/second degree	Sponsorship (Government, institution, ...)	Family
Q46. I intend to become an active alumna/alumnus	Scholarships/financial aid	Family
Q47. I defend NDU against rumors/critics	Scholarships/financial aid	Loan
Q48. I talk positively about NDU in the society	Sponsorship (Government, institution, ...)	Loan

All in all, students who are benefiting from sponsorship or financial aid are the most satisfied with their education at different levels and multiple aspects. This is related to the value of the money they invest in their education compared to those who rely on their families, are employed or have loans to finance their education expenses.

3.2.8 Housing.

The sample included 22 students who lived on-campus and 274 students who lived off-campus. The two groups showed no significant statistical differences for all variables except for Q17, Q41, Q42 Q43 and Q44 (See Table B8):

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Q17/Q41/Q42/Q43/Q44:

Q17: Academic events/programs (exchange programs, international competitions, MUN, etc.) offered at NDU provides broader general knowledge & enhanced interest in global issues

Q41: Overall, I feel motivated and enthusiastic about coming to NDU

Q42: Overall, I am satisfied with the services available at NDU

Q43: I am satisfied with my overall experience at NDU

Q44: I would recommend NDU to others

The mean ranks were higher for the on-campus students than the off-campus students for all the above listed aspects. On-campus student might have more time to spend on extra-curricular activities, subsequently having higher ranks for Q17. We have to point out that the ease of daily life to students living on-campus is way beyond those who live off-campus. This would be reflected into the whole learning experience which we believe is the reason behind the above results. Dorms at NDU are luxurious offering premium services (hygiene, safety, catering, Wi-Fi etc.), the geographic location of NDU and the green areas, gym and athletic courts, etc.

3.3 Inferential Statistics

This section allows us to infer about the conceptualized model with respect to the service quality constructs and to derive conclusions about the existing relationships between those constructs and student satisfaction and between student satisfaction and student loyalty.

3.3.1 Reliability.

The reliability test was first conducted. Cronbach's Alpha scored 0.939 greater than 0.7 which means that our model has very good internal consistency (see Table 4). Moreover,

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there was no need to remove any item of the questionnaire since Cronbach's Alpha kept scoring greater than 0.9 when we tested Cronbach's Alpha score if any of the items was removed (See Table C1).

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.939	.944	40

Table 4: Reliability Statistics

3.3.2 Factor analysis.

Factor Analysis was performed using SPSS (version 20) (see Appendix C); Next, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity were conducted to detect the validity of our model (see Table 5).

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.921
Approx. Chi-Square	6572.629
Bartlett's Test of Sphericity	df
	780
	Sig.
	.000

Table 5: KMO and Bartlett's Test

KMO scored 0.921 which is greater than 0.5 meaning that the data is perfectly suited for factor analysis. Bartlett's Test sig. is less than 0.05 then H0 (no sphericity) is rejected; there are enough relationships among the variables.

The normality of our data was investigated by extracting skewness and kurtosis scores of our variables (see Table C2). Very few variables had a slightly higher kurtosis than |3|, others also had a slightly higher skewness than |1|. Hence, we can easily assume normality of our data. The normality tests Shapiro-Wilk and Kolmogorov-Smirnov Tests' (see Table C3) p-values were less than 0.05; thus, we reject H0 (normality), meaning that our data deviates

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from a normal distribution but this is expected due to using Likert scale data which was interpreted earlier.

Next, factor analysis was performed to understand the underlying correlations between the variables and to discover the underlying latent roots or factors (see Table C4).

Two variables Q9 and Q10 reported weak Anti-Image correlation equal to 0.468 and 0.486 respectively (see Table C5). To keep the shadow of the doubt since the values are close to 0.5, we will maintain these 2 variables yet we will monitor them throughout the study. The communalities (see Table C6) were examined and all variables that have communalities less than 0.5 were omitted and we re-ran the factor analysis. The below variables were omitted:

Q16. My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc. (communality = 0.481)

Q18. NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc.) (communality = 0.469)

Q24. Wi-Fi service at NDU is reliable (communality = 0.480)

Q25. Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc.) (communality = 0.457)

Q33. Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc.) (communality = 0.460)

Q34. NDU provides adequate services for students with physical disabilities (communality = 0.478)

Q37. The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc.) (communality = 0.448)

The Total Variance Explained table (see Table C7) shows how the variance is divided among the five factors. The cumulative percentage of variance scored in excess of 63%; the first factor scored in excess of 37 %, the second factor scored in excess of 6 %, the third factor

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scored in excess of 6 %, the fourth factor scored in excess of 5 %, each of the fifth and sixth factors scored in excess of 3 %.

Next, we examined the un-rotated matrix of variables, many cross-loadings appeared. We tried all possible rotations by monitoring the number of cross loadings and the variables line-up into the factors; the perfect match was PROMAX. After many attempts, 4 cross loadings persisted. Hence, we removed the 4 cross-loadings in the pattern matrix as follows:

Q20. NDU offers appropriate financial aid services (work study and sibling grants, etc...)

Q31. NDU has automated systems and processes to provide prompt and efficient services

Q35. NDU has a well-equipped gym and athletic courts

Q38. Students courts, landscaping, green areas create an appropriate environment to my education at NDU

After removing the persistent variables that cross loaded we ended up with a new cross-loading which is Q46: "I intend to become an active alumna/alumnus". We kept this model due to its logical combinations of variables.

The pattern matrix (see Table C8) shows the latent variables under each extracted factor. We will name each factor according to the characteristics of its constituents. Thus, we propose:

Factor 1 namely Affective Component

Factor 2 namely Support Services

Factor 3 namely Administrative Services

Factor 4 namely Academic Services

Factor 5 namely Complementary Services

Factor 6 namely Tuition Fees

It is important to note that the satisfaction and loyalty variables did not group under different factors; however, they were grouped together under Factor 1. This is not conforming to our conceptual model, though the variables that were chosen were based on existent literature.

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Now, we tested the accuracy of the obtained factors and their latent variables, we saved the factors as scores and ran linear regression with each factor score as a dependent variable and the variables underlying it as independent variables to confirm that the chosen rotation is optimal.

Factor 1: Affective Component

R square and R square adjusted scored in excess of 99% meaning that the variables under factor 1 explain that factor by at least 99%. The Durbin-Watson test shows there is no autocorrelation. ANOVA test significance is 0 less than 0.05 which means our model is a good fit. The p-value for all variables were less than 0.05, thus, they are all significant (see Table C9).

Factor 1: Affective Component
Q39. Overall, I consider my education at NDU very enriching and fulfilling
Q40. Overall, I am happy with the environment at NDU
Q41. Overall, I feel motivated and enthusiastic about coming to NDU
Q42. Overall, I am satisfied with the services available at NDU
Q43. I am satisfied with my overall experience at NDU
Q44. I would recommend NDU to others
Q45. I would consider returning to NDU to pursue graduate studies/second degree
Q46. I intend to become an active alumna/alumnus
Q47. I defend NDU against rumors/critics
Q48. I talk positively about NDU in the society

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Factor 2: Support Services

R square and R square adjusted scored in excess of 94%. The Durbin-Watson test scored 2.092 showing there is no-autocorrelation. ANOVA test significance is 0 less than 0.05 which means our model is a good fit. The p-value for all variables under factor 2 were less than 0.05, thus, they are all significant (see Table C10).

Factor 2: Support Services
Q17. Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues
Q19. NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...
Q21. NDU provides good medical services (access, availability, coverage, utilization, ...)
Q22. NDU operates an excellent counseling service (Psychological & spiritual support, etc.)
Q26. NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc.)

Factor 3: Administrative Services

R square and R square adjusted scored in excess of 95%. The Durbin-Watson test scored 1.985 showing there is no-autocorrelation. ANOVA test significance is 0 less than 0.05 which means our model is a good fit. The p-value for all variables under factor 3 were less than 0.05, thus, they are all significant (see Table C11).

Factor 3: Administrative Services
Q27. Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc.)
Q28. Admin staff process students' requests within reasonable time frame

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Q29. Administrative offices' operating hours are compatible for students to submit a specific request
Q30. NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc.)

Factor 4: Academic Services

R square and R square adjusted scored in excess of 91%. The Durbin-Watson test scored 2.019 showing there is no-autocorrelation. ANOVA test significance is 0 less than 0.05 which means our model is a good fit. The p-value for all variables under factor 4 were less than 0.05, thus, they are all significant (see Table C12).

Factor 4: Academic Services
Q12. NDU offers diversified programs and specializations
Q13. Instructors have solid knowledge of their respective field
Q14. Instructors use suitable teaching methods (ppt, videos, online lectures, etc.)
Q15. The number of students per class is convenient for an interactive learning environment
Q46. I intend to become an active alumna/alumnus

Factor 5: Complementary Services

R square and R square adjusted scored in excess of 88%. The Durbin-Watson test scored 1.890 showing there is no-autocorrelation. ANOVA test significance is 0 less than 0.05 which means our model is a good fit. The p-value for all variables under factor 5 were less than 0.05, thus, they are all significant (see Table C13). This new factor has emerged, according to the literature review, we proposed to examine the physical facilities which include attributes such as, well equipped classrooms, gym, green areas, athletic courts, cafeteria, etc. however most of these variables were omitted due to their weak communalities. Hence, the variables

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that conglomerated together under factor 5, we named Complementary Services underlies the below variables.

Factor 5: Complementary Services
Q11. Fees per credit at NDU are reasonable (value received)
Q23. Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)
Q32. NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
Q36. The bookshop on Campus provides adequate services

Factor 6: Tuition Fees

R square and R square adjusted scored in excess of 96%. The Durbin-Watson test scored 1.874 showing there is no-autocorrelation. ANOVA test significance is 0 less than 0.05 which means our model is a good fit. The p-value for all variables under factor 6 were less than 0.05, thus, they are all significant (see Table C14).

Factor 6: Tuition Fees
Q9. I selected my current major based on the number of required credits (program cost)
Q10. I selected my current major based on the overall program duration (time)

3.3.3 Hypotheses testing.

Our conceptual model consisted of several hypotheses; each service quality factor might affect students' satisfaction. Now it is time to test those hypotheses according to the extracted factors. We performed linear regression on each of Q39 across Q43 as dependent

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variables, and the obtained factor scores were the independent variables. We will discuss the results according to the extracted factors and not according to our conceptual model.

Q39. Overall, I consider my education at NDU very enriching and fulfilling (Y39)

R square and R square adjusted were in excess of 70%. The Durbin-Watson scored 2.004 indicating no autocorrelation. ANOVA test p-value is less than 0.05 inferring a good model fit. The significant factors scoring a p-value of less than 0.05 are: Factor 1 (Affective Component) with a standardized coefficient in excess of 65%, Factor 4 (Academic Services) with a coefficient of 29% and Factor 6 (Tuition Fees) with a negative coefficient in excess of 9% (see Table C15).

$$Y39 = b_0 + b_1F1 + b_4F4 + b_6F6 + e_t$$

$$Y39 = 5.724 + 0.653F1 + 0.297F4 - 0.092F6 + e_t (113.229)$$

The Affective Component (Factor 1) has accounted for considerable variance in student satisfaction where students who demonstrated positive emotions would consider their education at NDU very enriching and fulfilling. Moreover, the academic services positively affect the students' enriching and fulfilling education. The outcomes showed that tuition fees have a very slight impact on the enriching and fulfilling education of the students.

Q40. Overall, I am happy with the environment at NDU (Y40)

R square and R square adjusted were in excess of 74%. The Durbin-Watson scored 1.837 indicating no autocorrelation. ANOVA test p-value is less than 0.05 representing a good model fit. The significant factors scoring a p-value of less than 0.05 are: Factor 1 (Affective Component) with a standardized coefficient in excess of 80%, Factor 3 (Administrative Services) with a coefficient in excess of 10% and Factor 5 (Complementary Services) with a coefficient in excess of 9% (see Table C16).

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$$Y40 = b_0 + b_1F_1 + b_3F_3 + b_5F_5 + e_t$$

$$Y40 = 5.714 + 0.804F_1 + 0.103F_3 + 0.091F_5 + 112.116$$

Once again, the results assert that Factor 1 (Affective Component) is a salient factor in predicting students' satisfaction. Factor 3 (Administrative Services) and Factor 5 (Complementary Services) are positively associated with student's satisfaction.

Q41. Overall, I feel motivated and enthusiastic about coming to NDU (Y41)

R square and R square adjusted were in excess of 77%. The Durbin-Watson scored 1.950 indicating no autocorrelation. ANOVA test p-value is less than 0.05 representing a good model fit. The significant factors scoring a p-value of less than 0.05 are: Factor 1 (Affective Component) with a standardized coefficient in excess of 82% and Factor 6 (Tuition Fees) with a negative coefficient of 6% (see Table C17).

$$Y41 = b_0 + b_1F_1 + b_6F_6 + e_t$$

$$Y41 = 5.616 + 0.829F_1 - 0.60F_6 + 121.549$$

The Affective Component emerged as the most prominent factor to influence the motivation and enthusiasm of students. The results confirm that Tuition Fees have a slight negative impact on students' satisfaction. It is natural that when tuition fees would increase, it will be negatively linked to student satisfaction; however, this might not influence their behaviour.

Q42. Overall, I am satisfied with the services available at NDU (Y42)

R square adjusted scored 71%. The Durbin-Watson scored 2.144 indicating no autocorrelation. ANOVA test p-value is less than 0.05 representing a good model fit. The significant factors scoring a p-value of less than 0.05 are: Factor 1 (Affective Component) with a standardized coefficient in excess of 60%, Factor 2 (Support Services) with a

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coefficient of 14%, Factor 3 (Administrative Services) with a coefficient in excess of 12 %, and Factor 4 (Academic Services) with a coefficient in excess of 8% (see Table C18).

$$Y42 = b_0 + b_1F1 + b_2F2 + b_3F3 + b_4F4 + e_t$$

$$Y42 = 5.471 + 0.607F1 + 0.14F2 + 0.127F3 + 0.086F4 + 141.926$$

Thus, we deduce that Affective Component has the greatest impact on students' satisfaction. Support Services, Administrative Services, and Academic Services in respective order are positively related to student satisfaction. Support services can really make a big difference for students' education and life on campus.

Q43. I am satisfied with my overall experience at NDU (Y43)

R square adjusted scored 78%. The Durbin-Watson scored 1.965 indicating no autocorrelation. ANOVA test p-value is less than 0.05 representing a good model fit. The significant factors scoring a p-value of less than 0.05 are: Factor 1 (Affective Component) with a standardized coefficient in excess of 86%, and Factor 4 (Academic Services) with a coefficient in excess of 13% (see Table C19).

$$Y43 = b_0 + b_1F1 + b_4F4 + e_t$$

$$Y43 = 5.741 + 0.864F1 + 0.131F4 + 91.571$$

Apparently, Affective Component has a very significant impact in predicting the overall experience of the students at the University and is ultimately the best predictor for student's satisfaction. Findings showed that Academic Services is positively correlated with the overall student's experience at NDU.

3.3.4 Investigating the underlying relationships between the variables.

The purpose of this section is to explore the underlying relationships within our model by implementing regression analysis. According to the literature review, it was revealed that

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the institutions' service quality constructs might affect students' satisfaction. Likewise, we investigated the relationship between students' satisfaction and their loyalty.

3.3.4.1 Relationship between service quality constructs and student satisfaction.

We were intrigued to test the relationship between Service Quality Constructs and Student Satisfaction, where each dependent variable related to student satisfaction Q39 across Q43 is tested against the independent service quality variables Q9 across Q48 to determine the pattern and intensity of influence on the dependent variable (see Appendix D).

Dependent Variable (DV) Q39: Overall, I consider my education at NDU very enriching and fulfilling

All variables that did not show significance were omitted and then the regression was repeated with the significant independent variables only. The results showed that the significant independent variables explain in excess of 67 % of the dependent variable (Q39) as per R square and R square adjusted. In other words, our model replicates 67% of the variations in Q39. The Durbin-Watson test shows there is no-autocorrelation. ANOVA test significance is 0 less than 0.05 which means our model is a good fit. The significant independent variables (p-value <0.05) are: Q13, Q34, Q40, and Q43 (see Table D1).

Q13 has a standardized coefficient equals to 24.1 %, and Q34's coefficient is 9.9%. We are interested in these two variables because they are service quality variables. Therefore, students would consider their education at NDU enriching and fulfilling if their instructors have a solid knowledge of their respective fields in the first place, and in the second place, if NDU provides adequate services for students with physical disabilities. Q40 and Q43 have higher coefficients; however Q40 and Q43 fall under the same umbrella with Q39.

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Dependent Variable Q40: Overall, I am happy with the environment at NDU

The significant independent variables explain in excess of 75 % of the dependent variable Q40. The significant independent variables (p-value <0.05) are: Q29, Q31, Q33, Q36, Q39, and Q41. The standardized coefficients of Q29, Q31, Q33 and Q36 are equal to 9.6%, -10.4 %, 11%, and 7% respectively (see Table D2).

Therefore, students who feel happy about the environment at NDU are mainly affected by the modern classrooms that are well equipped where the learning material can be fully delivered. It was detected that the automated systems and processes to get efficient and prompt services had an opposite relationship with Q40. NDU students might prefer face-to-face communication with administrative staff to get their job done instead of taking the initiative and do it all alone and their own responsibility. In addition, Q29 had 9.6% effect on Q40. Thus, the compatible operating hours for the administrative services might reap happy students with the environment at NDU. Q36 had a 7% effect on Q40; in other words, students appreciate a good bookshop service.

Students who consider their education enriching and fulfilling and feel motivated about coming to NDU, will no doubt feel happy about the environment at NDU.

Dependent Variable Q41: Overall, I feel motivated and enthusiastic about coming to NDU

The independent variables explain in excess of 76% of Q41. The significant independent variables (p-value <0.05) are: Q30, Q38, Q40, Q42, and Q43. The standardized coefficients of Q30 and Q38 are equal 8.6 % and 11.5 % respectively (see Table D3).

Students courts, landscaping and green areas will motivate students to come to NDU where they can enjoy staying and spending their free time. Students do not like getting overwhelmed with procedures and steps to get their job done; they consider it a hectic job. They prefer clear and standardized procedures such as: admission, registration, graduation and even payments, etc.; that is a relief!

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Dependent Variable Q42: Overall, I am satisfied with the services available at NDU

This model provides in excess of 74% prediction of the dependent variable. The significant independent variables (p-value <0.05) are: Q12, Q15, Q19, Q22, Q28, Q34, Q37, Q41, and Q43 (see Table D4).

Independent Variable	Standardized Coefficient
Q28. Admin staff process students' requests within reasonable time frame	19.7%
Q12. NDU offers diversified programs and specializations	14.1%
Q37. The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	9.9%
Q19. NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	9.8%
Q22. NDU operates an excellent counseling service (Psychological & spiritual support, etc.)	8.1%
Q15. The number of students per class is convenient for an interactive learning environment	7.2%
Q34. NDU provides adequate services for students with physical disabilities	-6.7%

We would like to highlight that students highly value (19.7%) processing their requests in a reasonable time frame. They prioritized this variable among the others. When interpreting the negative correlation between Q34 and Q42, we can conclude that students who took the questionnaire did not have physical disabilities; they were rather indifferent about this kind of service and may be they would care less if adequate services were available for students with physical disabilities or not. Students normally show little empathy for the logistics of the disabled.

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Dependent Variable Q43: I am satisfied with my overall experience at NDU

The independent variables explain in excess of 78% of the studied dependent variable. The significant independent variables (p-value <0.05) are: Q12, Q14, Q31, Q39, Q41, Q42, and Q44 (see Table D5).

The coefficient of Q31 equals -11.9% which is a contrasting effect; the more the systems and processes become automated, the fewer students are satisfied with the overall experience at NDU. Probably this is due to lack of responsibility NDU students opt to take; for example, they might prefer their advisors to get their registration done instead of taking the necessary steps to get it done themselves. Q12's coefficient is equal to -10.5 %; it is probably because NDU students are indifferent about the diversified programs and specializations, as long as NDU has offered the degree they are majoring in. Q14's coefficient is equal to 9.5 %; instructors teaching methods would affect students' satisfaction with the overall experience at NDU. One interesting variable is Q44 which has a coefficient of 32.4 % where at some point loyal students who would recommend NDU to others can affect their satisfaction with their overall experience at NDU.

3.3.4.2 Relationship between student satisfaction and loyalty.

The relationship between Student Satisfaction and Student Loyalty was explored where each dependent loyalty variable Q44 across Q48 is tested against the independent variables related to student satisfaction Q39 across Q43 to determine the pattern and intensity of influence on the dependent variable (see Appendix D).

Dependent Variable Q44: I would recommend NDU to others

The current model explains in excess of 73% of the dependent variable. The significant independent variables (p-value <0.05) are: Q9, Q11, Q12, Q43, Q45, and Q48 (see Table D6).

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We conclude that students would recommend NDU due to its reasonable fees/credit (value received) which has a 13.9 % standardized coefficient. NDU's diversified programs have a 7.2 % coefficient. The overall number of credits required to complete the program has a contradictory relationship with Q44; i.e. if the number of required credits (thus, program cost increases), students would not often recommend NDU to others. This model is remarkable since Q43 (I am satisfied with my overall experience at NDU), a satisfaction variable, affects the loyalty variable Q44 by 39.4 %. So students who are satisfied with their overall experience at NDU would definitely recommend it to others. Thus, in this situation, we do not reject H6 which states that there is a positive and direct relationship between student satisfaction and student loyalty which is clearly the case at NDU. However, this was not represented with any other satisfaction and loyalty variables. Therefore, it is not adequate to conclude about H6 given these results only. It needs further research to be able to conclude about H6.

Dependent Variable Q45: I would consider returning to NDU to pursue graduate studies/second degree

We have got 45 % explanation why students would return to NDU to pursue graduate studies/second degree. The significant independent variables (p-value <0.05) are: Q9, Q11, Q17, Q35 and Q44. Q17 affects the dependent variable Q45 by 15.8 %, Q35 by 14.3 %, Q11 by -14.2 % and Q 9 by 10.2 % (see Table D7).

Students would consider returning to NDU to pursue higher studies or other disciplines when they really realize that NDU is the place where they receive the best education in return of value of their money. Thus, the overall program cost is of considerable importance when choosing the same University again. Additionally, students would seek the same institution again when the academic events/programs suit their ambitions and enhance the educational attainment they look for.

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Dependent Variable Q46: I intend to become an active alumna/alumnus

This regression analysis explains our model by almost 24% only. The significant independent variables (p-value <0.05) are: Q10 and Q45 (see Table D8). The program duration has a 13 % standardized coefficient that a student would become an active alumna/alumnus. However, this is a slight effect and no other studied variable contributes to becoming active alumni.

Dependent Variable Q47: I defend NDU against rumors/critics

Running this regression analysis, we were able to grasp 67% of interpreting why students would defend NDU against rumors/critics. The significant independent variables (p-value <0.05) are: Q12 and Q48 (see Table D9).

We are only interested by Q12 whose coefficient is 7.9 %. The diversified programs and specializations affects how NDU students defend it in the society and it is normal that when they talk positively about their University, to defend it against rumors/critics.

Dependent Variable Q48: I talk positively about NDU in the society

This model explains 80% of the real life model where the significant independent variables (p-value <0.05) are: Q30, Q35, Q38, Q44, and Q47. Q30 explains Q48 by 10.5 %, Q35 by - 8.5 % and Q38 by 14.3 % (see Table D10).

This means that several variables contribute to spreading a positive word of mouth about NDU. In the first rank are the appropriate students' courts and green areas; in the second rank are the clear and standardized procedures. It seems that students care less about the gym facility since it had a negative standardized beta coefficient which means that both variables are inversely proportional. However, in our case, it simply means that students care less about this particular variable does not trigger them to spread a positive word of mouth about NDU in the society.

3.4 Theoretical and Managerial Implications

The factor analysis resulted in six latent roots or factors, Affective Component, Support services, Administrative Services, Academic Services, Complementary Services, and Tuition Fees with a total variance explained in excess of 63% with Affective Components holding the highest percentage of variance (37%).

Our forecasted hypotheses between the service quality constructs and student satisfaction were tested. Contrary to the findings by Saleem et al. (2017), we reject H1 which states that tuition fees are a major concern for students. However, these results confirm the outcomes of the longitudinal study by Burgess et al. (2018) which revealed that the increase in tuition fees had no identifiable negative effect, with student satisfaction steadily improving throughout the decade.

Findings supported the studies outcomes conducted by Arrivabene et al. (2019), Shahsavar and Sudzina (2017), K.F. Latif et al. (2019), and Noaman et al. (2017) where we failed to reject H2 which indicates that Academic Services positively influence students' satisfaction. Moreover, the study outcomes failed to reject H3 which proposes that Support Services strongly and positively affect students' satisfaction conforming to the results of the studies carried out by Arnold (2018), Kaur (2016) and El-Hage (2016). The study findings were not able to reject H4 which suggests that Administrative Services positively impact students' satisfaction. This came in parallel with the study results by Teeroovengadam et al. (2016), contradicting the study results by Arrivabene et al. in 2019 which indicated that non-academic aspects related to the support staff and access did not significantly influence student satisfaction. The automated systems and processes had a negative effect on student satisfaction according to the current study denying the findings of the study conducted by Gunawardhana and perera (2015) and Shahsavar and Sudzina (2017).

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We could not conclude for H5 which states that Physical Facilities positively impact students' satisfaction because many variables relative to physical facilities were omitted and was replaced by Complementary Services. The results inferred that Library Services under Factor 5 has a positive influence on student satisfaction corroborating evidence to the study results by Nadiri et al. (2009) but opposing the study results by Fernandes et al. (2013) which proposed that library services did not have significant evidence on overall satisfaction. This study's results did not match the findings of Driscoll et al. (2012) which indicated that traditional and electronic communication channels had no influence on students' satisfaction. While as, it supported the study findings by Al-khasawneh et al. (2020). The findings also consolidated the study results by Azoury et al. (2014), concluding that Middle Eastern societies are more concerned with the academic institution's prestige and reputation rather than the value for their money. Though one of the latent variables under factor 5 is "Fees per credit at NDU are reasonable (value received)", however, factor 5 is not a major contributor to student satisfaction as indicated in the total variance explained table.

On the other hand, one other factor has surfaced, Affective Component, which was not included in our conceptual model but this result triggered our attention to another important attribute that might affect student satisfaction. The study results confirmed that Affective component among all others have the most significant impact on student satisfaction. According to Dobni and Zinkhan (1990), the implicit meanings of brand image are formed by cognitive components (the beliefs) and affective components (the feelings). In marketing, researchers agree that the cognitive component is an antecedent of the affective component and that the consumer's assessment depend on his knowledge of object (Arnaud et al., 1988). In this regard, the study confirms the results by Azoury et al. (2014) which deduced that the affective component has a positive and significant influence on the overall image of the university.

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Our model hypothesized H6 which states that Student Satisfaction significantly and positively impacts student loyalty. Findings revealed that if students feel satisfied with their overall experience at NDU, they tend to remain loyal to the University; they would recommend it to others and are more likely to choose the same institution for future studies.

The results were consistent with Annamdevula and Bellamkonda (2016), Khoo et al. (2017), Subrahmanyam (2017), Austin and Pervaiz (2017) and Masserini et al. (2018). This result was only detected in only one satisfaction variable with respect to one loyalty variable; therefore, it is not adequate to conclude about H6.

Researches have shown that the behavior of loyal students can be explained by student retention, recommending their institution to others and it also can be defined as a student favorable attitude toward the institution through positive word-of-mouth by recommending the institution to others and defend it against rumors and gossips. Our regression results showed that the major aspects behind the student's loyalty are the total number of required credits (program cost), the affordable fees per credits vis-a-vis the value received, and the academic events/programs that would provide broader knowledge and enhance interest in global issues. The results confirms the study findings by Ali and Ahmed (2018); the effect of university switching cost on student loyalty is very significant; the higher the monetary, financial and time cost to make a switch from one university to another, the more the chances the students will continue education at the same university. Moreover, diversified programs and specializations affect how students defend their university against rumors or critics in the society and they would recommend NDU to others. They would also spread a positive word-of-mouth when courts and green areas create an appropriate environment for their education. Setting up clear and standardized procedures such as: admission, registration, request for documents, payments, etc. would induce a positive word-of-mouth as well. People in general and students in particular always benchmark their

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education experience with others. Students who are proud of their choice of a convenient university would brag about it in front of their friends and their community and those who have suffered a bad experience would share their negative experience with others.

This empirical research has asserted that the affective component of service quality constructs is a powerful emotional force that stimulates students' satisfaction. It has put forth a new dimension to focus on for HEIs, policy makers and even education governmental body. It has also presented a holistic approach for service quality that can be established in higher education; hence, education bodies and decision makers can instill such an integrated approach to higher education. It is a contemporary milestone to pave the way for creating a unified standard for the Lebanese higher education sector and consequently to regain its reputation as the regional center of education amid the scandal related to the allegations that some private Lebanese HEIs were involved in cash-for-degrees schemes. Moreover, this research is an added value to the accreditation bodies which can have insights about the most important service quality elements from the perspective of students.

The study has demonstrated that the affective component is the most important service quality construct from the student perspective. Several variables that lie under the affective component should be taken into consideration to enhance student satisfaction. Students need an enriching and fulfilling education and a suitable environment where they would feel happy, motivated, and enthusiastic about coming to the university. The services provided by the institution are an important attribute to students in addition to their overall experience at the university. The affective component also includes recommending the university to others, pursuing further studies at the same institution, becoming active alumni, defending the university against rumors and critics, and finally spreading a positive word-of-mouth about the university. The university can take action on multiple levels to enrich the students' affective component. The university should promote the idea of "sticky campus", a place

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where students will want to stick around even if they have no lecture to attend. The university might involve students with revamping facilities projects so they would be more engaged and attached to their institution. Students need to be co-creators of learning; it is not only about allowing them to provide feedback about course and teaching methods but also about how much they are listened to, and how far their feedback has been taken into consideration. In addition, the student union serves as the catalyst for the student interpersonal growth and its role is so vital to a successful higher education experience. The student union represents the students and makes their voice heard when negotiating issues related to students' interests. The student union shows life on campus at its best and when community members think of the university image, it will be of the student union. Moreover, the students' clubs allow students with common interests to exchange knowledge, culture, and experience, etc., create bonds, and develop a sense of belonging to the university. The academic events, extra-curricular activities, social and athletic activities that are held by the student clubs will provide an enriching experience for students.

Furthermore, the university needs to monitor its research quality, graduate employability, teaching quality, and international outlook in order to improve its QS ranking. Moreover, the university should take an active, ongoing role to maintain compliance with NECHE accreditation requirements that was secured in 2018.

The study evidences that tuition fees is not a major concern for students that would affect their satisfaction. Students care more about the Support Services, Administrative Services, and Academic Services respectively. They also care for, but to a lesser extent, about the complementary services including library and bookshop services, and the communication channels used by the University. Thus, decision makers and enrollment managers should focus on the issues that are most pertinent to students' needs and that would enhance those services. Students in the second place depend on support services that contribute to their

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well-being and development (career advising, academic events/programs, medical services, counseling services, social activities). For example, career counseling is not only about helping students find a job or search for internships. The University should amplify the Placement Office's role by using the expertise of career counselors who will help the students explore skills and strengths, determine interests and personality type and give advice about careers that would be a good match for students. The University can also offer networking workshops that teach students how to approach professionals, both online and face-to-face; this will increase the students' employability and make networking less intimidating. Moreover, student life on campus can embed a lot in its ability to stimulate students' engagement and commitment to the University. Group activities and trips shall be organized so often to keep the student busy within the University community. Create a positive and friendly atmosphere that would promote the University as a comfort zone for students.

Surprisingly, in the age of social media where people spend hours on their mobiles, NDU students do not prefer the automated systems and processes; they probably prefer to get their job done with face-to face personal interactions and communications. This can also be attributed to lack of knowledge of the implemented systems or simply they are entrenching technology. Thus, these are the areas of concern that the University shall be addressing in its strategic planning and development. This subject can be addressed and emphasized during the orientation sessions held for new students to become more acquainted with the integrated systems of the University and more resilient to it. Moreover, the university needs to deliver information through a platform such as a mobile-friendly orientation app, which can be the most effective way to communicate with the student body before, during and after the orientation program. Another reason behind the lack of knowledge might be due to the low participation level that has been observed in the orientation sessions of new students. Usually new students consider unfamiliar settings so uncomfortable; thus, orientation sessions shall

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be interesting by creating a welcoming, friendly and energetic atmosphere and by conducting icebreaker activities.

It has also been observed that there are several discrepancies between the Main Campus and the off-campus (Shouf and NLC). The University has a relatively lower enrollment rates in the regional campuses. The top management might consider improving the available physical facilities at the regional campuses and create facilities that are not available and that might attract current and future students such as gym and sports city, etc. Moreover, the University leaders may promote academic programs and events at the regional campuses by involving students with activities that are tailored to the local context which can foster the local development. They should also target the study programs and specializations available at the regional campuses since in most active majors, only the first year of the program can be completed at the regional campuses and then the students have to attend the courses at the Main Campus. They might consider elevating the number of courses offered at the regional campuses while weaving a comprehensive plan to make it cost effective. In addition, more attention should be given to the counseling and library services at the Shouf Campus.

As observed, the instructors' knowledge and their teaching methods ratings lagged behind NLC for the Main and Shouf Campuses. These attributes need further investigation through the teaching and course evaluation form (T1) which NDU is already conducting each semester to evaluate four main areas (course and content; instructor; methodology; student).

The administration staff's professional attitude was highest rated at NLC and Shouf Campuses respectively and this can be treated at the Main Campus by may be providing a good student-to-staff ratio.

Conclusion

Summary of Findings

The Study examined the influence of multiple aspects and factors on overall student satisfaction with the university experience. The outcomes obtained were divided into four phases; the first phase investigated the demographics variables and how they were associated with the different dimensions of the service quality. The second phase encompassed the identification of the factors that influence student opinions. The third phase was the hypotheses testing. The last phase was to uncover the existing relationships between the service quality constructs as independent variables and the overall student satisfaction constructs as dependent variables and the relationship between student satisfaction as independent variables and loyalty constructs as dependent variables.

The results showed that the graduate and undergraduate groups had no significant statistical differences; thus, the two groups were treated and examined as one group. Some statistical differences were found between male and female students; female students demonstrated higher satisfaction levels in terms of recognition of students' achievements, effective using and updating of various communication channels, well equipped and modern classrooms, and adequacy of bookshop services. They would also consider NDU to pursue graduate studies or second degree than their male counterparts. It was observed that some statistical differences between the main campus and the two regional campuses (NLC & Shouf). There were some facets of service quality in which NLC students showed higher satisfaction levels especially with regards to the instructors' knowledge and their teaching methods. This was also expressed when they rated the administration staff's professional attitude.

The Main campus students had higher rates for physical facilities such as, gym, bookshop, cafeterias, etc. They also demonstrated higher rates for academic programs and events,

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physical activities, and programs and specializations diversity. While as, the Shouf Campus lagged behind the other two other campuses in all the aspects related to service quality.

Outcomes also demonstrated that sophomore students valued the services offered by NDU more than junior and senior students respectively. There were only two significant statistical differences between Lebanese and Non-Lebanese students where Lebanese students were more agreeable that NDU processes their requests in a timely manner. On the other hand, Non-Lebanese ranked the gym and athletics courts higher than the Lebanese students. Results also highlighted that students who live on campus are more satisfied, than those who live off-campus, with the overall university environment and learning experience. At the faculty level, many statistical differences were outlined with three main reflections. FLPS students had the highest mean rank for the diversified programs and specializations offered at NDU. This might be due to the recently introduced major in Bachelor of Laws. FNHS had the highest mean ranks in almost all the service quality dimensions that were tackled in the study. The FE students had the lowest mean rank with respect to advisors guidance and were the least students who might consider returning to NDU to pursue post graduate studies or second degree. Moreover, students who benefit from sponsorships and financial aid emerged as the most satisfied students with their education at different levels. The findings were in line with Weaver (2013) hypothesizing that as student's personal responsibility in paying for college expenses increases, academic motivation and success will also increase. However, findings indicated that the correlation between financial responsibility and overall academic motivation was not statistically significant.

The factor analysis phase determined six latent roots or factors named in the order of their importance, Affective component, Support Services, Administrative Services, Complementary Services, and Tuition fees.

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The results revealed that H1 that states “tuition fees are a major concern for students” can be rejected. As per the results, factor 6 (tuition fees) is not the major predictor of student satisfaction, though it has a negative relationship with student satisfaction; the less the tuition fees, the higher the students’ satisfaction. We failed to reject H2; thus, Academic services positively influence students’ satisfaction. We also could not reject H3; hence, Support Services strongly and positively affect students’ satisfaction. In addition, the above results showed that we could not reject H4; i.e. Administrative services positively impact students’ satisfaction. We could not conclude for H5 “Physical facilities positively impact students’ satisfaction” since many variables relative to physical facilities were omitted and the variables that grouped under factor 5 were named Complementary Services according to their latent characteristics. Consequently, we could neither accept nor reject H5. However, results showed that complementary services positively affect students’ satisfaction.

The main focus of higher education to achieve excellence or reach high-quality standards aims at student satisfaction. Student’s life is a combination of interrelated academic and social experiences. Linear Regression was conducted and it provided a snapshot of some of the pivotal determinants of the overall student satisfaction. The instructors’ solid knowledge of their respective fields, offering diversified programs and specializations, well-equipped classrooms are all elements that positively affect student satisfaction. Students also care for a convenient number of students per class to be provided with an interactive learning environment. Student satisfaction can be derived by effective career advising and counseling services. Students need compatible operating hours for the administrative services, clear and standardized procedures, and to process their requests within reasonable time frame. They also appreciate convenient cafeteria services, and appropriate student courts and green areas.

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Findings revealed that if students feel satisfied with their overall experience at NDU, they tend to remain loyal to the University, would recommend it to others and are more likely to choose the same institution for future studies. However, 4 other satisfaction variables did not show any significant relationship with the other 4 loyalty variables. Thus, H6 which states that student satisfaction positively impacts student loyalty could not be concluded for.

Limitations

There are several limitations that should be addressed in this study. First, the study was conducted during the outbreak of COVID-19 where the University has moved to online classes. We could have collected bigger sample size if students were available on campus, this would have allowed more robust results. Second, the psychological status of the students during this period in time, feelings of fear and uncertainty were prevailing, this might have affected how they responded when asked to rate their opinions regarding the different service quality constructs. Third, the study was conducted on a single university; future studies could replicate this model on other universities. Comparing the outcomes would lead to get a better understanding of the service quality elements that are with utmost importance for students. Fourth, the study sought input from students at one point in time; students' perceptions of their institutions may change as they progress through their studies. It is recommended that future studies would be based on longitudinal data to capture the changes or developments in students' perceptions. Finally, the study was not able to conclude for H6 which states that student satisfaction significantly and positively impacts student loyalty. This relationship was observed only in one satisfaction variable having a significant and positive relationship with one loyalty variable where students who are satisfied with the overall experience at NDU, they tend to remain loyal to the university.

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Future Perspectives

First, the purpose of this research was to address the cognitive components of service quality and did not study the affective components. The outcomes revealed that the affective components have the greatest positive and significant influence on student satisfaction. Thus, may be future studies should be conducted to identify the affective elements and factors that would enhance students' satisfaction. Educational institutions are complex systems; future research can focus on other factors pertinent to the institution's image and reputation. Such elements might be whether graduates are proud of their education, students form close friendships, the institution has a national image, faculty research has a national image, the institution makes a cultural contribution to its community, and whether the institution organizes extra-curricular activities through the students' clubs, etc. The affective component of image is associated with psychological conditions that trigger student's feelings, attitude and behavior.

In addition, the study might be replicated in other universities and the outcomes might be compared so that will help to validate the results obtained in this study. Thus, we can draw a generalization of the Lebanese students and their perception of service quality and their satisfaction. It will be interesting to consider a qualitative study to get input from staff, administrators, and instructors in an attempt to get better understanding of their opinions in regard to the service quality elements that they perceive as most important to students. Those key functional entities should reassess their services and operations to provide smoother and better services which can reflect on the students. Another scope for research might be to investigate how the determined service quality factors can affect student retention and dropout rates. It is costly for HEIs to tolerate the burden of recruiting new students than retaining the existing ones.

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Information and knowledge are key forces in this ever-changing world which requires continuous development of the education system. Consequently, universities have to stay aware of these changes and to adapt to the best practices that would keep them in the foreground.

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Figure 1: SERVQUAL Model

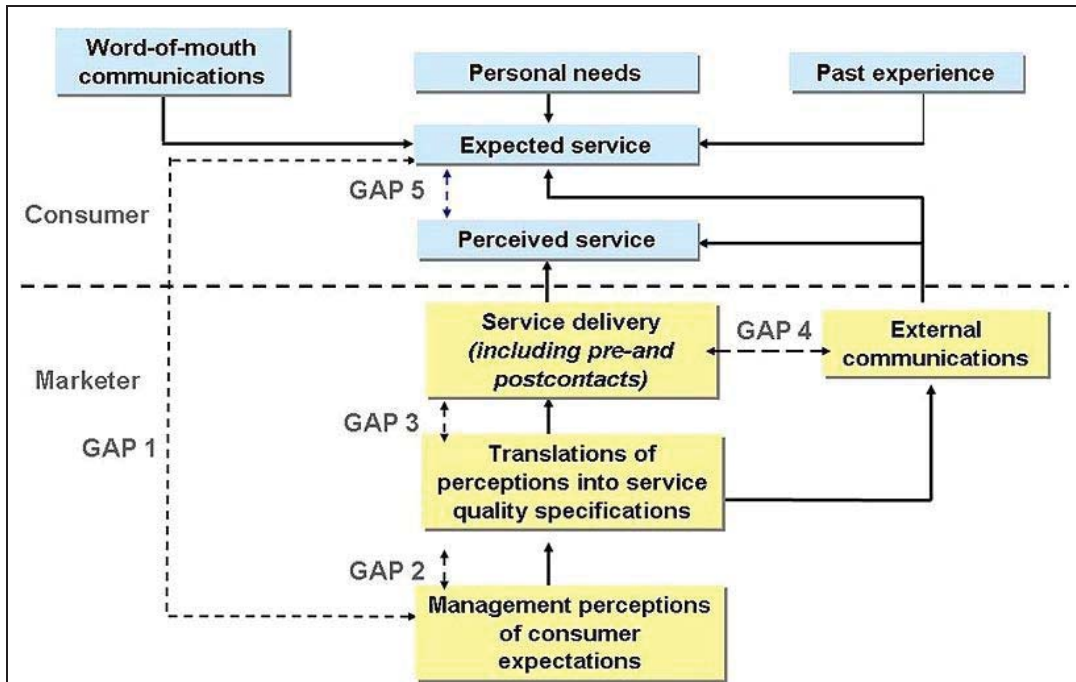


Figure 1: SERVQUAL Model (Parasuraman et al.:1985)

Figure 2: Inductive and deductive reasoning approaches

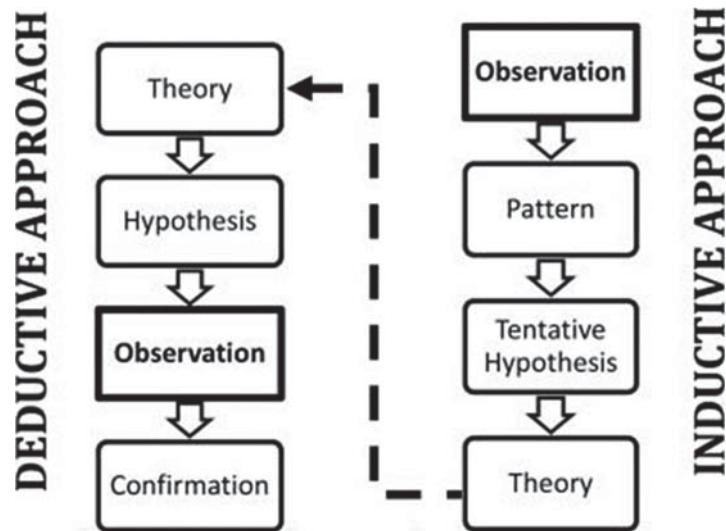


Figure 2: Inductive and deductive reasoning approaches (Trochim:2000)

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Table 1: SERVQUAL Dimensions

Dimensions	Definition	22 items in scale
Tangibles	Physical facilities, equipment, and appearance of personnel	1. up-to date equipment 2. visual appeal of physical facilities 3. appearance of employees 4. appearance of the physical facilities in keeping with the type of services provided
Reliability	Ability to perform the promised service dependably and accurately	5. promised service dependably and accurately 6. problems are addressed with sympathy and reassurance 7. dependability 8. providing services at the promised time 9. keeping records accurately
Responsiveness	Willingness to help customers and provide prompt service	10. telling customers exactly when services will be performed 11. prompt services from employees 12. employees willingness to help customers 13. employees prompt respond to customer request
Assurance	Knowledge and courtesy of employees and their ability to inspire trust and confidence	14. feeling of trust 15. feeling of safety in transaction with employees 16. employees politeness 17. support provided to employees 18. individual attention to customer (providing individualized service)
Empathy	Caring, individualized attention the firm provides its customers	19. personal attention to customer (recognizing the regular customer) 20. knowledge of customer's needs 21. having customer best interest at heart 22. convenient operating hours to customer

SERVQUAL Dimensions
(Parasuraman et al.: 1988)

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Table 2: HEdPERF Model

Constructs	Item	Variables
Academic Aspects	1	Professors are knowledgeable in course content
	2	Professors deal in a caring and courteous manner
	3	Professors respond to request for assistance
	4	Professors show sincere interest in solving problem
	5	Professors show positive attitude
	6	Professors maintains good communication in class
	7	Professors give feedback on progress
	8	The time available for consulting professors is sufficient and convenient
	9	Professors are highly educated and have experience in their respective fields
Non-Academic Aspects	10	Staff are sincerely interested in solving a problem
	11	Staff provide individual attention
	12	Dealing with complaints promptly and effectively
	13	Staff are always ready to respond to requests for assistance
	14	Staff keep accurate and retrievable records
	15	Staff keep their promise when promised to do something within a certain time
	16	Opening hours are convenient
	17	Staff have positive attitude toward their work and students
	18	Staff communicate well with students
	19	Staff are knowledgeable of systems/procedures
	20	Students feel secured and confident in their relationship with the institution
	21	Institution provides service within reasonable time frame

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Reputation	22	The institution has a professional appearance/image
	23	The institution has adequate and necessary housing facilities and equipment
	24	The academic facilities are adequate and necessary
	25	Institution offers programs of excellen quality
	26	The recreational facilities are adequate and necessary
	27	Class size allows good interaction and assistance
	28	Institution location and appearance is ideal
	29	Programs offered by the institution are respectable
	30	The institution's graduated students are easily employable
Access	31	Students are treated equally and respectfully
	32	Students can express their opinions freely
	33	Staff respects the confidentiality of information students disclose to them
	34	Staff are easily contacted
	35	Institution fosters the creation of student organizations
	36	The institution considers feedback from students to improve services
	37	Institution has a simple and standardized procedure for providing services
Program Issues	38	Institution offers wide range of programs with various specializations
	39	Programs offered by the institution have flexible structures and study plans
	40	The institution provides excellent counseling services
	41	The health care services are adequate and necessary

HEdPERF Model
(Abdullah.: 2006)

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Table 3: Factor Loadings Based on Sample Size

Loading factor	Min sample size
.75	50
.70	60
.65	70
.60	85
.55	100
.50	120
.45	150
.40	200
.35	250
.30	350

Factor Loadings Based on Sample Size
(Hair et al.: 2009)

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APPENDICES

Appendix A: Questionnaire

Dear Student,

This survey is a part of MBS thesis developed by Ms. Dounia Baradhi under the supervision of Dr. Lindos Daou, Assistant Professor, FBAE, at Notre Dame University-Louaize (NDU) in Lebanon. The study, titled "Service Quality and Its Impact on Students' Satisfaction and Loyalty: The case of Notre Dame University-Louaize", investigates the different characteristics of service quality and their impact on students' satisfaction and loyalty. The study findings will provide insights for NDU's policy makers and administrators in specific and Lebanese higher education institutions in general and may also be published in scientific research journals or used in presentations at professional conferences.

Thank you for taking the time to complete this questionnaire which requires 20 minutes. Your participation is entirely voluntary and you may discontinue participation at any time. There is no monetary compensation for the study and declining to participate will not involve any penalty or loss of any benefits. All information you provide will remain anonymous and will be treated with confidentiality.

For any further information, please contact Dounia Baradhi via e-mail at dounia.baradhi@ndu.edu.lb or by phone on: 09-208205.

Part I-Demographic Characteristics:	
1. Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
2. Nationality	<input type="checkbox"/> Lebanese <input type="checkbox"/> Non-Lebanese
3. Campus	<input type="checkbox"/> Main <input type="checkbox"/> NLC <input type="checkbox"/> Shouf
4. Level of Study	<input type="checkbox"/> Undergraduate <input type="checkbox"/> Graduate
5. Faculty	<input type="checkbox"/> FAAD <input type="checkbox"/> FBAE <input type="checkbox"/> FE <input type="checkbox"/> FH <input type="checkbox"/> FLPS <input type="checkbox"/> FNAS <input type="checkbox"/> FNHS
6. Class	<input type="checkbox"/> Freshman <input type="checkbox"/> Sophomore (completed 0 to 29 credits)

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	<input type="checkbox"/> Junior (completed 30 to 59 credits) <input type="checkbox"/> Senior (completed more than 60 crs.)						
7. Your tuition fees are mainly financed through:	<input type="checkbox"/> 1. Sponsorship (Government, institution, ...) <input type="checkbox"/> 2. Family <input type="checkbox"/> 3. Job <input type="checkbox"/> 4. Loan <input type="checkbox"/> 5. Scholarships/financial aid						
8. Housing	<input type="checkbox"/> On-Campus (NDU Dorms) <input type="checkbox"/> Off-Campus (outside NDU)						
Part II-Determinants of Service Quality							
Part II is related to certain aspects of the service that you experience at NDU. Express your level of agreement or disagreement on the following statements. 1=Strongly Disagree 2=Disagree 3= Somewhat Disagree 4=Neither Agree nor Disagree 5=Somewhat Agree 6=Agree 7=Strongly Agree							
	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neither Agree nor Disagree	5 Somewhat Agree	6 Agree	7 Strongly Agree
9. I selected my current major based on the number of required credits (program cost)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I selected my current major based on the overall program duration (time)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Fees per credit at NDU are reasonable (value received)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. NDU offers diversified programs and specializations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Instructors have solid knowledge of their respective field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Instructors use suitable teaching methods (ppt, videos, online lectures, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. The number of students per class is convenient for an interactive learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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environment							
16. My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. NDU offers appropriate financial aid services (work study and sibling grants, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. NDU provides good medical services (access, availability, coverage, utilization, ...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. NDU operates an excellent counseling service (Psychological & spiritual support, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Wi-Fi service at NDU is reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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26. NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Admin staff process students' requests within reasonable time frame	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Administrative offices' operating hours are compatible for students to submit a specific request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. NDU has automated systems and processes to provide prompt and efficient services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. NDU provides adequate services for students with physical disabilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. NDU has a well-equipped gym and athletic courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. The bookshop on Campus provides adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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services							
37. The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Students courts, landscaping, green areas create an appropriate environment to my education at NDU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Part III-Measuring Student Satisfaction							
Please rate the level of your satisfaction with the service elements offered at NDU.							
39. Overall, I consider my education at NDU very enriching and fulfilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Overall, I am happy with the environment at NDU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Overall, I feel motivated and enthusiastic about coming to NDU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Overall, I am satisfied with the services available at NDU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. I am satisfied with my overall experience at NDU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Part IV-Measuring Student Loyalty							
Convey your emotions and behavior towards NDU							
44. I would recommend NDU to others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. I would consider returning to NDU to pursue graduate studies/second degree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. I intend to become an active alumna/alumnus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. I defend NDU against rumors/critics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. I talk positively about NDU in the society	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Appendix B: Demographics Testing

Table B1: Mann-Whitney: Q1_Gender

Ranks				
	Q1_Gender	N	Mean Rank	Sum of Ranks
Q9_ I selected my current major based on the number of required credits (program cost)	Male	143	152.06	21745.00
	Female	154	146.16	22508.00
	Total	297		
Q10_ I selected my current major based on the overall program duration (time)	Male	143	149.13	21325.00
	Female	154	148.88	22928.00
	Total	297		
Q11_ Fees per credit at NDU are reasonable (value received)	Male	143	153.99	22020.00
	Female	154	144.37	22233.00
	Total	297		
Q12_ NDU offers diversified programs and specializations	Male	143	145.52	20809.50
	Female	154	152.23	23443.50
	Total	297		
Q13_ Instructors have solid knowledge of their respective field	Male	143	143.58	20532.00
	Female	154	154.03	23721.00
	Total	297		
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Male	143	145.01	20736.50
	Female	154	152.70	23516.50
	Total	297		
Q15_ The number of students per class is convenient for an interactive learning environment	Male	143	143.47	20516.00
	Female	154	154.14	23737.00
	Total	297		
Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	Male	143	152.25	21772.00
	Female	154	145.98	22481.00
	Total	297		
Q17_ Academic events/programs (exchange	Male	143	150.38	21505.00
	Female	154	147.71	22748.00

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programs, international competitions, MUN, etc...)				
offered at NDU provides broader general knowledge & enhanced interest in global issues	Total	297		
Q18_ NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Male	143	133.38	19074.00
	Female	154	163.50	25179.00
	Total	297		
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	Male	143	149.62	21395.00
	Female	154	148.43	22858.00
	Total	297		
Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Male	143	150.21	21480.50
	Female	154	147.87	22772.50
	Total	297		
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	Male	143	147.60	21106.50
	Female	154	150.30	23146.50
	Total	297		
Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Male	143	148.71	21265.00
	Female	154	149.27	22988.00
	Total	297		
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Male	143	141.39	20218.50
	Female	154	156.07	24034.50
	Total	297		
Q24_ Wi-Fi service at NDU is reliable	Male	143	142.76	20415.00
	Female	154	154.79	23838.00
	Total	297		
Q25_ Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Male	143	146.83	20996.00
	Female	154	151.02	23257.00
	Total	297		
Q26_ NDU encourages me to engage in social activities	Male	143	148.29	21205.00
	Female	154	149.66	23048.00

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(leisure, religious and spiritual life, community service and awareness, etc...)	Total	297		
Q27_ Admin staff show professional attitude	Male	143	149.56	21387.50
(respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Female	154	148.48	22865.50
	Total	297		
Q28_ NDU process students' requests within reasonable time frame	Male	143	148.74	21269.50
	Female	154	149.24	22983.50
	Total	297		
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Male	143	146.68	20975.50
	Female	154	151.15	23277.50
	Total	297		
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Male	143	144.99	20734.00
	Female	154	152.72	23519.00
	Total	297		
Q31_ NDU has automated systems and processes to provide prompt and efficient services	Male	143	143.12	20465.50
	Female	154	154.46	23787.50
	Total	297		
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Male	143	130.38	18644.00
	Female	154	166.29	25609.00
	Total	297		
Q33_ Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Male	143	138.15	19755.00
	Female	154	159.08	24498.00
	Total	297		
Q34_ NDU provides adequate services for students with physical disabilities	Male	143	143.19	20476.50
	Female	154	154.39	23776.50
	Total	297		
Q35_ NDU has a well-	Male	143	140.58	20103.00

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equipped gym and athletic courts	Female	154	156.82	24150.00
	Total	297		
Q36_ The bookshop on Campus provides adequate services	Male	143	136.54	19525.00
	Female	154	160.57	24728.00
	Total	297		
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Male	143	150.48	21518.50
	Female	154	147.63	22734.50
	Total	297		
Q38_ Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Male	143	143.86	20571.50
	Female	154	153.78	23681.50
	Total	297		
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	Male	143	141.67	20258.50
	Female	154	155.81	23994.50
	Total	297		
Q40_ Overall, I am happy with the environment at NDU	Male	143	139.82	19994.50
	Female	154	157.52	24258.50
	Total	297		
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	Male	143	142.52	20380.00
	Female	154	155.02	23873.00
	Total	297		
Q42_ Overall, I am satisfied with the services available at NDU	Male	143	140.47	20087.00
	Female	154	156.92	24166.00
	Total	297		
Q43_ I am satisfied with my overall experience at NDU	Male	143	142.05	20313.50
	Female	154	155.45	23939.50
	Total	297		
Q44_ I would recommend NDU to others	Male	143	141.98	20302.50
	Female	154	155.52	23950.50
	Total	297		
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	Male	143	136.97	19587.00
	Female	154	160.17	24666.00
	Total	297		
Q46_ I intend to become an active alumna/alumnus	Male	143	144.22	20623.00
	Female	154	153.44	23630.00
	Total	297		
Q47_ I defend NDU against rumors/critics	Male	143	144.00	20592.50
	Female	154	153.64	23660.50
	Total	297		
Q48_ I talk positively about	Male	143	143.62	20537.50

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NDU in the society	Female	154	154.00	23715.50
	Total	297		

	Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...
Mann-Whitney U	10573.000	10993.000	10298.000	10513.500	10236.000	10440.500	10220.000	10546.000
Wilcoxon W	22508.000	22928.000	22233.000	20809.500	20532.000	20736.500	20516.000	22481.000
Z	-.620	-.025	-.979	-.710	-1.114	-.817	-1.133	-.642
Asymp. Sig. (2-tailed)	.535	.980	.328	.477	.265	.414	.257	.521

a. Grouping Variable: Q1_Gender

	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_ NDU recognizes students' achievements (Distinction List, academic scholarships, etc...)	Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placements etc...	Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q24_ Wi-Fi service at NDU is reliable
Mann-Whitney U	10813.000	8778.000	10923.000	10837.500	10810.500	10969.000	9922.500	10119.000
Wilcoxon W	22748.000	19074.000	22858.000	22772.500	21106.500	21265.000	20218.500	20415.000
Z	-.275	-3.163	-.122	-.241	-.282	-.059	-1.550	-1.232
Asymp. Sig. (2-	.783	.002	.903	.810	.778	.953	.121	.218

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tailed)								
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a. Grouping Variable: Q1_Gender

	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Q31_NDU has automated systems and processes to provide prompt and efficient services	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
Mann-Whitney U	10700.000	10909.000	10930.500	10973.500	10679.500	10438.000	10169.500	8348.000
Wilcoxon Z	20996.000	21205.000	22865.500	21269.500	20975.500	20734.000	20465.500	18644.000
	-.433	-.142	-.114	-.053	-.472	-.820	-1.190	-3.843
Asymp. Sig. (2-tailed)	.665	.887	.909	.958	.637	.412	.234	.000

a. Grouping Variable: Q1_Gender

	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookshop on Campus provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling	Q40_Overall, I am happy with the environment at NDU
Mann-Whitney U	9459.000	10180.500	9807.000	9229.000	10799.500	10275.500	9962.500	9698.500
Wilcoxon Z	19755.000	20476.500	20103.000	19525.000	22734.500	20571.500	20258.500	19994.500
	-2.239	-1.178	-1.655	-2.488	-.295	-1.045	-1.523	-1.869
Asymp. Sig. (2-tailed)	.025	.239	.098	.013	.768	.296	.128	.062

a. Grouping Variable: Q1_Gender

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	Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	Q42_ Overall, I am satisfied with the services available at NDU	Q43_ I am satisfied with my overall experience at NDU	Q44_ I would recommend NDU to others	Q45_ I would consider returning to NDU to pursue graduate studies/second degree	Q46_ I intend to become an active alumna/alumnus	Q47_ I defend NDU against rumors/critics	Q48_ I talk positively about NDU in the society
Mann-Whitney U	10084.000	9791.000	10017.500	10006.500	9291.000	10327.000	10296.500	10241.500
Wilcoxon W	20380.000	20087.000	20313.500	20302.500	19587.000	20623.000	20592.500	20537.500
Z	-1.314	-1.727	-1.420	-1.456	-2.364	-.945	-1.016	-1.113
Asymp. Sig. (2-tailed)	.189	.084	.156	.145	.018	.345	.310	.266

a. Grouping Variable: Q1_Gender

Table B2: Mann-Whitney: Q2_Nationality

Ranks				
	Q2_Nationality	N	Mean Rank	Sum of Ranks
Q9_ I selected my current major based on the number of required credits (program cost)	Lebanese	276	150.07	41419.00
	Non-Lebanese	21	134.95	2834.00
	Total	297		
Q10_ I selected my current major based on the overall program duration (time)	Lebanese	276	147.97	40841.00
	Non-Lebanese	21	162.48	3412.00
	Total	297		
Q11_ Fees per credit at NDU are reasonable (value received)	Lebanese	276	148.95	41109.50
	Non-Lebanese	21	149.69	3143.50
	Total	297		
Q12_ NDU offers diversified programs and specializations	Lebanese	276	150.81	41623.00
	Non-Lebanese	21	125.24	2630.00
	Total	297		
Q13_ Instructors have solid knowledge of their respective field	Lebanese	276	148.76	41057.00
	Non-Lebanese	21	152.19	3196.00
	Total	297		
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Lebanese	276	150.78	41614.50
	Non-Lebanese	21	125.64	2638.50
	Total	297		
Q15_ The number of	Lebanese	276	150.62	41570.50

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students per class is	Non-Lebanese	21	127.74	2682.50
convenient for an interactive learning environment	Total	297		
Q16_My academic advisor	Lebanese	276	148.47	40979.00
provides continuing guidance with my major, rules, regulations, &	Non-Lebanese	21	155.90	3274.00
opportunities at NDU, etc...	Total	297		
Q17_Academic events/programs (exchange programs, international competitions, MUN, etc...)	Lebanese	276	150.70	41593.00
offered at NDU provides broader general knowledge & enhanced interest in global issues	Non-Lebanese	21	126.67	2660.00
	Total	297		
Q18_NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Lebanese	276	150.35	41495.50
	Non-Lebanese	21	131.31	2757.50
	Total	297		
Q19_NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	Lebanese	276	149.70	41316.00
	Non-Lebanese	21	139.86	2937.00
	Total	297		
Q20_NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Lebanese	276	150.20	41455.50
	Non-Lebanese	21	133.21	2797.50
	Total	297		
Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	Lebanese	276	149.43	41243.00
	Non-Lebanese	21	143.33	3010.00
	Total	297		
Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Lebanese	276	150.84	41632.00
	Non-Lebanese	21	124.81	2621.00
	Total	297		
Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Lebanese	276	148.01	40849.50
	Non-Lebanese	21	162.07	3403.50
	Total	297		
Q24_Wi-Fi service at NDU	Lebanese	276	149.98	41393.50

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is reliable	Non-Lebanese	21	136.17	2859.50
	Total	297		
Q25_ Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Lebanese	276	150.07	41418.00
	Non-Lebanese	21	135.00	2835.00
	Total	297		
Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Lebanese	276	150.25	41470.00
	Non-Lebanese	21	132.52	2783.00
	Total	297		
Q27_ Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Lebanese	276	150.03	41408.00
	Non-Lebanese	21	135.48	2845.00
	Total	297		
Q28_ NDU process students' requests within reasonable time frame	Lebanese	276	152.15	41994.00
	Non-Lebanese	21	107.57	2259.00
	Total	297		
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Lebanese	276	150.87	41639.50
	Non-Lebanese	21	124.45	2613.50
	Total	297		
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Lebanese	276	150.39	41507.00
	Non-Lebanese	21	130.76	2746.00
	Total	297		
Q31_ NDU has automated systems and processes to provide prompt and efficient services	Lebanese	276	150.24	41466.00
	Non-Lebanese	21	132.71	2787.00
	Total	297		
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Lebanese	276	148.96	41112.50
	Non-Lebanese	21	149.55	3140.50
	Total	297		

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Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Lebanese	276	148.49	40984.50
	Non-Lebanese	21	155.64	3268.50
	Total	297		
Q34_NDU provides adequate services for students with physical disabilities	Lebanese	276	147.61	40739.00
	Non-Lebanese	21	167.33	3514.00
	Total	297		
Q35_NDU has a well-equipped gym and athletic courts	Lebanese	276	145.20	40074.00
	Non-Lebanese	21	199.00	4179.00
	Total	297		
Q36_The bookshop on Campus provides adequate services	Lebanese	276	147.70	40765.50
	Non-Lebanese	21	166.07	3487.50
	Total	297		
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Lebanese	276	146.43	40414.00
	Non-Lebanese	21	182.81	3839.00
	Total	297		
Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Lebanese	276	148.90	41097.50
	Non-Lebanese	21	150.26	3155.50
	Total	297		
Q39_Overall, I consider my education at NDU very enriching and fulfilling	Lebanese	276	151.33	41766.50
	Non-Lebanese	21	118.40	2486.50
	Total	297		
Q40_Overall, I am happy with the environment at NDU	Lebanese	276	149.49	41260.00
	Non-Lebanese	21	142.52	2993.00
	Total	297		
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	Lebanese	276	151.47	41807.00
	Non-Lebanese	21	116.48	2446.00
	Total	297		
Q42_Overall, I am satisfied with the services available at NDU	Lebanese	276	150.75	41606.00
	Non-Lebanese	21	126.05	2647.00
	Total	297		
Q43_ I am satisfied with my overall experience at NDU	Lebanese	276	151.03	41685.50
	Non-Lebanese	21	122.26	2567.50
	Total	297		
Q44_ I would recommend NDU to others	Lebanese	276	150.67	41584.00
	Non-Lebanese	21	127.10	2669.00
	Total	297		
Q45_ I would consider returning to NDU to pursue	Lebanese	276	149.69	41314.50
	Non-Lebanese	21	139.93	2938.50

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graduate studies/second degree	Total	297		
Q46_ I intend to become an active alumna/alumnus	Lebanese	276	150.79	41617.50
	Non-Lebanese	21	125.50	2635.50
	Total	297		
Q47_ I defend NDU against rumors/critics	Lebanese	276	150.44	41522.00
	Non-Lebanese	21	130.05	2731.00
	Total	297		
Q48_ I talk positively about NDU in the society	Lebanese	276	150.58	41561.00
	Non-Lebanese	21	128.19	2692.00
	Total	297		

	Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...
Mann-Whitney U	2603.000	2615.000	2883.500	2399.000	2831.000	2407.500	2451.500	2753.000
Wilcoxon W	2834.000	40841.000	41109.500	2630.000	41057.000	2638.500	2682.500	40979.000
Z	-.815	-.764	-.039	-1.389	-.188	-1.369	-1.246	-.390
Asymp. Sig. (2-tailed)	.415	.445	.969	.165	.851	.171	.213	.696

a. Grouping Variable: Q2_Nationality

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	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Q19_NDU provides effective career advising & mentoring, and opportunities for internships, placements etc...	Q20_NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q24_Wi-Fi service at NDU is reliable
Mann-Whitney U	2429.000	2526.500	2706.000	2566.500	2779.000	2390.000	2623.500	2628.500
Wilcoxon W	2660.000	2757.500	2937.000	2797.500	3010.000	2621.000	40849.500	2859.500
Z	-1.272	-1.026	-.517	-.896	-.326	-1.390	-.762	-.725
Asymp. Sig. (2-tailed)	.203	.305	.605	.370	.745	.164	.446	.468

a. Grouping Variable: Q2_Nationality

	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc...)	Q31_NDU has automated systems and processes to provide prompt and efficient services	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
Mann-Whitney U	2604.000	2552.000	2614.000	2028.000	2382.500	2515.000	2556.000	2886.500
Wilcoxon W	2835.000	2783.000	2845.000	2259.000	2613.500	2746.000	2787.000	41112.500
Z	-.799	-.936	-.785	-2.392	-1.430	-1.069	-.943	-.032

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Asymp. Sig. (2-tailed)	.425	.349	.433	.017	.153	.285	.346	.974
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a. Grouping Variable: Q2_Nationality

	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookstore on Campus provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling	Q40_Overall, I am happy with the environment at NDU
Mann-Whitney U	2758.500	2513.000	1848.000	2539.500	2188.000	2871.500	2255.500	2762.000
Wilcoxon W	40984.500	40739.000	40074.000	40765.500	40414.000	41097.500	2486.500	2993.000
Z	-.392	-1.064	-2.814	-.976	-1.932	-.073	-1.819	-.378
Asymp. Sig. (2-tailed)	.695	.287	.005	.329	.053	.941	.069	.706

a. Grouping Variable: Q2_Nationality

	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Q42_Overall, I am satisfied with the services available at NDU	Q43_I am satisfied with my overall experience at NDU	Q44_I would recommend NDU to others	Q45_I would consider returning to NDU to pursue graduate studies/second degree	Q46_I intend to become an active alumna/alumnus	Q47_I defend NDU against rumors/critics	Q48_I talk positively about NDU in the society
Mann-Whitney U	2215.000	2416.000	2336.500	2438.000	2707.500	2404.500	2500.000	2461.000
Wilcoxon W	2446.000	2647.000	2567.500	2669.000	2938.500	2635.500	2731.000	2692.000
Z	-1.888	-1.330	-1.564	-1.299	-.510	-1.328	-1.103	-1.232
Asymp. Sig. (2-tailed)	.059	.183	.118	.194	.610	.184	.270	.218

a. Grouping Variable: Q2_Nationality

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Table B3: Kruskal-Wallis: Q3_Campus

Ranks			
	Q3_Campus	N	Mean Rank
Q9_ I selected my current major based on the number of required credits (program cost)	Main	268	148.91
	NLC	17	136.76
	Shouf	12	168.25
	Total	297	
Q10_ I selected my current major based on the overall program duration (time)	Main	268	150.00
	NLC	17	128.03
	Shouf	12	156.42
	Total	297	
Q11_ Fees per credit at NDU are reasonable (value received)	Main	268	153.15
	NLC	17	128.41
	Shouf	12	85.58
	Total	297	
Q12_ NDU offers diversified programs and specializations	Main	268	153.40
	NLC	17	123.94
	Shouf	12	86.21
	Total	297	
Q13_ Instructors have solid knowledge of their respective field	Main	268	148.99
	NLC	17	185.26
	Shouf	12	97.92
	Total	297	
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Main	268	146.28
	NLC	17	200.79
	Shouf	12	136.46
	Total	297	
Q15_ The number of students per class is convenient for an interactive learning environment	Main	268	144.24
	NLC	17	194.85
	Shouf	12	190.42
	Total	297	
Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	Main	268	147.13
	NLC	17	181.18
	Shouf	12	145.29
	Total	297	
Q17_ Academic events/programs (exchange programs, international	Main	268	152.66
	NLC	17	131.06
	Shouf	12	92.67

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competitions, MUN, etc...)			
offered at NDU provides			
broader general knowledge	Total	297	
& enhanced interest in			
global issues			
Q18_ NDU recognizes	Main	268	150.94
students' achievements	NLC	17	141.35
(Distinction, Dean's List,	Shouf	12	116.42
academic scholarships,			
etc...)	Total	297	
Q19_ NDU provides	Main	268	147.51
effective career advising	NLC	17	182.97
& mentoring, and	Shouf	12	134.04
opportunities for internships,			
placement etc...	Total	297	
Q20_ NDU offers	Main	268	149.15
appropriate financial aid	NLC	17	167.18
services (work study and	Shouf	12	119.83
sibling grants, etc...)	Total	297	
Q21_ NDU provides good	Main	268	150.86
medical services (access,	NLC	17	145.76
availability, coverage,	Shouf	12	112.04
utilization, ...)	Total	297	
Q22_ NDU operates an	Main	268	151.45
excellent counselling service	NLC	17	151.44
(Psychological &	Shouf	12	90.83
spiritual support, etc...	Total	297	
Q23_ Library has sufficient	Main	268	150.69
and up-to-date forms of	NLC	17	164.18
resources (articles, journals,	Shouf	12	89.83
books, ...)	Total	297	
	Main	268	149.88
Q24_ Wi-Fi service at NDU	NLC	17	164.79
is reliable	Shouf	12	107.08
	Total	297	
Q25_ Physical activities	Main	268	153.69
contribute to a better	NLC	17	141.76
education at NDU (sports	Shouf	12	54.58
teams, athletic competitions,			
etc...)	Total	297	
Q26_ NDU encourages me	Main	268	150.70
to engage in social activities	NLC	17	149.88
(leisure, religious and	Shouf	12	109.79

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spiritual life, community service and awareness, etc...)	Total	297	
Q27_ Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Main	268	145.60
	NLC	17	203.56
	Shouf	12	147.71
	Total	297	
Q28_ NDU process students' requests within reasonable time frame	Main	268	150.56
	NLC	17	152.47
	Shouf	12	109.17
	Total	297	
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Main	268	147.96
	NLC	17	173.71
	Shouf	12	137.25
	Total	297	
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Main	268	149.43
	NLC	17	155.00
	Shouf	12	131.00
	Total	297	
Q31_ NDU has automated systems and processes to provide prompt and efficient services	Main	268	148.49
	NLC	17	167.26
	Shouf	12	134.58
	Total	297	
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Main	268	147.32
	NLC	17	178.12
	Shouf	12	145.33
	Total	297	
Q33_ Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Main	268	147.58
	NLC	17	155.03
	Shouf	12	172.17
	Total	297	
Q34_ NDU provides adequate services for students with physical disabilities	Main	268	148.03
	NLC	17	166.21
	Shouf	12	146.29
	Total	297	
Q35_ NDU has a well-	Main	268	157.61

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equipped gym and athletic courts	NLC	17	83.50
	Shouf	12	49.46
	Total	297	
Q36_The bookshop on Campus provides adequate services	Main	268	155.23
	NLC	17	109.62
	Shouf	12	65.75
	Total	297	
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Main	268	153.16
	NLC	17	101.03
	Shouf	12	124.13
	Total	297	
Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Main	268	150.87
	NLC	17	146.65
	Shouf	12	110.54
	Total	297	
Q39_Overall, I consider my education at NDU very enriching and fulfilling	Main	268	149.15
	NLC	17	180.06
	Shouf	12	101.58
	Total	297	
Q40_Overall, I am happy with the environment at NDU	Main	268	150.27
	NLC	17	155.38
	Shouf	12	111.67
	Total	297	
Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Main	268	150.82
	NLC	17	141.29
	Shouf	12	119.29
	Total	297	
Q42_Overall, I am satisfied with the services available at NDU	Main	268	151.32
	NLC	17	139.65
	Shouf	12	110.33
	Total	297	
Q43_ I am satisfied with my overall experience at NDU	Main	268	152.28
	NLC	17	134.06
	Shouf	12	96.96
	Total	297	
Q44_ I would recommend NDU to others	Main	268	151.12
	NLC	17	143.53
	Shouf	12	109.50
	Total	297	
Q45_ I would consider returning to NDU to pursue graduate studies/second	Main	268	148.41
	NLC	17	163.06
	Shouf	12	142.21

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degree	Total	297	
	Main	268	150.38
Q46_ I intend to become an	NLC	17	143.62
active alumna/alumnus	Shouf	12	125.75
	Total	297	
	Main	268	148.38
Q47_ I defend NDU against	NLC	17	175.03
rumors/critics	Shouf	12	126.04
	Total	297	
	Main	268	149.78
Q48_ I talk positively about	NLC	17	165.79
NDU in the society	Shouf	12	107.79
	Total	297	

	Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...
N	297	297	297	297	297	297	297	297
Median	2.00	2.00	4.00	6.00	6.00	6.00	6.00	6.00
Chi-Square	1.380 ^b	.984 ^c	5.434 ^d	.510 ^e	3.947 ^f	5.046 ^g	4.839 ^h	2.693 ⁱ
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.502	.611	.066	.775	.139	.080	.089	.260

a. Grouping Variable: Q3_Campus

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	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Q19_NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	Q20_NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...	Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q24_Wi-Fi service at NDU is reliable
N	297	297	297	297	297	297	297	297
Median	5.00	6.00	5.00	5.00	5.00	4.00	6.00	5.00
Chi-Square	2.802 ^j	.284 ^k	2.782 ^l	1.122 ^m	3.046 ⁿ	5.716 ^o	3.785 ^p	4.088 ^q
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.246	.868	.249	.571	.218	.057	.151	.130

a. Grouping Variable: Q3_Campus

	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Q31_NDU has automated systems and processes to provide prompt and efficient services	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
N	297	297	297	297	297	297	297	297
Median	5.00	5.00	6.00	5.00	6.00	6.00	6.00	6.00
Chi-Square	5.660 ^r	1.992 ^s	.776 ^t	2.629 ^u	.341 ^v	.687 ^w	2.518 ^w	1.307 ^x
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.059	.369	.678	.269	.843	.709	.284	.520

a. Grouping Variable: Q3_Campus

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	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookshop on Campus provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling	Q40_Overall, I am happy with the environment at NDU
N	297	297	297	297	297	297	297	297
Median	6.00	6.00	4.00	5.00	5.00	6.00	6.00	6.00
Chi-Square	1.054 ^y	.588 ^z	14.866 ^a _a	6.351 ^{ab}	4.113 ^o	.280 ^{ac}	3.152 ^{ad}	2.715 ^f
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.590	.745	.001	.042	.128	.869	.207	.257

a. Grouping Variable: Q3_Campus

	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Q42_Overall, I am satisfied with the services available at NDU	Q43_I am satisfied with my overall experience at NDU	Q44_I would recommend NDU to others	Q45_I would consider returning to NDU to pursue graduate studies/second degree	Q46_I intend to become an active alumna/alumnus	Q47_I defend NDU against rumors/critics	Q48_I talk positively about NDU in the society
N	297	297	297	297	297	297	297	297
Median	6.00	6.00	6.00	6.00	5.00	5.00	6.00	6.00
Chi-Square	.687 ^f	.937 ^{ae}	2.781 ^{af}	3.627 ^{ac}	.546 ^f	2.412 ^{ag}	.748 ^{ah}	1.458 ^{ah}
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.709	.626	.249	.163	.761	.299	.688	.482

a. Grouping Variable: Q3_Campus

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Table B4: Mann-Whitney: Q4_ Level of Study (Graduate/Undergraduate)

Ranks				
	Q4_ Level of Study	N	Mean Rank	Sum of Ranks
Q9_ I selected my current major based on the number of required credits (program cost)	Undergraduate	225	144.09	32421.00
	Graduate	72	164.33	11832.00
	Total	297		
Q10_ I selected my current major based on the overall program duration (time)	Undergraduate	225	147.64	33220.00
	Graduate	72	153.24	11033.00
	Total	297		
Q11_ Fees per credit at NDU are reasonable (value received)	Undergraduate	225	148.24	33355.00
	Graduate	72	151.36	10898.00
	Total	297		
Q12_ NDU offers diversified programs and specializations	Undergraduate	225	146.78	33024.50
	Graduate	72	155.95	11228.50
	Total	297		
Q13_ Instructors have solid knowledge of their respective field	Undergraduate	225	143.45	32275.50
	Graduate	72	166.35	11977.50
	Total	297		
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Undergraduate	225	143.90	32377.00
	Graduate	72	164.94	11876.00
	Total	297		
Q15_ The number of students per class is convenient for an interactive learning environment	Undergraduate	225	144.66	32549.00
	Graduate	72	162.56	11704.00
	Total	297		
Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	Undergraduate	225	146.54	32972.00
	Graduate	72	156.68	11281.00
	Total	297		
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Undergraduate	225	149.79	33702.00
	Graduate	72	146.54	10551.00
	Total	297		
Q18_ NDU recognizes	Undergraduate	225	148.73	33463.50

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students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Graduate	72	149.85	10789.50
	Total	297		
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	Undergraduate	225	153.30	34491.50
	Graduate	72	135.58	9761.50
	Total	297		
Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Undergraduate	225	146.68	33003.50
	Graduate	72	156.24	11249.50
	Total	297		
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	Undergraduate	225	145.80	32805.00
	Graduate	72	159.00	11448.00
	Total	297		
Q22_ NDU operates an excellent counseling service (Psychological & spiritual support, etc...)	Undergraduate	225	145.81	32807.50
	Graduate	72	158.97	11445.50
	Total	297		
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Undergraduate	225	144.63	32541.50
	Graduate	72	162.66	11711.50
	Total	297		
Q24_ Wi-Fi service at NDU is reliable	Undergraduate	225	152.14	34230.50
	Graduate	72	139.20	10022.50
	Total	297		
Q25_ Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Undergraduate	225	150.43	33847.00
	Graduate	72	144.53	10406.00
	Total	297		
Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Undergraduate	225	147.06	33088.00
	Graduate	72	155.07	11165.00
	Total	297		
Q27_ Admin staff show professional attitude	Undergraduate	225	150.10	33771.50
	Graduate	72	145.58	10481.50

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(respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Total	297		
Q28_ NDU process	Undergraduate	225	144.43	32496.00
students' requests within reasonable time frame	Graduate	72	163.29	11757.00
	Total	297		
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Undergraduate	225	147.26	33134.50
	Graduate	72	154.42	11118.50
	Total	297		
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Undergraduate	225	146.67	33001.00
	Graduate	72	156.28	11252.00
	Total	297		
Q31_ NDU has automated systems and processes to provide prompt and efficient services	Undergraduate	225	145.58	32756.50
	Graduate	72	159.67	11496.50
	Total	297		
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Undergraduate	225	146.65	32997.00
	Graduate	72	156.33	11256.00
	Total	297		
Q33_ Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Undergraduate	225	150.04	33758.50
	Graduate	72	145.76	10494.50
	Total	297		
Q34_ NDU provides adequate services for students with physical disabilities	Undergraduate	225	151.75	34143.00
	Graduate	72	140.42	10110.00
	Total	297		
Q35_ NDU has a well-equipped gym and athletic courts	Undergraduate	225	144.21	32448.00
	Graduate	72	163.96	11805.00
	Total	297		
Q36_ The bookshop on Campus provides adequate services	Undergraduate	225	143.48	32284.00
	Graduate	72	166.24	11969.00
	Total	297		
Q37_ The NDU cafeterias	Undergraduate	225	144.24	32455.00

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are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Graduate	72	163.86	11798.00
	Total	297		
Q38_Students courts, landscaping, green areas	Undergraduate	225	148.50	33412.50
create an appropriate environment to my education at NDU	Graduate	72	150.56	10840.50
	Total	297		
Q39_Overall, I consider my education at NDU very enriching and fulfilling	Undergraduate	225	148.21	33347.00
	Graduate	72	151.47	10906.00
	Total	297		
Q40_Overall, I am happy with the environment at NDU	Undergraduate	225	149.96	33740.00
	Graduate	72	146.01	10513.00
	Total	297		
Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Undergraduate	225	151.32	34048.00
	Graduate	72	141.74	10205.00
	Total	297		
Q42_Overall, I am satisfied with the services available at NDU	Undergraduate	225	146.19	32893.00
	Graduate	72	157.78	11360.00
	Total	297		
Q43_ I am satisfied with my overall experience at NDU	Undergraduate	225	149.53	33643.50
	Graduate	72	147.35	10609.50
	Total	297		
Q44_ I would recommend NDU to others	Undergraduate	225	151.58	34105.50
	Graduate	72	140.94	10147.50
	Total	297		
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	Undergraduate	225	138.90	31252.50
	Graduate	72	180.56	13000.50
	Total	297		
Q46_ I intend to become an active alumna/alumnus	Undergraduate	225	148.69	33456.00
	Graduate	72	149.96	10797.00
	Total	297		
Q47_ I defend NDU against rumors/critics	Undergraduate	225	151.23	34026.00
	Graduate	72	142.04	10227.00
	Total	297		
Q48_ I talk positively about NDU in the society	Undergraduate	225	150.95	33963.50
	Graduate	72	142.91	10289.50
	Total	297		

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	Q9_ I select ed my curren t major based on the numbe r of requir ed credits (progr am cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reason able (value receive d)	Q12_ NDU offers diversified programs and specializatio ns	Q13_ Instructo rs have solid knowled ge of their respectiv e field	Q14_ Instructo rs uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenien t for an interactive learning environme nt	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations , & opportuniti es at NDU, etc...
Chi-Square	3.325	.242	.074	.694	4.386	3.671	2.655	.792
df	1	1	1	1	1	1	1	1
Asymp. Sig.	.068	.623	.786	.405	.036	.055	.103	.374

a. Mann-Whitney Test

b. Grouping Variable: Q4_ Level of Study

	Q17_ Academic events/progra ms (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_ NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships , etc...)	Q19_ NDU provides effective career advising & mentoring, and opportunitie s for internships, placement etc...	Q20_ NDU offers appropriat e financial aid services (work study and sibling grants, etc...)	Q21_ NDU provides good medical services (access, availabilit y, coverage, utilization, ...)	Q22_ NDU operates an excellent counselling service (Psychologic al & spiritual support, etc...)	Q23_ Librar y has sufficient and up-to-date forms of resources (articles, journals, books, ...)
Chi-Square	.082	.010	2.427	.711	1.391	1.379	2.665
df	1	1	1	1	1	1	1
Asymp. Sig.	.774	.919	.119	.399	.238	.240	.103

a. Mann-Whitney Test

b. Grouping Variable: Q4_ Level of Study

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	Q24 _Wi-Fi service at NDU is reliable	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc...)	Q31_NDU has automated systems and processes to provide prompt and efficient services
Chi-Square	1.290	.274	.500	.166	2.864	.420	.765	1.606
df	1	1	1	1	1	1	1	1
Asymp. Sig.	.256	.601	.480	.684	.091	.517	.382	.205

a. Mann-Whitney Test

b. Grouping Variable: Q4_Level of Study

	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookshop on Campus provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling
Chi-Square	.789	.154	1.044	2.980	4.082	3.033	.035	.091
df	1	1	1	1	1	1	1	1
Asymp. Sig.	.374	.694	.307	.084	.043	.082	.852	.763

a. Mann-Whitney Test

b. Grouping Variable: Q4_Level of Study

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	Q40_Overall, I am happy with the environment at NDU	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Q42_Overall, I am satisfied with the services available at NDU	Q43_I am satisfied with my overall experience at NDU	Q44_I would recommend NDU to others	Q45_I would consider returning to NDU to pursue graduate studies/second degree	Q46_I intend to become an active alumna/alumnus	Q47_I defend NDU against rumors/critics	Q48_I talk positively about NDU in the society
Chi-Square	.127	.748	1.088	.039	.962	13.259	.012	.690	.547
df	1	1	1	1	1	1	1	1	1
Asymp. Sig.	.721	.387	.297	.843	.327	.000	.912	.406	.460

- a. Mann-Whitney Test
- b. Grouping Variable: Q4_Level of Study

Table B5: Kruskal-Wallis: Q5_Class (4 GROUPS)

Ranks			
	Q5_Class	N	Mean Rank
Q9_I selected my current major based on the number of required credits (program cost)	Freshman	2	172.50
	Sophomore	50	115.22
	Junior	55	112.92
	Senior	118	111.09
	Total	225	
Q10_I selected my current major based on the overall program duration (time)	Freshman	2	174.25
	Sophomore	50	115.82
	Junior	55	106.78
	Senior	118	113.67
	Total	225	
Q11_Fees per credit at NDU are reasonable (value received)	Freshman	2	101.50
	Sophomore	50	107.82
	Junior	55	121.75
	Senior	118	111.31
	Total	225	
Q12_NDU offers diversified programs and specializations	Freshman	2	113.75
	Sophomore	50	117.68
	Junior	55	109.40

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	Senior	118	112.68
	Total	225	
	Freshman	2	122.00
Q13_ Instructors have solid	Sophomore	50	119.21
knowledge of their	Junior	55	111.69
respective field	Senior	118	110.83
	Total	225	
	Freshman	2	65.50
Q14_ Instructors uses	Sophomore	50	100.97
suitable teaching methods	Junior	55	114.21
(ppt, videos, online lectures,	Senior	118	118.34
etc...)	Total	225	
	Freshman	2	77.25
Q15_ The number of	Sophomore	50	112.47
students per class is	Junior	55	121.34
convenient for an interactive	Senior	118	109.94
learning environment	Total	225	
	Freshman	2	131.75
Q16_ My academic advisor	Sophomore	50	108.29
provides continuing	Junior	55	121.77
guidance with my major,	Senior	118	110.59
rules, regulations, & amp;	Total	225	
opportunities at NDU, etc...	Freshman	2	113.00
Q17_ Academic	Sophomore	50	113.09
events/programs (exchange	Junior	55	106.94
programs, international	Senior	118	115.79
competitions, MUN, etc...)	Total	225	
offered at NDU provides			
broader general knowledge			
& amp; enhanced interest in			
global issues			
	Freshman	2	88.00
Q18_ NDU recognizes	Sophomore	50	106.64
students' achievements	Junior	55	117.21
(Distinction, Dean's List,	Senior	118	114.16
academic scholarships,	Total	225	
etc...)	Freshman	2	123.50
Q19_ NDU provides	Sophomore	50	123.72
effective career advising	Junior	55	119.75
& amp; mentoring, and	Senior	118	105.14
opportunities for internships,	Total	225	
placement etc...	Freshman	2	135.25
Q20_ NDU offers	Sophomore	50	119.57
appropriate financial aid	Junior	55	120.25
services (work study and			

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sibling grants, etc...)	Senior	118	106.46
	Total	225	
Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	Freshman	2	142.00
	Sophomore	50	117.76
	Junior	55	110.18
	Senior	118	111.81
	Total	225	
Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Freshman	2	147.00
	Sophomore	50	113.65
	Junior	55	115.03
	Senior	118	111.20
	Total	225	
Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Freshman	2	133.00
	Sophomore	50	114.13
	Junior	55	112.06
	Senior	118	112.62
	Total	225	
Q24_ Wi-Fi service at NDU is reliable	Freshman	2	181.00
	Sophomore	50	138.95
	Junior	55	123.56
	Senior	118	95.93
Total	225		
Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Freshman	2	189.00
	Sophomore	50	108.20
	Junior	55	121.68
	Senior	118	109.70
	Total	225	
Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Freshman	2	152.75
	Sophomore	50	119.49
	Junior	55	116.13
	Senior	118	108.12
	Total	225	
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Freshman	2	82.75
	Sophomore	50	118.26
	Junior	55	120.45
	Senior	118	107.81
	Total	225	
Q28_NDU process students' requests within reasonable time frame	Freshman	2	94.25
	Sophomore	50	96.64
	Junior	55	127.44
	Senior	118	113.52

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	Total	225	
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Freshman	2	78.50
	Sophomore	50	111.36
	Junior	55	116.55
	Senior	118	112.62
	Total	225	
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Freshman	2	106.00
	Sophomore	50	102.07
	Junior	55	115.67
	Senior	118	116.50
	Total	225	
Q31_ NDU has automated systems and processes to provide prompt and efficient services	Freshman	2	129.75
	Sophomore	50	108.84
	Junior	55	116.58
	Senior	118	112.81
	Total	225	
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Freshman	2	100.50
	Sophomore	50	126.97
	Junior	55	113.08
	Senior	118	107.25
	Total	225	
Q33_ Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Freshman	2	69.75
	Sophomore	50	126.15
	Junior	55	123.70
	Senior	118	103.17
	Total	225	
Q34_ NDU provides adequate services for students with physical disabilities	Freshman	2	134.00
	Sophomore	50	109.30
	Junior	55	122.11
	Senior	118	109.97
	Total	225	
Q35_ NDU has a well-equipped gym and athletic courts	Freshman	2	144.25
	Sophomore	50	124.43
	Junior	55	118.35
	Senior	118	105.14
	Total	225	
Q36_ The bookshop on Campus provides adequate services	Freshman	2	132.50
	Sophomore	50	115.64
	Junior	55	118.90
	Senior	118	108.80
	Total	225	

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	Total	225	
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Freshman	2	111.25
	Sophomore	50	141.30
	Junior	55	115.58
	Senior	118	99.83
	Total	225	
Q38_ Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Freshman	2	109.25
	Sophomore	50	132.26
	Junior	55	121.02
	Senior	118	101.17
	Total	225	
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	Freshman	2	110.25
	Sophomore	50	116.71
	Junior	55	110.21
	Senior	118	112.78
	Total	225	
Q40_ Overall, I am happy with the environment at NDU	Freshman	2	107.50
	Sophomore	50	115.48
	Junior	55	115.58
	Senior	118	110.84
	Total	225	
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	Freshman	2	124.50
	Sophomore	50	117.00
	Junior	55	121.85
	Senior	118	106.98
	Total	225	
Q42_ Overall, I am satisfied with the services available at NDU	Freshman	2	110.00
	Sophomore	50	121.12
	Junior	55	121.65
	Senior	118	105.58
	Total	225	
Q43_ I am satisfied with my overall experience at NDU	Freshman	2	102.50
	Sophomore	50	113.49
	Junior	55	118.25
	Senior	118	110.53
	Total	225	
Q44_ I would recommend NDU to others	Freshman	2	106.75
	Sophomore	50	124.10
	Junior	55	117.11
	Senior	118	106.49
	Total	225	
Q45_ I would consider returning to NDU to pursue	Freshman	2	145.25
	Sophomore	50	124.67

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graduate studies/second degree	Junior	55	117.90
	Senior	118	105.22
	Total	225	
	Freshman	2	141.25
	Sophomore	50	115.23
Q46_ I intend to become an active alumna/alumnus	Junior	55	116.60
	Senior	118	109.90
	Total	225	
	Freshman	2	103.75
	Sophomore	50	111.25
Q47_ I defend NDU against rumors/critics	Junior	55	114.20
	Senior	118	113.34
	Total	225	
	Freshman	2	100.25
	Sophomore	50	108.35
Q48_ I talk positively about NDU in the society	Junior	55	118.84
	Senior	118	112.47
	Total	225	

	Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...
Chi-Square	2.034	2.493	1.494	.480	.730	4.008	1.969	1.654
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.565	.477	.684	.923	.866	.261	.579	.647

b. Grouping Variable: Q5_Class

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	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placements etc...	Q20_NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_NDU operates an excellent counseling service (Psychological & spiritual support, etc...)	Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q24_ Wi-Fi service at NDU is reliable
Chi-Square	.737	1.139	3.923	2.764	.871	.748	.242	20.564
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.864	.768	.270	.429	.832	.862	.970	.000

b. Grouping Variable: Q5_Class

	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc...)	Q31_NDU has automated systems and processes to provide prompt and efficient services	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
Chi-Square	4.544	2.137	2.480	6.580	.854	2.100	.552	3.719
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.208	.545	.479	.087	.836	.552	.907	.293

b. Grouping Variable: Q5_Class

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	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookshop on Campuses provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling	Q40_Overall, I am happy with the environment at NDU
Chi-Square	8.081	1.896	4.226	1.272	15.174	10.098	.315	.338
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.044	.594	.238	.736	.002	.018	.957	.953

b. Grouping Variable: Q5_Class

	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Q42_Overall, I am satisfied with the services available at NDU	Q43_I am satisfied with my overall experience at NDU	Q44_I would recommend NDU to others	Q45_I would consider returning to NDU to pursue graduate studies/second degree	Q46_I intend to become an active alumna/alumnus	Q47_I defend NDU against rumors/critics	Q48_I talk positively about NDU in the society
Chi-Square	2.520	3.598	.652	3.337	4.215	.909	.109	.903
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.472	.308	.884	.342	.239	.823	.991	.825

b. Grouping Variable: Q5_Class

Table B5.1: Kruskal-Wallis: Q5_Class (3 GROUPS)

	Ranks		
	Q5_Class	N	Mean Rank
Q9_ I selected my current major based on the number of required credits (program cost)	Sophomore	50	114.67
	Junior	55	112.39
	Senior	118	110.69
	Total	223	
Q10_ I selected my current major based on the overall program duration (time)	Sophomore	50	115.28
	Junior	55	106.35
	Senior	118	113.25

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	Total	223	
Q11_ Fees per credit at	Sophomore	50	106.76
NDU are reasonable (value	Junior	55	120.55
received)	Senior	118	110.23
	Total	223	
Q12_ NDU offers diversified	Sophomore	50	116.62
programs and	Junior	55	108.41
specializations	Senior	118	111.72
	Total	223	
Q13_ Instructors have solid	Sophomore	50	118.21
knowledge of their	Junior	55	110.80
respective field	Senior	118	109.93
	Total	223	
Q14_ Instructors uses	Sophomore	50	99.62
suitable teaching methods	Junior	55	112.77
(ppt, videos, online lectures,	Senior	118	116.89
etc...)	Total	223	
Q15_ The number of	Sophomore	50	111.15
students per class is	Junior	55	119.95
convenient for an interactive	Senior	118	108.66
learning environment	Total	223	
Q16_ My academic advisor	Sophomore	50	107.51
provides continuing	Junior	55	120.84
guidance with my major,	Senior	118	109.78
rules, regulations, &	Total	223	
opportunities at NDU, etc...			
Q17_ Academic	Sophomore	50	112.09
events/programs (exchange	Junior	55	105.99
programs, international	Senior	118	114.76
competitions, MUN, etc...)			
offered at NDU provides			
broader general knowledge	Total	223	
& enhanced interest in			
global issues			
Q18_ NDU recognizes	Sophomore	50	105.52
students' achievements	Junior	55	115.89
(Distinction, Dean's List,	Senior	118	112.93
academic scholarships,	Total	223	
etc...)			
Q19_ NDU provides	Sophomore	50	122.71
effective career advising	Junior	55	118.77
& mentoring, and	Senior	118	104.31

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opportunities for internships, placement etc...	Total	223	
Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Sophomore	50	118.70
	Junior	55	119.41
	Senior	118	105.71
	Total	223	
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	Sophomore	50	116.97
	Junior	55	109.45
	Senior	118	111.08
	Total	223	
Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Sophomore	50	112.95
	Junior	55	114.32
	Senior	118	110.52
	Total	223	
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Sophomore	50	113.30
	Junior	55	111.25
	Senior	118	111.80
	Total	223	
Q24_ Wi-Fi service at NDU is reliable	Sophomore	50	138.34
	Junior	55	123.08
	Senior	118	95.67
	Total	223	
Q25_ Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Sophomore	50	107.93
	Junior	55	121.30
	Senior	118	109.39
	Total	223	
Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Sophomore	50	118.77
	Junior	55	115.46
	Senior	118	107.52
	Total	223	
Q27_ Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Sophomore	50	116.95
	Junior	55	119.15
	Senior	118	106.57
	Total	223	
Q28_ NDU process students' requests within reasonable time frame	Sophomore	50	95.55
	Junior	55	126.16
	Senior	118	112.37
	Total	223	

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Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Sophomore	50	110.04
	Junior	55	115.25
	Senior	118	111.32
	Total	223	
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Sophomore	50	101.06
	Junior	55	114.60
	Senior	118	115.42
	Total	223	
Q31_ NDU has automated systems and processes to provide prompt and efficient services	Sophomore	50	108.02
	Junior	55	115.69
	Senior	118	111.97
	Total	223	
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Sophomore	50	125.80
	Junior	55	111.95
	Senior	118	106.17
	Total	223	
Q33_ Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Sophomore	50	124.68
	Junior	55	122.22
	Senior	118	101.86
	Total	223	
Q34_ NDU provides adequate services for students with physical disabilities	Sophomore	50	108.58
	Junior	55	121.18
	Senior	118	109.17
	Total	223	
Q35_ NDU has a well-equipped gym and athletic courts	Sophomore	50	123.58
	Junior	55	117.56
	Senior	118	104.50
	Total	223	
Q36_ The bookshop on Campus provides adequate services	Sophomore	50	114.82
	Junior	55	118.01
	Senior	118	108.00
	Total	223	
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Sophomore	50	139.98
	Junior	55	114.50
	Senior	118	98.98
	Total	223	
Q38_ Students courts, landscaping, green areas	Sophomore	50	131.13
	Junior	55	119.95

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create an appropriate environment to my education at NDU	Senior	118	100.19
	Total	223	
Q39_Overall, I consider my education at NDU very enriching and fulfilling	Sophomore	50	115.67
	Junior	55	109.17
	Senior	118	111.76
	Total	223	
Q40_Overall, I am happy with the environment at NDU	Sophomore	50	114.44
	Junior	55	114.49
	Senior	118	109.81
	Total	223	
Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Sophomore	50	116.08
	Junior	55	120.90
	Senior	118	106.12
	Total	223	
Q42_Overall, I am satisfied with the services available at NDU	Sophomore	50	120.06
	Junior	55	120.58
	Senior	118	104.58
	Total	223	
Q43_ I am satisfied with my overall experience at NDU	Sophomore	50	112.37
	Junior	55	117.12
	Senior	118	109.46
	Total	223	
Q44_ I would recommend NDU to others	Sophomore	50	122.99
	Junior	55	116.00
	Senior	118	105.48
	Total	223	
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	Sophomore	50	123.88
	Junior	55	117.15
	Senior	118	104.56
	Total	223	
Q46_ I intend to become an active alumna/alumnus	Sophomore	50	114.47
	Junior	55	115.83
	Senior	118	109.17
	Total	223	
Q47_ I defend NDU against rumors/critics	Sophomore	50	110.15
	Junior	55	113.07
	Senior	118	112.28
	Total	223	
Q48_ I talk positively about NDU in the society	Sophomore	50	107.26
	Junior	55	117.67
	Senior	118	111.36

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Total	223
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	Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...
Chi-Square	.152	.625	1.427	.481	.679	2.824	1.291	1.471
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.927	.732	.490	.786	.712	.244	.524	.479

b. Grouping Variable: Q5_Class

	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_ NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q24_ Wi-Fi service at NDU is reliable
Chi-Square	.737	.799	3.859	2.522	.439	.155	.032	18.282
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.692	.671	.145	.283	.803	.925	.984	.000

b. Grouping Variable: Q5_Class

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	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc...)	Q31_NDU has automated systems and processes to provide prompt and efficient services	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
Chi-Square	1.630	1.344	2.007	6.437	.223	2.097	.406	3.675
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.443	.511	.367	.040	.895	.350	.816	.159

b. Grouping Variable: Q5_Class

	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookshop on Campus provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling	Q40_Overall, I am happy with the environment at NDU
Chi-Square	7.087	1.645	3.728	1.082	15.096	10.187	.317	.323
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.029	.439	.155	.582	.001	.006	.853	.851

b. Grouping Variable: Q5_Class

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	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Q42_Overall, I am satisfied with the services available at NDU	Q43_I am satisfied with my overall experience at NDU	Q44_I would recommend NDU to others	Q45_I would consider returning to NDU to pursue graduate studies/second degree	Q46_I intend to become an active alumna/alumnus	Q47_I defend NDU against rumors/critics	Q48_I talk positively about NDU in the society
Chi-Square	2.467	3.630	.596	3.342	3.721	.515	.065	.818
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.291	.163	.742	.188	.156	.773	.968	.664

b. Grouping Variable: Q5_Class

Table B6: Kruskal-Wallis: Q6_Faculty

Ranks			
	Q6_Faculty	N	Mean Rank
Q9_ I selected my current major based on the number of required credits (program cost)	FAAD	44	141.22
	FBAE	94	151.41
	FE	61	149.49
	FH	28	150.66
	FLPS	11	102.14
	FNAS	40	155.56
	FNHS	19	164.39
Q10_ I selected my current major based on the overall program duration (time)	Total	297	
	FAAD	44	142.49
	FBAE	94	153.43
	FE	61	137.73
	FH	28	171.75
	FLPS	11	111.50
	FNAS	40	160.45
Q11_ Fees per credit at NDU are reasonable (value received)	FNHS	19	142.45
	Total	297	
	FAAD	44	126.10
	FBAE	94	154.91
	FE	61	160.98
	FH	28	143.96
	FLPS	11	132.86
FNAS	40	155.41	

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	FNHS	19	137.58
	Total	297	
	FAAD	44	130.94
	FBAE	94	149.17
	FE	61	141.87
Q12_ NDU offers diversified programs and specializations	FH	28	158.00
	FLPS	11	202.68
	FNAS	40	137.90
	FNHS	19	191.89
	Total	297	
	FAAD	44	144.97
	FBAE	94	152.62
	FE	61	130.31
Q13_ Instructors have solid knowledge of their respective field	FH	28	158.32
	FLPS	11	166.41
	FNAS	40	139.74
	FNHS	19	196.13
	Total	297	
	FAAD	44	133.66
	FBAE	94	168.35
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	FE	61	137.13
	FH	28	125.36
	FLPS	11	107.05
	FNAS	40	146.45
	FNHS	19	191.42
	Total	297	
	FAAD	44	132.20
	FBAE	94	137.86
Q15_ The number of students per class is convenient for an interactive learning environment	FE	61	142.38
	FH	28	155.43
	FLPS	11	192.68
	FNAS	40	165.85
	FNHS	19	194.05
	Total	297	
	FAAD	44	157.06
	FBAE	94	152.72
Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	FE	61	110.62
	FH	28	132.05
	FLPS	11	145.91
	FNAS	40	172.51
	FNHS	19	212.39
	Total	297	
Q17_ Academic	FAAD	44	145.86

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events/programs (exchange	FBAE	94	146.09
programs, international	FE	61	137.70
competitions, MUN, etc...)	FH	28	149.32
offered at NDU provides	FLPS	11	167.91
broader general knowledge	FNAS	40	155.73
& enhanced interest in	FNHS	19	181.37
global issues	Total	297	
	FAAD	44	122.11
	FBAE	94	154.32
Q18_ NDU recognizes	FE	61	137.35
students' achievements	FH	28	164.11
(Distinction, Dean's List,	FLPS	11	174.82
academic scholarships,	FNAS	40	151.00
etc...)	FNHS	19	180.89
	Total	297	
	FAAD	44	136.10
	FBAE	94	155.70
Q19_ NDU provides	FE	61	126.70
effective career advising	FH	28	165.70
& mentoring, and	FLPS	11	151.18
opportunities for internships,	FNAS	40	148.13
placement etc...	FNHS	19	193.29
	Total	297	
	FAAD	44	137.07
	FBAE	94	143.10
Q20_ NDU offers	FE	61	145.57
appropriate financial aid	FH	28	154.79
services (work study and	FLPS	11	176.14
sibling grants, etc...)	FNAS	40	164.49
	FNHS	19	160.03
	Total	297	
	FAAD	44	151.15
	FBAE	94	154.27
Q21_ NDU provides good	FE	61	137.48
medical services (access,	FH	28	131.16
availability, coverage,	FLPS	11	145.18
utilization, ...)	FNAS	40	135.95
	FNHS	19	210.95
	Total	297	
Q22_ NDU operates an	FAAD	44	137.99
excellent counselling service	FBAE	94	150.00
(Psychological &	FE	61	142.62
spiritual support, etc...	FH	28	136.70

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	FLPS	11	165.41
	FNAS	40	149.21
	FNHS	19	198.21
	Total	297	
	FAAD	44	168.89
	FBAE	94	140.53
Q23_ Library has sufficient	FE	61	146.24
and up-to-date forms of	FH	28	133.43
resources (articles, journals,	FLPS	11	157.82
books, ...)	FNAS	40	130.93
	FNHS	19	209.63
	Total	297	
	FAAD	44	127.35
	FBAE	94	146.33
	FE	61	149.43
Q24_ Wi-Fi service at NDU	FH	28	162.00
is reliable	FLPS	11	137.73
	FNAS	40	167.78
	FNHS	19	158.82
	Total	297	
	FAAD	44	126.85
	FBAE	94	157.09
Q25_Physical activities	FE	61	149.31
contribute to a better	FH	28	157.61
education at NDU (sports	FLPS	11	144.95
teams, athletic competitions,	FNAS	40	154.53
etc...)	FNHS	19	137.32
	Total	297	
	FAAD	44	137.81
Q26_NDU encourages me	FBAE	94	150.89
to engage in social activities	FE	61	153.11
(leisure, religious and	FH	28	136.84
spiritual life, community	FLPS	11	155.55
service and awareness,	FNAS	40	142.28
etc...)	FNHS	19	180.66
	Total	297	
	FAAD	44	144.77
Q27_Admin staff show	FBAE	94	148.27
professional attitude	FE	61	137.88
(respect, confidentiality,	FH	28	151.21
solving problems, dealing	FLPS	11	139.00
with complaints, error free	FNAS	40	161.86
work, etc...)	FNHS	19	173.58

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	Total	297	
	FAAD	44	151.34
	FBAE	94	143.09
	FE	61	136.39
Q28_ NDU process	FH	28	136.64
students' requests within	FLPS	11	157.41
reasonable time frame	FNAS	40	173.15
	FNHS	19	175.84
	Total	297	
	FAAD	44	153.23
	FBAE	94	143.31
Q29_ Administrative offices'	FE	61	145.68
operating hours are	FH	28	136.64
compatible for students to	FLPS	11	166.55
submit a specific request	FNAS	40	162.21
	FNHS	19	158.24
	Total	297	
	FAAD	44	147.70
	FBAE	94	155.16
Q30_ NDU has clear and	FE	61	138.55
standardized procedures	FH	28	147.41
(admission, registration,	FLPS	11	156.32
request for documents,	FNAS	40	154.59
payments, etc..)	FNHS	19	141.39
	Total	297	
	FAAD	44	134.49
	FBAE	94	148.80
Q31_ NDU has automated	FE	61	150.66
systems and processes to	FH	28	141.18
provide prompt and efficient	FLPS	11	151.55
services	FNAS	40	138.30
	FNHS	19	210.87
	Total	297	
Q32_ NDU effectively uses	FAAD	44	138.03
and updates various	FBAE	94	147.19
channels to communicate	FE	61	153.25
with students (website,	FH	28	145.79
email, Blackboard,	FLPS	11	172.36
telephone, social media	FNAS	40	139.80
platforms, mobile apps,	FNHS	19	180.29
etc...)	Total	297	
Q33_ Classrooms are	FAAD	44	150.97
modern and well equipped	FBAE	94	142.43

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(PC, internet, active boards, FE	61	139.61
LCD projectors, etc...)	FH	28
	FLPS	11
	FNAS	40
	FNHS	19
	Total	297
	FAAD	44
	FBAE	94
Q34_ NDU provides	FE	61
adequate services for	FH	28
students with physical	FLPS	11
disabilities	FNAS	40
	FNHS	19
	Total	297
	FAAD	44
	FBAE	94
Q35_ NDU has a well-	FE	61
equipped gym and athletic	FH	28
courts	FLPS	11
	FNAS	40
	FNHS	19
	Total	297
	FAAD	44
	FBAE	94
Q36_ The bookshop on	FE	61
Campus provides adequate	FH	28
services	FLPS	11
	FNAS	40
	FNHS	19
	Total	297
	FAAD	44
	FBAE	94
Q37_ The NDU cafeterias	FE	61
are convenient to eat in	FH	28
(variety of menu, furniture,	FLPS	11
hygiene, prices, etc...)	FNAS	40
	FNHS	19
	Total	297
Q38_ Students courts,	FAAD	44
landscaping, green areas	FBAE	94
create an appropriate	FE	61
environment to my	FH	28
education at NDU	FLPS	11

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	FNAS	40	168.31
	FNHS	19	175.45
	Total	297	
	FAAD	44	151.49
	FBAE	94	153.05
	FE	61	134.12
Q39_Overall, I consider my	FH	28	131.48
education at NDU very	FLPS	11	163.73
enriching and fulfilling	FNAS	40	149.63
	FNHS	19	186.95
	Total	297	
	FAAD	44	141.32
	FBAE	94	150.80
	FE	61	140.09
Q40_Overall, I am happy	FH	28	129.04
with the environment at	FLPS	11	182.05
NDU	FNAS	40	155.49
	FNHS	19	183.13
	Total	297	
	FAAD	44	127.18
	FBAE	94	152.06
	FE	61	138.41
Q41_Overall, I feel	FH	28	151.30
motivated and enthusiastic	FLPS	11	183.09
about coming to NDU	FNAS	40	161.09
	FNHS	19	169.82
	Total	297	
	FAAD	44	131.52
	FBAE	94	152.01
	FE	61	131.32
Q42_Overall, I am satisfied	FH	28	153.25
with the services available	FLPS	11	174.95
at NDU	FNAS	40	158.50
	FNHS	19	190.05
	Total	297	
	FAAD	44	124.32
	FBAE	94	157.61
	FE	61	132.71
Q43_ I am satisfied with my	FH	28	143.96
overall experience at NDU	FLPS	11	173.14
	FNAS	40	163.25
	FNHS	19	179.32
	Total	297	

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	FAAD	44	129.94
	FBAE	94	151.64
	FE	61	135.54
Q44_ I would recommend	FH	28	149.91
NDU to others	FLPS	11	163.59
	FNAS	40	165.53
	FNHS	19	178.71
	Total	297	
	FAAD	44	147.78
	FBAE	94	147.92
Q45_ I would consider	FE	61	120.75
returning to NDU to pursue	FH	28	138.46
graduate studies/second	FLPS	11	168.59
degree	FNAS	40	161.04
	FNHS	19	226.68
	Total	297	
	FAAD	44	120.97
	FBAE	94	147.07
	FE	61	147.38
Q46_ I intend to become an	FH	28	147.63
active alumna/alumnus	FLPS	11	165.45
	FNAS	40	171.65
	FNHS	19	173.50
	Total	297	
	FAAD	44	130.80
	FBAE	94	150.63
	FE	61	143.34
Q47_ I defend NDU against	FH	28	156.59
rumors/critics	FLPS	11	157.59
	FNAS	40	163.84
	FNHS	19	153.89
	Total	297	
	FAAD	44	129.75
	FBAE	94	147.66
	FE	61	146.75
Q48_ I talk positively about	FH	28	147.29
NDU in the society	FLPS	11	174.73
	FNAS	40	162.18
	FNHS	19	167.29
	Total	297	

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	Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...
Chi-Square	5.012	6.744	5.984	13.807	11.438	18.777	15.025	28.334
df	6	6	6	6	6	6	6	6
Asymp. Sig.	.542	.345	.425	.032	.076	.005	.020	.000

b. Grouping Variable: Q6_Faculty

	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_ NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q24_ Wi-Fi service at NDU is reliable
Chi-Square	4.974	11.302	12.332	4.450	14.588	8.933	17.306	6.132
df	6	6	6	6	6	6	6	6
Asymp. Sig.	.547	.079	.055	.616	.024	.177	.008	.409

b. Grouping Variable: Q6_Faculty

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	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc...)	Q31_NDU has automated systems and processes to provide prompt and efficient services	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
Chi-Square	4.866	4.616	4.130	8.159	3.119	2.024	13.129	5.402
df	6	6	6	6	6	6	6	6
Asymp. Sig.	.561	.594	.659	.227	.794	.917	.041	.493

b. Grouping Variable: Q6_Faculty

	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookshop on Campus provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling	Q40_Overall, I am happy with the environment at NDU
Chi-Square	4.134	8.445	4.550	11.576	10.678	7.814	8.399	8.230
df	6	6	6	6	6	6	6	6
Asymp. Sig.	.659	.207	.603	.072	.099	.252	.210	.222

b. Grouping Variable: Q6_Faculty

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chi-Square	Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	Q42_ Overall, I am satisfied with the services available at NDU	Q43_ I am satisfied with my overall experience at NDU	Q44_ I would recommend NDU to others	Q45_ I would consider returning to NDU to pursue graduate studies/second degree	Q46_ I intend to become an active alumna/alumnus	Q47_ I defend NDU against rumors/critics	Q48_ I talk positively about NDU in the society
Chi-Square	8.299	11.429	12.513	8.992	24.736	9.906	4.270	5.808
df	6	6	6	6	6	6	6	6
Asymp. Sig.	.217	.076	.051	.174	.000	.129	.640	.445

b. Grouping Variable: Q6_Faculty

Table B7: Kruskal-Wallis: Q7_Your tuition fees are mainly financed through

		Ranks	
		Q7_Your tuition fees are mainly financed through:	Mean Rank
Q9_ I selected my current major based on the number of required credits (program cost)	Sponsorship (Government, institution, ..)	9	198.89
	Family	167	149.17
	Job	38	152.99
	Loan	7	177.86
	Scholarship/Financial Aid	75	135.95
Total		296	
Q10_ I selected my current major based on the overall program duration (time)	Sponsorship (Government, institution, ..)	9	212.50
	Family	167	144.58
	Job	38	147.34
	Loan	7	134.43
	Scholarship/Financial Aid	75	151.45
Total		296	
Q11_ Fees per credit at NDU are reasonable (value received)	Sponsorship (Government, institution, ..)	9	200.22
	Family	167	138.74
	Job	38	145.22
	Loan	7	79.50
	Scholarship/Financial Aid	75	172.13

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	Total	296	
	Sponsorship (Government, institution, ..)	9	176.72
	Family	167	141.05
Q12_ NDU offers diversified programs and specializations	Job	38	148.88
	Loan	7	168.93
	Scholarship/Financial Aid	75	159.59
	Total	296	
	Sponsorship (Government, institution, ..)	9	154.44
	Family	167	142.92
Q13_ Instructors have solid knowledge of their respective field	Job	38	133.09
	Loan	7	141.64
	Scholarship/Financial Aid	75	168.67
	Total	296	
	Sponsorship (Government, institution, ..)	9	167.06
	Family	167	140.99
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Job	38	135.76
	Loan	7	174.93
	Scholarship/Financial Aid	75	166.99
	Total	296	
	Sponsorship (Government, institution, ..)	9	176.06
	Family	167	138.97
Q15_ The number of students per class is convenient for an interactive learning environment	Job	38	140.03
	Loan	7	145.79
	Scholarship/Financial Aid	75	170.96
	Total	296	
	Sponsorship (Government, institution, ..)	9	185.78
	Family	167	144.26
Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	Job	38	122.26
	Loan	7	143.43
	Scholarship/Financial Aid	75	167.23
	Total	296	
	Sponsorship (Government, institution, ..)	9	154.44
	Family	167	142.98
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Job	38	142.09
	Loan	7	145.71
	Scholarship/Financial Aid	75	163.59
	Total	296	

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	Sponsorship (Government, institution, ..)	9	128.50
Q18_ NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Family	167	141.06
	Job	38	149.24
	Loan	7	102.21
	Scholarship/Financial Aid	75	171.41
	Total	296	
	Sponsorship (Government, institution, ..)	9	139.94
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	Family	167	148.14
	Job	38	133.22
	Loan	7	153.21
	Scholarship/Financial Aid	75	157.63
	Total	296	
	Sponsorship (Government, institution, ..)	9	178.28
Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Family	167	134.10
	Job	38	145.76
	Loan	7	79.07
	Scholarship/Financial Aid	75	184.87
	Total	296	
	Sponsorship (Government, institution, ..)	9	137.50
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	Family	167	139.10
	Job	38	174.17
	Loan	7	145.57
	Scholarship/Financial Aid	75	158.02
	Total	296	
	Sponsorship (Government, institution, ..)	9	180.28
Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Family	167	139.43
	Job	38	159.93
	Loan	7	149.64
	Scholarship/Financial Aid	75	158.97
	Total	296	
	Sponsorship (Government, institution, ..)	9	149.06
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Family	167	146.51
	Job	38	154.20
	Loan	7	133.14
	Scholarship/Financial Aid	75	151.41
	Total	296	

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	Sponsorship (Government, institution, ..)	9	146.39
Q24_ Wi-Fi service at NDU is reliable	Family	167	145.11
	Job	38	130.75
	Loan	7	147.43
	Scholarship/Financial Aid	75	165.39
	Total	296	
	Sponsorship (Government, institution, ..)	9	83.00
Q25_ Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Family	167	148.28
	Job	38	142.71
	Loan	7	146.93
	Scholarship/Financial Aid	75	159.92
	Total	296	
	Sponsorship (Government, institution, ..)	9	121.22
Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Family	167	141.01
	Job	38	166.34
	Loan	7	167.07
	Scholarship/Financial Aid	75	157.68
	Total	296	
	Sponsorship (Government, institution, ..)	9	208.33
Q27_ Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Family	167	147.64
	Job	38	119.01
	Loan	7	115.86
	Scholarship/Financial Aid	75	161.23
	Total	296	
	Sponsorship (Government, institution, ..)	9	183.33
Q28_ NDU process students' requests within reasonable time frame	Family	167	141.31
	Job	38	160.72
	Loan	7	134.07
	Scholarship/Financial Aid	75	155.49
	Total	296	
	Sponsorship (Government, institution, ..)	9	173.50
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Family	167	137.31
	Job	38	152.11
	Loan	7	133.07
	Scholarship/Financial Aid	75	170.02
	Total	296	

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	Sponsorship (Government, institution, ..)	9	172.06
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Family	167	138.12
	Job	38	156.75
	Loan	7	151.21
	Scholarship/Financial Aid	75	164.35
	Total	296	
	Sponsorship (Government, institution, ..)	9	193.61
Q31_ NDU has automated systems and processes to provide prompt and efficient services	Family	167	142.22
	Job	38	142.21
	Loan	7	140.64
	Scholarship/Financial Aid	75	160.98
	Total	296	
	Sponsorship (Government, institution, ..)	9	178.11
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Family	167	138.79
	Job	38	128.24
	Loan	7	148.14
	Scholarship/Financial Aid	75	176.87
	Total	296	
	Sponsorship (Government, institution, ..)	9	136.28
Q33_ Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Family	167	148.07
	Job	38	132.39
	Loan	7	140.29
	Scholarship/Financial Aid	75	159.85
	Total	296	
	Sponsorship (Government, institution, ..)	9	172.56
Q34_ NDU provides adequate services for students with physical disabilities	Family	167	153.49
	Job	38	125.08
	Loan	7	118.00
	Scholarship/Financial Aid	75	149.21
	Total	296	
	Sponsorship (Government, institution, ..)	9	103.17
Q35_ NDU has a well-equipped gym and athletic courts	Family	167	147.23
	Job	38	149.32
	Loan	7	186.93
	Scholarship/Financial Aid	75	152.77
	Total	296	

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	Sponsorship (Government, institution, ..)	9	122.17
Q36_ The bookshop on Campus provides adequate services	Family	167	150.98
	Job	38	137.04
	Loan	7	147.57
	Scholarship/Financial Aid	75	152.04
	Total	296	
	Sponsorship (Government, institution, ..)	9	135.22
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Family	167	144.89
	Job	38	156.93
	Loan	7	156.14
	Scholarship/Financial Aid	75	153.14
	Total	296	
	Sponsorship (Government, institution, ..)	9	138.39
Q38_ Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Family	167	145.71
	Job	38	133.42
	Loan	7	157.57
	Scholarship/Financial Aid	75	162.72
	Total	296	
	Sponsorship (Government, institution, ..)	9	157.61
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	Family	167	149.09
	Job	38	119.75
	Loan	7	127.07
	Scholarship/Financial Aid	75	162.65
	Total	296	
	Sponsorship (Government, institution, ..)	9	171.39
Q40_ Overall, I am happy with the environment at NDU	Family	167	143.97
	Job	38	128.75
	Loan	7	126.86
	Scholarship/Financial Aid	75	167.87
	Total	296	
	Sponsorship (Government, institution, ..)	9	159.39
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	Family	167	145.84
	Job	38	126.33
	Loan	7	120.79
	Scholarship/Financial Aid	75	166.93
	Total	296	

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	Sponsorship (Government, institution, ..)	9	164.06
Q42_Overall, I am satisfied with the services available at NDU	Family	167	143.10
	Job	38	139.96
	Loan	7	118.93
	Scholarship/Financial Aid	75	165.73
	Total	296	
	Sponsorship (Government, institution, ..)	9	154.94
Q43_ I am satisfied with my overall experience at NDU	Family	167	145.30
	Job	38	132.86
	Loan	7	125.50
	Scholarship/Financial Aid	75	164.92
	Total	296	
	Sponsorship (Government, institution, ..)	9	179.61
Q44_ I would recommend NDU to others	Family	167	144.07
	Job	38	138.29
	Loan	7	105.21
	Scholarship/Financial Aid	75	163.83
	Total	296	
	Sponsorship (Government, institution, ..)	9	196.33
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	Family	167	132.18
	Job	38	168.04
	Loan	7	161.86
	Scholarship/Financial Aid	75	167.95
	Total	296	
	Sponsorship (Government, institution, ..)	9	145.44
Q46_ I intend to become an active alumna/alumnus	Family	167	134.20
	Job	38	163.32
	Loan	7	148.79
	Scholarship/Financial Aid	75	173.17
	Total	296	
	Sponsorship (Government, institution, ..)	9	158.78
Q47_ I defend NDU against rumors/critics	Family	167	140.51
	Job	38	129.51
	Loan	7	115.64
	Scholarship/Financial Aid	75	177.73
	Total	296	

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Q48_ I talk positively about NDU in the society	Sponsorship (Government, institution, ..)	9	182.00
	Family	167	141.43
	Job	38	129.36
	Loan	7	96.79
	Scholarship/Financial Aid	75	174.75
	Total	296	

	Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...
Chi-Square	6.229	5.941	16.268	4.354	7.006	7.523	9.591	9.689
df	4	4	4	4	4	4	4	4
Asymp. Sig.	.183	.204	.003	.360	.136	.111	.048	.046

b. Grouping Variable: Q7_ Your tuition fees are mainly financed through:

	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_ NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placements etc...	Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q24_ Wi-Fi service at NDU is reliable
Chi-Square	3.486	10.077	2.276	25.253	7.031	5.301	.632	5.027
df	4	4	4	4	4	4	4	4
Asymp. Sig.	.480	.039	.685	.000	.134	.258	.959	.285

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b. Grouping Variable: Q7_Your tuition fees are mainly financed through:

	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc...)	Q31_NDU has automated systems and processes to provide prompt and efficient services	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
Chi-Square	7.206	5.301	12.738	4.505	9.580	6.796	5.751	15.471
df	4	4	4	4	4	4	4	4
Asymp. Sig.	.125	.258	.013	.342	.048	.147	.219	.004

b. Grouping Variable: Q7_Your tuition fees are mainly financed through:

	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookshop on Campus provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling	Q40_Overall, I am happy with the environment at NDU
Chi-Square	3.315	5.522	4.301	1.920	1.235	4.008	7.939	8.237
df	4	4	4	4	4	4	4	4
Asymp. Sig.	.507	.238	.367	.750	.872	.405	.094	.083

b. Grouping Variable: Q7_Your tuition fees are mainly financed through:

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	Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	Q42_ Overall, I am satisfied with the services available at NDU	Q43_ I am satisfied with my overall experience at NDU	Q44_ I would recommend NDU to others	Q45_ I would consider returning to NDU to pursue graduate studies/second degree	Q46_ I intend to become an active alumna/alumnus	Q47_ I defend NDU against rumors/critics	Q48_ I talk positively about NDU in the society
Chi-Square	7.775	5.711	5.377	7.330	15.402	12.559	14.628	16.044
df	4	4	4	4	4	4	4	4
Asymp. Sig.	.100	.222	.251	.119	.004	.014	.006	.003

b. Grouping Variable: Q7_ Your tuition fees are mainly financed through:

Table B8: Mann-Whitney: Q8_Housing

Ranks					
	Q8 Housing	Housing	N	Mean Rank	Sum of Ranks
Q9_ I selected my current major based on the number of required credits (program cost)	On-Campus		22	129.55	2850.00
	Off-Campus (Outside NDU)		274	150.02	41106.00
	Total		296		
Q10_ I selected my current major based on the overall program duration (time)	On-Campus		22	129.18	2842.00
	Off-Campus (Outside NDU)		274	150.05	41114.00
	Total		296		
Q11_ Fees per credit at NDU are reasonable (value received)	On-Campus		22	171.59	3775.00
	Off-Campus (Outside NDU)		274	146.65	40181.00
	Total		296		
Q12_ NDU offers diversified programs and specializations	On-Campus		22	151.57	3334.50
	Off-Campus (Outside NDU)		274	148.25	40621.50
	Total		296		
Q13_ Instructors have solid knowledge of their respective field	On-Campus		22	155.55	3422.00
	Off-Campus (Outside NDU)		274	147.93	40534.00
	Total		296		
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	On-Campus		22	145.50	3201.00
	Off-Campus (Outside NDU)		274	148.74	40755.00
	Total		296		
Q15_ The number of students per class is	On-Campus		22	169.27	3724.00
	Off-Campus (Outside NDU)		274	146.83	40232.00

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

convenient for an interactive learning environment	Total	296		
Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	On-Campus	22	171.34	3769.50
	Off-Campus (Outside NDU)	274	146.67	40186.50
	Total	296		
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...)	On-Campus	22	189.84	4176.50
	Off-Campus (Outside NDU)	274	145.18	39779.50
	Total	296		
offered at NDU provides broader general knowledge & enhanced interest in global issues				
Q18_ NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	On-Campus	22	142.61	3137.50
	Off-Campus (Outside NDU)	274	148.97	40818.50
	Total	296		
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	On-Campus	22	159.50	3509.00
	Off-Campus (Outside NDU)	274	147.62	40447.00
	Total	296		
Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	On-Campus	22	142.77	3141.00
	Off-Campus (Outside NDU)	274	148.96	40815.00
	Total	296		
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	On-Campus	22	135.09	2972.00
	Off-Campus (Outside NDU)	274	149.58	40984.00
	Total	296		
Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	On-Campus	22	161.84	3560.50
	Off-Campus (Outside NDU)	274	147.43	40395.50
	Total	296		
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	On-Campus	22	175.16	3853.50
	Off-Campus (Outside NDU)	274	146.36	40102.50
	Total	296		
Q24_ Wi-Fi service at NDU is reliable	On-Campus	22	186.57	4104.50
	Off-Campus (Outside NDU)	274	145.44	39851.50

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	Total	296		
Q25_ Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	On-Campus	22	148.98	3277.50
	Off-Campus (Outside NDU)	274	148.46	40678.50
	Total	296		
Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	On-Campus	22	131.50	2893.00
	Off-Campus (Outside NDU)	274	149.86	41063.00
	Total	296		
Q27_ Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	On-Campus	22	162.25	3569.50
	Off-Campus (Outside NDU)	274	147.40	40386.50
	Total	296		
Q28_ NDU process students' requests within reasonable time frame	On-Campus	22	136.68	3007.00
	Off-Campus (Outside NDU)	274	149.45	40949.00
	Total	296		
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	On-Campus	22	149.30	3284.50
	Off-Campus (Outside NDU)	274	148.44	40671.50
	Total	296		
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	On-Campus	22	135.41	2979.00
	Off-Campus (Outside NDU)	274	149.55	40977.00
	Total	296		
Q31_ NDU has automated systems and processes to provide prompt and efficient services	On-Campus	22	141.98	3123.50
	Off-Campus (Outside NDU)	274	149.02	40832.50
	Total	296		
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	On-Campus	22	153.43	3375.50
	Off-Campus (Outside NDU)	274	148.10	40580.50
	Total	296		
Q33_ Classrooms are	On-Campus	22	142.14	3127.00

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modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Off-Campus (Outside NDU)	274	149.01	40829.00
	Total	296		
Q34_ NDU provides adequate services for students with physical disabilities	On-Campus	22	161.32	3549.00
	Off-Campus (Outside NDU)	274	147.47	40407.00
	Total	296		
Q35_ NDU has a well-equipped gym and athletic courts	On-Campus	22	146.66	3226.50
	Off-Campus (Outside NDU)	274	148.65	40729.50
	Total	296		
Q36_ The bookshop on Campus provides adequate services	On-Campus	22	172.32	3791.00
	Off-Campus (Outside NDU)	274	146.59	40165.00
	Total	296		
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	On-Campus	22	159.82	3516.00
	Off-Campus (Outside NDU)	274	147.59	40440.00
	Total	296		
Q38_ Students courts, landscaping, green areas create an appropriate environment to my education at NDU	On-Campus	22	161.50	3553.00
	Off-Campus (Outside NDU)	274	147.46	40403.00
	Total	296		
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	On-Campus	22	175.70	3865.50
	Off-Campus (Outside NDU)	274	146.32	40090.50
	Total	296		
Q40_ Overall, I am happy with the environment at NDU	On-Campus	22	171.77	3779.00
	Off-Campus (Outside NDU)	274	146.63	40177.00
	Total	296		
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	On-Campus	22	183.45	4036.00
	Off-Campus (Outside NDU)	274	145.69	39920.00
	Total	296		
Q42_ Overall, I am satisfied with the services available at NDU	On-Campus	22	187.27	4120.00
	Off-Campus (Outside NDU)	274	145.39	39836.00
	Total	296		
Q43_ I am satisfied with my overall experience at NDU	On-Campus	22	182.66	4018.50
	Off-Campus (Outside NDU)	274	145.76	39937.50
	Total	296		
Q44_ I would recommend NDU to others	On-Campus	22	186.45	4102.00
	Off-Campus (Outside NDU)	274	145.45	39854.00
	Total	296		
Q45_ I would consider returning to NDU to pursue	On-Campus	22	169.18	3722.00
	Off-Campus (Outside NDU)	274	146.84	40234.00

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graduate studies/second degree	Total	296		
Q46_ I intend to become an active alumna/alumnus	On-Campus	22	181.39	3990.50
	Off-Campus (Outside NDU)	274	145.86	39965.50
	Total	296		
Q47_ I defend NDU against rumors/critics	On-Campus	22	158.70	3491.50
	Off-Campus (Outside NDU)	274	147.68	40464.50
	Total	296		
Q48_ I talk positively about NDU in the society	On-Campus	22	166.91	3672.00
	Off-Campus (Outside NDU)	274	147.02	40284.00
	Total	296		

	Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment	Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...
Mann-Whitney U	2597.000	2589.000	2506.000	2946.500	2859.000	2948.000	2557.000	2511.500
Wilcoxon W	2850.000	2842.000	40181.000	40621.500	40534.000	3201.000	40232.000	40186.500
Z	-1.131	-1.126	-1.335	-.185	-.426	-.181	-1.253	-1.328
Asymp. Sig. (2-tailed)	.258	.260	.182	.853	.670	.857	.210	.184

a. Grouping Variable: Q8_Housing

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	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q18_NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	Q19_NDU provides effective career advising & mentoring, and opportunities for internships, placements, etc...	Q20_NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q24_Wi-Fi service at NDU is reliable
Mann-Whitney U	2104.500	2884.500	2772.000	2888.000	2719.000	2720.500	2427.500	2176.500
Wilcoxon W	39779.500	3137.500	40447.000	3141.000	2972.000	40395.500	40102.500	39851.500
Z	-2.422	-.351	-.640	-.335	-.794	-.789	-1.599	-2.214
Asymp. Sig. (2-tailed)	.015	.725	.522	.738	.427	.430	.110	.027

a. Grouping Variable: Q8_Housing

	Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	Q28_NDU process students' requests within reasonable time frame	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc...)	Q31_NDU has automated systems and processes to provide prompt and efficient services	Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)
Mann-Whitney U	3003.500	2640.000	2711.500	2754.000	2996.500	2726.000	2870.500	2905.500
Wilcoxon W	40678.500	2893.000	40386.500	3007.000	40671.500	2979.000	3123.500	40580.500
Z	-.028	-.993	-.821	-.702	-.048	-.789	-.389	-.300

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATISFACTION & LOYALTY

Asymp. Sig. (2-tailed)	.978	.321	.412	.482	.962	.430	.697	.764
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a. Grouping Variable: Q8_Housing

	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	Q34_NDU provides adequate services for students with physical disabilities	Q35_NDU has a well-equipped gym and athletic courts	Q36_The bookshop on Campus provides adequate services	Q37_The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	Q39_Overall, I consider my education at NDU very enriching and fulfilling	Q40_Overall, I am happy with the environment at NDU
Mann-Whitney U	2874.000	2732.000	2973.500	2490.000	2765.000	2728.000	2415.500	2502.000
Wilcoxon W	3127.000	40407.000	3226.500	40165.000	40440.000	40403.000	40090.500	40177.000
Z	-.387	-.766	-.107	-1.401	-.666	-.779	-1.666	-1.396
Asymp. Sig. (2-tailed)	.699	.444	.915	.161	.506	.436	.096	.163

a. Grouping Variable: Q8_Housing

	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Q42_Overall, I am satisfied with the services available at NDU	Q43_I am satisfied with my overall experience at NDU	Q44_I would recommend NDU to others	Q45_I would consider returning to NDU to pursue graduate studies/second degree	Q46_I intend to become an active alumna/alumnus	Q47_I defend NDU against rumors/critics	Q48_I talk positively about NDU in the society
Mann-Whitney U	2245.000	2161.000	2262.500	2179.000	2559.000	2290.500	2789.500	2609.000
Wilcoxon W	39920.000	39836.000	39937.500	39854.000	40234.000	39965.500	40464.500	40284.000
Z	-2.087	-2.311	-2.057	-2.318	-1.197	-1.913	-.611	-1.121
Asymp. Sig. (2-tailed)	.037	.021	.040	.020	.231	.056	.541	.262

a. Grouping Variable: Q8_Housing

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Appendix C: Factor Analysis

Table C1: Reliability Test

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q9_ I selected my current major based on the number of required credits (program cost)	202.34	960.035	.030	.564	.942
Q10_ I selected my current major based on the overall program duration (time)	201.87	952.691	.091	.573	.942
Q11_ Fees per credit at NDU are reasonable (value received)	200.96	921.715	.419	.424	.938
Q12_ NDU offers diversified programs and specializations	199.39	920.292	.584	.552	.937
Q13_ Instructors have solid knowledge of their respective field	199.03	922.580	.601	.575	.937
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	199.12	925.131	.519	.519	.937
Q15_ The number of students per class is convenient for an interactive learning environment	199.14	939.716	.350	.288	.939
Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	199.82	918.192	.393	.310	.939

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Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	199.90	921.021	.519	.487	.937
Q18_NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	199.14	924.009	.512	.459	.938
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	200.28	906.439	.578	.464	.937
Q20_NDU offers appropriate financial aid services (work study and sibling grants, etc...)	199.85	912.426	.535	.502	.937
Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	199.97	918.593	.558	.504	.937
Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	200.20	914.736	.594	.518	.937
Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	199.17	933.708	.449	.424	.938
Q24_ Wi-Fi service at NDU is reliable	200.04	916.191	.422	.288	.939
Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	199.83	923.758	.501	.442	.938

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	200.15	915.264	.546	.464	.937
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	199.65	907.965	.633	.547	.936
Q28_NDU process students' requests within reasonable time frame	199.72	914.391	.601	.555	.937
Q29_Administrative offices' operating hours are compatible for students to submit a specific request	199.57	925.719	.459	.560	.938
Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	199.37	916.619	.565	.623	.937
Q31_NDU has automated systems and processes to provide prompt and efficient services	199.64	914.379	.622	.581	.937
Q32_NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	198.92	934.754	.458	.438	.938
Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	199.10	929.521	.483	.442	.938

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q34_ NDU provides adequate services for students with physical disabilities	199.39	936.184	.367	.309	.939
Q35_ NDU has a well-equipped gym and athletic courts	200.56	925.836	.365	.477	.939
Q36_ The bookshop on Campus provides adequate services	199.72	920.594	.515	.545	.937
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	199.87	915.513	.476	.421	.938
Q38_ Students courts, landscaping, green areas create an appropriate environment to my education at NDU	199.07	921.724	.571	.531	.937
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	199.09	915.114	.716	.729	.936
Q40_ Overall, I am happy with the environment at NDU	199.10	910.041	.736	.798	.936
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	199.20	902.881	.751	.813	.936
Q42_ Overall, I am satisfied with the services available at NDU	199.34	903.462	.782	.773	.935
Q43_ I am satisfied with my overall experience at NDU	199.07	912.019	.729	.822	.936
Q44_ I would recommend NDU to others	199.03	908.151	.721	.778	.936
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	200.09	896.552	.597	.581	.937
Q46_ I intend to become an active alumna/alumnus	200.10	916.155	.484	.443	.938
Q47_ I defend NDU against rumors/critics	199.01	912.209	.607	.709	.937

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q48_ I talk positively about NDU in the society	198.84	912.782	.710	.825	.936
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Table C2: Descriptives

Descriptives		Statistic	Std. Error
Q9_ I selected my current major based on the number of required credits (program cost)	Mean	2.47	.101
	90% Confidence Interval for Mean	Lower Bound	2.31
		Upper Bound	2.64
	5% Trimmed Mean	2.33	
	Median	2.00	
	Variance	3.000	
	Std. Deviation	1.732	
	Minimum	1	
	Maximum	7	
	Range	6	
	Interquartile Range	3	
	Skewness	1.003	.141
	Kurtosis	-.191	.282
	Mean	2.95	.106
Q10_ I selected my current major based on the overall program duration (time)	90% Confidence Interval for Mean	Lower Bound	2.77
		Upper Bound	3.12
	5% Trimmed Mean	2.85	
	Median	2.00	
	Variance	3.328	
	Std. Deviation	1.824	
	Minimum	1	
	Maximum	7	
	Range	6	
	Interquartile Range	4	
	Skewness	.578	.141
	Kurtosis	-.934	.282
	Mean	3.85	.095
	Q11_ Fees per credit at NDU are reasonable (value received)	90% Confidence Interval for Mean	Lower Bound
		Upper Bound	4.01
5% Trimmed Mean		3.84	
Median		4.00	
Variance		2.708	
Std. Deviation		1.646	

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	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-.068	.141
	Kurtosis		-.835	.282
	Mean		5.42	.073
	90% Confidence Interval for	Lower Bound	5.30	
	Mean	Upper Bound	5.54	
	5% Trimmed Mean		5.52	
	Median		6.00	
Q12_ NDU offers diversified	Variance		1.569	
programs and	Std. Deviation		1.253	
specializations	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.207	.141
	Kurtosis		1.475	.282
	Mean		5.78	.067
	90% Confidence Interval for	Lower Bound	5.67	
	Mean	Upper Bound	5.90	
	5% Trimmed Mean		5.91	
	Median		6.00	
Q13_ Instructors have solid	Variance		1.345	
knowledge of their	Std. Deviation		1.160	
respective field	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-1.560	.141
	Kurtosis		3.270	.282
	Mean		5.69	.073
	90% Confidence Interval for	Lower Bound	5.57	
	Mean	Upper Bound	5.81	
	5% Trimmed Mean		5.83	
Q14_ Instructors uses	Median		6.00	
suitable teaching methods	Variance		1.571	
(ppt, videos, online lectures,	Std. Deviation		1.254	
etc...)	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	

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	Skewness		-1.518	.141
	Kurtosis		2.687	.282
	Mean		5.67	.068
	90% Confidence Interval for	Lower Bound	5.56	
	Mean	Upper Bound	5.78	
	5% Trimmed Mean		5.78	
	Median		6.00	
Q15_ The number of	Variance		1.377	
students per class is	Std. Deviation		1.174	
convenient for an interactive	Minimum		1	
learning environment	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.355	.141
	Kurtosis		2.408	.282
	Mean		4.99	.109
	90% Confidence Interval for	Lower Bound	4.81	
	Mean	Upper Bound	5.17	
	5% Trimmed Mean		5.10	
Q16_ My academic advisor	Median		6.00	
provides continuing	Variance		3.500	
guidance with my major,	Std. Deviation		1.871	
rules, regulations, &	Minimum		1	
opportunities at NDU, etc...	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-.775	.141
	Kurtosis		-.529	.282
	Mean		4.91	.080
	90% Confidence Interval for	Lower Bound	4.78	
	Mean	Upper Bound	5.04	
Q17_ Academic	5% Trimmed Mean		4.97	
events/programs (exchange	Median		5.00	
programs, international	Variance		1.894	
competitions, MUN, etc...)	Std. Deviation		1.376	
offered at NDU provides	Minimum		1	
broader general knowledge	Maximum		7	
& enhanced interest in	Range		6	
global issues	Interquartile Range		2	
	Skewness		-.572	.141
	Kurtosis		.053	.282
Q18_ NDU recognizes	Mean		5.67	.076
students' achievements	90% Confidence Interval for	Lower Bound	5.54	

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(Distinction, Dean's List, academic scholarships, etc...)	Mean	Upper Bound	5.79		
	5% Trimmed Mean		5.80		
	Median		6.00		
	Variance		1.696		
	Std. Deviation		1.302		
	Minimum		1		
	Maximum		7		
	Range		6		
	Interquartile Range		2		
	Skewness		-1.386	.141	
	Kurtosis		2.225	.282	
	Mean		4.53	.095	
	90% Confidence Interval for Mean	Lower Bound	4.37		
		Upper Bound	4.69		
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	5% Trimmed Mean		4.59		
	Median		5.00		
	Variance		2.696		
	Std. Deviation		1.642		
	Minimum		1		
	Maximum		7		
	Range		6		
	Interquartile Range		2		
	Skewness		-5.09	.141	
	Kurtosis		-6.34	.282	
	Mean		4.96	.092	
	90% Confidence Interval for Mean	Lower Bound	4.81		
		Upper Bound	5.12		
	5% Trimmed Mean		5.06		
Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	Median		5.00		
	Variance		2.522		
	Std. Deviation		1.588		
	Minimum		1		
	Maximum		7		
	Range		6		
	Interquartile Range		2		
	Skewness		-.790	.141	
	Kurtosis		-.044	.282	
	Mean		4.85	.079	
	Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	90% Confidence Interval for Mean	Lower Bound	4.72	
			Upper Bound	4.97	
		5% Trimmed Mean		4.92	
		Median		5.00	
Variance			1.834		

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	Std. Deviation		1.354	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-.661	.141
	Kurtosis		.504	.282
	Mean		4.61	.080
	90% Confidence Interval for Mean	Lower Bound	4.48	
		Upper Bound	4.74	
	5% Trimmed Mean		4.66	
	Median		4.00	
Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...	Variance		1.908	
	Std. Deviation		1.381	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-.411	.141
	Kurtosis		.183	.282
	Mean		5.64	.066
	90% Confidence Interval for Mean	Lower Bound	5.53	
		Upper Bound	5.75	
	5% Trimmed Mean		5.73	
	Median		6.00	
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Variance		1.298	
	Std. Deviation		1.139	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.075	.141
	Kurtosis		1.580	.282
	Mean		4.77	.106
	90% Confidence Interval for Mean	Lower Bound	4.60	
		Upper Bound	4.95	
	5% Trimmed Mean		4.86	
Q24_ Wi-Fi service at NDU is reliable	Median		5.00	
	Variance		3.344	
	Std. Deviation		1.829	
	Minimum		1	
	Maximum		7	
	Range		6	

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	Interquartile Range		2	
	Skewness		-.737	.141
	Kurtosis		-.534	.282
	Mean		4.98	.078
	90% Confidence Interval for	Lower Bound	4.86	
	Mean	Upper Bound	5.11	
	5% Trimmed Mean		5.05	
Q25_ Physical activities	Median		5.00	
contribute to a better	Variance		1.787	
education at NDU (sports	Std. Deviation		1.337	
teams, athletic competitions,	Minimum		1	
etc...)	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-.584	.141
	Kurtosis		.153	.282
	Mean		4.66	.086
	90% Confidence Interval for	Lower Bound	4.52	
	Mean	Upper Bound	4.80	
	5% Trimmed Mean		4.71	
Q26_ NDU encourages me	Median		5.00	
to engage in social activities	Variance		2.185	
(leisure, religious and	Std. Deviation		1.478	
spiritual life, community	Minimum		1	
service and awareness,	Maximum		7	
etc...)	Range		6	
	Interquartile Range		2	
	Skewness		-.537	.141
	Kurtosis		-.246	.282
	Mean		5.16	.085
	90% Confidence Interval for	Lower Bound	5.02	
	Mean	Upper Bound	5.30	
	5% Trimmed Mean		5.27	
Q27_ Admin staff show	Median		6.00	
professional attitude	Variance		2.163	
(respect, confidentiality,	Std. Deviation		1.471	
solving problems, dealing	Minimum		1	
with complaints, error free	Maximum		7	
work, etc...)	Range		6	
	Interquartile Range		1	
	Skewness		-1.186	.141
	Kurtosis		.881	.282
Q28_ NDU process	Mean		5.09	.080

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students' requests within reasonable time frame	90% Confidence Interval for	Lower Bound	4.96		
	Mean	Upper Bound	5.22		
	5% Trimmed Mean		5.19		
	Median		5.00		
	Variance		1.887		
	Std. Deviation		1.374		
	Minimum		1		
	Maximum		7		
	Range		6		
	Interquartile Range		2		
	Skewness		-1.110	.141	
	Kurtosis		1.060	.282	
	Mean		5.24	.080	
	90% Confidence Interval for	Lower Bound	5.11		
Mean	Upper Bound	5.37			
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	5% Trimmed Mean		5.35		
	Median		6.00		
	Variance		1.912		
	Std. Deviation		1.383		
	Minimum		1		
	Maximum		7		
	Range		6		
	Interquartile Range		1		
	Skewness		-1.246	.141	
	Kurtosis		1.297	.282	
	Mean		5.44	.081	
	90% Confidence Interval for	Lower Bound	5.31		
	Mean	Upper Bound	5.57		
	5% Trimmed Mean		5.58		
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Median		6.00		
	Variance		1.943		
	Std. Deviation		1.394		
	Minimum		1		
	Maximum		7		
	Range		6		
	Interquartile Range		1		
	Skewness		-1.494	.141	
	Kurtosis		2.116	.282	
	Mean		5.17	.077	
	Q31_ NDU has automated systems and processes to provide prompt and efficient services	90% Confidence Interval for	Lower Bound	5.04	
		Mean	Upper Bound	5.30	
		5% Trimmed Mean		5.27	
		Median		6.00	

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	Variance		1.776	
	Std. Deviation		1.333	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.114	.141
	Kurtosis		1.162	.282
	Mean		5.89	.063
	90% Confidence Interval for	Lower Bound	5.79	
	Mean	Upper Bound	5.99	
	5% Trimmed Mean		6.00	
	Median		6.00	
	Variance		1.173	
	Std. Deviation		1.083	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-1.560	.141
	Kurtosis		3.595	.282
	Mean		5.71	.070
	90% Confidence Interval for	Lower Bound	5.60	
	Mean	Upper Bound	5.83	
	5% Trimmed Mean		5.83	
	Median		6.00	
	Variance		1.435	
	Std. Deviation		1.198	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.475	.141
	Kurtosis		2.491	.282
	Mean		5.42	.073
	90% Confidence Interval for	Lower Bound	5.30	
	Mean	Upper Bound	5.55	
	5% Trimmed Mean		5.51	
	Median		6.00	
	Variance		1.603	
	Std. Deviation		1.266	
	Minimum		1	
	Maximum		7	

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	Range		6	
	Interquartile Range		2	
	Skewness		-.799	.141
	Kurtosis		.251	.282
	Mean		4.26	.098
	90% Confidence Interval for	Lower Bound	4.09	
	Mean	Upper Bound	4.42	
	5% Trimmed Mean		4.28	
	Median		4.00	
Q35_ NDU has a well-	Variance		2.860	
equipped gym and athletic	Std. Deviation		1.691	
courts	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		3	
	Skewness		-.378	.141
	Kurtosis		-.658	.282
	Mean		5.09	.081
	90% Confidence Interval for	Lower Bound	4.96	
	Mean	Upper Bound	5.22	
	5% Trimmed Mean		5.20	
	Median		5.00	
Q36_ The bookshop on	Variance		1.955	
Campus provides adequate	Std. Deviation		1.398	
services	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-1.000	.141
	Kurtosis		1.088	.282
	Mean		4.94	.097
	90% Confidence Interval for	Lower Bound	4.78	
	Mean	Upper Bound	5.10	
	5% Trimmed Mean		5.05	
	Median		5.00	
Q37_ The NDU cafeterias	Variance		2.777	
are convenient to eat in	Std. Deviation		1.666	
(variety of menu, furniture,	Minimum		1	
hygiene, prices, etc...)	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-.923	.141
	Kurtosis		-.041	.282

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	Mean		5.74	.072
	90% Confidence Interval for	Lower Bound	5.62	
	Mean	Upper Bound	5.86	
	5% Trimmed Mean		5.87	
Q38_Students courts,	Median		6.00	
landscaping, green areas	Variance		1.539	
create an appropriate	Std. Deviation		1.241	
environment to my	Minimum		1	
education at NDU	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-1.457	.141
	Kurtosis		2.739	.282
	Mean		5.72	.067
	90% Confidence Interval for	Lower Bound	5.61	
	Mean	Upper Bound	5.83	
	5% Trimmed Mean		5.85	
	Median		6.00	
Q39_Overall, I consider my	Variance		1.322	
education at NDU very	Std. Deviation		1.150	
enriching and fulfilling	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.699	.141
	Kurtosis		4.153	.282
	Mean		5.71	.071
	90% Confidence Interval for	Lower Bound	5.60	
	Mean	Upper Bound	5.83	
	5% Trimmed Mean		5.84	
	Median		6.00	
Q40_Overall, I am happy	Variance		1.516	
with the environment at	Std. Deviation		1.231	
NDU	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-1.485	.141
	Kurtosis		2.878	.282
	Mean		5.62	.079
Q41_Overall, I feel	90% Confidence Interval for	Lower Bound	5.49	
motivated and enthusiastic	Mean	Upper Bound	5.75	
about coming to NDU	5% Trimmed Mean		5.76	

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	Median		6.00	
	Variance		1.859	
	Std. Deviation		1.363	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-1.398	.141
	Kurtosis		2.000	.282
	Mean		5.47	.075
	90% Confidence Interval for	Lower Bound	5.35	
	Mean	Upper Bound	5.60	
	5% Trimmed Mean		5.58	
	Median		6.00	
Q42_Overall, I am satisfied	Variance		1.689	
with the services available	Std. Deviation		1.300	
at NDU	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.261	.141
	Kurtosis		1.817	.282
	Mean		5.74	.070
	90% Confidence Interval for	Lower Bound	5.63	
	Mean	Upper Bound	5.86	
	5% Trimmed Mean		5.87	
	Median		6.00	
Q43_ I am satisfied with my	Variance		1.436	
overall experience at NDU	Std. Deviation		1.198	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-1.564	.141
	Kurtosis		3.376	.282
	Mean		5.78	.075
	90% Confidence Interval for	Lower Bound	5.66	
	Mean	Upper Bound	5.91	
Q44_ I would recommend	5% Trimmed Mean		5.94	
NDU to others	Median		6.00	
	Variance		1.685	
	Std. Deviation		1.298	
	Minimum		1	

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	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.789	.141
	Kurtosis		3.538	.282
	Mean		4.72	.108
	90% Confidence Interval for	Lower Bound	4.54	
	Mean	Upper Bound	4.89	
	5% Trimmed Mean		4.80	
	Median		5.00	
Q45_ I would consider	Variance		3.433	
returning to NDU to pursue	Std. Deviation		1.853	
graduate studies/second	Minimum		1	
degree	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-.514	.141
	Kurtosis		-.734	.282
	Mean		4.71	.094
	90% Confidence Interval for	Lower Bound	4.55	
	Mean	Upper Bound	4.86	
	5% Trimmed Mean		4.77	
	Median		5.00	
	Variance		2.627	
Q46_ I intend to become an	Std. Deviation		1.621	
active alumna/alumnus	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-.462	.141
	Kurtosis		-.477	.282
	Mean		5.80	.082
	90% Confidence Interval for	Lower Bound	5.66	
	Mean	Upper Bound	5.93	
	5% Trimmed Mean		5.97	
	Median		6.00	
Q47_ I defend NDU against	Variance		2.013	
rumors/critics	Std. Deviation		1.419	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		2	
	Skewness		-1.610	.141

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	Kurtosis		2.578	.282
	Mean		5.97	.070
	90% Confidence Interval for Mean	Lower Bound	5.85	
		Upper Bound	6.09	
	5% Trimmed Mean		6.12	
	Median		6.00	
	Variance		1.469	
Q48_ I talk positively about NDU in the society	Std. Deviation		1.212	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		1	
	Skewness		-1.788	.141
	Kurtosis		3.675	.282

Table C3: Tests of Normality

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Q9_ I selected my current major based on the number of required credits (program cost)	.265	297	.000	.804	297	.000
Q10_ I selected my current major based on the overall program duration (time)	.237	297	.000	.870	297	.000
Q11_ Fees per credit at NDU are reasonable (value received)	.138	297	.000	.945	297	.000
Q12_ NDU offers diversified programs and specializations	.266	297	.000	.847	297	.000
Q13_ Instructors have solid knowledge of their respective field	.284	297	.000	.804	297	.000

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Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	.287	297	.000	.808	297	.000
Q15_ The number of students per class is convenient for an interactive learning environment	.277	297	.000	.831	297	.000
Q16_ My academic advisor provides continuing guidance with my major, rules, regulations, & opportunities at NDU, etc...	.214	297	.000	.868	297	.000
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.177	297	.000	.918	297	.000
Q18_ NDU recognizes students' achievements (Distinction, Dean's List, academic scholarships, etc...)	.271	297	.000	.827	297	.000
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.175	297	.000	.915	297	.000
Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	.208	297	.000	.897	297	.000
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	.197	297	.000	.893	297	.000

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Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...	.195	297	.000	.916	297	.000
Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	.269	297	.000	.858	297	.000
Q24_Wi-Fi service at NDU is reliable	.229	297	.000	.879	297	.000
Q25_Physical activities contribute to a better education at NDU (sports teams, athletic competitions, etc...)	.191	297	.000	.916	297	.000
Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	.159	297	.000	.920	297	.000
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	.251	297	.000	.840	297	.000
Q28_NDU process students' requests within reasonable time frame	.224	297	.000	.864	297	.000
Q29_Administrative offices' operating hours are compatible for students to submit a specific request	.254	297	.000	.839	297	.000
Q30_NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	.279	297	.000	.802	297	.000

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Q31_NDU has automated systems and processes to provide prompt and efficient services	.235	297	.000	.864	297	.000
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	.285	297	.000	.801	297	.000
Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	.298	297	.000	.807	297	.000
Q34_ NDU provides adequate services for students with physical disabilities	.278	297	.000	.871	297	.000
Q35_ NDU has a well-equipped gym and athletic courts	.145	297	.000	.932	297	.000
Q36_The bookshop on Campus provides adequate services	.197	297	.000	.883	297	.000
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	.225	297	.000	.865	297	.000
Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	.271	297	.000	.819	297	.000
Q39_Overall, I consider my education at NDU very enriching and fulfilling	.299	297	.000	.791	297	.000
Q40_Overall, I am happy with the environment at NDU	.272	297	.000	.818	297	.000

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Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	.281	297	.000	.821	297	.000
Q42_ Overall, I am satisfied with the services available at NDU	.254	297	.000	.848	297	.000
Q43_ I am satisfied with my overall experience at NDU	.273	297	.000	.809	297	.000
Q44_ I would recommend NDU to others	.321	297	.000	.760	297	.000
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	.170	297	.000	.905	297	.000
Q46_ I intend to become an active alumna/alumnus	.161	297	.000	.923	297	.000
Q47_ I defend NDU against rumors/critics	.274	297	.000	.778	297	.000
Q48_ I talk positively about NDU in the society	.301	297	.000	.756	297	.000

a. Lilliefors Significance Correction

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Table C4: Correlation Matrix

Correlation Matrix

		Q9_ I selecte d my current major based on the numbe r of require d credits (progra m cost)	Q10_ I select ed my curren t major based on the overall progra m duratio n (time)	Q11_ Fees per credit at NDU are reasona ble (value received)	Q12_ NDU offers diversified programs and specializati ons	Q13_ Instructo rs have solid knowled ge of their respecti ve field	Q14_ Instruct ors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenien t for an interactive learning environm ent
Correlation	Q9_ I selected my current major based on the number of required credits (program cost)	1.000	.693	.062	-.048	-.073	.049	-.007
	Q10_ I selected my current major based on the overall program duration (time)	.693	1.000	.149	-.077	-.001	.052	.025
	Q11_ Fees per credit at NDU are reasonable (value received)	.062	.149	1.000	.340	.297	.271	.139
	Q12_ NDU offers diversified programs and specializations	-.048	-.077	.340	1.000	.475	.371	.220

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Q13_ Instructors have solid knowledge of their respective field	-0.073	-0.001	.297	.475	1.000	.542	.317
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	.049	.052	.271	.371	.542	1.000	.315
Q15_ The number of students per class is convenient for an interactive learning environment	-0.007	.025	.139	.220	.317	.315	1.000
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.062	.072	.267	.403	.328	.187	.176

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Q19_NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.101	.129	.236	.319	.381	.317	.223
Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	-.015	.023	.164	.371	.355	.330	.182
Q22_NDU operates an excellent counseling service (Psychological & spiritual support, etc...	.055	.076	.203	.375	.333	.338	.174
Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	-.063	-.086	.110	.284	.348	.311	.197

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Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	.080	.036	.283	.363	.282	.248	.149
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	-.002	.076	.328	.287	.480	.390	.203
Q28_NDU process students' requests within reasonable time frame	.068	.073	.345	.351	.366	.362	.220
Q29_Administ rative offices' operating hours are compatible for students to submit a specific request	-.070	-.023	.226	.156	.245	.265	.324

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Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	-0.074	-0.092	.255	.372	.356	.416	.263
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	-0.055	-0.046	.103	.324	.287	.286	.200
Q36_ The bookshop on Campus provides adequate services	.016	.030	.150	.317	.412	.199	.195
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	-0.082	-0.057	.296	.487	.558	.433	.275

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q40_Overall, I am happy with the environment at NDU	-.041	.019	.288	.432	.446	.350	.346
Q41_Overall, I feel motivated and enthusiastic about coming to NDU	-.086	-.002	.330	.489	.465	.362	.307
Q42_Overall, I am satisfied with the services available at NDU	-.010	.042	.333	.557	.458	.410	.350
Q43_ I am satisfied with my overall experience at NDU	-.025	.020	.318	.429	.436	.430	.280
Q44_ I would recommend NDU to others	-.081	.031	.412	.494	.424	.337	.212
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	.051	.064	.170	.337	.371	.285	.238
Q46_ I intend to become an active alumna/alumnus	.062	.160	.157	.276	.182	.150	.226
Q47_ I defend NDU against rumors/critics	-.003	.006	.287	.457	.394	.263	.195

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q48_ I talk positively about NDU in the society	-0.70	.016	.340	.485	.469	.356	.242
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	Q28_ NDU process students' requests within reasonable time frame	Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Q36_ The bookshop on Campus provides adequate services	Q39_ Overall, I consider my education at NDU very enriching and fulfilling
Q9_ I selected my current major based on the number of required credits (program cost)	.068	-.070	-.074	-.055	.016	-.082
Q10_ I selected my current major based on the overall program duration (time)	.073	-.023	-.092	-.046	.030	-.057
Q11_ Fees per credit at NDU are reasonable (value received)	.345	.226	.255	.103	.150	.296

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q12_ NDU offers diversified programs and specializations	.351	.156	.372	.324	.317	.487
Q13_ Instructors have solid knowledge of their respective field	.366	.245	.356	.287	.412	.558
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	.362	.265	.416	.286	.199	.433
Q15_ The number of students per class is convenient for an interactive learning environment	.220	.324	.263	.200	.195	.275

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.269	.185	.148	.165	.229	.358
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.327	.186	.287	.240	.260	.450
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	.311	.168	.296	.186	.373	.372

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q22_NDU operates an excellent counseling service (Psychological & spiritual support, etc...	.361	.247	.344	.235	.414	.368
Q23_Library has sufficient and up- to-date forms of resources (articles, journals, books, ...)	.258	.352	.253	.356	.449	.293
Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	.335	.195	.224	.200	.326	.358
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	.513	.438	.499	.365	.361	.496

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q28_ NDU process students' requests within reasonable time frame	1.000	.510	.540	.309	.267	.397
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	.510	1.000	.585	.372	.256	.311
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	.540	.585	1.000	.361	.260	.424

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATISFACTION & LOYALTY

Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	.309	.372	.361	1.000	.368	.287
Q36_ The bookshop on Campus provides adequate services	.267	.256	.260	.368	1.000	.335
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	.397	.311	.424	.287	.335	1.000
Q40_ Overall, I am happy with the environment at NDU	.449	.409	.460	.333	.365	.715
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	.423	.364	.488	.321	.313	.686

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q42_Overall, I am satisfied with the services available at NDU	.559	.358	.478	.395	.378	.664
Q43_ I am satisfied with my overall experience at NDU	.398	.311	.406	.324	.298	.759
Q44_ I would recommend NDU to others	.434	.312	.414	.293	.259	.677
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	.323	.198	.301	.218	.251	.545
Q46_ I intend to become an active alumna/alumnus	.262	.175	.226	.183	.180	.373
Q47_ I defend NDU against rumors/critics	.344	.288	.348	.355	.217	.541
Q48_ I talk positively about NDU in the society	.408	.329	.450	.368	.267	.658

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

	Q40_Overall, I am happy with the environment at NDU	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	Q42_Overall, I am satisfied with the services available at NDU	Q43_I am satisfied with my overall experience at NDU	Q44_I would recommend NDU to others	Q45_I would consider returning to NDU to pursue graduate studies/second degree	Q46_I intend to become an active alumna/alumnus	Q47_I defend NDU against rumors/critics	Q48_I talk positively about NDU in the society
Q9_I selected my current major based on the number of required credits (program cost)	-.041	-.086	-.010	-.025	-.081	.051	.062	-.003	-.070
Q10_I selected my current major based on the overall program duration (time)	.019	-.002	.042	.020	.031	.064	.160	.006	.016
Q11_Fees per credit at NDU are reasonable (value received)	.288	.330	.333	.318	.412	.170	.157	.287	.340
Q12_NDU offers diversified programs and specializations	.432	.489	.557	.429	.494	.337	.276	.457	.485
Q13_Instructors have solid knowledge of their respective field	.446	.465	.458	.436	.424	.371	.182	.394	.469

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	.350	.362	.410	.430	.337	.285	.150	.263	.356
Q15_ The number of students per class is convenient for an interactive learning environment	.346	.307	.350	.280	.212	.238	.226	.195	.242
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.348	.383	.409	.334	.352	.378	.289	.293	.308

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q19_NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.413	.418	.496	.415	.424	.364	.309	.325	.377
Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	.344	.372	.383	.354	.352	.378	.309	.272	.345
Q22_NDU operates an excellent counselling service (Psychologic al & spiritual support, etc...	.391	.415	.474	.335	.359	.329	.309	.282	.370
Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	.315	.255	.303	.276	.207	.255	.132	.204	.244

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	.362	.362	.425	.353	.354	.295	.301	.270	.290
Q27_ Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	.451	.452	.464	.478	.465	.321	.251	.409	.475
Q28_ NDU process students' requests within reasonable time frame	.449	.423	.559	.398	.434	.323	.262	.344	.408
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	.409	.364	.358	.311	.312	.198	.175	.288	.329

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	.460	.488	.478	.406	.414	.301	.226	.348	.450
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	.333	.321	.395	.324	.293	.218	.183	.355	.368
Q36_ The bookshop on Campus provides adequate services	.365	.313	.378	.298	.259	.251	.180	.217	.267
Q39_Overall , I consider my education at NDU very enriching and fulfilling	.715	.686	.664	.759	.677	.545	.373	.541	.658

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q40_Overall , I am happy with the environment at NDU	1.000	.830	.729	.756	.688	.549	.488	.551	.685
Q41_Overall, I feel motivated and enthusiastic about coming to NDU	.830	1.000	.749	.780	.729	.553	.498	.594	.719
Q42_Overall , I am satisfied with the services available at NDU	.729	.749	1.000	.758	.688	.549	.449	.513	.629
Q43_ I am satisfied with my overall experience at NDU	.756	.780	.758	1.000	.787	.560	.443	.605	.732
Q44_ I would recommend NDU to others	.688	.729	.688	.787	1.000	.623	.459	.614	.756
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	.549	.553	.549	.560	.623	1.000	.476	.478	.532
Q46_ I intend to become an active alumna/alumnus	.488	.498	.449	.443	.459	.476	1.000	.462	.496
Q47_ I defend NDU against rumors/critics	.551	.594	.513	.605	.614	.478	.462	1.000	.818

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q48_ I talk positively about NDU in the society	.685	.719	.629	.732	.756	.532	.496	.818	1.000
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Table C5: Anti-image Matrices

Anti-image Matrices								
		Q9_ I selected my current major based on the number of required credits (program cost)	Q10_ I selected my current major based on the overall program duration (time)	Q11_ Fees per credit at NDU are reasonable (value received)	Q12_ NDU offers diversified programs and specializations	Q13_ Instructors have solid knowledge of their respective field	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	Q15_ The number of students per class is convenient for an interactive learning environment
Anti-image Correlation	Q9_ I selected my current major based on the number of required credits (program cost)	.471 ^a	-.689	.020	-.069	.117	-.064	.004
	Q10_ I selected my current major based on the overall program duration (time)	-.689	.487 ^a	-.129	.111	-.074	-.022	-.001

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q11_ Fees per credit at NDU are reasonable (value received)	.020	-.129	.920 ^a	-.115	-.031	-.083	-.017
Q12_NDU offers diversified programs and specializations	-.069	.111	-.115	.904 ^a	-.133	-.087	-.022
Q13_ Instructors have solid knowledge of their respective field	.117	-.074	-.031	-.133	.916 ^a	-.330	-.125
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	-.064	-.022	-.083	-.087	-.330	.900 ^a	-.131
Q15_ The number of students per class is convenient for an interactive learning environment	.004	-.001	-.017	-.022	-.125	-.131	.916 ^a

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	-0.15	.004	-0.090	-0.203	-0.066	.119	.000
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	-0.052	-0.042	.033	.123	-0.059	-0.040	-0.046
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	.093	-0.044	.066	-0.092	-0.010	-0.068	-0.022

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...	-0.034	-0.028	.040	.020	.073	-0.116	.055
Q23_Library has sufficient and up- to-date forms of resources (articles, journals, books, ...)	.011	.083	.006	-.068	-.069	-.098	.024
Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	-.111	.124	-.113	-.063	.050	-.005	.031
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	.067	-.096	-.065	.151	-.161	-.026	.057

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATISFACTION & LOYALTY

Q28_ NDU process students' requests within reasonable time frame	-.104	.028	-.104	.001	-.058	-.039	.077
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	.078	-.060	-.039	.208	.083	.024	-.211
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	-.069	.155	-.006	-.157	.046	-.146	.015

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	.024	.007	.115	-.105	.049	-.094	.006
Q36_ The bookshop on Campus provides adequate services	-.040	-.022	-.011	-.050	-.222	.201	-.013
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	.000	.098	.018	-.113	-.207	-.028	.040
Q40_ Overall, I am happy with the environment at NDU	-.034	.000	.042	.056	.021	.050	-.094
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	.085	-.020	-.039	-.045	-.088	.049	.018

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q42_Overall, I am satisfied with the services available at NDU	.059	-.052	.010	-.236	.039	.032	-.122
Q43_ I am satisfied with my overall experience at NDU	-.108	.054	.036	.192	.127	-.209	-.002
Q44_ I would recommend NDU to others	.159	-.088	-.204	-.168	.032	.086	.099
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	-.122	.042	.136	.142	-.062	-.026	-.046
Q46_ I intend to become an active alumna/alumnus	.069	-.159	.054	-.001	.132	.043	-.097
Q47_ I defend NDU against rumors/critics	-.135	.110	-.019	-.149	-.042	.088	.024
Q48_ I talk positively about NDU in the society	.092	-.073	-.023	.008	-.073	-.004	.007

a. Measures of Sampling Adequacy(MSA)

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATISFACTION & LOYALTY

	Q17_Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	Q19_NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...	Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)
Q9_ I selected my current major based on the number of required credits (program cost)	-.015	-.052	.093	-.034	.011	-.111
Q10_ I selected my current major based on the overall program duration (time)	.004	-.042	-.044	-.028	.083	.124
Q11_ Fees per credit at NDU are reasonable (value received)	-.090	.033	.066	.040	.006	-.113
Q12_NDU offers diversified programs and specializations	-.203	.123	-.092	.020	-.068	-.063

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q13_ Instructors have solid knowledge of their respective field	-0.066	-0.059	-0.010	.073	-0.069	.050
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	.119	-0.040	-0.068	-0.116	-0.098	-0.005
Q15_ The number of students per class is convenient for an interactive learning environment	.000	-0.046	-0.022	.055	.024	.031
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.905 ^a	-0.294	-0.008	-0.127	-0.064	-0.147

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	-.294	.939 ^a	-.081	-.045	.002	-.126
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	-.008	-.081	.929 ^a	-.282	-.050	-.208
Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...	-.127	-.045	-.282	.926 ^a	-.176	-.111
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	-.064	.002	-.050	-.176	.898 ^a	.034

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	-0.147	-0.126	-0.208	-0.111	.034	.938 ^a
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	-0.038	-0.115	-0.013	-0.005	.034	-0.118
Q28_NDU process students' requests within reasonable time frame	.005	.037	-0.064	-0.006	.007	-0.037
Q29_Administrative offices' operating hours are compatible for students to submit a specific request	-0.117	.103	.065	.020	-0.217	-0.020

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	.175	-.067	-.051	-.069	.093	.087
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	.031	-.051	.065	.065	-.139	.000
Q36_ The bookshop on Campus provides adequate services	.081	.042	-.118	-.148	-.223	-.073
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	.011	-.101	.007	-.013	.032	-.002

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q40_ Overall, I am happy with the environment at NDU	.033	-.008	.055	.024	-.077	-.038
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	-.075	.030	-.018	-.077	.087	.011
Q42_ Overall, I am satisfied with the services available at NDU	.007	-.150	.110	-.154	.055	-.040
Q43_ I am satisfied with my overall experience at NDU	-.017	.071	-.067	.171	-.096	-.015
Q44_ I would recommend NDU to others	.061	-.090	.029	-.031	.097	-.023
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	-.158	.051	-.129	.053	-.100	.042
Q46_ I intend to become an active alumna/alumnus	-.021	-.023	-.063	-.040	.026	-.088
Q47_ I defend NDU against rumors/critics	.004	-.023	.037	.041	.024	-.019

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q48_ I talk positively about NDU in the society	.036	.027	-.029	-.092	.001	.089
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a. Measures of Sampling Adequacy(MSA)

	Q28_ NDU process students' requests within reasonable time frame	Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	Q36_ The bookshop on Campus provides adequate services	Q39_ Overall, I consider my education at NDU very enriching and fulfilling	Q40_ Overall, I am happy with the environment at NDU
Q9_ I selected my current major based on the number of required credits (program cost)	-.104	.078	-.069	.024	-.040	.000	-.034
Q10_ I selected my current major based on the overall program duration (time)	.028	-.060	.155	.007	-.022	.098	.000
Q11_ Fees per credit at NDU are reasonable (value received)	-.104	-.039	-.006	.115	-.011	.018	.042

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q12_NDU offers diversified programs and specializations	.001	.208	-.157	-.105	-.050	-.113	.056
Q13_ Instructors have solid knowledge of their respective field	-.058	.083	.046	.049	-.222	-.207	.021
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	-.039	.024	-.146	-.094	.201	-.028	.050
Q15_ The number of students per class is convenient for an interactive learning environment	.077	-.211	.015	.006	-.013	.040	-.094

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.005	-.117	.175	.031	.081	.011	.033
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.037	.103	-.067	-.051	.042	-.101	-.008
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	-.064	.065	-.051	.065	-.118	.007	.055

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...	-0.006	.020	-0.069	.065	-0.148	-0.013	.024
Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	.007	-.217	.093	-.139	-.223	.032	-.077
Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	-.037	-.020	.087	.000	-.073	-.002	-.038
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	-.176	-.083	-.171	-.108	-.103	-.091	.037

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q28_ NDU process students' requests within reasonable time frame	.932 ^a	-.236	-.158	.020	.056	.038	-.053
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	-.236	.853 ^a	-.381	-.133	-.012	-.028	-.103
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	-.158	-.381	.907 ^a	-.039	.008	-.001	.020

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	.020	-.133	-.039	.931 ^a	-.185	.086	.014
Q36_The bookshop on Campus provides adequate services	.056	-.012	.008	-.185	.903 ^a	-.009	-.095
Q39_Overall, I consider my education at NDU very enriching and fulfilling	.038	-.028	-.001	.086	-.009	.961 ^a	-.217
Q40_Overall, I am happy with the environment at NDU	-.053	-.103	.020	.014	-.095	-.217	.951 ^a
Q41_Overall, I feel motivated and enthusiastic about coming to NDU	.095	-.010	-.142	.025	.047	.052	-.454

SERVICE QUALITY AND ITS IMPACT ON STUDENTS' SATTISFACTION & LOYALTY

Q42_Overall, I am satisfied with the services available at NDU	-.301	.046	-.016	-.123	-.062	-.003	-.092
Q43_ I am satisfied with my overall experience at NDU	.112	.053	.064	.011	-.018	-.302	-.072
Q44_ I would recommend NDU to others	-.057	-.063	.033	.019	.037	-.012	-.010
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	-.001	.092	-.052	.022	.000	-.111	-.032
Q46_ I intend to become an active alumna/alumnus	-.018	.035	.011	.009	.010	.034	-.088
Q47_ I defend NDU against rumors/critics	-.008	-.090	.091	-.097	.042	.017	.062
Q48_ I talk positively about NDU in the society	.004	.053	-.098	-.059	.043	-.053	-.096

a. Measures of Sampling Adequacy(MSA)

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	Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	Q42_ Overall, I am satisfied with the services available at NDU	Q43_ I am satisfied with my overall experience at NDU	Q44_ I would recommend NDU to others	Q45_ I would consider returning to NDU to pursue graduate studies/ second degree	Q46_ I intend to become an active alumna/alumnus	Q47_ I defend NDU against rumors/critics	Q48_ I talk positively about NDU in the society
Q9_ I selected my current major based on the number of required credits (program cost)	.085	.059	-.108	.159	-.122	.069	-.135	.092
Q10_ I selected my current major based on the overall program duration (time)	-.020	-.052	.054	-.088	.042	-.159	.110	-.073
Q11_ Fees per credit at NDU are reasonable (value received)	-.039	.010	.036	-.204	.136	.054	-.019	-.023
Q12_ NDU offers diversified programs and specializations	-.045	-.236	.192	-.168	.142	-.001	-.149	.008
Q13_ Instructors have solid knowledge of their respective field	-.088	.039	.127	.032	-.062	.132	-.042	-.073

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Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	.049	.032	-.209	.086	-.026	.043	.088	-.004
Q15_ The number of students per class is convenient for an interactive learning environment	.018	-.122	-.002	.099	-.046	-.097	.024	.007
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	-.075	.007	-.017	.061	-.158	-.021	.004	.036

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Q19_NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.030	-.150	.071	-.090	.051	-.023	-.023	.027
Q21_NDU provides good medical services (access, availability, coverage, utilization, ...)	-.018	.110	-.067	.029	-.129	-.063	.037	-.029
Q22_NDU operates an excellent counselling service (Psychological & spiritual support, etc...	-.077	-.154	.171	-.031	.053	-.040	.041	-.092
Q23_Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	.087	.055	-.096	.097	-.100	.026	.024	.001

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Q26_NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	.011	-.040	-.015	-.023	.042	-.088	-.019	.089
Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	.021	.068	-.078	-.029	.050	.019	-.056	-.016
Q28_NDU process students' requests within reasonable time frame	.095	-.301	.112	-.057	-.001	-.018	-.008	.004
Q29_Administrative offices' operating hours are compatible for students to submit a specific request	-.010	.046	.053	-.063	.092	.035	-.090	.053

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Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	- .142	- .016	.064	.033	-.052	.011	.091	-.098
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	.025	-.123	.011	.019	.022	.009	-.097	-.059
Q36_ The bookshop on Campus provides adequate services	.047	-.062	-.018	.037	.000	.010	.042	.043
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	.052	-.003	-.302	-.012	-.111	.034	.017	-.053

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Q40_ Overall, I am happy with the environment at NDU	-.454	-.092	-.072	-.010	-.032	-.088	.062	-.096
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	.950 ^a	-.151	-.201	-.053	-.012	-.081	-.033	-.057
Q42_ Overall, I am satisfied with the services available at NDU	-.151	.943 ^a	-.328	.000	-.102	-.019	.067	.039
Q43_ I am satisfied with my overall experience at NDU	-.201	-.328	.922 ^a	-.335	.076	.025	-.057	-.104
Q44_ I would recommend NDU to others	-.053	.000	-.335	.936 ^a	-.322	.009	.068	-.248
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	-.012	-.102	.076	-.322	.931 ^a	-.182	-.096	.052
Q46_ I intend to become an active alumna/alumnus	-.081	-.019	.025	.009	-.182	.952 ^a	-.115	-.082
Q47_ I defend NDU against rumors/critics	-.033	.067	-.057	.068	-.096	-.115	.902 ^a	-.612

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Q48_ I talk positively about NDU in the society	-0.057	.039	-.104	-.248	.052	-.082	-.612	.924 ^a
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a. Measures of Sampling Adequacy(MSA)

Table C6: Communalities

Communalities		
	Initial	Extraction
Q9_ I selected my current major based on the number of required credits (program cost)	1.000	.817
Q10_ I selected my current major based on the overall program duration (time)	1.000	.843
Q11_ Fees per credit at NDU are reasonable	1.000	.622
Q12_ NDU offers diversified programs and specializations	1.000	.544
Q13_ Instructors have solid knowledge of their respective field	1.000	.694
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	1.000	.621
Q15_ The number of students per class is convenient for an interactive learning environment	1.000	.611
Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	1.000	.520

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Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	1.000	.519
Q20_ NDU offers appropriate financial aid services (work study and sibling grants, etc...)	1.000	.612
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	1.000	.572
Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	1.000	.571
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	1.000	.519
Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	1.000	.529
Q27_ Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	1.000	.555
Q28_ NDU process students' requests within reasonable time frame	1.000	.643
Q29_ Administrative offices' operating hours are compatible for students to submit a specific request	1.000	.729

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Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	1.000	.696
Q31_ NDU has automated systems and processes to provide prompt and efficient services	1.000	.607
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	1.000	.544
Q35_ NDU has a well-equipped gym and athletic courts	1.000	.626
Q36_ The bookshop on Campus provides adequate services	1.000	.686
Q38_ Students courts, landscaping, green areas create an appropriate environment to my education at NDU	1.000	.578
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	1.000	.691
Q40_ Overall, I am happy with the environment at NDU	1.000	.776
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	1.000	.790
Q42_ Overall, I am satisfied with the services available at NDU	1.000	.722
Q43_ I am satisfied with my overall experience at NDU	1.000	.781

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Q44_ I would recommend NDU to others	1.000	.786
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	1.000	.570
Q46_ I intend to become an active alumna/alumnus	1.000	.576
Q47_ I defend NDU against rumors/critics	1.000	.657
Q48_ I talk positively about NDU in the society	1.000	.811

Extraction Method: Principal Component Analysis.

Table C7: Total Variance Explained (un-rotated)

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.012	37.971	37.971	11.012	37.971	37.971
2	1.948	6.719	44.690	1.948	6.719	44.690
3	1.892	6.526	51.216	1.892	6.526	51.216
4	1.509	5.204	56.420	1.509	5.204	56.420
5	1.127	3.886	60.306	1.127	3.886	60.306
6	1.054	3.633	63.940	1.054	3.633	63.940
7	.953	3.286	67.225			
8	.831	2.867	70.092			
9	.777	2.679	72.771			
10	.753	2.595	75.366			
11	.671	2.313	77.678			
12	.669	2.308	79.987			
13	.584	2.013	82.000			
14	.546	1.883	83.883			
15	.513	1.770	85.654			
16	.486	1.675	87.329			
17	.446	1.536	88.865			
18	.433	1.495	90.360			
19	.407	1.403	91.763			
20	.372	1.282	93.045			

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21	.333	1.149	94.194			
22	.310	1.069	95.263			
23	.299	1.030	96.293			
24	.245	.845	97.138			
25	.221	.761	97.899			
26	.213	.734	98.633			
27	.148	.512	99.145			
28	.128	.442	99.587			
29	.120	.413	100.000			

Extraction Method: Principal Component Analysis.

Table C8: Promax Pattern Matrix

	Pattern Matrix ^a					
	Component					
	1	2	3	4	5	6
Q9_ I selected my current major based on the number of required credits (program cost)						.898
Q10_ I selected my current major based on the overall program duration (time)						.916
Q11_ Fees per credit at NDU are reasonable (value received)					-.456	
Q12_ NDU offers diversified programs and specializations				.424		
Q13_ Instructors have solid knowledge of their respective field				.828		
Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)				.863		
Q15_ The number of students per class is convenient for an interactive learning environment				.436		

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Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.745			
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.557			
Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	.693			
Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	.686			
Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)				.638
Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	.835			
Q27_ Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)			.530	
Q28_ NDU process students' requests within reasonable time frame			.738	

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Q29_ Administrative offices' operating hours are compatible for students to submit a specific request		.933		
Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)		.752		
Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)				.458
Q36_ The bookshop on Campus provides adequate services				.580
Q39_ Overall, I consider my education at NDU very enriching and fulfilling	.653			
Q40_ Overall, I am happy with the environment at NDU	.804			
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	.829			
Q42_ Overall, I am satisfied with the services available at NDU	.607			
Q43_ I am satisfied with my overall experience at NDU	.864			
Q44_ I would recommend NDU to others	.837			
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	.767			
Q46_ I intend to become an active alumna/alumnus	.811			-.434

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Q47_ I defend NDU against rumors/critics	.827					
Q48_ I talk positively about NDU in the society	.882					

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Table C9: Dependent Variable REGR Factor Score 1

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.999 ^a	.997	.997	.05360818	.997	10271.220	10	286	.000	2.050

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	295.178	10	29.518	10271.220	.000 ^b
	Residual	.822	286	.003		
	Total	296.000	296			

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Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.109	.018		-283.762	.000
	Q39_Overall, I consider my education at NDU very enriching and fulfilling	.086	.005	.099	18.969	.000
	Q40_Overall, I am happy with the environment at NDU	.100	.005	.123	19.842	.000
	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	.098	.005	.133	20.398	.000
	Q42_Overall, I am satisfied with the services available at NDU	.077	.004	.101	18.755	.000
	Q43_ I am satisfied with my overall experience at NDU	.103	.005	.123	18.721	.000
	Q44_ I would recommend NDU to others	.095	.005	.124	20.819	.000
	Q45_ I would consider returning to NDU to pursue graduate studies/second degree	.065	.002	.121	28.373	.000
	Q46_ I intend to become an active alumna/alumnus	.082	.002	.132	34.324	.000
	Q47_ I defend NDU against rumors/critics	.096	.004	.136	24.851	.000
	Q48_ I talk positively about NDU in the society	.114	.006	.138	19.964	.000

a. Dependent Variable: REGR factor score 1 for analysis 1

Table C10: Dependent Variable REGR Factor Score 2

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.974 ^a	.948	.947	.22999272	.948	1060.963	5	291	.000	2.092

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	280.607	5	56.121	1060.963	.000 ^b
	Residual	15.393	291	.053		
	Total	296.000	296			

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Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.304	.062		-69.502	.000
	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.217	.012	.299	18.199	.000
	Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.119	.010	.195	11.773	.000
	Q21_ NDU provides good medical services (access, availability, coverage, utilization, ...)	.174	.012	.236	13.946	.000
	Q22_ NDU operates an excellent counselling service (Psychological & spiritual support, etc...)	.173	.012	.239	14.014	.000
	Q26_ NDU encourages me to engage in social activities (leisure, religious and spiritual life, community service and awareness, etc...)	.227	.011	.336	20.197	.000

a. Dependent Variable: REGR factor score 2 for analysis 1

Table C11: Dependent Variable REGR Factor Score 3

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.976 ^a	.953	.952	.21815571	.953	1481.886	4	292	.000	1.985

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	282.103	4	70.526	1481.886	.000 ^b
	Residual	13.897	292	.048		
	Total	296.000	296			

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Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.560	.061		-75.182	.000
	Q27_Admin staff show professional attitude (respect, confidentiality, solving problems, dealing with complaints, error free work, etc...)	.159	.011	.234	14.967	.000
	Q28_ NDU process students' requests within reasonable time frame	.235	.012	.323	19.655	.000
	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	.268	.012	.370	22.522	.000
	Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	.209	.012	.292	17.037	.000

a. Dependent Variable: REGR factor score 3 for analysis 1

Table C12: Dependent Variable REGR Factor Score 4

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.955 ^a	.912	.911	.29908188	.912	603.622	5	291	.000	2.019

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	269.970	5	53.994	603.622	.000 ^b
	Residual	26.030	291	.089		
	Total	296.000	296			

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Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.514	.116		-47.656	.000
	Q12_NDU offers diversified programs and specializations	.229	.016	.287	14.041	.000
	Q13_ Instructors have solid knowledge of their respective field	.381	.019	.441	19.743	.000
	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	.334	.017	.419	19.733	.000
	Q15_ The number of students per class is convenient for an interactive learning environment	.110	.016	.129	6.802	.000
	Q46_ I intend to become an active alumna/alumnus	-.097	.011	-.157	-8.561	.000

a. Dependent Variable: REGR factor score 4 for analysis 1

Table C13: Dependent Variable REGR Factor Score 5

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.941 ^a	.885	.883	.34184959	.885	560.230	4	292	.000	1.890

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	261.877	4	65.469	560.230	.000 ^b
	Residual	34.123	292	.117		
	Total	296.000	296			

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Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.100	.131		-31.263	.000
	Q11_ Fees per credit at NDU are reasonable	-.294	.012	-.484	-24.022	.000
	Q23_ Library has sufficient and up-to-date forms of resources (articles, journals, books, ...)	.404	.020	.460	20.123	.000
	Q32_ NDU effectively uses and updates various channels to communicate with students (website, email, Blackboard, telephone, social media platforms, mobile apps, etc...)	.253	.020	.274	12.471	.000
	Q36_ The bookshop on Campus provides adequate services	.287	.017	.402	17.414	.000

a. Dependent Variable: REGR factor score 5 for analysis 1

Table C14: Dependent Variable REGR Factor Score 6

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.982 ^a	.965	.965	.18714463	.965	4078.781	2	294	.000	1.874

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	285.703	2	142.852	4078.781	.000 ^b
	Residual	10.297	294	.035		
	Total	296.000	296			

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Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.629	.021		-76.939	.000
	Q9_ I selected my current major based on the number of required credits (program cost)	.295	.009	.510	33.791	.000
	Q10_ I selected my current major based on the overall program duration (time)	.306	.008	.557	36.919	.000

a. Dependent Variable: REGR factor score 6 for analysis 1

Table C15: Dependent variable Q39: Overall, I consider my education at NDU very enriching and fulfilling

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.843 ^a	.711	.705	.625	.711	118.724	6	290	.000	2.004

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	278.131	6	46.355	118.724	.000 ^b
	Residual	113.229	290	.390		
	Total	391.360	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.724	.036		157.867	.000
	REGR factor score 1 for analysis 1	.751	.051	.653	14.841	.000
	REGR factor score 2 for analysis 1	.021	.047	.018	.451	.652
	REGR factor score 3 for analysis 1	-.080	.047	-.069	-1.715	.087
	REGR factor score 4 for analysis 1	.342	.049	.297	6.913	.000
	REGR factor score 5 for analysis 1	.016	.038	.014	.434	.665
	REGR factor score 6 for analysis 1	-.106	.037	-.092	-2.876	.004

a. Dependent Variable: Q39_Overall, I consider my education at NDU very enriching and fulfilling

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Table C16: DV Q40: Overall, I am happy with the environment at NDU

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.866 ^a	.750	.745	.622	.750	145.091	6	290	.000	1.837

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	336.558	6	56.093	145.091	.000 ^b
	Residual	112.116	290	.387		
	Total	448.673	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.714	.036		158.369	.000
	REGR factor score 1 for analysis 1	.990	.050	.804	19.658	.000
	REGR factor score 2 for analysis 1	-.042	.047	-.034	-.891	.374
	REGR factor score 3 for analysis 1	.126	.046	.103	2.727	.007
	REGR factor score 4 for analysis 1	-.010	.049	-.008	-.204	.839
	REGR factor score 5 for analysis 1	.112	.037	.091	3.001	.003
	REGR factor score 6 for analysis 1	-.003	.037	-.003	-.085	.932

a. Dependent Variable: Q40_Overall, I am happy with the environment at NDU

Table C17: Dependent variable Q41: Overall, I feel motivated and enthusiastic about coming to NDU

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.883 ^a	.779	.775	.647	.779	170.468	6	290	.000	1.950

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ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	428.693	6	71.449	170.468	.000 ^b
	Residual	121.549	290	.419		
	Total	550.242	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.616	.038		149.500	.000
	REGR factor score 1 for analysis 1	1.130	.052	.829	21.542	.000
	REGR factor score 2 for analysis 1	.025	.049	.018	.507	.612
	REGR factor score 3 for analysis 1	.090	.048	.066	1.873	.062
	REGR factor score 4 for analysis 1	.012	.051	.009	.232	.817
	REGR factor score 5 for analysis 1	-.022	.039	-.016	-.557	.578
	REGR factor score 6 for analysis 1	-.082	.038	-.060	-2.157	.032

a. Dependent Variable: Q41_ Overall, I feel motivated and enthusiastic about coming to NDU

Table C18: DV Q42: Overall, I am satisfied with the services available at NDU

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson	
					R Square Change	F Change	df1	df2		Sig. F Change
1	.846 ^a	.716	.710	.700	.716	121.945	6	290	.000	2.144

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	358.081	6	59.680	121.945	.000 ^b
	Residual	141.926	290	.489		
	Total	500.007	296			

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Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.471	.041		134.785	.000
	REGR factor score 1 for analysis 1	.789	.057	.607	13.915	.000
	REGR factor score 2 for analysis 1	.183	.053	.140	3.474	.001
	REGR factor score 3 for analysis 1	.165	.052	.127	3.160	.002
	REGR factor score 4 for analysis 1	.112	.055	.086	2.025	.044
	REGR factor score 5 for analysis 1	.070	.042	.054	1.664	.097
	REGR factor score 6 for analysis 1	.018	.041	.014	.429	.668

a. Dependent Variable: Q42_Overall, I am satisfied with the services available at NDU

Table C19: DV Q43: I am satisfied with my overall experience at NDU

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.886 ^a	.785	.780	.562	.785	176.012	6	290	.000	1.965

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	333.466	6	55.578	176.012	.000 ^b
	Residual	91.571	290	.316		
	Total	425.037	296			

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Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.741	.033		176.063	.000
	REGR factor score 1 for analysis 1	1.036	.046	.864	22.752	.000
	REGR factor score 2 for analysis 1	-.089	.042	-.074	-2.097	.037
	REGR factor score 3 for analysis 1	-.028	.042	-.024	-.676	.500
	REGR factor score 4 for analysis 1	.156	.044	.131	3.517	.001
	REGR factor score 5 for analysis 1	-.032	.034	-.026	-.934	.351
	REGR factor score 6 for analysis 1	-.003	.033	-.003	-.092	.927

a. Dependent Variable: Q43 I am satisfied with my overall experience at NDU

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Appendix D: Regression

Table D1: DV Q39: Overall, I consider my education at NDU very enriching and fulfilling

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.823 ^a	.678	.674	.657	2.052

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	265.335	4	66.334	153.696	.000 ^b
	Residual	126.025	292	.432		
	Total	391.360	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.090	.254		.354	.724
	Q13_ Instructors have solid knowledge of their respective field	.239	.037	.241	6.391	.000
	Q34_ NDU provides adequate services for students with physical disabilities	.090	.031	.099	2.891	.004
	Q40_ Overall, I am happy with the environment at NDU	.233	.049	.249	4.794	.000
	Q43_ I am satisfied with my overall experience at NDU	.424	.050	.442	8.561	.000

a. Dependent Variable: Q39_Overall, I consider my education at NDU very enriching and fulfilling

Table D2: DV Q40: Overall, I am happy with the environment at NDU

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.870 ^a	.756	.751	.614	2.120

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ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	339.323	6	56.554	149.982	.000 ^b
	Residual	109.350	290	.377		
	Total	448.673	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.141	.228		.619	.536
	Q29_Administrative offices' operating hours are compatible for students to submit a specific request	.085	.029	.096	2.892	.004
	Q31_NDU has automated systems and processes to provide prompt and efficient services	-.096	.034	-.104	-2.809	.005
	Q33_Classrooms are modern and well equipped (PC, internet, active boards, LCD projectors, etc...)	.113	.034	.110	3.319	.001
	Q36_The bookshop on Campus provides adequate services	.062	.029	.070	2.115	.035
	Q39_Overall, I consider my education at NDU very enriching and fulfilling	.279	.044	.260	6.341	.000
	Q41_Overall, I feel motivated and enthusiastic about coming to NDU	.545	.038	.604	14.395	.000

a. Dependent Variable: Q40_Overall, I am happy with the environment at NDU

Table D3: DV Q41: Overall, I feel motivated and enthusiastic about coming to NDU

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.879 ^a	.772	.768	.657	1.868

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ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	424.750	5	84.950	196.988	.000 ^b
	Residual	125.492	291	.431		
	Total	550.242	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.817	.227		-3.591	.000
	Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	.084	.032	.086	2.641	.009
	Q38_Students courts, landscaping, green areas create an appropriate environment to my education at NDU	.127	.036	.115	3.508	.001
	Q40_Overall, I am happy with the environment at NDU	.490	.052	.442	9.363	.000
	Q42_Overall, I am satisfied with the services available at NDU	.141	.050	.135	2.817	.005
	Q43_ I am satisfied with my overall experience at NDU	.292	.055	.257	5.315	.000

a. Dependent Variable: Q41_ Overall, I feel motivated and enthusiastic about coming to NDU

Table D4: DV Q42: Overall, I am satisfied with the services available at NDU

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.866 ^a	.750	.742	.661	2.041

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	374.795	9	41.644	95.453	.000 ^b
	Residual	125.212	287	.436		
	Total	500.007	296			

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Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.733	.277		-2.643	.009
Q12_ NDU offers diversified programs and specializations	.146	.037	.141	3.981	.000
Q15_ The number of students per class is convenient for an interactive learning environment	.080	.035	.072	2.291	.023
Q19_ NDU provides effective career advising & mentoring, and opportunities for internships, placement etc...	.078	.028	.098	2.824	.005
Q22_ NDU operates an excellent counseling service (Psychological & spiritual support, etc...	.076	.034	.081	2.250	.025
Q28_ NDU process students' requests within reasonable time frame	.186	.033	.197	5.687	.000
Q34_ NDU provides adequate services for students with physical disabilities	-.069	.033	-.067	-2.097	.037
Q37_ The NDU cafeterias are convenient to eat in (variety of menu, furniture, hygiene, prices, etc...)	.077	.026	.099	3.010	.003
Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	.197	.048	.207	4.074	.000

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Q43_ I am satisfied with my overall experience at NDU	.381	.053	.351	7.237	.000
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a. Dependent Variable: Q42_Overall, I am satisfied with the services available at NDU

Table D5: DV Q43: I am satisfied with my overall experience at NDU

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.890 ^a	.792	.787	.553	1.830

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	336.794	7	48.113	157.575	.000 ^b
	Residual	88.243	289	.305		
	Total	425.037	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.506	.196		2.585	.010
	Q12_ NDU offers diversified programs and specializations	-.100	.033	-.105	-3.076	.002
	Q14_ Instructors uses suitable teaching methods (ppt, videos, online lectures, etc...)	.091	.030	.095	3.073	.002
	Q31_ NDU has automated systems and processes to provide prompt and efficient services	-.107	.029	-.119	-3.662	.000
	Q39_ Overall, I consider my education at NDU very enriching and fulfilling	.283	.043	.272	6.514	.000

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Q41_ Overall, I feel motivated and enthusiastic about coming to NDU	.214	.041	.244	5.210	.000
Q42_ Overall, I am satisfied with the services available at NDU	.231	.042	.250	5.471	.000
Q44_ I would recommend NDU to others	.299	.040	.324	7.489	.000

a. Dependent Variable: Q43_ I am satisfied with my overall experience at NDU

Table D6: Dependent Variable Q44: I would recommend NDU to others

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.863 ^a	.744	.739	.664	1.915

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	371.095	6	61.849	140.478	.000 ^b
	Residual	127.680	290	.440		
	Total	498.774	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	.219	.233		.939	.348
1	Q9_ I selected my current major based on the number of required credits (program cost)	-.052	.023	-.069	-2.293	.023
	Q11_ Fees per credit at NDU are reasonable (value received)	.110	.026	.139	4.258	.000
	Q12_ NDU offers diversified programs and specializations	.075	.036	.072	2.056	.041

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Q43_ I am satisfied with my overall experience at NDU	.427	.050	.394	8.545	.000
Q45_ I would consider returning to NDU to pursue graduate studies/second degree	.152	.026	.217	5.844	.000
Q48_ I talk positively about NDU in the society	.284	.050	.265	5.668	.000

a. Dependent Variable: Q44_ I would recommend NDU to others

Table D7: Dependent Variable Q45: I would consider returning to NDU to pursue graduate studies/second degree

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.678 ^a	.460	.451	1.373	1.912

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	467.288	5	93.458	49.542	.000 ^b
	Residual	548.954	291	1.886		
	Total	1016.242	296			

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Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.659	.435		-3.814	.000
	Q9_ I selected my current major based on the number of required credits (program cost)	.109	.047	.102	2.345	.020
	Q11_ Fees per credit at NDU are reasonable	-.160	.054	-.142	-2.964	.003
	Q17_ Academic events/programs (exchange programs, international competitions, MUN, etc...) offered at NDU provides broader general knowledge & enhanced interest in global issues	.212	.064	.158	3.299	.001
	Q35_ NDU has a well-equipped gym and athletic courts	.156	.049	.143	3.175	.002
	Q44_ I would recommend NDU to others	.867	.071	.608	12.178	.000

a. Dependent Variable: Q45_I would consider returning to NDU to pursue graduate studies/second degree

Table D8: DV Q46: I intend to become an active alumna/alumnus

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.494 ^a	.244	.239	1.414	1.946

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	189.517	2	94.759	47.379	.000 ^b
	Residual	587.998	294	2.000		
	Total	777.515	296			

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Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.436	.255		9.568	.000
	Q10_ I selected my current major based on the overall program duration (time)	.116	.045	.130	2.561	.011
	Q45_ I would consider returning to NDU to pursue graduate studies/second degree	.409	.044	.468	9.207	.000

a. Dependent Variable: Q46_ I intend to become an active alumna/alumnus

Table D9: Dependent Variable Q47: I defend NDU against rumors/critics

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.821 ^a	.673	.671	.814	2.195

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	401.296	2	200.648	303.164	.000 ^b
	Residual	194.583	294	.662		
	Total	595.879	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.136	.260		-.522	.602
	Q12_ NDU offers diversified programs and specializations	.090	.043	.079	2.082	.038
	Q48_ I talk positively about NDU in the society	.912	.045	.779	20.452	.000

a. Dependent Variable: Q47_ I defend NDU against rumors/critics

Table D10: DV Q48: I talk positively about NDU in the society

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.895 ^a	.800	.797	.546	2.013

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ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	347.888	5	69.578	233.157	.000 ^b
	Residual	86.839	291	.298		
	Total	434.727	296			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.479	.190		2.523	.012
	Q30_ NDU has clear and standardized procedures (admission, registration, request for documents, payments, etc..)	.091	.025	.105	3.571	.000
	Q35_ NDU has a well-equipped gym and athletic courts	-.061	.020	-.085	-3.127	.002
	Q38_ Students courts, landscaping, green areas create an appropriate environment to my education at NDU	.139	.029	.143	4.756	.000
	Q44_ I would recommend NDU to others	.323	.033	.346	9.739	.000
	Q47_ I defend NDU against rumors/critics	.446	.029	.522	15.348	.000

a. Dependent Variable: Q48_ I talk positively about NDU in the society