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Applying The Kano Model To Higher Education: Moving Beyond Measuring Student Satisfaction

Melissa P. Mcdowall

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APPLYING THE KANO MODEL TO HIGHER EDUCATION:
MOVING BEYOND MEASURING STUDENT SATISFACTION

by

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A Dissertation
Submitted to the Graduate Faculty

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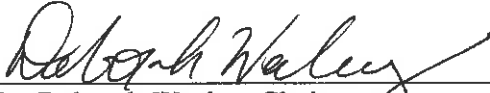
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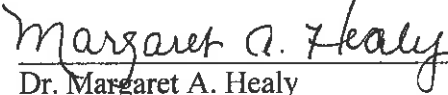
Doctor of Philosophy

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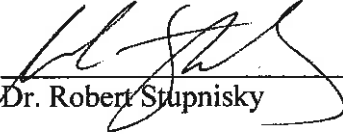
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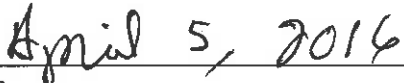
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This dissertation is being submitted by the appointed advisory committee as having met all of the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.

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Wayne Swisher
Dean of the School of Graduate Studies

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Date   April 5, 2016

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PERMISSION

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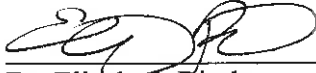
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                                                              Melissa P. McDowall

                                                              3/15/2016

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ACKNOWLEDGEMENTS

I would like to thank the many, many people who have shown me love and support throughout my education, my career, and my life. First, to my parents, who have given me the great gifts of work ethic, personal ethics, and a deep belief in my ability to overcome all of life's challenges. Their commitment to our family is a thing of awe, and I am so deeply grateful for the gift of having been their daughter. Next, to my godparents, who so graciously gave me the gift of the first two years of my college education. There are few gifts that have deeper or more lasting impact upon a life.

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ABSTRACT

This study sought to evaluate the Kano Model of Satisfaction (1984) for applicability to research on college student satisfaction. Traditional college students were surveyed using both the Ruffalo Noel Levitz Student Satisfaction Inventory (SSI) and a follow-up Kano survey tool adapted from the SSI items for academic advising effectiveness and campus life. Responses were paired from respondents to both survey tools.

Analysis showed that respondents tended to have general agreement that the service elements included in this study had some positive level of impact on overall (dis)satisfaction levels. However, the type of impact which respondents reported the service elements as having—large increases in dissatisfaction for failing to fulfill must-be elements; small increases in satisfaction for fulfilling satisfiers; large increases in satisfaction for fulfilling delighters, no direct impact on (dis)satisfaction for fulfilling indifferent elements, or an increase in dissatisfaction for fulfilling reverse quality elements—varied among respondents.

The items for academic advising effectiveness were largely categorized as either must-be elements or satisfiers, with only small proportions of students seeing them as delighters, indifferent elements, or reverse quality elements. The campus life elements had much larger proportions of students coding them as indifferent or delighter elements in addition to must-be or satisfier elements.

A series of *t*-tests and ANOVAs were run to test for a statistically significant different in importance scores by Kano categorization. However, the results were only significant between those participants who had answered that the Kano category for the item was "indifferent element" versus those that had placed it in another category. This showed that the SSI importance score did not give a full picture of an item's impact on a student's overall

(dis)satisfaction levels as it did not clearly indicate what the impact of either meeting or not

meeting student expectations for that item would be.

CHAPTER I

INTRODUCTION

In an era of growing competitiveness and uncertainty, many institutions find themselves in an increasingly precarious position. With college costs and student debt-load skyrocketing, the higher education industry has found itself under rapidly increasing scrutiny: scrutiny by federal and state governments, by the media, by the public, by students and families, and even scrutiny from those employed within the industry itself. Media headlines such as "Is higher education even worth it?" and "Distrust in academics" have become common place, found in publications across the U.S. (Boyers, 2012; Browne, 2014). With this increased scrutiny has come a great deal of pressure to conform to standardized measures of quality, such as graduation rates, retention rates, placement rates, default rates, average indebtedness of graduates, and more (Higher Education Compliance Alliance, n.d.; ASHE, 2008).

The growing pressure puts college and university leaders in a rather novel position, at least compared to earlier eras. Whereas in previous periods, institutions of higher education (HEIs) were primarily focused on increasing access to higher education, the focus in the late twentieth century switched to ensuring students' success once they enrolled (Tinto, 2012; Thelin, 2011). The increasing diversity of the American college student body has led to a corresponding increase in student services as well as the staff and tools required to deliver them, which has dramatically driven up operational costs(Thelin, 2011; American Institutes for Research, 2014). In addition, the focus on increasing access led to the proliferation of institutions and an overall move toward commercialism as institutions sought to enroll more and more students, making for a dramatic increase in competition among institutions (Thelin, 2011; de Lourdes Machado, Brites, Magalhães, & José Sá, 2011; DeShields Jr., Kara, & Kaynak, 2005).

With a mission of providing education for not only the elite, but for the masses, comes the challenge of how to ensure that this broadened student body is served well by institutions of higher education (HEIs). With the increasing focus on the student experience has come a growing recognition of the student as customer (de Lourdes Machado et al., 2011; Gruber, Lowrie, Brodowsky, Reppel, Voss, & Nur Chowdhury, 2012; ASHE, 2008). Research into the areas of student retention and student success have demonstrated a link between student satisfaction levels and retention, academic success, and eventual graduation, as well as secondary benefits in areas such as recruitment and alumni involvement and donations (Bean & Bradley, 1986; Howard & Maxwell, 1980; Rowley, 1997; Alves & Raposo, 2008; Elliott & Shin, 1999; Elliott & Healy, 2001; Palacio et al., 2002; de Lourdes Machado et al., 2011; Learning and Skills Development Agency, 2001).

With the rising awareness of the impact that student satisfaction levels have on both student and institutional success, many institutions over the last 40 or so years began to administer various tools to measure their students' satisfaction levels (Odom, 2008; Bean & Bradley, 1986). Over the years, a great deal of data regarding satisfaction levels has been collected, from studies on the effect of institutional image on student satisfaction (Elliott, 2003; de Lourdes Machado et al., 2011), to the formulation of standardized tools to measure student satisfaction (Odom, 2008; Schreiner & Juillerat, 1994; Obiekwe, 2000; Ruffalo Noel Levitz, 2014a), to extensive research on the ties between satisfaction and retention and success (Alves & Raposo, 2008; Bean & Bradley, 1986; Brown & Mazzarol, 2009). One of the biggest challenges facing HEI leaders today is how to make sense of student satisfaction assessment data to design an educational experience that will best improve student satisfaction in order to drive institutional quality metrics and increase and maintain revenues. The challenge goes deeper, as

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they must also figure out how to do so in the face of limited resources and in an era of economic uncertainty, rising operational costs, shrinking external funding sources, and growing public skepticism as to the actual value of a postsecondary education.

In this study, the Kano Model of Satisfaction (1984) was used to find out how individual service elements influence overall student satisfaction with broad service areas, specifically in the areas of campus life and academic advising. In addition, the study sought to determine if there was a relationship between the Kano categories to which students assigned items and the importance rating they assigned to those same items on a standardized satisfaction survey, namely the Ruffalo Noel Levitz Student Satisfaction Inventory (SSI).

Study Focus

This study focused on understanding how individual aspects of academic advising and campus life influence overall student satisfaction with advising and campus life for traditional students at a private, four-year university. College students are one of the most frequently surveyed, studied, and analyzed groups of people in the U.S., yet bachelor's-granting institutions see nearly a quarter of their students leave after the first year and only about half of the students who enroll in bachelor's degree programs actually complete that degree after six years (Tinto, 2012; U.S. Department of Education, 2013). Furthermore, national concern is growing over the rapid gain that foreign countries are making on educating their citizens compared to the United States. For the first time in history, the U.S. is beginning to fall behind the rest of the globe in terms of the percentage of its population aged 25-34 holding at least a bachelor's degree (Lumina Foundation, 2013; National Science Board, 2008). In 2012, only 33 percent of citizens aged 25-29 held a bachelor's degree or higher (U.S. Department of Education, 2013). In response, President Obama has put forth the call to American higher education to regain the highest

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percentage of adults aged 25-34 with at least a bachelor's degree by the year 2020 (Russell, 2011).

Over the last few decades, a great deal of research has been done on the issue of retention and attrition in higher education: why do students leave? What can be done to encourage student persistence and completion? If they stay, how do we ensure they complete their degrees? Foundational theoretical work in the area of student retention was completed by Spady (1970), Tinto (1975), and Bean (1980). Spady's theory purports that student attrition is similar to suicide, whereupon the individual is insufficiently integrated into the social networks around them and chooses to "exit" rather than continue on the fringe (1970). Tinto's theory of student integration builds upon Spady's, arguing that student departure decisions are driven in the majority by the degree of social and academic integration that the student achieves with their campus (1975). Bean's theory of student attrition posits that student departure decisions are akin to employee attrition, where beliefs drive attitudes and attitudes shape behavioral intentions to stay or to go (Bean & Bradley, 1986; Cabrera, Nora, & Castaneda, 1993).

Over time, there has been a growing awareness of the role that satisfaction plays in retention and persistence (Oliver, 1999; Brown & Mazzarol, 2009; Dado, Petrovicova, Cuzovic, & Rajic, 2012). Student satisfaction has been found to be strongly connected to not only retention and persistence, but also to achievement and learning outcomes (Bean & Bradley, 1986; Howard & Maxwell, 1980). Because of its importance to the retention and success of students and its benefits to the higher education industry as a whole, a great deal of research has been done in the area of student satisfaction.

Student satisfaction has been found to be similar to both job satisfaction (Bean & Bradley, 1986; Gruber et al., 2012; Mills & Morris, 1986) and customer satisfaction (ASHE,

2008; de Lourdes Machado et al., 2011; DeShields Jr. et al., 2005; Sultan & Wong, 2011). Most researchers have come to a level of agreement that higher education is most like a service industry (DeShields Jr. et al., 2005; de Lourdes Machado et al., 2011; Temizer & Turkyilmaz, 2012), so many of the efforts to understand student satisfaction have utilized the same methods and measures that service industries use to evaluate customer satisfaction.

Study Purpose

The purpose of this quantitative, cross-sectional study was twofold:

1. To see how students categorized items related to academic advising and campus life according to the Kano Model's five dimensions in order to see if the categorizations were consistent.

2. To test how the respondents' importance rating of the academic advising and campus life items, as measured by the Ruffalo Noel Levitz Student Satisfaction Inventory, relate to their assignment of those same items to the Kano Model's five categories of satisfaction: must-be, satisfier, delighter, indifferent, and reverse quality elements.

Research Questions

The primary research questions in this study were:

Q1. Do traditional college students consider the five individual items contributing to satisfaction with academic advising to be must-be, satisfier, delighter, indifferent, or reverse quality elements?

Q2. Do traditional college students consider the 15 individual items contributing to satisfaction with campus life to be must-be, satisfier, delighter, indifferent, or reverse quality elements?

Q3. Is there a statistically significant difference between categorization of the five academic advising items as must-be, satisfier, delighter, indifferent, or reverse quality element relative to that item's rated importance on the SSI?

Q4. Is there a statistically significant difference between categorization of the 15 campus life items as must-be, satisfier, delighter, indifferent, or reverse quality element relative to that item's rated importance on the SSI?

Inquiry Framework: The Kano Model

The Kano Model of Satisfaction (1984) has been applied to a wide array of industries, from service, to manufacturing, to higher education. This model is descended from Herzberg's Two Factor Theory of Satisfaction (1959) with Kano's model building on the foundation laid by Herzberg (Kuo, 2004). Herzberg's model categorized factors contributing to dissatisfaction as being all extrinsic factors and those contributing to satisfaction as being all intrinsic factors. This separation of satisfier elements and dissatisfier elements has been widely acknowledged (and sometimes debated) throughout the literature on satisfaction (Johnston, 1995; Bockman, 1971; Cummings, 1975; DeShields Jr. et al., 2005; Ewen, Hulin, Cain Smith, & Locke, 1966; Ewen, 1964; Farr, 1977; French, Metersky, Thaler, & Trexler, 1973; Macarov, 1973; Shipley & Kiely, 1986). Like Herzberg, Kano splits factors contributing to dissatisfaction and satisfaction into separate categories. Kano's model differs from Herzberg's by allowing each specific audience to determine their own categorization of elements into dissatisfiers or satisfiers.

In the Kano Model, those factors that contribute to dissatisfaction are called must-be factors. In other words, the person considers this factor/product feature absolutely essential to his/her satisfaction—it "must be" present in the product/service, and its absence will cause a large, geometric increase in dissatisfaction. Must-be factors are categorized as one-dimensional

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quality elements or performance factors (Gruber et al., 2012). Must-be factors, because of their perceived necessity to the product or service under evaluation, have a huge impact on overall satisfaction. Failing to meet expectations on a single must-be factor will have a greater overall effect than successfully meeting 10 satisfiers, so knowing which factors fall into which categories is vital for successfully managing student satisfaction on college campuses (Barker, Emery, & Tolbert, 2005). This information helps increase current understanding of what drives dissatisfaction with a given service, which in turn gives administrators insight into drafting and prioritizing initiatives for reducing dissatisfaction with the services offered on their campuses.

The factors that contribute to satisfaction, on the other hand, are split into two categories as compared to Herzberg's one. Satisfiers are factors that the individual wants to have present, but which are not absolutely essential to the use of the product or service. The presence of satisfiers causes a linear increase in satisfaction. Delighters take this one step further. A delighter is a feature or factor that the person did not know he/she wanted, and its presence "delights" him/her and causes a non-linear jump in satisfaction (Barker et al., 2005). Satisfiers and delighters are considered attractive quality elements, or excitement factors (Gruber et al., 2012). Understanding which elements are satisfiers and which are delighters can help administrators to make strategic decisions about where to focus resources in order to maximize satisfaction with a given service.

There are two additional types of factors: indifferent quality elements and reverse quality elements (Gruber et al., 2012). Indifferent quality elements have no effect on (dis)satisfaction. There is neither a benefit nor a cost associated with their presence. Reverse quality elements, on the other hand, perform the opposite role as do satisfier and delighter elements. The presence of a reverse quality element causes an increase in dissatisfaction. Likewise, its absence causes an

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increase in satisfaction. Ideally, a reverse quality element is something to be avoided in the end

service or product, as it has a negative impact on overall (dis)satisfaction. Finally, a factor can be

identified as questionable, meaning the answers to both forms of the survey question—functional

and dysfunctional—contradicted one another. This could mean that the question was poorly

written or that it was misread. Figure 1 provides a visual map of the Kano Model.
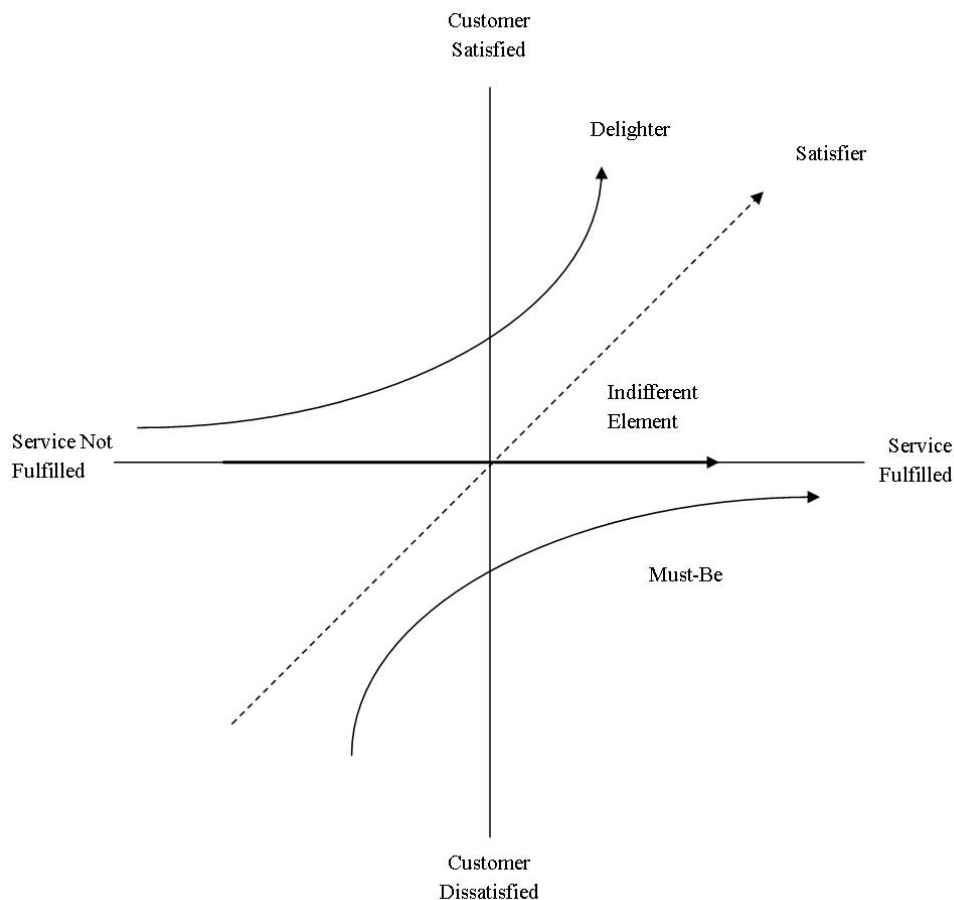
Figure 1. The Kano Model of Satisfaction. (Adapted from Dominici & Palumbo, 2013)

One important aspect to be aware of is that, over time, product elements can change Kano

categories (Stroud, n.d.). Taking a different kind of product as an example, consider the way in

which cell phone features have changed over time. First, the mere notion of making a phone call

from a mobile phone was a satisfier, even if one could not make a call in many areas due to

service coverage issues. Very quickly, the ability to make clear phone calls from anywhere moved into the realm of a must-be factor. Then, some years later, the camera phone came out. The camera feature, when it was new, was a delighter, then slowly became a satisfier, then finally a must-be. And today, most smartphone users would consider the ability to access the internet and stream videos from anywhere and everywhere to be a must-be factor. A similar phenomenon can be seen if one considers the evolution of the college dormitory into the modern residence hall. The shared showers and tiny rooms of yesteryear are no longer considered acceptable by most students.

Study Overview

Existing literature includes a wide array of factors that have been identified as contributing to student satisfaction (Moro-Egido & Panades, 2010; DeShields Jr. et al., 2005; Richardson, 2003; Elliott & Shin, 1999; Elliott, 2003; Dominici & Palumbo, 2013; Gibson, 2010). The Ruffalo Noel Levitz Student Satisfaction Inventory ™ (SSI) serves as a guide in identifying the factors most widely accepted as valid. The SSI is a widely-administered tool for assessing college student satisfaction (Ruffalo Noel Levitz, 2014b). Its validity has been well established (Schreiner & Juillerat, 1994; Obiekwe, 2000; Odom, 2008; Elliott & Shin, 1999).

The SSI identifies and measures 12 broad scales relating to undergraduate student satisfaction on four-year college campuses. These scales are student centeredness, instructional effectiveness, recruitment and financial aid effectiveness, campus support services, academic advising effectiveness, registration effectiveness, safety and security, concern for the individual, service excellence, responsiveness to diverse populations, and campus climate. The final scale differs depending on which version of the SSI is being used. The version used for four-year schools has campus life as the twelfth scale while the version for two-year schools has academic

services. The SSI evaluates each criterion on importance to the student and the level of satisfaction with the performance of their college or university. It then measures the gaps between importance and satisfaction to establish areas for improvement or areas in which resources have been over-invested when compared to actual importance to the student (Odom, 2008).

Of the 12 SSI scales, this study assessed two scales using the Kano Model (1984): academic advising effectiveness and campus life. This study sought to first understand how traditional college students categorized, in Kano terms, the service elements identified by the SSI scales of Academic Advising Effectiveness and Campus Life. The study did this by adapting a Kano survey tool from the original SSI questions and administering it to the same students who had completed the university-administered SSI survey. Having categorized the individual items using the Kano responses, the study next sought to see if the SSI importance score for a given service element had a statistically significant difference based on Kano category. This was done by pairing the responses to the Kano questionnaire with those from the SSI, and running a series of t-tests and ANOVAs on the data.

Key Service Areas: Academic Advising and Campus Life

Of the twelve SSI scales, academic advising was chosen as the first dimension for study for two key reasons. First, it has frequently been identified by research as being one of the most important educational elements influencing student (dis)satisfaction (Elliott & Healy, 2001; Erickson & Williams, 2010; Roberts & Styron, 2010; Schertzer & Schertzer, 2008). Second, it was chosen because an important implication of this study is its potential to assist HEI leaders in leveraging information about student satisfaction to drive institutional quality measures such as retention rates.

Using Tinto's (1975) model of student departure as a guide, there are two key areas into which students must become integrated in order to increase their chances of retaining: academic and social. Academic advising is a strong representative of the overall academic sphere because of the personal connection students develop with the academic side of the institution through the advisor-advisee relationship. Seen in this way, HEI leaders will have a vested interest in ensuring that satisfaction levels with academic advising are high. Knowing which individual items under academic advising fall into which Kano categories gives HEI administrators the information they can use to make strategic decisions regarding program design and resource investment.

Campus life was chosen as the second university service under study as this area nicely counterbalances against the college features included under academic advising. Campus life is an important part of the second sphere of integration that Tinto's (1975) model highlights as vital to retaining students: the social sphere. Interestingly, campus life has often been one of the lowest rated SSI scales in terms of importance to a student's overall satisfaction with the college experience (Elliott & Healy, 2001; Erickson & Williams, 2010). This juxtaposition with the importance that Tinto's model, which has been fairly well validated over the last 40 years, places on campus life and social activity reveals the crux of this study: self-reported student importance values may not give HEI leaders the level of detail they need to make targeted, strategic decisions that will have strong positive impact upon satisfaction with specific services. After all, if a well-meaning administrator prioritizes resource allocation based primarily on the importance rating students assigned to it, they might very well end up over-investing in the wrong set of service elements while starving ones which may actually have a deeper impact on overall (dis)satisfaction.

Study Importance

Better understanding college student satisfaction is of ever increasing importance in an era where student perceptions of quality have more and more impact on institutional, community, and governmental quality measures. In addition, student satisfaction is linked to not only retention and completion, but to students' overall learning outcomes and success. This makes the ability to improve satisfaction levels vital to both meeting external accountability measures and to best serving students as they seek to make meaningful change in their lives via postsecondary education (Dominici & Palumbo, 2013; Gruber et al., 2012).

Many institutions periodically survey their student bodies regarding their level of satisfaction with various campus services, many using commercial tools such as the Ruffalo Noel Levitz Student Satisfaction Inventory (Ruffalo Noel Levitz, 2014 a; Elliot & Shin, 2002). While these measurement surveys quickly identify which broad service areas are performing well or poorly, it gives institutional decision-makers little concrete direction when it comes to developing an actionable roadmap to shrink those gaps and improve performance in a specific service. Additional information about which individual educational service elements have the greatest influence over student (dis)satisfaction in a particular service area is needed for informed decision-making.

Arming administrators with the knowledge necessary to positively influence student satisfaction is vital for several reasons. First, in an era of mounting concern over the number of students who enter higher education and do not leave with a bachelor's degree within six years, it is vital that institutions take action to increase persistence and retention rates. Student satisfaction is known to have a strong relationship with student retention. Second, student success is at the heart of the educational endeavor, and a high level of student satisfaction is known to positively

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influence student success, motivation, and learning. Third, in an era of fierce competition over students and the increasing marketization of higher education as an industry, student satisfaction in terms of customer satisfaction is growing in importance as a recruitment and marketing tool.

This study provides HEI leaders with a new tool to use toward achieving a more detailed understanding of where to invest resources and services in order to have the greatest positive impact on satisfaction with individual campus services, and by extension to improve perceptions of institutional quality and to improve performance metrics. An institution can currently identify areas where it is doing poorly in terms of meeting student expectations by administering a student satisfaction measurement tool, such as the Ruffalo Noel Levitz Student Satisfaction Inventory. Having established areas of weakness, the institution is then faced with the difficult task of figuring out the best, most efficient way of closing those performance gaps. This is where the Kano model and the methods outlined in this study can be of assistance; helping to identify exactly which services areas should be tackled first, depending on the category students have place it in.

This study is particularly timely because the measurement of student satisfaction has become highly standardized and commercialized as a process and, because of this, little critical thought is given to whether or not current methods of measurement are really giving administrators and practitioners the information they need to successfully manage student satisfaction on their campuses (Odom, 2008). For the purposes of this study, the term "administrators" is referring not to all administrative staff, but rather to upper-level leadership at the university. The Kano Model gives insight into how individual campus service elements, such as advisor approachability, sum up to comprise a complete service area that students are well satisfied with and will perceive as being high quality. Applying this model to student satisfaction

can vastly change the way student satisfaction is seen, understood, and leveraged for student benefit.

It is important that higher education professionals increase their understanding of student satisfaction as an important tool driving student (and institutional) success and as an important measure of quality. Too often, higher education professionals react to the notion of students as customers with disdain, mistaking the process of recognizing students as the primary recipients of a product—education—as a demand to cater to the capricious and often irrational whims and desires of emerging adults (Molesworth, Nixon, & Scullion, 2009; Sall & Ndjaye, 2007; Silber, 1980). Higher education needs to move beyond this simplistic and inaccurate understanding of students as customers in order to maintain relevance in a changing world and to better fulfill its educational mission and better serve all stakeholders. This study seeks to help illuminate the path to making strategic, data-driven decisions and prioritizing programs more effectively in order to improve overall institutional performance and mission fulfillment.

Study Boundaries

Student satisfaction is a broad topic, and has been broken down into many sub-categories by past researchers, such as by student type, delivery modality, student demographics, institution type, academic discipline, and more (ASHE, 2008; de Lourdes Machado et al., 2011; DeShields Jr. et al., 2005; Sultan, & Wong, 2011). Although the Kano Model does offer a method to identify an audience-specific list of factors influencing satisfaction, this study did not seek to reinvestigate or question the established list of service elements that have been identified by the SSI as having strong impacts on student satisfaction with academic advising effectiveness or campus life. Rather, this study sought to test whether the impact which the individual service

elements have on overall satisfaction with specific campus services can be better understood by applying the Kano Model to them.

The study was limited to only one broad student category: the "traditional" college student at the four-year college or university, a group which has been widely studied and for which a great deal of research is available (Kelly, LaVergne, Boone Jr., & Boone, 2012; Morrow & Ackerman, 2012; Stukalina, 2012; de Lourdes Machado et al., 2012). This population was chosen because of its prominence in the higher education industry. According to the National Center for Education Statistics (2014), 41 percent of all 18 to 24 year-olds were enrolled in degree-granting institutions in 2012, and 69 percent of those were enrolled in four-year institutions. Out of all students enrolled in degree-seeking institutions, 57.7 percent were in the traditional 18-24 year-old range. Because this group comprises such a significant proportion of the overall customer base, satisfying and retaining this group is vital to the health of the higher education industry as a whole.

Definition of Terms

The following section contains an explanation of key terms that are used throughout this document. Term definitions and sources are provided.

Academic Integration: A key term in the literature on student attrition and retention, academic integration is defined as being interested, motivated, and confident as a student, and perceiving that one "thinks like faculty" (Bean & Bradley, 1986).

Attrition/Dropout: Tinto defines attrition/dropout as "a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experiences in those systems…continually modify his goal and institutional

commitments in ways which lead to persistence and/or to varying forms of dropout"

(1975, p. 94).

Campus Life: Ruffalo Noel Levitz defines campus life as "student life programs offered by the

institution, ranging from athletics to residence life. This [item] also assesses campus

policies and procedures to determine students' perceptions of their rights and

responsibilities" (2014a, para. 15).

Customers/Consumers: while in some fields of study these terms may be defined separately, the

literature on college student satisfaction being used in this study uses these two terms

interchangeably.

Delighters: as defined in the Kano Model, a delighter is a feature or element that the person did

not know he/she wanted, and its presence "delights" him/her and causes a non-linear

jump in satisfaction (Barker et al., 1993).

Extrinsic/Hygiene Factors: Herzberg's Two-Factor Theory defines hygiene factors, or extrinsic

factors, as those factors that contribute directly to a person's dissatisfaction. These factors

are those things external to the individual but which have an effect upon their level of

dissatisfaction. Herzberg's study of job satisfaction identified a list of hygiene factors,

including "interpersonal relations with subordinates or supervisors, technical

supervision,…administrative policies,…working conditions,…and personal life" (Bess &

Dee, 2008, p. 290).

Goal Commitment: In retention literature and Tinto's model in particular, goal

commitment is defined as the student's "level of expectation [of a degree] (e.g., two- or

four-year degree) and the intensity with which the expectation is held (Tinto, 1975, p.

93).

Indifferent Element: as defined in by the Kano Model, indifferent quality elements, as their name

suggests, have no effect on (dis)satisfaction. There is neither a (dis)satisfaction level

increase nor decrease associated with their presence (Gruber et al., 2012).

Institutional Commitment: In retention literature and Tinto's model in particular, institutional

commitment is defined as the student's "specific institutional components which

predispose him toward attending one institution (or type of institution) rather than

another" (Tinto, 1975, p. 93).

Instructional Effectiveness: This is students' perception of the quality/effectiveness of their

"academic experiences, the curriculum, and the campus's commitment to academic

excellence" (Ruffalo Noel Levitz, 2014a, para. 7)

Intrinsic/Motivator Factors: Herzberg's Two-Factor Theory defines motivator factors, or intrinsic

factors, as those factors that contribute directly to a person's satisfaction. These factors

are those things internal to the individual and which have an effect upon their level of

satisfaction. Herzberg's study of job satisfaction identified a list of motivator factors

including "achievement, recognition, the work itself, responsibility, and advancement"

(Bess & Dee, 2008, p. 290).

Kano Model: the Kano Model of Satisfaction (1984) is descended from Herzberg's Two Factor

Theory of Satisfaction (1959) with Kano's model building on the foundation laid by

Herzberg (Kuo, 2004). Kano's model differs from Herzberg's by allowing each specific

audience to determine their own categorization of elements into dissatisfiers or satisfiers.

The model defines five types of factors, or elements, that can contribute to satisfaction or

dissatisfaction: must-be factors, satisfiers, delighters, reverse quality elements, and

indifferent elements (Gruber et al., 2012; Barker et al., 2005).

Motivation: "Motivation…reflects a student's desire to commit to academic goals, such as

finishing college, along with a commitment to the institution" (Goenner, Harris, & Pauls,

2013, p. 43)

Must-be factor: as defined in the Kano Model, a must-be factor contributes to dissatisfaction.

The person considers this factor/product feature absolutely essential to his/her

satisfaction—it "must be" present in the product/service, and its absence will cause a

large, geometric increase in dissatisfaction. Must-be factors are categorized as one-

dimensional quality elements or a performance factors (Gruber et al., 2012).

Perceived Quality: "In the services literature, the focus is on perceived quality, which results

from the comparison of customer service expectations with their perceptions of actual

performance" (Gruber, Fuss, Voss, & Glaser-Ziduka, 2010).

Persistence: Hagedorn (2005) clarified the difference between persistence and student retention,

stating that "[t]he National Center for Education Statistics… differentiates the terms by

using 'retention' as an institutional measure and 'persistence' as a student measure. In

other words, institutions retain and students persist" (p. 6).

Product of a University: This study will use Robert Sevier's (1996) definition, as paraphrased by

Elliot (2003): "a university's product is the sum of the student's academic, social,

physical, and even spiritual experiences" (p. 272).

Quality: quality is a highly contested term in higher education as its definition changes

depending on who is doing the evaluation thereof (Dimas, Goula, Pierrakos, 2011). As

this study is agreeing with the assertion that higher education is a service industry,

references to quality are simply abridged references to "perceived quality," defined

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above. Quality here can be in reference to either a particular educational service area, such as academic advising, or with the educational experience as a whole.

Retention: Hagedorn (2005) clarified the difference between persistence and student retention, stating that "[t]he National Center for Education Statistics…differentiates the terms by using 'retention' as an institutional measure and 'persistence' as a student measure. In other words, institutions retain and students persist" (p. 6).

Reverse quality element: as defined by the Kano Model, reverse quality elements perform the opposite role as do must-be's, satisfiers, or delighters. The presence of a reverse quality element causes an increase in dissatisfaction and its absence causes an increase in satisfaction (Gruber et al., 2012).

Satisfaction: an emotional response to a specific transaction; this response occurs at a specific moment in time (Giese & Cote, 2002).

Satisfier: as defined in the Kano Model, satisfiers are factors that the individual wants to have present, but which are not absolutely essential to the use of the product or service. The presence of satisfiers causes a linear increase in satisfaction (Barker et al., 1993).

Service Element: an individual item which adds up with other elements to make a whole service. For example, service elements for the service called academic advising effectiveness include advisor approachability and advisor assistance with setting goals, among others.

Service Encounter: a service encounter is a transaction between the service provider and the customer. In higher education, service encounters can be defined broadly, as in a course the student enrolls in, to narrow, as in a specific interaction between an employee and a student, such as an individual advising appointment (Athiyaman, 1997).

Service Quality: the gap between a student's expectations and his/her perceptions of the service

    actually delivered to them, regardless of student type or modality (Gruber et al., 2010).

Social Integration: similar to Bean's "institutional fit," Tinto's social integration is the degree to

    which a student feels part of his/her campus community. Social integration "occurs

    primarily through informal peer group associations, semi-formal extracurricular

    activities, and interaction with faculty and administrative personnel within the college"

    (Tinto, 1975, p. 107).

Student Satisfaction: Elliot and Healy (2001) define student satisfaction: "a short-term attitude

    resulting from an evaluation of a student's education experience." This definition will be

    used with the broader understanding provided by Dado et al. (2012) that student

    satisfaction can be transaction-specific in scope or it can be a cumulative attitude relating

    to the sum of the entire consumption experience.

Student Satisfaction Inventory ^{TM} (SSI): Developed by the USA Group Ruffalo Noel Levitz, a

    higher education consulting group, the SSI is a tool for measuring student satisfaction on

    college campuses. The SSI has become one of the most-used tools for the measurement

    of student satisfaction. Furthermore, the "reliability of the SSI is high, with internal

    consistency of $\alpha = .98$ and three-week test-retest $r = .87$" (Ruffalo Noel Levitz, 2009, p.

    2).

Student Success: student success is defined as academic achievement, engagement in

    educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills

    and competencies, persistence, attainment of educational objectives, and postcollege

    performance (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006, p. 7).

Traditional Student: a traditional student was defined by the participating institution as a college

      student, aged 18-24, and pursuing a bachelor's degree on a traditional, residential

      campus.

Summary

This chapter served as an introduction to student satisfaction as a dynamic construct that

has strong ties to student retention, persistence, and to student outcomes. Because of the

powerful impact that student satisfaction has on students and institutions alike, it is of vital

importance that researchers and administrators take the time to more fully understand how

student satisfaction works, and how it can be leveraged to raise retention rates, completion rates,

and overall student learning outcomes. The proposed study sought to deepen understanding of

the way in which individual service elements influenced overall student satisfaction with a

specific campus service beyond the current, somewhat surface-level of understanding provided

by commercial tools such as the SSI. In the following chapters, the existing literature on this

topic will be explored and the planned method and rationale for conducting this study will be

fully explained, followed by a presentation of the results and discussion of their meaning.

CHAPTER II

LITERATURE REVIEW

Overview

The purpose of this quantitative, cross-sectional study was twofold:

1. To see how students categorized items related to academic advising and campus life according to the Kano Model's five dimensions in order to see if the categorizations were consistent.

2. To test how the respondents' importance rating of the academic advising and campus life items, as measured by the Ruffalo Noel Levitz Student Satisfaction Inventory, relate to their assignment of those same items to the Kano Model's five categories of satisfaction: must-be, satisfier, delighter, indifferent, and reverse quality elements.

This chapter will provide an overview of the concept and study of student satisfaction and its importance to the student experience in terms of retention, success, and motivation. The chapter will also reveal the ways in which student satisfaction was studied in the past. Next, key literature on program prioritization and institutional decision-making will be presented. Finally, the literature on the model framing the study, the Kano Model of Satisfaction, will be discussed.

Student Satisfaction

Student satisfaction is a complex and often misunderstood concept. Many higher education professionals fail to understand why student satisfaction is of such key importance to the ongoing success of institutions. Many simply see the increasing focus on student satisfaction as simply another symptom of higher education's descent into commodification and the marketplace; a process that many feel puts at risk the academic integrity of higher education (Szekeres, 2010; Molesworth, Nixon, & Scullion, 2009; ASHE, 2008; Mai, 2005).

The marketization process has pros, such as increased access and higher enrollments, as well as cons, such as mission creep and rising costs (DeShields Jr. et al., 2005; ASHE, 2008). However, it is not the purpose of this study to sell the reader on buying into one side of the argument or the other. Rather, its goal is to make clear the value of having a clear understanding of the value of student satisfaction, in terms of its impact on the core mission of higher education. Further, this study hopes to arm practitioners with the tools and knowledge necessary to exert positive influence on the student satisfaction levels at their own institutions, enabling them to improve everything from retention rates to student success to relationships with donors.

Defining Student Satisfaction

The literature on satisfaction in general has established that, while satisfaction may differ in regard to its object from one setting to the next, satisfaction in any context remains the same construct (Giese & Cote, 2002). That said, definitions still vary widely across the literature. Giese and Cote (2002) undertook a review of the existing literature on satisfaction, finding that across most definitions, three general component factors remain consistent:

> 1) [C]onsumer satisfaction is a response (emotional or cognitive); 2) the response pertains to a particular focus (expectations, product, consumption experience, etc.); and 3) the response occurs at a particular time (after consumption, after choice, based on accumulated experience, etc). (p. 123)

The above definition can be condensed to say that satisfaction is an emotional response to a specific transaction and this response occurs at a specific moment in time. Dado et al. (2012) further add that satisfaction has been described as "an inherently unstable and temporary mental state" (Reichheld, 1996 as cited in Dado et al., 2012, p. 206) and as "an active, dynamic process, with a strong social dimension, which is context-dependent and invariably intertwined with life

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satisfaction and the quality of life itself" (Fournier & Glen Mick, 1999 as cited in Dado et al., 2012, p. 206). This definition of satisfaction holds true regardless of whatever the person is consuming, be it a particular product, a service, an interaction, or an entire education.

In addition, Dado et al. (2012) point out that satisfaction is conceptualized in two different ways in the literature. First, it is conceptualized as transaction-specific, a response to one particular transaction for one particular service or product (think of a student's satisfaction with one particular interaction with his or her advisor). Second, it can be conceptualized as a cumulative response to the overall experience, such as a student's entire advising experience at a given institution over the course of four years.

Because of the varying contexts in which satisfaction is measured and studied, many definitions of satisfaction are modified to become context specific, specifically student satisfaction, customer satisfaction, or service satisfaction. Athiyaman (1997) defines student (dis)satisfaction as "an internal state similar to attitude but it is transaction-specific" (p. 529). Dominici and Polumbo (2013) define student (dis)satisfaction as "students' perceptions of or attitudes toward learning activities" (p. 89). Gruber et al. (2010) define student satisfaction as "pleasurable fulfillment, which means that consumers perceive that 'consumption fulfills some need, desire, goal, or so forth and that this fulfillment is pleasurable'" (p. 107). Elliott and Healy (2001) define student satisfaction as "a short-term attitude resulting from an evaluation of a student's educational experience" (p. 2). In another publication, Elliot and Shin (2002) further state that "student satisfaction is being shaped continually by repeated experiences in campus life" (p. 198).

Though all of these definitions are slightly different on the surface, the core components of student satisfaction—being an emotional response; being related to specific programs,

services, or experiences; and being a response unique to a particular point in time, a response that might be very different at a future moment—are fairly consistent throughout. This study will use Elliot and Healy's condensed definition of student satisfaction: "a short-term attitude resulting from an evaluation of a student's education experience." This definition will be used with the broader understanding provided by Dado et al. (2012) that student satisfaction can be transaction-specific in scope or it can be a cumulative attitude relating to the sum of the entire consumption experience.

Higher Education as a Service Industry

Defining student satisfaction as a form of customer satisfaction raises the question of whether higher education can in fact be cast as a service industry, and if it can, can students further be cast as the consumers of its services? The literature on the topic does offer heavy support for both higher education as a service industry and students as its primary customers.

Numerous studies identify higher education as a becoming ever more subject to market forces (DeShields Jr. et al., 2005; Butt & Ur Rehman, 2010; de Lourdes Machado et al., 2011). With powerful competition over students, prestige, faculty, public and private dollars, and more, institutions of higher education are increasingly coming to view themselves as businesses in a competitive market. This represents a major shift from traditional conceptions of the university as an academic sanctuary, exempt from the mundane concerns of business and finance. As Newman and Couturier (2002) put it, "the market has arrived in higher education. There is no turning back" (as cited in de Lourdes Machado et al., 2011, p. 415).

Beyond simply recognizing higher education as subject to market forces, many researchers and professionals argue that higher education is a service industry, and therefore can be studied using many of the same techniques. Temizer and Turkyilmaz (2012) put it simply:

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"HEIs represent the characteristics of pure service industry" (p. 3803). The service industry sector is defined rather broadly. At its most basic, the service industry is split into two general categories: consumer-oriented and business-oriented, with a third category which is mixed between the two with services directed at both consumers and businesses (Simmering, n.d.). HEIs can be understood as fitting somewhere into the third category. On the one hand, they provide educational services directly to student-consumers. On the other, they provide educated personnel to businesses as skilled employees. DeShields Jr. et al. (2005) stated that institutions of higher education are themselves increasingly viewing the higher education industry as a service industry. Correspondingly, there has been an increasing focus on meeting the expectations of students, the primary consumers of the services provided by higher education institutions.

While educational services, practices, and contexts vary widely around the world, this evolution in the way higher education is perceived is occurring both in the United States and beyond. Dominici and Palumbo (2013) describe changes occurring in Italy, where policymakers are beginning to demand the collection of student satisfaction data as both a measure of quality and to increase student recruitment efforts. Gruber et al. (2010) have similar findings in Germany, noting that institutions are focusing on meeting and exceeding the needs and expectations of their students. Brown and Mazzarol (2009) explore the topic from an Australian point of view, finding Australian higher education to be in "an environment which now acknowledges higher education as a major service good" (p. 82). Sohail and Shaikh (2004) explore the emerging topic of service quality for universities located in the Middle East, noting the increase of competition over students and the growing number of students wishing to study abroad.

Identifying higher education as a service industry is a first step in coming to understand how students and stakeholders perceive HEIs and their quality. However, defining the "product" of higher education can be tricky. Is it limited to the experiences had in the classroom? How about student life programming? Do the experiences had while hanging out with friends in a residence hall room count? How about the dining hall? Or is it all of the above? This study will use Robert Sevier's (1996) broad definition, as paraphrased by Elliot (2003): "a university's product is the sum of the student's academic, social, physical, and even spiritual experiences" (p. 272).

Elliot (2003) goes on to cite Kotler and Fox's (1995) argument that while students tend to report overall satisfaction with their academic experiences, their satisfaction with support services and other out-of-the-classroom services tends to be less positive. Student satisfaction needs to be understood as a very comprehensive construct; even experiences had by students that are not strictly part of the university's academic or student life programming (i.e. service interactions with bookstore staff, condition of residence hall lounges, delivery process for work study checks, etc…) will factor into a student's overall satisfaction with the higher education experience.

Because a university's sum product is such a broad, complex set of services and experiences, it is necessary to break it down into measurable, manageable service areas, such as the 12 service scales defined by the SSI. In this study, individual service areas are considered to be standalone sub-products, the sums of which add up to more than their whole, creating the total higher education product experience.

Students as Customers

The relationship between students and institutions of higher education is characterized in a number of different ways. Some argue that students are akin to employees, in that both students and employees are voluntary members of the organization (Bean & Bradley, 1986; Gruber et al., 2012; Mills & Morris, 1986). Students are alternatively sometimes characterized as partners in the educational process (DeShields Jr. et al., 2005; Gruber et al., 2012; Kara & DeShields Jr., 2004). Nearly all higher education professionals would also agree that students are themselves products of the institution, as they are the products which employers and society consumes upon graduation (ASHE, 2008; Gruber et al., 2012).

One particular view of the student role has become primary in the literature on student satisfaction: students as customers. While many researchers recognize the challenges inherent in labelling students as customers—as students are also very clearly products of the institution—it must also be acknowledged that without students, higher education would not need to exist. Therefore, students are the primary customers/consumers of higher education's services (ASHE, 2008; de Lourdes Machado et al., 2011; DeShields Jr. et al., 2005; Sultan, & Wong, 2011; Abdullah, 2006).

The multitude of ways in which the student-institution relationship is characterized reveals the complexity of this topic. As Edmondson (2011) puts it, "[college is] a peculiar industry where the customer is also the product—and what the customer wants may not always be the best for the product" (as cited in ASHE, 2008, p. 3). This complexity means that while students are the primary customers of higher education, meeting their expectations and wishes is not as simple as meeting those of customers in other industries. In higher education, satisfying customers is not a matter of giving in to the customer's every wish, which would clearly be

inappropriate in terms of educating students. It is more a matter of delivering a product that the customer is satisfied with both in terms of quality and in terms of the level of respect and customer service they receive.

<div align="center">**Why is Student Satisfaction Important?**</div>

Having established that higher education can be considered a service industry and that students are the primary consumers of its services, the reader may be wondering what importance this topic has in practical terms. Understanding and controlling student satisfaction is of great importance to higher education institutions. As previously mentioned, student satisfaction has strong links to student recruitment, student retention, institutional quality, student motivation, student outcomes and success, and overall strength of relationships with institutional stakeholders (Dado et al., 2012; Brown & Mazzarol, 2009; Moro-Egido & Panades, 2010; Bean & Bradley, 1986; Elliott, 2003). Because of the way in which satisfaction influences all of the above areas, understanding student satisfaction and using that knowledge to shape the student experience via program prioritization and program design is important to the long-term health and success of institutions of higher education. Student satisfaction's link to each key area will be discussed more fully in the following sections.

Satisfaction and Quality

Product quality in higher education is a complex topic. Its definition and contributing factors change depending on which stakeholder audience is being considered. Dimas et al. (2011) describe the differences between perceptions of quality for various stakeholder groups.

> 1) *Providers (funding bodies and community at large).* Quality is interpreted as value for money, 2) *Users of products (current and prospective students).* Quality is interpreted in terms of excellence, 3) *Users of outputs (i.e. employers).* Quality is interpreted as fitness for purpose, 4) *The employees of the sector (academics and administrators).* Quality is interpreted as consistency. (p. 305)

However, Dimas et al. go on to say that quality within service industries is generally closely tied to customer satisfaction, with satisfaction driving perceived quality. Since this study is focused primarily on students as the primary consumers of HEI's services, students' perceptions of quality will be the focus of the literature reviewed here.

Athiyaman (1997) and Oliver and DeSarbo (1989) describe the relationship between student satisfaction and perceived quality. An individual forms an attitude and develops expectations about a product upon first learning of the product's existence; for example, a student learning about a new course from the university catalog. Upon enrolling in the course, the student experiences either confirmation or positive/negative disconfirmation of his/her original beliefs about the course. If the student experiences negative disconfirmation, meaning the actual class "product" fell short of performance or quality expectations, the student's level of dissatisfaction increases. If the individual experiences positive disconfirmation, the student's level of satisfaction increases. If the pre-enrollment expectations are simply confirmed, the student's level of satisfaction will correspond with the attitude he/she held before enrolling. Finally, the student assigns attributional causes to the disconfirmation he/she experienced, placing blame anywhere from the instructor, fellow classmates, his/herself, etc…

Athiyaman (1997) continues on to describe each individual class taken as a service encounter or transaction. He further argues that more recent encounters have a higher impact on perceived quality than those in the past. This argument means that if one asks a student about his/her evaluation or perceived quality of the university at a given point in time, all previous encounters or courses must be weighted in the equation with the most recent ones receiving the highest weights. In reality, though, each day of class can also be seen as a service encounter, or each encounter with a professor throughout a given day, making it nearly impossible to measure

satisfaction with each previous service encounter. For this reason, when trying to measure satisfaction with something as complex as the total college experience, Athiyaman suggests going with a more general approach and trying only to measure satisfaction in terms of a smaller set of university characteristics, such as staff availability or library services.

For the most part, researchers consider service quality in higher education to be the gap between a student's expectations and his or her perceptions of the service actually delivered to them, regardless of student type or modality (Gruber et al., 2010; Emery, 2006; Elliott & Shin, 2002; Jackson & Helms, 2008; Palacio, Diaz Meneses, & Perez Perez, 2002; Sumaedi, 2011; Nadiri, Kandampully, & Hussain, 2009; Dado et al., 2012). However, some researchers define quality in somewhat different terms. Elliot (2003) finds that for traditional students at a four-year university, perceived quality is determined by their perceived intellectual growth and interactions with instructors who treat the students fairly and are able to offer high-quality instruction. Baxter (2012) characterizes the notion of quality for students in much more economic terms—perceived value for the money. She found that for distance students, perceptions of quality hinge around the quality of the materials provided and the support offered by instructors.

The argument that increasing students' levels of perceived service quality in higher education should be a primary focus of faculty, staff, and administrators is often dismissed by higher education professionals, believing that their role is to educate students, not to make kids "feel good" (Molesworth et al., 2009; Anctil, 2008). However, as Gruber et al. (2012) put it, "Students, like everyone else, are service literate. It is unreasonable to expect that they will come into college and class leaving service expectations, which they have learned in every other sphere, outside the classroom door" (p. 166). This argument is echoed by Danjuma and Rasli (2012), who state that "institutions of higher learning, such as universities, can ill-afford to view

their operations from an inside perspective only. Today's higher education customers, notably students, expect better services across all dimensions of service quality" (p. 350).

Higher education practitioners need to expand their interpretation of student satisfaction and perceived quality as a measure of institutional quality as more than a simple matter of student's "liking" a teacher or having their every demand and wish met by the institution. Rather, student satisfaction levels and institutional quality have a complex relationship that is a reflection of institutional performance across a wide array of areas, from academic advising to academic instruction to campus life. Therefore, carefully managing student satisfaction can be a powerful tool in achieving the institutional mission, especially in light of satisfaction's connections to student recruitment and retention; student motivation, achievement, and success; and relationships with outside stakeholders such as alumni, donors, and more.

Satisfaction and Enrollment Management

Enrollment management, from recruitment to retention to graduation, is a vital concern for institutions. Public and private institutions alike find themselves increasingly dependent on tuition dollars to meet an ever greater proportion of operating costs. According to the U.S. Department of Education (2013), in 2012, tuition and fee revenue comprised an average of 22 percent of all revenues at public four-year institutions and 32 percent for all private four-year institutions. The data additionally show that tuition and fee revenue was 19 percent higher in 2012 than 2007 for public four-year institutions and seven percent higher for private non-profit institutions. Because student satisfaction impacts both recruitment and retention efforts, increasing student satisfaction could lead to significant financial gains for the institution as a whole.

Satisfaction and recruitment. While it may seem logical to assume that the factors that drive student satisfaction are likely to be the same factors that drove the initial purchase decision, research shows that this is not the case. As Alves and Raposo (2008) put it, "in the measurement of students' satisfaction in higher education, influential aspects of the selection of a university should not be confused with influential aspects of student satisfaction" (p. 204). However, student satisfaction is acknowledged to influence recruitment efforts, albeit indirectly. The higher the satisfaction level of current and past students, the more positive the institution's public image, the easier it is to recruit new students (Elliot, 2003; Elliott & Healy, 2001; Palacio et al., 2002; de Lourdes Machado et al., 2011). Student satisfaction's primary influence on student recruitment comes from word-of-mouth reports of current and past students, meaning that while having high student satisfaction will have a positive impact on recruitment, it is an indirect influence.

Satisfaction and retention. Student satisfaction has a much more direct influence upon student retention. High student satisfaction, indeed, customer satisfaction with any product, leads to an increase in consumer loyalty (Oliver, 1999; Brown & Mazzarol, 2009; Dado et al., 2012). Loyalty in turn influences behavioral intention, the intention to repurchase a product (or, in this case, continue enrollment at a university) or even the intention to recommend (or recommend against) the product to others, such as the above-mentioned word-of-mouth testimonials affecting institutional image (Oliver, 1999; Dado et al., 2012).

Loyalty has a deep and well established relationship with student retention. Tinto's (1975) model of student departure argues that student retention hinged upon two important student-driven factors: student goal commitment—the student's commitment to attaining a degree—and student institutional commitment—the student's commitment to a particular college

or university. This model has been updated several times since its 1975 debut, but its basic principles remain the same.

Student satisfaction and institutional commitment. Student satisfaction, with its effect upon student loyalty, has a very clear relationship with institutional commitment (Gruber et al., 2012; Goenner et al., 2013). As Vander Schee (2010) argues, "student satisfaction with products early on leads to brand loyalty or retention in the future" (p. 32). Temizer and Turkylimaz (2012) also discuss the relationship between student satisfaction and loyalty, stating that "the satisfaction and loyalty of the students strongly depends on the efforts regarding the quality of the services provided" (p. 3802).

For the purposes of this study, loyalty and institutional commitment can be understood to be the same thing (Butt & Ur Rehman, 2010; Vander Schee, 2010). Interestingly, few studies make this relationship explicit, two notable exceptions being Sparkman, Maulding, and Roberts' (2012) study on the non-cognitive predictors of student success and Vander Schee's (2010) study on how first-semester programming drove satisfaction, which in turn drove loyalty/retention. Articles seem to be steeped either in the language of the market (loyalty) or the language of student attrition and retention (institutional commitment). Even though parties in both camps are using the same or similar language, neither seems to realize it.

Student satisfaction and goal commitment. Student (dis)satisfaction also has a powerful relationship with goal commitment. One important factor driving student (dis)satisfaction is the utility the student expects to get from their investment of time and resources into higher education (Bean & Baxter, 1986; Trotter & Cove, 2005). Most educators can attest to frequently fielding questions such as "how is this going to be used in real life?" and "why do I need to learn this?" If a student expects that his or her educational experience will help meet personal goals

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such as degree completion and, eventually, career success, she or he is more likely to be satisfied

with the college experience (Bean & Baxter, 1986; Gibson, 2010; Crosling, Heagney, & Thomas,

2009; Learning and Skills Development Agency, 2001). Therefore, the perceived relevance and

usefulness of college programming will bolster (dis)satisfaction levels, leading to an alignment

of institutional product and a student's commitment to her or his goals (Crosling, Heagney, &

Thomas, 2009; De Lourdes Machado, Brites, Magalhães, & José Sá, 2011).

Satisfaction, Motivation, and Success

Student satisfaction has been shown to have a relationship with student motivation and

student success (Elliott, 2003; Bean & Bradley, 1986; Moro-Egido & Panades, 2010). Indeed,

educators have long accepted that there is a relationship between student academic performance,

motivation, and satisfaction, but exactly which influences the other has been under debate

(Howard & Maxwell, 1980; Bean & Bradley, 1986; Herbert, 2006). General consensus has long

assumed that a student's satisfaction with his/her educational experience is influenced by the

grade he/she is receiving in a course (Marsh, Overall, & Thomas, 1976; Gruber et al., 2012).

Marsh et al. (1976) performed a study to test whether that assumption was true. Their results

show that while there is a relationship between expected grades and evaluation of an instructor as

satisfactory or not, the amount of bias produced by receiving a poor grade is negligible.

This research is continued by Howard and Maxwell (1980), whose findings suggest that

the relationship between student evaluations of satisfaction and their grades appear to be the

reverse of the common assumption of grades driving evaluation. They are finding, rather, that a

student's satisfaction with his/her academic experience in fact influences his/her level of

motivation for academic performance. As Bean and Bradley (1986) put it, "the findings

consistently indicated that *satisfaction had a greater influence on performance than performance*

had on satisfaction [emphasis in original]" (p. 403). These results are replicated in other studies, leading to many student satisfaction researchers recognizing the influence of satisfaction upon motivation and success (Elliott, 2003; Bloom, Yorges, & Ruhl, 2000; Moro-Egido & Panades, 2010; Suhre, Jansen, & Harskamp, 2007).

Deeper research in the area of student motivation has revealed ways in which a well-crafted academic experience can lead to high student satisfaction and therefore bolster motivation and performance. Students can be taught to correctly attribute failures and successes in order to bolster their academic motivation (Perry, Stupnisky, Daniels, & Haynes, 2008; Haynes, Daniels, Stupnisky, Perry, & Hladkyj, 2008; Haynes, Ruthig, Perry, Stupnisky, & Hall, 2006). Furthermore, research has found that the more control a student feels over his/her situation, the more motivation he/she feels to achieve academic goals (Daniels, Stewart, Stupnisky, Perry, & LoVerso, 2011; Stupnisky, Renaud, Daniels, Haynes, & Perry, 2008; Stupnisky, Perry, Renaud, & Hladkyj, 2013; Bekele, 2010). The better a job a teacher or educational program does of teaching students correct attribution for their successes or failures, and the higher sense of control a teacher or program fosters in its students, higher their academic motivation tends to be.

The above research into attributional retraining and sense of control makes no effort to directly link to student satisfaction. However, the research does make clear the effect that attribution and control have upon a student's emotional state (Daniels, Pekrun, Stupnisky, Haynes, Perry, & Newall, 2009). As satisfaction is described as an emotional state regarding a particular transaction (Giese & Cote, 2002), it is only logical to make the further connection to say that an environment that fosters positive attribution of successes and failures as well as an increased sense of control could only yield positive levels of satisfaction. This connection

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between attribution, control, emotion, and student satisfaction is demonstrated empirically by both Alves and Raposo (2008) and Oliver (1993).

Satisfaction and Relationships with Stakeholders

Educational institutions have a wide variety of stakeholders, from students and families to faculty; from employers to community members. When an institution's students are well satisfied, its relationships with these stakeholder groups are improved as a result (Rowley, 1997; Alves & Raposo, 2008). As described earlier, satisfaction is an assessment of an experience; of its quality. The higher students' levels of satisfaction, the higher the perceived quality of the institution, for not only students but for the many stakeholder groups with whom they interact (Gruber et al., 2012; Gruber et al., 2010; Elliott & Healy, 2001; Elliott & Shin, 2002). Whether influenced by a student's positive statements about his or her experience at the institution, or influenced more subliminally by exposure to successful and skilled graduates, satisfied (or dissatisfied) students have a broad impact on other stakeholder groups. Thus, positive student satisfaction levels can have far reaching effects, improving relationships with donors, employers, other students, faculty and staff, and other external stakeholders in addition to its positive effects upon recruitment, retention, and student success.

Measurement of Student Satisfaction

According to Bean and Bradley (1986), much of the early research on student satisfaction was conducted during the 1960s and 1970s, an era of significant student unrest. Much of this research was focused on measuring the levels of satisfaction in specific areas of the university, rather than trying to increase an understanding of its underlying causes. Since Bean and Bradley's 1986 study, many researchers have attempted to discover which key variables influence student satisfaction. Many factors are currently identified as being influential.

However, the much of the research into student satisfaction retains this focus on measurement of overall satisfaction (Elliott & Shin, 2002).

Additional concern about the way in which the study of student satisfaction is generally approached is raised by Alves and Raposo (2009). "[It] is seen that many studies that approach the question of student satisfaction in higher education are not done with the objective of analysing or measuring satisfaction thoroughly" (p. 204). Rather, they argued, most studies of college student satisfaction are primarily focused on trying to assess whether students will choose to remain enrolled or if they have become successfully integrated with their institutions. Alves and Raposo further point out that many studies fail to directly measure satisfaction, instead using indirect methods such as students' willingness to recommend their institutions to a friend or their confidence in the future utility of their degrees. Finally, they express concern over the tendency to equate satisfaction with quality, arguing that the construct of satisfaction is represented a more complex array of attributes.

Alves and Raposo (2009) posit the following variables as being highly influential in the formation of (dis)satisfaction. First, disconfirmation of expectations is considered of great influence. As described by Athiyaman (1997), disconfirmation is the process of (dis)confirming the expectations which are formed about a product or service as the person learns of its existence. However, Alves and Raposo argue that there are concurrent influences in addition to the disconfirmation process, namely the influence of previous experiences as well as wishes and ideals.

Alves and Raposo also argue for additional variables influencing (dis)satisfaction. These include the value of alternatives, wherein the more attractive the next nearest alternative is, the less satisfied an individual is with the product or service which he or she receives. An additional

variable is attribution, which is essentially the process whereby students place blame or responsibility for the disconfirmation they experience. Finally, Alves and Raposo identify emotion (affect) as having a magnifying effect on all of the variables influencing satisfaction. While concluding that satisfaction is much more stable when measured using multiple comparison points, Alves and Raposo are unable to prove that either emotion or attribution are primary influencers on the formation of (dis)satisfaction. Rather, their results confirm that the process of disconfirmation has the greatest single influence upon (dis)satisfaction.

Elliot and Shin (2002) also offer an alternative approach to the traditional method of simply assessing a student's overall satisfaction with their college experience. They recommend using a multi-attribute rating scale. In this method, multiple educational attributes are assessed individually for both importance to the students and their levels of satisfaction with each individual attribute. A student's overall satisfaction is then established by finding the weighted average of the student's reported ideal performance of the attributes, his/her rating of the institution's performance, and finally the overall importance of the attributes as rated by the entire participant pool. Once the gap between these scores is established, students can be categorized from "very satisfied" to "very dissatisfied" using the computed value, rather than the traditional method of asking a student to simply self-report his/her overall satisfaction. The method described above mirrors that used by one of the most popular (and highly commercialized) tools for assessing college student satisfaction in use today: the Ruffalo Noel Levitz Student Satisfaction Inventory.

Student Satisfaction Inventory

Ruffalo Noel Levitz's Student Satisfaction Inventory (SSI) has become one of the most popular tools for assessing student satisfaction levels on college campuses. According to Ruffalo

Noel Levitz, "[t]he Ruffalo Noel Levitz Satisfaction-Priorities Surveys **have been taken by more than 5,500,000 students at 2,700 campuses**, giving [users] access to exceptionally valid and varied national benchmarks" (2014b, para. 5, emphasis in original).

The SSI assesses 12 performance scales: academic advising effectiveness, campus climate, campus support services, concern for the individual, instructional effectiveness, admissions and financial aid effectiveness, registration effectiveness, responsiveness to diverse populations, safety and security, service excellence, and student centeredness. The final scale differs depending on which version of the SSI is being used. The version for two-year schools has academic services as the twelfth scale. The version used for four-year schools—the version being used for this study—has campus life as the twelfth scale.

Most frequently, the SSI is administered by an institution as a means of assessing the institution's performance in the eyes of its students. The students provide an importance score and satisfaction score for the survey items, which then provides institutions with a personalized evaluation of not only their student bodies' valuing systems in terms of the importance they place on specific services, but also provides a performance gap from where the students place the item in importance versus where they rate it in terms of satisfaction in that area. In addition to the data analysis which Ruffalo Noel Levitz provides to institutions when they administer the SSI to their student bodies, numerous independent studies on student satisfaction have been performed using data collected via the SSI. For example, Elliott (2003) uses data from an SSI administration to research whether the mean satisfaction scores for the individual dimensions are significant predictors of the overall satisfaction score. Elliott finds that student centeredness and campus climate are the only two dimensions which prove to have a significant predictive relationship with overall satisfaction.

Elliott and Healy (2001) also use SSI data in a study similar to Elliott's later (2003) work. This study also seeks to identify potential predictors for overall satisfaction. However, this time the performance gap scores on an SSI administration are analyzed to see if they have a predictive relationship to the overall satisfaction score reported by the students. They find that student centeredness, campus climate, and instructional effectiveness all appear to be significant predictors of overall satisfaction.

Noel-Levitz performed a study which went beyond the usual analysis of the SSI results which are provided to campuses after administering the SSI. In their 2009 study, researchers seek to determine if the satisfaction scores for each of the 12 dimensions provided on the SSI are predictive of a student's likelihood to be retained. They find that the predictive effect of the satisfaction scores is higher for lower classmen than for upper. They also find that the strongest predictive satisfaction elements varies by class level. For freshmen, campus climate is the strongest predictor, with the global satisfaction score following behind. Sophomore retention is also strongly predicted by campus climate and global satisfaction, but GPA and institutional type also are strong factors for this class level. For juniors and beyond, GPA, institutional type, and student demographics have increasing predictive importance when compared to satisfaction scores. Additionally, the performance gap scores begin to overtake the satisfaction scores in terms of predictive power.

Key Factors Contributing to Student Satisfaction: Academic Advising and Campus Life

Researchers have long sought to understand what individual educational attributes affect student satisfaction. This study focuses on two key areas: academic advising effectiveness and campus life. These are two of the 12 service areas identified by the SSI as contributing to student satisfaction with the college experience. The following section describes not only the two service

areas of focus, but additional factors which have been identified in student satisfaction research, but were not examined in this exploratory study.

Academic advising effectiveness. Academic advising effectiveness is frequently cited as vital to student satisfaction and student success (Elliott & Healy, 2001; Erickson & Williams, 2010; Schertzer & Schertzer, 2008; de Lourdes Machado et al., 2011). It is included as one of the 12 scales assessed by the SSI, with Ruffalo Noel Levitz providing the following definition. "Academic Advising Effectiveness (also called Academic Advising and Counseling Effectiveness) assesses the academic advising program, evaluating advisors and counselors on their knowledge, competence, approachability, and personal concern for students" (2014a, para. 3).

Researchers have found academic advising to be deeply important to students' overall (dis)satisfaction with their college experiences. Elliott and Healy (2001) performed a study of traditional undergraduate students from the Midwest, finding that they rated academic advising effectiveness as the most important dimension contributing to satisfaction with their college educations. In 2010, Erickson and Williams had similar findings with another group of traditional, undergraduate students from the Midwest. Schertzer and Schertzer (2008) argue that academic advising is a key component to achieving academic fit, and those students that feel they have a good academic fit tend to have positive feelings about the institution as a whole. These findings support Tinto's (1975) model of student retention, which argues that academic integration is one of two major integrative spheres which drive student departure decisions. De Lourdes Machado et al. (2011) similarly found that academic advising is an important contributor to student satisfaction with academic aspects of their educational experience.

Campus life. Campus life is often regarded as being a major contributor to overall student satisfaction levels. Campus life is assessed by Ruffalo Noel Levitz as one of the SSI scales. According to Ruffalo Noel Levitz, "Campus Life, included on versions for four-year institutions, assesses the effectiveness of student life programs offered by the institution, ranging from athletics to residence life. This scale also assesses campus policies and procedures to determine students' perceptions of their rights and responsibilities" (2014a, para. 15)

Other studies cite campus life as being important to student (dis)satisfaction with the overall college experience. Elliott and Healy (2001) found that while students rate campus life as the least important dimension contributing to satisfaction with their college educations, they still give it a fairly substantial importance score. In 2010, Erickson and Williams had similar findings with another group of traditional, undergraduate students from the Midwest. Interestingly, while campus life is reported to be a less important factor in satisfying current students, it is cited as being of considerable importance to students in choosing their college, meaning this factor has significant value for recruitment purposes (Szekeres, 2010; de Lourdes Machado et al., 2011).

Of further interest is the contrast these somewhat lackluster importance scores have with Tinto's (1975) retention model, which places integration with campus life as one of the two key spheres with which students must become integrated to stave off a decision to depart the institution. This helps to highlight one of the cruxes of this study. How much faith can administrators really place in the accuracy and value of the self-reported importance scores provided by their students? Tinto's model has been well validated, showing that an engaging and inclusive campus life is key to retaining students (Borglum & Kubala, 2000; DeShields Jr et al., 2005; Goenner et al., 2013; Tinto, 2012). The juxtaposition of relatively low importance scores with the emphasis placed on this area by the Tinto model suggests that it would be unwise for

administrators to make program design decisions and allocate resources based on importance

scores alone.

Additional Factors Influencing Student Satisfaction

There is a wide array of additional factors that strongly influence college students'

overall (dis)satisfaction with their college experiences. While this study is focused on only two

of them, it is important to understand that they are only two parts of a much broader and more

complex system of influences. The below section outlines additional factors that have been found

to be important in determining a student's overall satisfaction with the college experience.

Campus climate. Another scale assessed on the SSI, "Campus Climate evaluates how

the institution promotes a sense of campus pride and belonging" (Ruffalo Noel Levitz, 2014a,

para. 4). On the SSI, the campus climate scale has several items which overlap with campus life,

revealing how these two dimensions are closely interrelated, but not identical. In a study on the

relationship between student satisfaction and retention, Ruffalo Noel Levitz (2009) found that

participants' satisfaction with campus climate is a reliable predictor of retention for all class

levels, but most especially for first-year students. Campus climate is rated in the upper half of the

SSI scales in terms of importance (Erickson & Williams, 2010). Elliott and Healy (2001) further

found that campus climate is very important in determining a student's overall satisfaction score.

However, in Elliott's (2003) study, campus climate is not found to be a significant predictor for a

student's overall satisfaction levels. It is, though, one of the biggest predictors of student

retention in Noel-Levitz's (2009) study.

Campus support services. Campus support services is a third scale assessed by the SSI.

Ruffalo Noel Levitz gives the following description: "Campus Support Services assesses the

quality of support programs and services" (2014a, para. 5). This dimension includes campus

support areas such as library services, bookstore services, academic support and tutoring, and career counseling. Kotler and Fox (1995) found that this area tends to be one of low satisfaction when compared to the satisfaction with primary instructional experiences (as cited in Elliott, 2003). Lau (2003) echoes this as an area of weakness for many colleges, stating that "academic and career advisors are essential to the success of student retention programs… Institutional administrators should ensure that…academic support services are readily available to students (p. 128).

In terms of the effect that campus support services has on college student satisfaction, Elliott's (2003) study again does not find that this dimension was a significant predictor of overall satisfaction. In addition, Erickson and Williams (2010) report that students rate campus support services in the bottom half of the 12 SSI scales in terms of importance, as does Elliott and Healy's (2001) study.

Concern for the individual. Next on the list of SSI scales is concern for the individual. "Concern for the Individual assesses your commitment to treating each student as an individual. This assessment includes groups who deal personally with students (e.g., faculty, advisors, counselors, and staff)" (Ruffalo Noel Levitz, 2014a, para. 6). As with many of the SSI scales, there is overlap between the survey items. This set of items, however, focuses specifically on the level of personal attention and individual concern that various campus staffs show for students.

This dimension is similar to one identified by another satisfaction assessment tool, SERQUAL. SERVQUAL has five total dimensions, and the dimension of "empathy" is very similar to the SSI conception of concern for the individual. Nadiri, Kandampully, & Hussain (2009) defined empathy as "the service firm's readiness to provide each customer with personal service" (p. 525). Additional researchers put a similar emphasis on this construct, albeit under a

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variety of names, such as "interpersonal relationships" (Moro-Egido & Panades, 2010; Baxter, 2012; Borglum & Kubala, 2000) and "service encounters" (Gruber et al., 2012; Temizer & Turkyilmaz, 2012; Hasan, Ilias, Abd Rahman, & Abd Razak, 2008).

Concern for the individual was ranked fifth of twelve in importance in Erickson and Williams' (2010) report. Similarly, Elliott and Healy's (2001) study ranked it at sixth. Finally, Elliott's (2003) study did not find this dimension as significantly predictive of overall satisfaction.

Instructional effectiveness. A fifth SSI scale is instructional effectiveness. "Instructional Effectiveness measures students' academic experiences, the curriculum, and the campus's commitment to academic excellence" (Ruffalo Noel Levitz, 2014a, para. 7). This scale is focused on the student's classroom experience, not in terms of relationships with faculty, per se, but about the student's belief in the quality of the educational programs, instructional efforts, and institutional commitment to academic excellence. Elliot (2003) found that this dimension was statistically significant in predicting overall student satisfaction levels. Gibson (2010), Elliott and Healy (2001), and de Lourdes Machado et al., (2011) had similar findings.

Admissions and financial aid effectiveness. Admissions and financial aid effectiveness (also called recruitment and financial aid effectiveness) is another of the 12 SSI scales. "Admissions and Financial Aid Effectiveness measures the competence of admissions counselors, along with students' perceptions of the financial aid programs" (Ruffalo Noel Levitz, 2014a, para. 8). This scale's items pertain mostly to the accuracy of the picture and level of customer service which recruiters painted to students during the enrollment process, as well as the timeliness of cost and aid information provided prior to enrollment.

In the Erickson and Williams (2010) report, this scale ranked eight of twelve in terms of importance. It ranked 10 of 12 in Elliott and Healy's (2001) study. Likewise, Elliott's (2003) study did not find recruitment and financial aid effectiveness to be significant in predicting overall satisfaction. Interestingly, studies that are not based on the SSI do not seem to regard admissions and financial aid as an area of influence for satisfaction. For the most part, they focus on services that are centered on current students, not on the effect that admissions practices may have later on in the enrollment lifecycle of students.

Registration effectiveness. Next of the SSI scales is registration effectiveness. "Registration Effectiveness assesses registration and billing, including how smooth the registration process is" (Ruffalo Noel Levitz, 2014a, para. 9). This scale focuses on policy, procedure, convenience, and customer service. As with admissions and financial aid, registration effectiveness is not often found in studies that are not based on the SSI. This is likely because the focus of studies of satisfaction is generally the transformative services that add up to make the total college student experience. Registration, like admissions, is generally considered to be an aside, a simple means by which students access the university's services. However, this is what makes it important to assessing total satisfaction. Much in the same way a software application's user interface impacts a person's satisfaction with the product as a whole, admissions, financial aid, and registration processes and policies are the gatekeepers to the student's college experiences, and therefore have a deep impact on overall satisfaction.

The level of impact this area has is revealed by the importance rating which students have assigned to it. In Erickson and Williams' (2010) report, it ranks seven of twelve, beating out areas such as campus life and service excellence. In Elliott and Healy's (2001) study, it ranked a

high fourth on the list in importance. However, Elliott's (2003) study found that it was not a significant predictor of overall satisfaction.

Responsiveness to diverse populations. Responsiveness to diverse populations is also an SSI scale. "Responsiveness to Diverse Populations assesses the institution's commitment to specific groups of students enrolled at the institution (e.g., under-represented populations, students with disabilities, commuters, part-time students, and adult learners)" (Ruffalo Noel Levitz, 2014a, para. 10). Despite the name, the focus of this scale is not service to ethnic or racial minority groups, differing religious groups, or other notable sources of diversity such as sexual orientation or gender identity. Rather, this scale focuses on broader student groups, such as older-than-average or part versus full-time students, although there is one item asking about services provided to under-represented groups. Unique among the 12 SSI scales, responsiveness to diverse populations is not assigned an importance score, instead given only a satisfaction score with the university's performance in this area. Because of the lack of an importance score rating, none of studies being used to benchmark the SSI items included it in their analysis.

Much of the research on student satisfaction has found that student inclusion in these diverse groups affects the importance ranking that students place on the dimensions which influence overall satisfaction. Among the student groups which have been studied are full versus part-time (Borglum & Kubala, 2000; Moro-Egido & Panades, 2010; Thomas, 2010), online versus onsite students (Zhu, 2012; Herbert, 2006; Gikandi, Morrow, Davis, 2011; Richardson, 2003; Ruffalo Noel Levitz, 2014b; MacDonald & Thompson, 2005), employment status (Moro-Egido & Panades, 2010; Thomas 2010), institutional type (Borglum & Kubala, 2000; Ruffalo Noel Levitz, 2014b; Sojkin, Bartkowiak, & Skuza, 2012), and academic discipline (Moro-Egido & Panades, 2010).

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Safety and security. The Ruffalo Noel Levitz SSI also lists safety and security among its scales. "Safety and Security measures the campus' responsiveness to students' personal safety and security" (Ruffalo Noel Levitz, 2014a, para. 11). Elliott's (2003) study found that safety and security comes last in terms of significance as a predictor of overall college student satisfaction. However, Erickson and Williams' (2010) report found that students rank safety and security third in importance to determining their overall satisfaction, as does Elliott and Healy's (2003) study. Ruffalo Noel Levitz' (2009) study found that while safety and security is not a strong predictor for retention on its own, it does serve to amplify campus climate's effectiveness as a predictor of retention. In a slightly different line of research, Trotter and Cove (2005) found that students' satisfaction is affected when the nearby car park is temporarily closed, forcing students to find off-campus parking and making them feel that their persons and belongings were less safe as a result.

Interestingly, safety and security may not be a universal factor in college student satisfaction. In a study performed with Romanian college students, Munteanu, Ceobanu, Bobâlcă, and Anton (2010) found that unlike the results achieved by American researchers, college students in Romanian universities have a fairly low level of concern with campus safety and security, instead being much more focused on faculty members' behavior.

In addition to being specifically associated with college student satisfaction, other satisfaction studies have identified safety as being important to other constituent groups. Barker et al. (2005) identify safety as an important factor in determining a supervisor's satisfaction level with employee performance. Additionally, in a study on job satisfaction which uses both Maslow's Hierarchy of Needs and Herzberg's Two-Factor Model of Satisfaction, Udechu (2009) argues that sense of safety is essential to ensuring workers feel motivated and not dissatisfied.

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Service excellence. Service excellence is second to last on the list of SSI scales. In other satisfaction models, service excellence is generally threaded throughout all or several of the dimensions. The SSI, however, separates this area out as a unique dimension in order to evaluate specifically customer service performance in various units and across the university as an entire scale. "Service Excellence measures quality of service and personal concern for students in various areas of campus" (Ruffalo Noel Levitz, 2014a, para. 12). This dimension is similar to the next dimension, student centeredness, in that its focus is on the approachability and kindness of university staff. However, the service excellence dimension is about specific units within the university, whereas student centeredness is more about the universal feeling on campus, and broader service groups such as administrators.

In Elliott's (2003) study, service excellence is not found to be a significant predictor of overall satisfaction. In Erickson and Williams' (2010) report, it also does not rank particularly high, coming in fourth from the end in terms of importance. In Elliott and Healy's (2001) study, it ranks even lower, coming in second to last in importance. However, even at its relatively low ranking out of the twelve scales, it is important to note that it is given an importance score in the upper five-point range. Out of a scale of one to seven, this reveals how important even the "least" important SSI scales are to students.

Student centeredness. The final SSI scale is student centeredness. "Student Centeredness measures the institution's attitude toward students and the extent to which they feel welcome and valued" (Ruffalo Noel Levitz, 2014a, para. 13). This dimension is similar to service excellence, but has some key differences. Rather than being about specific customer service levels and competence of key staffing units, this dimension is about the holistic feeling of being on campus. Is it welcoming? Are the people caring and inclusive? Does the institution

show personal concern for its students? Elliott's (2003) study found student centeredness, along with instructional effectiveness, to be a significant predictor of a student's overall satisfaction levels. Similarly, Erickson and Williams (2010) found that this dimension ranks among the top four dimensions in terms of importance to students' satisfaction. Dissimilarly, Elliott and Healy's (2001) study found that this dimension ranks toward the bottom of the list in terms of importance.

The Total Quality Management (TQM) framework offers a very similar construct, albeit with a different label: commitment and reliability. One study employing a TQM framework found that students' perceptions about the level of commitment from top management predicts their resulting satisfaction with their higher education experiences (Ardi, Hidayatno, & Zagloel, 2012). Other studies had similar findings, with students' perceptions about the reliability of the institution and its representatives being the primary predictor of satisfaction (Shahdadnejad & Alroaia, 2013). Overall, it appears that student satisfaction is driven at least in part by their perceptions regarding the commitment levels and trustworthiness of administrators and faculty.

Conceptual Framework: The Kano Model of Satisfaction

The Kano Model maintains the basic structure of Herzberg's (1959) Two Factor Theory of Satisfaction, where the sets of factors which influence dissatisfaction are unique from those that influence satisfaction (Kuo, 2004; Barker et al., 2005; Emery, 2006; Jackson & Helms, 2008; Gruber et al., 2012). Those factors that contribute to dissatisfaction are called "must-be" factors (Gruber et al., 2012). The factors that contribute to satisfaction, on the other hand, are split into two categories as compared to Herzberg's one. Satisfiers are factors that the individual wants to have present, but which are not absolutely essential to the use of the product or service. The presence of satisfiers causes a linear increase in satisfaction. Delighters take this one step

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further. A delighter is a feature or factor that the person did not know he/she wanted, and its presence "delights" him/her and causes a non-linear jump in satisfaction (Barker et al., 1993).

There are two additional types of factors: indifferent quality elements and reverse quality elements (Gruber et al., 2012). Indifferent quality elements, as their name suggests, have no effect on (dis)satisfaction. There is neither a benefit nor a cost associated with their presence. Reverse quality elements, on the other hand, perform the opposite role as do must-be's, satisfiers, or delighters. The presence of a reverse quality element causes an increase in dissatisfaction and its absence causes an increase in satisfaction.

Kano in Higher Education

The Kano Model has been applied to a wide array of industries and is often employed for use in product design. Luor, Lu, Chien, and Wu (2012) found in their review of the literature that the Kano Model has had a steadily growing impact upon research into quality and satisfaction, especially among researchers in America, Asia, Africa, and Europe. In higher education, however, the model has only been employed a few times. Reasons why it has perhaps not been more fully employed in higher education may be because its history of use in manufacturing and product design has not made it an obvious analog to higher education. As discussed earlier in this chapter, higher education is only recently beginning to look at itself as a kind of service industry, so adoption of metrics and tools more commonly used in industry is coming slowly. The higher education Kano studies that have been conducted to date have mostly been conducted by faculty or researchers in the business or marketing fields of study, individuals who are more familiar with non-education industry satisfaction models than most.

Dominici and Palumbo (2013) employed the Kano Model in a study which sought to understand how to build the ideal e-learning course to achieve high student satisfaction levels. In

their study, they follow all steps of the Kano methodology, starting by building a focus group to identify audience-specific desires, building a questionnaire based on the focus group responses, then finally distributing the final survey to a larger sample.

Dominici and Palumbo's questionnaire includes six product elements, which they then attempt to assign to a category based on the frequency of the responses they receive for each. Three of the six cannot be neatly tucked into a single category as the responses are spread across multiple categories and no one group is the overwhelming winner. They do have a substantial group of students answer that "mandatory quizzes" is a reverse quality element, which they conclude means that, because quizzes are a necessary aspect of education, should be handled carefully so as to be as little annoying as possible.

Gruber et al. (2012) also apply the Kano Model in a higher education environment, this time seeking to understand what impact various faculty characteristics have upon students' satisfaction with those faculty. The intent of this study is to help guide faculty training and hiring decisions, in order to improve the student experience. They found that none of the professorial personality qualities fall into the must-be category, but rather are either satisfiers or delighters. In general, respondents indicate that their ability to have a good, personal relationship with their faculty members is deeply impactful upon their satisfaction levels.

Barker et al. (2005) also examine students using the Kano Model, but their aim is to measure employers' satisfaction with newly hired college graduates. In this study, the researchers borrow and modify survey items from another study which has been designed to assess employers' satisfaction with employees. Having modified the items to suit the Kano Model, they administer the questionnaire to both employers and students. The goal is to assess what real employers feel are most important to their satisfaction with entry level employees, then

compare it to what students—soon-to-be entry level employees—believe is important to a supervisor's satisfaction. The results show that students tend to categorize items as delighters or satisfiers, but the supervisors categorize them as must-be, indicating a significant gap between real-world job expectations and what students expect to face.

Emery (2006) performs a similar study, this time assessing professor's satisfaction with student performance, likening professors to employers and students to employees. The purpose of the study is to help clarify faculty expectations for students, under the assumption that a major role of the faculty members as facilitators of learning is to clearly communicate their expectations to the students. Overall, he finds that most faculty members, regardless of age, sex, or rank, tend to agree on which category to assign the given classroom and homework behaviors. They especially agree upon which items are must-be items.

Summary

This chapter provides a broad overview of the literature on student satisfaction and the ways in which it has been studied, as well as providing an explanation of the conceptual framework that will be applied in this study. Important concepts are as follows. First, student satisfaction can be defined as "a short-term attitude resulting from an evaluation of a student's education experience" (Elliott & Healy, 2002, p. 2). Second, higher education can be considered to be a service industry, and students are its primary customers. Third, there is a powerful relationship between student satisfaction and perceptions of quality, enrollment management, student motivation, student success, and relationships with stakeholders. Fourth, much of the research into student satisfaction has focused on measurement rather than on understanding how it works, leaving institutional administrators without the tools they need to leverage student satisfaction to the benefit of their campuses and students. Finally, the application of the Kano

Model to better understand services areas such as academic advising and campus life will

provide the kind of data that administrators need to make strategic decisions to enhance student

satisfaction with the services on their campuses. This information is provided in order to give

context to the study methods, results, and discussion that will follow in the coming chapters.

CHAPTER III

METHODS

The purpose of this quantitative, cross-sectional study was twofold:

1. To see how students categorized items related to academic advising and campus
    life according to the Kano Model's five dimensions in order to see if the
    categorizations were consistent.

2. To test how the respondents' importance rating of the academic advising and
    campus life items, as measured by the Ruffalo Noel Levitz Student Satisfaction
    Inventory, relate to their assignment of those same items to the Kano Model's five
    categories of satisfaction: must-be, satisfier, delighter, indifferent, and reverse
    quality elements.

This study focused on college student satisfaction, seeking to find ways in which the

application of the Kano Model can help scholars and practitioners alike to move beyond

measurement of satisfaction and forward to actually building a road map to improve institutional

performance and enhance student satisfaction. As a first step in the exploration of the Kano

Model for higher education, this study used results yielded by the Ruffalo Noel Levitz Student

Satisfaction Inventory (SSI), and sought to identify if there were a relationship between Kano

categorization and the SSI importance score. This chapter describes the methods used to achieve

the study purpose and answer the four research questions.

Research Questions

Four research questions were explored in this study:

Q1. Do traditional college students consider the five individual items contributing to satisfaction with academic advising to be must-be, satisfier, delighter, indifferent, or reverse quality elements?

Q2. Do traditional college students consider the 15 individual items contributing to satisfaction with campus life to be must-be, satisfier, delighter, indifferent, or reverse quality elements?

Q3. Is there a statistically significant difference between categorization of the five academic advising items as must-be, satisfier, delighter, indifferent, or reverse quality element relative to that item's rated importance on the SSI?

Q4. Is there a statistically significant difference between categorization of the 15 campus life items as must-be, satisfier, delighter, indifferent, or reverse quality element relative to that item's rated importance on the SSI?

Research Approach and Design

While there were many different approaches to studying this topic, the one that was selected was to start with a pre-existing student satisfaction tool as a guide in defining the student satisfaction constructs which could then be examined using the Kano Model. The results from the original tool could then be compared to the Kano results, to see if there was additional information provided via the Kano Model that was not achievable using the standardized tool alone. The standardized tool selected was the Ruffalo Noel Levitz Student Satisfaction Inventory (SSI), because of its prominence in the higher education marketplace. According to Ruffalo Noel Levitz, their Satisfaction-Priorities Surveys have been administered at 2,700 campuses (2014b), making it one of the most widespread student satisfaction tools in use. Having chosen a tool to adapt the Kano items from, the next step was to administer both tools—the SSI and the newly developed Kano questionnaire—to the same students in order to compare the results of both

tools. Only by pairing the results of the SSI version of the question to the Kano version for each respondent was it possible to see if the importance score was consistently different for each Kano category, or if there were overlaps.

Because this study involved surveying human subjects, approval was obtained from the appropriate Institutional Review Boards. This step was necessary to ensure that no participants would be put at risk for injury or exploitation due to their involvement in this study. IRB approval information can be found in the appendices of this document.

This study had two distinct, yet interrelated, sets of core questions which it sought to answer. First, because Kano has not previously been applied to student satisfaction at this broad level, there was the basic question of how the students at the participating university categorized, in Kano's terms, the various service elements that make up campus life and academic advising effectiveness. The method for determining the answer to these two research questions is fairly well established, with many studies using the prescribed Kano methods of first determining which product elements are important to consumers, then surveying customers about those elements, then finally mapping the responses to yield Kano categories for each product element (Gruber et al., 2012; Matzler, Hinterhuber, Bailom, and Sauerwein, 1996; Baker et al., 2005; Kuo, 2004; Luor et al., 2012).

The second set of research questions sought to delve deeper and to see what kinds of new information, if any, could be obtained by applying the Kano method to student satisfaction in this broad capacity. The Ruffalo Noel Levitz Student Satisfaction Inventory (SSI) provided an excellent starting place for this exploratory study. The SSI has been widely administered to students at institutions across the U.S., and its methods and results are well validated (Ruffalo Noel-Levitz, 2014a; Schreiner & Juillerat, 1994; Obiekwe, 2000; Odom, 2008).

Because of the prevalence of the SSI, it seemed logical to first see if there were any clear relationships between the Kano categories and the importance scores of the SSI. If participants consistently assigned the same level of importance and the same Kano category to an element, Kano's potential added benefit to the study of student satisfaction would be providing another layer of meaning to the already popular importance scoring system, allowing administrators to leverage their established SSI data to make more targeted decisions when trying to improve institutional performance via increasing student satisfaction levels. If, however, there proved to be a widespread lack of consistency between importance score and Kano category, it could mean that there was a great deal of important information that the importance score/performance gap system was not providing and which could be filled by the Kano Model.

This set of research questions centered around not just how specific service elements impacted academic advising or campus life generally, but rather sought to identify differences in assigned category and score across the board. This required a research design that compared the assigned Kano category (the nominal, independent variable) and importance score (the scale, dependent variable) for each item and each respondent in order to identify if there were differences between and within the Kano groups in terms of importance scores.

Setting

This study focused on traditional college students enrolled in undergraduate, on-campus programs at a private, four-year university in the upper Midwest. Institutional demographic information revealed that the majority of the on-campus, undergraduate student body at the time of this study hailed from the immediate four-state region surrounding the institution. According to 2013 U.S. census data, this region was relatively sparsely populated and fairly homogenous in terms of ethnic, racial, and religious backgrounds. The student body reflected this, with

institutional data revealing that 83.6 percent of the on-campus, undergraduate student body reported as non-Hispanic, Caucasian descent; 80.1 percent as being members of a Christian religious denomination; 81.8 percent hailed from within the four-state region; and the gender breakdown was 34.6 percent male to 65.4 percent female.

Instrumentation

Two instruments were used in this study. The first was the Ruffalo Noel Levitz Student Satisfaction Inventory (SSI) and the second was a tool developed the by researcher by adapting the original SSI questions using the Kano method.

Student Satisfaction Inventory. Ruffalo Noel Levitz' Student Satisfaction Inventory is one of the tools for assessing student satisfaction levels on college campuses. According to Ruffalo Noel Levitz, "[t]he Ruffalo Noel Levitz Satisfaction-Priorities Surveys **have been taken by more than 5,500,000 students at 2,700 campuses**, giving [users] access to exceptionally valid and varied national benchmarks" (2014b, para. 5, emphasis in original).

The SSI consists of 79 items assessing 12 performance scales: academic advising effectiveness, campus climate, campus support services, concern for the individual, instructional effectiveness, admissions and financial aid effectiveness, registration effectiveness, responsiveness to diverse populations, safety and security, service excellence, and student centeredness. The final scale, specific to four-year institutions, is campus life.

Participants were asked to respond to each question twice, one Likert scale response for the item's importance to respondents, and another Likert scale response for their satisfaction with the institution's performance on that item. For this study, only questions pertaining to the importance of academic advising effectiveness and campus life were pulled from the respondent data. The academic advising effectiveness scale consisted of five survey questions and campus

life consisted of fifteen. The SSI is highly reliable, with Noel-Levitz (2009) reporting an $\alpha = .98$ and a three week test-retest of $r = .87$. Other researchers have confirmed the validity of the SSI as well (Schreiner & Juillerat, 1994; Obiekwe, 2000; Odom, 2008).

For this study, academic advising effectiveness and campus life were chosen as the two university service areas to be examined. For the Academic Advising Effectiveness scale, Ruffalo Noel Levitz (S.Cook, personal communication, March 8, 2016) reports an $\alpha = .86$ on all importance scores for four-year universities for 2012 survey data. For Campus Life, the 2012 importance score data yielded an $\alpha = .93$.

Kano survey instrument. The literature outlined two different methods for developing a Kano survey. No matter which path the researcher intended to take, the first step was to identify the key product or service elements which would be analyzed for impact on the consumer. In the first method, one gathered a focus group comprised of individuals from the potential consumer base (Dominici & Palumbo, 2013; Emery, 2006). The focus group then shared their thoughts on what kinds of features or services they expected or wished for from the product being developed or analyzed. Their responses were then gathered by the researcher, and formulated into specific product elements. The researcher then formulated a survey for distribution to the broader consumer base. This method was usually used when employing the Kano method to develop a new product or service (Gruber et al., 2012; Kuo, 2004).

The second method, which is the one employed by this study, consisted of using a pre-existing source to identify the key product or service elements (Barker et al., 2005; Kuo, 2004; Gruber et al., 2012). If the item were an existing manufactured good, the key elements could consist of a combination of current features of the product combined with hypothetical features that could be added in the future (Kuo, 2004). In the case of this study, it was not a

manufacturing good under study, but rather a complex set of services that combine together to make up an individual's higher education experience.

Following this second methodological starting point, the second instrument used in this study relied upon the list of service elements already identified by the SSI. The original SSI questions regarding academic advising effectiveness and campus life items were adapted into one functional and one dysfunctional statement per item. As Academic Advising Effectiveness had consisted of five questions and Campus Life of fifteen, the final Kano survey resulted in 20 functional/dysfunctional pairs of questions. Participants were asked to respond to each item with one of five responses (outlined in more detail below) in order to categorize academic advising and campus life components as must-be factors, satisfiers, delighters, indifferent elements, or reverse quality elements. The wording of the original SSI questions was preserved as closely as possible in order to ensure that participants interpreted the subject and meaning of the question the same way on both survey tools.

Following the Kano survey development method outlined by Gruber et al. (2012) and Matzler, Hinterhuber, Bailom, and Sauerwein (1996), each Kano item included two separate questions. First, a student was asked how he/she felt if the product element was present (functional form of the question). Second, how did he/she feel if the product element was not present (dysfunctional form)? An example survey item functional/dysfunctional combo is, "How do you feel if your academic advisor is approachable?" and, "How do you feel if your academic advisor is not approachable?" Students were asked to choose one of five responses for each question: 1) I like it that way, 2) It must be that way, 3) I am neutral, 4) I can live with it that way, or 5) I dislike it that way. These responses yielded nominal data, rather than interval data.

Survey Administration

All students from the participating institution who met the stated participant requirements were sent up to three requests, spread out over four weeks, to complete the Ruffalo Noel Levitz SSI survey tool via their institutional email address. At the end of the SSI, there was a link and request to participate in the Kano survey that was developed for this study. This link took them to a second electronic survey instrument containing a form for informed consent, and then the Kano-adapted SSI items. The SSI consisted of 73 items requesting both a satisfaction and importance score Likert response, plus about 30 additional items asking demographic questions and/custom questions added by the institution. The Kano survey consisted of 40 paired functional/dysfunctional questions.

Because of the placement of the request and link all the way at the end of the lengthy SSI survey tool, many early SSI participants either did not see it or read it completely, or else they were so exhausted from the roughly 100-item SSI that an additional survey was of little interest to them. After the first one and half weeks of the administration window, the response rate on the Kano survey was very low (only 17 total responses). To help raise the Kano survey completion rate, a follow-up email was sent to the entire SSI sample group encouraging completion of the Kano survey tool, which resulted in a much more satisfactory completion rate of the Kano instrument. No incentives or prizes were offered to entice participation per the instruction of the participating institution's Office of Assessment.

Delimiters

Because the focus of the study was on developing a greater understanding of the factors influencing college student satisfaction with academic advising and campus life, it was important that all participants had been enrolled at the institution under study for long enough to give them

an opportunity to experience most of the factors being examined. To this end, this survey was administered in the latter half of the fall term, ensuring that even new students had a few months to have experienced many of their campus's services.

Additionally, only traditional college students were included in this study. The participating institution's definition of traditional students was used to define the parameters. The participants were of the traditional age range of 18-24, and were enrolled in face-to-face classes on a traditional, residential campus.

Finally, for practical reasons, all 12 SSI scales could not be assessed in this study. Because the Kano questionnaire required two questions for every one question on the SSI, the final pair of surveys would have been nearly 300 items, which participants would have been extremely unlikely to complete. Instead, two of the twelve scales were chosen—academic advising effectiveness and campus life.

Academic advising effectiveness was chosen as one of the two university services to study as it is often rated as the SSI scale most important in determining a student's satisfaction with their overall college experience. Because of its importance to the overall college experience, managing satisfaction levels with academic advising is vital for ensuring a positive college experience for students. So, if college administrators want to improve their overall performance in the area of academic advising, knowing whether students perceive the individual items making up academic advising as must-be factors, satisfiers, or delighters will help these leaders to be strategic in implementing program additions and changes to best improve the overall satisfaction with academic advising.

Campus life was chosen as the second university service under study as this area nicely counterbalances against the college features included under academic advising. As shown by

Tinto's (1975) model of student departure, there are two key areas into which students must be successfully integrated in order to optimize their chances of persisting to degree: academic and social. As an exploratory study hoping to arm college leaders with the tools they need to make strategic programming decisions in order to best impact student satisfaction, and by extension retention and graduation rates, it only makes sense to explore both sides of the student retention coin—academic and social. Or, in SSI terms, academic advising effectiveness and campus life.

Participants

There were a total of 1,734 students invited to participate. In order to establish the desired *N*, Cohen's (1988) *Statistical Power Analysis for the Behavioral Sciences* was consulted. Assuming a medium effect size, a minimum of 52 responses was needed to obtain an acceptable power level at the .05 level. From the pool of 1,734 possible respondents, 126 participants responded to the Kano survey instrument and 294 participants responded to the SSI. Of these, 74 participants could be identified as having responded to both survey instruments. Three of the 74 paired responses had to be removed from the final dataset for various reasons. One was removed because the participant had marked "no" to the consent to participate and two were removed because the respondents were older than the desired 18-24 age range. Of the final respondent pool, nearly 80 percent were male and 20 percent female.

The distribution across class levels was fairly even, with 27.5 percent reporting as freshmen, 20.3 percent as sophomores, 24.6 as juniors, 26.1 as seniors. One student reported as "other," which likely means that student was a second-year senior as all "other" student types were removed from the invitation list. All but one of the respondents reported being full-time students, and 73.5 percent of respondents currently lived in an on-campus residence hall. Finally, the majority of the respondents were relatively good students, with 86.7 percent reporting a

cumulative GPA above 3.0 on a 4.0 scale. Two students did not provide responses to any of the

demographic questions, and were removed from the total percentages. Overall, with the

exception of gender, the respondents were relatively representative of the participating

institution's traditional student body as a whole. Table 1 provides detailed participant

demographic information, compared alongside with institutional data on the demographics of the

entire traditional student body.

Table 1

Demographic Information

Demographic Category	Overall Sample Count ($n = 71$)	%	Total Population Count ($n = 1734$)	%
Sex				
Male	55	79.7	600	34.6
Female	14	20.3	1134	65.4
Class Level				
Freshman	19	27.5	636	36.7
Sophomore	14	20.3	300	17.3
Junior	17	24.6	285	16.4
Senior	18	26.1	513	29.6
Other	1	1.4	N/A	N/A
Class Load				
Full-Time	68	98.6	1685	97.2
Part-Time	1	1.4	49	2.8
GPA				
No credits earned	3	4.4	366	21.1
0.0 to 1.99	0	0	42	2.4
2.0 to 2.49	1	1.5	91	5.2
2.50 to 2.99	5	7.4	213	12.3
3.0 to 3.49	19	27.9	411	23.7
3.5 and above	40	58.8	611	35.2
Current Residence				
Residence hall	50	73.5	Unavailable	
Own house	1	1.5	Unavailable	
Off campus rental	13	19.1	Unavailable	
Parent's home	4	5.9	Unavailable	

Data Analysis

Because the data from the matching SSI responses were required for comparative

analysis, the institution maintained control over both the raw SSI data and the raw data from the

Kano survey. The participating institution's Office of Assessment received the raw data from

both the SSI responses and the Kano survey responses. The raw data files for both surveys

contained unique participant identifiers that were used to align participants' responses on the SSI

with their subsequent responses on the Kano survey. Once responses were paired, the personally

identifiable information was purged from the dataset and the data was then delivered to the

researcher for analysis.

Variables

There were a total of forty variables in this study—twenty independent variables and

twenty matching dependent variables. The independent variables consisted of the single Kano

category yielded by mapping the responses to the functional/dysfunctional pairs of Kano

questions. Each of the independent variables had five levels, which were the five possible

categorizations generated from the Kano questionnaire: must-be, satisfier, delighter, indifferent,

or reverse quality element. The dependent variables consisted of the importance score for each

item from the SSI responses. Table 2 provides a breakdown of the variables used in this study.

Table 2

Independent and Dependent Variables.

Service Element	Independent Variable – Kano Category					Dependent Variable SSI Importance
			Nominal			
	Level 1	Level 2	Level 3	Level 4	Level 5	Likert Scale
Academic Advising Effectiveness						
1 Advisor is approachable	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
2 Advisor helps set goals	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
3 Advisor is knowledgeable about major requirements	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
4 Major requirements are clear and reasonable	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
5 Advisor is concerned about my success	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
Campus Life						
1 Variety of intramurals are offered	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
2 Res hall conditions are comfortable	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
3 Athletics contribute to school spirit	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
4 Genders have equal opps. to participate in athletics	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
5 Adequate food selection in cafeteria	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
6 Res hall regulations are reasonable	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
7 Sufficient weekend activities	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
8 Involvement in campus orgs is easy	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
9 Campus center is comfortable	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
10 Handbook provides useful info about campus life	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
11 Disciplinary procedures are fair	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
12 Activity fees are put to good use	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
13 New student orientation is helpful	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
14 Res hall staff are concerned about me as an individual	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7
15 Freedom of expression is protected on campus	Must-be	Satisfier	Delighter	Indifferent	Reverse	1-7

Research Questions One and Two: Mapping the Kano Responses

The responses from both the functional and dysfunctional Kano survey questions were categorized using the response mapping system described by Matzler et al (1996), Dominici and Palumbo (2013), Kuo (2004), and Gruber et al. (2012). If the participant answered "I like it that way" to the functional question, and "I dislike it that way" to the dysfunctional question, the item was a satisfier. If the participant answered "It must be that way" to the functional question, and

"I dislike it that way" to the dysfunctional, then the item was a must-be factor. If the participant

answered "I like it that way" or "It must be that way" to the functional form, then "I am neutral"

or "I can live with it that way" to the dysfunctional, it was a delighter. In addition to categorizing

factors by must-be, satisfier, or delighter, this method also allowed for the categorization of

factors as indifferent (factor does not affect satisfaction or dissatisfaction), reverse (factor's

presence causes dissatisfaction), or questionable, with a questionable result likely meaning the

question was misunderstood by the reader or was badly worded (Gruber, et al., 2012; Matzler et

al., 1996; Chen & Chuang, 2008). Table 3 shows how responses are mapped to yield the correct

Kano categorizations.

Table 3

Mapping the Kano Questionnaire Results.

| Functional (positive) question | Dysfunctional (negative) question | | | | |
	1) Like	2) Must be	3) Neutral	4) Live with	5) Dislike
1) Like	Q	D	D	D	S
2) Must be	R	I	I	I	M
3) Neutral	R	I	I	I	M
4) Live with	R	I	I	I	M
5) Dislike	R	R	R	R	Q

Note: D: delighter, M: must-be, R: reverse, S: satisfier, Q: questionable, I: indifferent

(Adapted from Matzler et al., 1996)

Transformation of the Data

The researcher transformed the data and prepared it for analysis. First, respondents who

either marked "no" to being willing to participate (one respondent) or those who did not meet the

age range criterion (two respondents) were removed from the dataset. Next, extraneous questions

that were not used in this study were removed from the SSI data, including the satisfaction scores

for all questions, some demographic questions, and importance scores for items not related to

either Academic Advising Effectiveness or Campus Life, as only these two dimensions were

evaluated in this study. Next, the string/text responses to the Kano questions were converted into

numerical values to make it easier to perform the categorization mapping. Following this, the functional and dysfunctional versions of each Kano survey item were paired up, then the responses to each were mapped to establish the correct categorization for each participant's responses to each question (refer to Table 3 for mapping process).

Next, any SSI importance scores with a value of zero were removed, as this indicated a response of "not applicable" from the respondent. Following that, any Kano survey responses that yielded a "questionable" categorization were removed as this category indicates that the respondent misread one or more of the questions. Finally, prior to performing the statistical analysis for research questions three and four, any Kano groups/categories with fewer than 15 members were removed from the dataset for each item in order to enhance statistical validity during analysis.

Research Questions Three and Four: Statistical Analysis

The transformed data that corresponded with all variables in this study were uploaded to SPSS (version 23) for analysis. The data responding to research question three involved five nominal independent variables (the five items contributing to academic advising) with five levels each (must-be, satisfier, delighter, indifferent, and reverse) and five scale dependent variables (corresponding importance ratings from the SSI). The data responding to the fourth research question was similar to that for research question three. Of the 15 total items, two had only one Kano group of sufficient size to analyze. Therefore, 13 nominal independent variables (the items contributing to campus life) with five levels each (must-be, satisfier, delighter, indifferent, and reverse) and 13 corresponding scale dependent variables (importance ratings from the SSI) were analyzed.

To answer research questions three and four, either a one-way ANOVA or an independent samples *t*-test was performed for each item, depending on the number of valid groups in each item. The one-way ANOVA test was deemed appropriate because the data met the assumptions of the test, which were 1) the independent variable is nominal, 2) the dependent variable is normally distributed, and 3) the dependent variable has "homogeneity of variance across groups" (Plichta Kellar & Kelvin, 2013, p. 188). ANOVA is fairly robust even in circumstances where these assumptions are violated. Robustness is enhanced when the independent variable groups are balanced in size. Wherever significance was discovered via the ANOVA and there were three or more groups present, Tukey's HSD test was used to determine pairwise differences. Tukey's HSD was chosen because it was a fairly conservative test, reducing the chance of Type I error; as well as because it was a recommended test for five or more mean comparisons, which made it a good match for the data in this study.

While a one-way ANOVA is capable of performing similar analysis to a *t*-test, and indeed they share the same assumptions, an independent samples *t*-test is generally considered more appropriate when working with one nominal independent variable with only two levels/groups and one scale dependent variable (Plichta Kellar & Kelvin, 2013). Therefore, any survey items which had only two groups with more than 15 members were analyzed via an independent samples *t*-test, rather than the one-way ANOVA.

Limitations

One limitation of the study results from the limited sample size. The participating institution initially hoped to achieve a total of 400 respondents to the SSI. However, the final response rate was somewhat lower than hoped at only 17 percent, meaning there were fewer than 300 final respondents to the SSI. Of those that did complete the 101-item SSI survey, many did

not choose to continue on to complete the follow-up survey containing the Kano questions, meaning the maximum N for this study was necessarily limited. However, the minimum N which was desired was 52 respondents, and the final response number exceeded this at 71 useable responses, so while the respondent pool was small, it was of sufficient size for meaningful analysis. However, because the independent variable allowed for a total of 6 possible groupings (when including the questionable categorization), some group sizes became too small to analyze. This led to their elimination from the dataset, and the inability of the research to test these groups against the SSI importance score.

A second limitation is that given the number of hypothesis tests conducted, there was an increased probability of an unidentified Type I error within the dataset. However, each test was treated as being independent from all other tests, so the effect should not be considered as cumulative.

An additional limitation was the exploratory nature of this study. The Kano survey tool was developed specifically for this study and had not been validated by previous research. Furthermore, because no previous research had been done to explore if there is or is not a statistical relationship between SSI importance ratings and Kano categorizations, there was no guarantee that such a relationship would be uncovered upon completion of the study.

CHAPTER IV

RESULTS

The purpose of this quantitative, cross-sectional study was twofold:

1. To see how students categorized items related to academic advising and campus life according to the Kano Model's five dimensions in order to see if the categorizations were consistent.

2. To test how the respondents' importance rating of the academic advising and campus life items, as measured by the Ruffalo Noel Levitz Student Satisfaction Inventory, relate to their assignment of those same items to the Kano Model's five categories of satisfaction: must-be, satisfier, delighter, indifferent, and reverse quality elements.

This chapter provides a description of the results obtained through statistical analysis of the data collected. First, a general overview of the responses will be provided, in terms of the frequencies of the nominal Kano responses and the means for the SSI Likert scale responses. Then, a description of the results obtained from the one-way ANOVAs and *t*-tests will be provided.

Research Questions

The primary research questions were as follows:

Q1. Do traditional college students consider the five individual items contributing to satisfaction with academic advising to be must-be, satisfier, delighter, indifferent, or reverse quality elements?

Q2. Do traditional college students consider the 15 individual items contributing to satisfaction with campus life to be must-be, satisfier, delighter, indifferent, or reverse quality elements?

Q3. Is there a statistically significant difference between categorization of the five academic advising items as must-be, satisfier, delighter, indifferent, or reverse quality element relative to that item's rated importance on the SSI?

Q4. Is there a statistically significant difference between categorization of the 15 campus life items as must-be, satisfier, delighter, indifferent, or reverse quality element relative to that item's rated importance on the SSI?

Themes in the SSI Responses

In order to contextualize the individual results, the SSI responses were analyzed for themes within the data. For items related to Academic Advising Effectiveness, over 90 percent of respondents felt that each item was at some level of importance higher than neutral (scores of five or higher out of seven). Means for all Academic Advising Effectiveness items were in the six-point range. For items related to Campus Life, there was considerably greater variance in the levels of importance which respondents placed on individual items. Means ranged from the low fives to the low sixes for the Campus Life items. Table 4 provides a more detailed breakdown of the responses in terms of scores given, mean, and standard deviation for each Campus Life item.

Table 4

SSI Importance Score, Mean, and Standard Deviation.

SSI Survey Questions	% Importance of 1-3	% Importance of 4-5	% Importance of 6-7	*M*	*SD*
Academic Advising Effectiveness					
Q6. My academic advisor is approachable.	0	2.7	97.3	6.8	0.469
Q33. My academic advisor is knowledgeable about my requirements in my major.	0	2.8	97.2	6.78	.539
Q55. Major requirements are clear and reasonable.	0	9.9	90.1	6.6	0.715
Q14. My academic advisor is concerned about my success as an individual.	0	5.5	94.5	6.57	0.693
Q19. My academic advisor helps me set goals to work toward.	2.8	19.4	77.8	6.14	1.088
Campus Life					
Q73. Student activities fees are put to good use.	0	10	90	6.45	0.764
Q23. Living conditions in the residence halls are comfortable (adequate space, lighting, heat, air conditioning, telephones, etc.)	1.7	15	83.3	6.42	1.235
Q67. Freedom of expression is protected on campus.	1.4	14.3	84.3	6.3	1.000
Q64. New student orientation services help students adjust to college.	0	23.1	76.9	6.26	1.055
Q46. I can easily get involved in campus organizations.	0	17.6	82.4	6.25	0.969
Q63. Student disciplinary procedures are fair.	3.1	15.4	81.5	6.21	1.042
Q30. Residence hall staff are concerned about me as an individual.	4.8	20.6	74.6	5.93	1.315
Q42. There are a sufficient number of weekend activities for students.	7.9	23.8	68.3	5.87	1.443
Q40. Residence hall regulations are reasonable.	4.9	19.7	75.4	5.8	1.492
Q56. The student handbook provides helpful information about campus life.	6.1	21.2	72.7	5.79	1.557
Q52. The student center is a comfortable place for students to spend their leisure time.	9.4	23.4	67.2	5.72	1.644
Q38. There is an adequate selection of food available in the cafeteria.	3.1	15.6	81.3	5.54	2.112
Q31. Males and females have equal opportunities to participate in intercollegiate athletics.	7.6	27.3	59.1	5.48	1.731
Q24. The intercollegiate athletic programs contribute to a strong sense of school spirit.	14.1	28.1	57.8	5.19	1.872
Q9. A variety of intramural activities are offered.	10.1	44.9	44.9	5.11	1.693

Note: Likert scale responses were (1) not important at all, (2) not very important, (3) somewhat unimportant, (4) neutral, (5) somewhat important, (6) important, and (7) very important

Although the SSI scales would need to eventually be broken apart into individual items in order to compare them against the Kano items, the SSI data for the respondents were tested for reliability. Cronbach's alpha for Academic Advising Effectiveness was .732, which is slightly low but within acceptable ranges. For Campus Life, Cronbach's alpha was .85, well within the acceptable range.

The SSI data were additionally tested for normality, to see if the participant responses mirrored that of the sample population as a whole. For the study participants, the data were not normally distributed. For the construct of Academic Advising Effectiveness, skewness was -1.327 (SE = .285) and kurtosis was 1.345 (SE = .563). This is just outside the normal range of -1 to 1. For the full SSI respondent pool on Academic Advising Effectiveness, skewness was -1.531 (SE = .143) and kurtosis was 3.044 (SE = .285). Ruffalo Noel Levitz provided additional information regarding the performance of the SSI tool across all responses received in 2012. For all 2012 responses for importance scores in Academic Advising Effectiveness, skewness was -1.849 and kurtosis was 4.6 (S. Cook, personal communication, February 3, 2016).

For study participants on the Campus Life construct, skewness was -2.322 (SE = .285) and kurtosis was 9.171 (SE = .563). This compares to the full SSI respondent pool on Campus Life, where skewness was -1.638 (SE = .143) and kurtosis was 5.005 (SE = .285). For all SSI responses for importance scores in Campus Life during 2012, skewness was -1.001 and kurtosis was 1.156 (S. Cook, personal communication, February 3, 2016).

For the study participants, the institutional SSI respondent population as a whole, and the SSI performance over all responses for 2012, both skewness and kurtosis were outside the range of -1 to 1 that is generally defined as normal. The SSI has been well validated over many years, with results generally resulting in normally distributed data (Odom, 2008; Obiekwe, 2000).

According to Ruffalo Noel Levitz (S. Cook, personal communication, February 3, 2016), the results obtained in this study were in keeping with the expected SSI performance for importance scores for these two scales. While the SSI as a whole provides results that are normally distributed, individual scales may not. However, both ANOVA and *t*-tests are fairly robust even in the face of somewhat skewed data (Plichta Kellar & Kelvin, 2013), so the data were determined to be acceptable. Table 5 summarizes the comparison between skewness and kurtosis for the study participants, all institutional SSI respondents, and the performance of the SSI over all 2012 administrations.

Table 5

Skewness and Kurtosis for Participants vs All SSI Respondents

SSI Construct	Skewness	*SE*	Kurtosis	*SE*
Academic Advising Effectiveness				
Study Participants	-1.327	0.285	1.345	0.563
All SSI Respondents	-1.531	.143	3.044	.285
SSI 2012 Performance	-1.849		4.599	
Campus Life				
Study Participants	-2.322	0.285	9.171	0.563
All SSI Respondents	-1.638	.143	5.005	.285
SSI 2012 Performance	-1.001		1.156	

Research Question One

Research question one served to implement the Kano Model's methods in order to establish which Kano categories the participants felt each of the academic advising effectiveness items belonged to. The question read as follows:

Q1. Do traditional college students consider the five individual items contributing to satisfaction with academic advising to be must-be, satisfier, delighter, indifferent, or reverse quality elements?

Analysis of the responses to the Kano instrument's questions regarding academic advising effectiveness was performed. The five items were: "My academic advisor is approachable," "My academic advisor is concerned about my success as an individual," "My academic advisor helps me set goals to work toward," "My academic advisor is knowledgeable about my requirements in my major," and "Major requirements are clear and reasonable." Very few responses resulted in a categorization as "questionable." This speaks to the validity of the survey tool as "questionable" responses result from either a misread or a badly worded question that did not make sense to the reader (Gruber et al., 2012). Table 6 provides an overview of all responses to academic advising effectiveness items.

Table 6

Kano Survey: Academic Advising Effectiveness Category Frequencies.

Kano Survey Elements	% Must-be	% Satisfier	% Delighter	% Indifferent	% Reverse
Academic Advising Effectiveness					
Q6. Approachable advisor	37.7	52.2	5.8	4.3	0
Q14. Advisor individual concern	41.2	50.0	4.4	4.4	0
Q19. Advisor goal setting	22.1	52.9	17.6	7.4	0
Q33. Advisor knowledgeable about major requirements	58.8	38.2	1.5	1.5	0
Q55. Major requirements clear and reasonable	59.7	35.8	1.5	1.5	1.5

Categorizing the Academic Advising Items

The items relating to academic advising had responses spread out across all categories except "reverse," indicating that while there are some differences in the ways in which the participant group felt about an item, they tended to agree that the item was a positive part of their college experience. For all of these items, a significant proportion of respondents had placed the items in the satisfier category, which meant that meeting student expectations for this item would

result in a small increase in satisfaction levels. The other category which carried a bulk of the respondents was the must-be element, meaning that failing to meet student expectations in this area would result in a large increase in dissatisfaction levels. Smaller groups of students marked the items as delighters—meaning that meeting the item would be truly exceeding expectations and would cause a large increase in satisfaction, or as an indifferent item, meaning that these student felt their (dis)satisfaction levels were unaffected by the item. One student marked one item as a reverse-quality item, which means that the student found that this item's inclusion in their educational experience would cause a decrease in (dis)satisfaction levels. The specific results for each item are laid out below.

My Academic Advisor is Approachable. For the first item, "My academic advisor is approachable"—SSI item 6, the majority of respondents felt it fell into the satisfier category (52.2 percent). The second largest group of participants labelled this item as a must-be element (37.7 percent). Finally, a small number of participants felt it was a delighter (5.8 percent) or an indifferent element (4.3 percent). No respondents categorized this item as a reverse quality element.

My Academic Advisor Is Concerned About My Success As an Individual. The second item was "My academic advisor is concerned about my success as an individual." Again, the largest group of respondents felt this item was a satisfier (50 percent). Must-be was again the second largest group at 41.2 percent. As with the previous item, a small number of respondents felt that this was a delighter (4.4 percent) or an indifferent element (4.4 percent). No respondents felt this item was a reverse quality element.

My Academic Advisor Helps Me Set Goals To Work Toward. The third item was "My academic advisor helps me set goals to work toward." As with the previous two items, the

largest group of respondents felt this was a satisfier (52.9 percent). Unlike the previous two items, though, there is a fairly even spread among participants feeling it was a must-be element (22.1 percent) or a delighter (17.6 percent). Finally, a few of the participants, 7.4 percent, were indifferent to this item. As with the previous items, no respondents marked this as a reverse quality element.

My Academic Advisor Is Knowledgeable About My Requirements In My Major. The fourth item was "My academic advisor is knowledgeable about my requirements in my major." Unlike the previous three items, the largest group of respondents felt this was a must-be element (59.7 percent). The second largest group was that of satisfier (38.2 percent). Finally, one respondent each answered that the item was either a delighter or an indifferent element and none answered that it was a reverse quality element.

Major Requirements Are Clear and Reasonable. The final item that students had felt actively contributed to their college experience was "Major requirements are clear and reasonable." Like the previous item relating to major requirements, the largest group of respondents felt this was a must-be element (58.8 percent). The second largest group was that of satisfier (35.8 percent). Finally, one respondent each answered that the item was a delighter, an indifferent element, or a reverse-quality element.

Research Question Two

Research question two, like research question one, served to implement the Kano Model's methods in order to establish which Kano categories the participants felt each of the campus life items belonged to. The question read as follows:

Q2. Do traditional college students consider the 15 individual items contributing to satisfaction with campus life to be must-be, satisfier, delighter, indifferent, or reverse quality elements?

An analysis was made of the responses to the Kano instrument's questions regarding campus life. There were 15 total items related to campus life. These items asked questions about residence hall conditions, athletics, student activities, facilities and food, orientation services, discipline, and freedom of expression. Very few responses resulted in a categorization as "questionable," which speaks to the validity of the survey tool (Gruber et al., 2012). Table 7 provides an overview of all responses to campus life items.

Table 7

Kano Survey: Campus Life Category Frequencies.

Kano Survey Elements	% Must-be	% Satisfier	% Delighter	% Indifferent	% Reverse
Campus Life					
Q38. Cafeteria food selection	30.8	38.5	3.1	24.6	3.1
Q46. Ease of involvement in campus orgs	18.6	42.9	15.7	22.9	0
Q64. Orientation services and adjusting to college	33.8	32.4	10.3	20.6	2.9
Q30. Res hall staff individual concern	17.6	26.5	7.4	44.1	4.4
Q24. Athletics and school spirit	14.5	21.7	21.7	39.1	2.9
Q56. The student handbook provides helpful information about campus life	34.3	22.9	2.9	40.0	0
Q73. Student activities fees are put to good use	50.0	42.4	3.0	4.5	0
Q63. Student disciplinary procedures fairness	63.1	21.5	4.6	10.8	0
Q67. Freedom of expression is protected on campus	42.6	36.8	8.8	11.8	0
Q23. Comfortable res hall conditions	32.4	38.2	10.3	19.1	0
Q52. Student center is comfortable	22.4	43.3	11.9	22.4	0
Q40. Reasonable residence hall regulations	32.3	33.8	7.7	26.2	0
Q31. Athletics and gender equality	31.9	34.8	4.3	29.0	0
Q9. Intramural activity variety	4.4	25.0	20.6	50	0
Q42. Weekend activities	9.1	21.2	18.2	51.5	0

Categorizing the Campus Life Items

The items related to campus life were spread across the satisfier, must-be, indifferent, and delighter categories, with just a few respondents putting four of the items into the reverse quality category. Compared to the academic advising items, many more respondents categorized items as being indifferent to their satisfaction levels. A probable reason for this is that the respondents perhaps did not regularly utilize these services and therefore did not feel they had much affect upon their satisfaction levels. The specific results for the campus life items are laid out below.

There Is An Adequate Selection Of Food Available In The Cafeteria. For the first item, "There is an adequate selection of food available in the cafeteria," results were spread out fairly evenly across three of the five categories. The largest group was satisfier, at 38.5 percent of respondents. The next largest was must-be at 30.8 percent, then indifferent at 24.6 percent. A few individuals answered that this item was a delighter or a reverse quality element, 3.1 percent each.

I Can Easily Get Involved In Campus Organizations. For the next item, "I can easily get involved in campus organizations," the results were spread across four of the five categories. The largest group was satisfier, with 42.9 percent of respondents. The remaining respondents were categorized as indifferent (22.9 percent), must-be (18.6 percent), or delighter (15.7 percent).

New Student Orientation Services Help Students Adjust To College. The third item was "New student orientation services help students adjust to college." The largest group of respondents fell into the must-be category, with 33.8 percent. Immediately on its heels was the satisfier group, with 32.4 percent of respondents. The remaining respondents are categorized as indifferent (20.6 percent), delighter (10.3 percent), and reverse quality elements (2.9 percent).

Residence Hall Staff Are Concerned About Me As An Individual. The next item was "Residence hall staff are concerned about me as an individual." The largest group of respondents

fell into the indifferent category at 44.1 percent. The second largest group was satisfier at 26.5 percent, then must-be at 17.6 percent, followed by delighter at 7.4 percent, and finally reverse quality at 4.4 percent.

The Intercollegiate Athletic Programs Contribute To A Strong Sense Of School Spirit. The fifth item was "The intercollegiate athletic programs contribute to a strong sense of school spirit." The largest group of respondents was in the indifferent category at 39.1 percent. This was followed by a tie between satisfier and delighter, with 21.7 percent each. The remaining respondents were split between must-be at 14.5 percent and a reverse quality element at 2.9 percent.

The Student Handbook Provides Helpful Information About Campus Life. The sixth item was "The student handbook provides helpful information about campus life." Once again, the largest group of respondents categorized themselves as indifferent to this item, at 40 percent. The next largest groups were must-be with 34.3 percent and satisfier with 22.9 percent. A very small number of respondents felt this item was a delighter, with 2.9 percent. None felt it was a reverse quality element.

Student Activities Fees Are Put To Good Use. The next item was "Student activities fees are put to good use." The largest group of respondents—a full 50 percent—felt this item was a must-be element. The next largest group considered it a satisfier at 42.4 percent. The remaining few respondents felt it was an indifferent element (4.5 percent) or a delighter (3.0 percent). None felt it was a reverse quality element.

Student Disciplinary Procedures Are Fair. The eighth item was "Student disciplinary procedures are fair." Sixty-three percent of respondents felt this item was a must-be element. The next largest group was satisfier at 21.5 percent. The remaining respondents felt it was an

indifferent element (10.8 percent) or a delighter (4.6 percent). None felt it was a reverse quality element.

Freedom of Expression Is Protected On Campus. The ninth item was "Freedom of expression is protected on campus." For this item, 42.6 percent of respondents felt this item was a must-be element. The next largest group was satisfier at 36.8 percent. The remaining respondents felt it was an indifferent element (11.8 percent) or a delighter (8.8 percent). As with most of the previous items, none felt it was a reverse quality element.

Living Conditions In The Residence Halls Are Comfortable. The item "Living conditions in the residence halls are comfortable" came next. For this item, the satisfier category took the lead at 38.2 percent of responses. The next largest group was the must-be element at 32.4 percent. The remaining respondents were split between indifferent element (19.1 percent) or delighter (10.3 percent). None answered that the item was a reverse quality element.

The Student Center Is A Comfortable Place For Students To Spend Their Leisure Time. The next item was, "The student center is a comfortable place for students to spend their leisure time." For this item, the satisfier category led at 43.3 percent of responses. Must-be and indifferent element categories had an even number of responses with 22.4 percent each. The remaining respondents were the delighter element at 11.9 percent. None answered that the item was a reverse quality element.

Residence Hall Regulations Are Reasonable. The item "Residence hall regulations are reasonable" was next. The majority of the responses were satisfier at 33.8 percent of responses. Following just behind was the must-be element at 32.3 percent. A third sizable group answered that the item was an indifferent element (26.2 percent). The remaining respondents answered that it was a delighter at 7.7 percent. None answered that the item was a reverse quality element.

Males and Females Have Equal Opportunities To Participate In Intercollegiate Athletics. The next item was "Males and females have equal opportunities." The majority of the responses were the satisfier element at 34.8 percent of responses. The next largest category was the must-be element at 31.9 percent. Third-largest was the indifferent element with 29 percent. The remaining respondents answered that it was a delighter at 4.3 percent. None answered that the item was a reverse quality element.

A Variety Of Intramural Activities Are Offered. The next item was "A variety of intramural activities are offered." Half of the respondents (50.0 percent) were indifferent to this element, indicating that intramurals were of very little interest to these respondents. The next largest category of responses fell into the satisfier category at 25 percent. Third-largest was the delighter element with 20.6 percent. The remaining respondents answered that it was a must-be element at 4.4 percent, meaning that very few students felt intramurals were an essential part of the college experience. None answered that the item was a reverse quality element.

There Are A Sufficient Number Of Weekend Activities For Students. The next item was "There are a sufficient number of weekend activities for students." A slight majority of the responses were indifferent at 51.5 percent, indicating that, like intramurals, weekend activities were of very little interest to the majority of respondents. The next largest category was satisfier at 21.2 percent. Third-largest was the delighter element with 18.2 percent. The remaining respondents answered that it was a must-be at 9.1 percent. None answered that the item was a reverse quality element.

Understanding the Categories

Respondents who categorized an item as a must-be were indicating that failure to meet expectations in this area would result in a large increase in dissatisfaction. In order to categorize

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the item as a must-be element, participants answered the functional question with "it must be that way," "I can live with it that way," or "I am neutral," and the dysfunctional question with "I dislike it that way." An example of the functional question would be, "How do you feel when your academic advisor is approachable?" An example of the dysfunctional question would be, "How do you feel when your academic advisor is not approachable?" Categorization as a satisfier meant that meeting the student expectations in this area would result in a linear increase in satisfaction. In order to be coded a satisfier, participants answered "I like it that way" to the functional question and "I dislike it that way" to the dysfunctional question. For those that answered an item was a delighter, it indicated that providing this service item would result in a larger increase in satisfaction. To be classified as a delighter, a participant answered the functional question with "I like it that way" and the dysfunctional question with "I can live with it that way," "it must be that way," or "I am neutral."

For those that answered that items were indifferent, it indicates that for these elements, participants had no particular feeling about the presence or absence of that item, meaning they felt it had no impact on their overall satisfaction. To be classified as an indifferent element, a participant could have taken a number of routes. Both the functional and dysfunctional questions must have been answered with any of the following: "It must be that way," I am neutral," or I can live with it that way." For those who categorized an item as a reverse quality item, they felt that this service item's inclusion in their college experience would be a negative, resulting in a drop in overall (dis)satisfaction levels. In order to be categorized as a reverse quality element, participants must have answered the functional question with "I dislike it that way" and the dysfunctional question with "it must be that way," "I like it that way," "I am neutral," or "I can live with it that way."

Research Question Three

Research question three sought to compare the Kano results with the SSI importance scores. Did the various Kano categorizations tend to yield a statistically significant difference in SSI importance score for academic advising effectiveness items? Or were category and importance score relatively unrelated? The question was as follows:

Q3. Is there a statistically significant difference between categorization of the five academic advising items as must-be, satisfier, delighter, indifferent, or reverse quality element relative to that item's rated importance on the SSI?

To test the relationship between Kano categorization and the given importance rating for the items belonging to academic advising effectiveness, a total of four independent samples t-tests and one one-way analysis of variance (ANOVA) test were run. The results from the ANOVA and t-tests are discussed below. Table 8 summarizes the results of the t-tests for item 14, "my academic advisor is concerned about my success as an individual," item six, "my academic advisor is approachable," item 33, "my academic advisor is knowledgeable about requirements in my major," and item 55, "major requirements are clear and reasonable." Table 9 summarizes the results of the ANOVA for item 19, "my academic advisor helps me set goals to work toward."

Table 8

T-*test Results for Academic Advising Effectiveness Items*

	Variable 1			Variable 2		*t*-test for Equality of Means		Sig. (two-tailed)
	Mean	Standard Deviation		Mean	Standard Deviation	*t*	df	
Q14. My Academic Advisor Is Concerned About My Success as an Individual †								
Must-Be	6.75	.441	Satisfier	6.50	.749	1.633	54.775	.108
Q6. My Academic Advisor Is Approachable								
Must-Be	6.8	.500	Satisfier	6.86	.351	-.562	59	.576
Q33. My Academic Advisor Is Knowledgeable About My Requirements in My Major								
Must-Be	6.76	.490	Satisfier	6.88	.326	-1.107	62	.273
Q55. Major Requirements Are Clear and Reasonable								
Must-Be	6.56	.754	Satisfier	6.74	.541	-.974	60	.334

Note: † means Equal Variances Not Assumed

Table 9

ANOVA Results for Q19, My Academic Advisor Helps Me Set Goals to Work Toward

	Sum of Squares	df	Mean Square	F	Sig.
Q19. My Academic Advisor Helps Me Set Goals to Work Toward.					
Between Groups	1.164	2	.582	.591	.557
Within Groups	57.098	58	.984		
Total	58.262	60			

My Academic Advisor Is Concerned About My Success as an Individual

After removing groups with fewer than 15 members from the data on this item, only two groups were left for comparison: must-be and satisfier. Therefore, an independent samples *t*-test was conducted between students' self-reported importance scores for academic advisors being concerned about students' success as individuals (SSI question 14) and the relationship to students' self-reported determinations of this variable as a must-be factor or satisfier. The *t*-test (equal variances not assumed) revealed that there was not a statistically significant difference between the level of importance and assigned Kano category of must-be or satisfier at the .05 level: ($t(54.8)=1.633$, $p=.108$).

My Academic Advisor Is Approachable

After removing groups with fewer than 15 members from the data on this item, only two groups were left for comparison. These were must-be and satisfier categories. Therefore, an independent samples *t*-test was conducted between students' self-reported importance scores for their academic advisor being approachable (SSI question 6) and their determinations of this variable as a must-be factor or satisfier. The *t*-test revealed that there was not a statistically significant difference between the level of importance and assigned Kano category or must-be or satisfier at the .05 level: ($t(59)=-.562, p=.576$).

My Academic Advisor Is Knowledgeable About My Requirements in My Major

After removing groups with fewer than 15 members from the data on this item, only two groups were left for comparison: must-be and satisfier. Therefore, an independent samples *t*-test was conducted between students' self-reported importance scores for academic advisors being knowledgeable about major requirements (SSI question 33) and the relationship to students' self-reported determinations of this variable as a must-be factor or satisfier. The *t*-test revealed that there was not a statistically significant difference between the level of importance and assigned Kano category of must-be or satisfier at the .05 level: ($t(62)=-1.107, p=.273$).

Major Requirements Are Clear and Reasonable

After removing groups with fewer than 15 members from the data on this item, only two groups were left for comparison: must-be and satisfier. Therefore, an independent samples *t*-test was conducted between students' self-reported importance scores for major requirements being clear and reasonable (SSI question 55) and the relationship to students' self-reported determinations of this variable as a must-be factor or satisfier. The *t*-test revealed that there was

not a statistically significant difference between the level of importance and assigned Kano category of must-be or satisfier at the .05 level: ($t(60)$=-.974, p=.334).

My Academic Advisor Helps Me Set Goals to Work Toward

An analysis of variance (ANOVA) was conducted between students' self-reported importance scores for academic advisors helping with goal setting (SSI question 19) and the relationship to students' self-reported determinations of this variable as a must-be, satisfier, or delighter element. The ANOVA revealed that there was not a statistically significant difference between the level of importance and assigned Kano category at the .05 level: ($F(2,58)$=.591, p=.557).

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Research Question Four

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Research question four was similar to research question three, and sought to compare the Kano results with the SSI importance scores for campus life items. Did the various Kano categorizations tend to yield a statistically significant difference in SSI importance score? Or were category and importance score relatively unrelated? The question was as follows:

Q4. Is there a statistically significant difference between categorization of the 15 campus

life items as must-be, satisfier, delighter, indifferent, or reverse quality element to that

item's rated importance on the SSI?

To test the relationship between Kano categorization and given importance rating for the items belonging to campus life, a total of seven one-way ANOVA tests and six independent samples t-tests were run. For the remaining two items, there was only one group per item with at least 15 members, so no analysis was possible. The results from these tests are detailed in subsequent sections. Table 10 summarizes the results of the t-tests for items 46, 30, 9, 73, 67, and 23. Table 11 summarizes the results of the ANOVAs for items 38, 64, 24, 56, 52, 40, and 31.

Table 10

T-*test Results for Campus Life Items*

Variable 1			Variable 2			*t*-test for Equality of Means		
	Mean	Standard Deviation		Mean	Standard Deviation	*t*	df	Sig. (two-tailed)
Q46. I can easily get involved in campus organizations. †								
Indifferent	5.64	1.277	Satisfier	6.54	.576	2.492	15.701	.024*
Q9. A variety of intramural activities are offered. †								
Indifferent	4.45	1.920	Satisfier	5.71	1.213	-2.721	43.676	.009**
Q30. Residence hall staff are concerned about me as an individual.								
Indifferent	5.73	1.279	Satisfier	6.38	1.088	-1.639	36	.110
Q73. Student Activities Fees Are Put To Good Use								
Must-Be	6.63	.554	Satisfier	6.30	.869	1.760	57	.084
Q67. Freedom of Expression Is Protected On Campus								
Must-Be	6.43	.742	Satisfier	6.61	.656	-.908	49	.368
Q23. Living Conditions in the Residence Hall Are Comfortable								
Must-Be	6.43	1.165	Satisfier	6.58	.758	-.527	45	.601

Note: † means Equal Variances Not Assumed

Table 11

ANOVA Results for Campus Life Items

	Sum of Squares	df	Mean Square	F	Sig.
Q38. There is an adequate selection of food available in the cafeteria.					
Between Groups	6.618	2	3.309	3.278	.046*
Within Groups	49.459	49	1.009		
Total	56.077	51			
Q31. Males and females have equal opportunities to participate in intercollegiate athletics.					
Between Groups	30.056	2	15.028	6.344	.003**
Within Groups	132.656	56	2.369		
Total	162.712	58			
Q24. The intercollegiate athletic programs contribute to a strong sense of school spirit.					
Between Groups	42.727	2	21.364	9.851	.000***
Within Groups	99.763	46	2.169		
Total	142.490	48			
Q56. The student handbook provides helpful information about campus life.					
Between Groups	26.942	2	13.471	6.491	.003**
Within Groups	120.370	58	2.075		
Total	147.311	60			
Q52. The student center is a comfortable place for students to spend their leisure time.					
Between Groups	57.277	2	28.639	15.146	.000***
Within Groups	90.762	48	1.891		
Total	148.039	50			
Q40. Residence halls regulations are reasonable.					
Between Groups	4.207	2	2.104	2.047	.140
Within Groups	48.293	47	1.028		
Total	52.500	49			
Q64. New student orientation services help students adjust to college.					
Between Groups	4.215	2	2.108	2.104	.133
Within Groups	50.087	50	1.002		
Total	54.302	52			

I Can Easily Get Involved in Campus Organizations

After groups with fewer than 15 members were removed from the data, only two groups remained for this item. Therefore, an independent samples *t*-test was conducted between students' self-reported importance scores for the ease of getting involved in campus organizations (SSI question 46) and the relationship to students' self-reported determinations of this variable as a satisfier or indifferent element. The *t*-test (equal variances not assumed) revealed a statistically significant difference between the level of importance and assigned Kano category at the .05 level: ($t(15.701)=-2.492$, $p=.024$).

A Variety of Intramural Activities Are Offered

After groups with fewer than 15 members were removed from the data, only two groups remained for this item: indifferent and satisfier. An independent samples *t*-test was conducted between students' self-reported importance scores for the variety of intramural activities offered (SSI question 9) and the relationship to students' self-reported determinations of this variable as an indifferent or satisfier element. The *t*-test (equal variances not assumed) revealed that there was a statistically significant difference between the level of importance and assigned Kano category at the .05 level: (t(43.676)=-2.721, *p*=.009).

Residence Hall Staff Are Concerned about Me as an Individual

After groups with fewer than 15 members were removed from the data, only two groups remained for this item: indifferent and satisfier. Therefore, an independent samples *t*-test was conducted between students' self-reported importance scores for residence hall staff being concerned about students as individuals (SSI question 30) and the relationship to students' self-reported determinations of this variable as a satisfier or indifferent element. The *t*-test revealed that there was not a statistically significant difference between the level of importance and assigned Kano category at the .05 level: (t(36)=-1.639, *p*=.11).

Student Activities Fees Are Put To Good Use

After groups with fewer than 15 members were removed from the data, only two groups remained for this item: must-be and satisfier. An independent samples *t*-test was conducted between students' self-reported importance scores for the proper use of student fees (SSI question 73) and the relationship to students' self-reported determinations of this variable as a must-be or satisfier element. The *t*-test revealed that there was not a statistically significant

difference between the level of importance and assigned Kano category at the .05 level:

(t(57)=1.76, p=.084).

Freedom of Expression Is Protected On Campus

After groups with fewer than 15 members were removed from the data, only two groups remained for this item: must-be and satisfier. An independent samples t-test was conducted between students' self-reported importance scores for the protection of freedom of expression on campus (SSI question 67) and the relationship to students' self-reported determinations of this variable as a must-be or satisfier element. The t-test revealed that there was not a statistically significant difference between the level of importance and assigned Kano category at the .05 level: (t(49)=-.908, p=.368).

Living Conditions in the Residence Hall Are Comfortable

After groups with fewer than 15 members were removed from the data, only two groups remained for this item: must-be and satisfier. An independent samples t-test was conducted between students' self-reported importance scores for the comfortability of the residence halls (SSI question 23) and the relationship to students' self-reported determinations of this variable as a must-be or satisfier element. The t-test revealed that there was not a statistically significant difference between the level of importance and assigned Kano category at the .05 level: (t(45)=-.527, p=.601).

There Is an Adequate Selection of Food Available in the Cafeteria

An analysis of variance (ANOVA) was conducted between students' self-reported importance scores for the adequacy of the food selection available in the cafeteria (SSI question 38) and the relationship to students' self-reported determinations of this variable as a must-be, satisfier, or indifferent element. The ANOVA revealed that there was a statistically significant

difference between the level of importance and assigned Kano category at the .05 level:

($F(2,49)=3.278, p=.046$).

Tukey's HSD was used to determine the differences between the Kano categories. This analysis revealed that there was a statistically significant difference between students who felt indifferent about "an adequate selection of food available in the cafeteria," and respondents who categorized it as a must-be ($M_D=-1.029, SE=.407$). There was no significance found between indifferent and satisfier or satisfier and must-be. Two of the groups—delighter and reverse—had fewer than 15 members each, and so they were not included in the ANOVA.

Males and Females Have Equal Opportunities to Participate in Intercollegiate Athletics

An analysis of variance (ANOVA) was conducted between students' self-reported importance scores for equality of access to athletics for males and females (SSI question 31) and the relationship to students' self-reported determinations of this variable as a satisfier, must-be, or indifferent element. The ANOVA revealed a statistically significant difference between the level of importance and assigned Kano category at the .05 level: ($F(2,56)=6.344, p=.003$).

Tukey's HSD was used to determine the differences between the Kano categories. This analysis revealed that there was a statistically significant difference between students who felt indifferent about "males and females have equal access to participate in intercollegiate athletics," and respondents who categorized it as a satisfier ($M_D=-1.817, SE=.511$). There was no statistically significant result between indifferent and must-be or must-be and satisfier. The other two groups (delighter and reverse quality element) had fewer than 15 members each, and so they were not included in the ANOVA.

The Intercollegiate Athletic Programs Contribute to a Strong Sense of School Spirit

An analysis of variance (ANOVA) was conducted between students' self-reported importance scores for athletic programs contributing to a strong sense of school spirit (SSI question 24) and the relationship to students' self-reported determinations of this variable as a satisfier, delighter, or indifferent element. The ANOVA revealed a statistically significant difference between the level of importance and assigned Kano category at the .05 level: ($F(2,46)=9.851, p<.001$).

Tukey's HSD was used to determine the differences between the Kano categories. This analysis revealed that there was a statistically significant difference between students who felt indifferent about "collegiate athletics contributing to a strong sense of school spirit," and respondents who categorized it as a satisfier (M_D=-2.086, SE=.498) or as a delighter (M_D=-1.568, SE=.520). The other two groups (must-be and reverse quality element) had fewer than 15 members each, and so they were not included in the ANOVA.

The Student Handbook Provides Helpful Information about Campus Life

An analysis of variance (ANOVA) was conducted between students' self-reported importance scores for the student handbook providing information on campus life (SSI question 56) and the relationship to students' self-reported determinations of this variable as a must-be, satisfier, or indifferent element.. The ANOVA revealed a statistically significant difference between the level of importance and assigned Kano category at the .05 level: ($F(2,58)=6.491, p=.003$).

Tukey's HSD was used to determine the differences between the Kano categories. This analysis revealed that there was a statistically significant difference between students who felt indifferent about "collegiate athletics contributing to a strong sense of school spirit," and

respondents who categorized it as a must-be (M_D=-1.278, SE=.426) or as a satisfier (M_D=-1.440, SE=.470). The other two groups (delighter and reverse) had fewer than 15 members each, and so they were not included in the ANOVA.

The Student Center Is a Comfortable Place for Students to Spend Their Leisure Time

An analysis of variance (ANOVA) was conducted between students' self-reported importance scores for the comfortability of the student center (SSI question 52) and the relationship to students' self-reported determinations of this variable as a must-be, satisfier, or indifferent element. The ANOVA revealed a statistically significant difference between the level of importance and assigned Kano category at the .05 level: (F(2,48)=15.146, p<.001).

Tukey's HSD was used to determine the differences between the Kano categories. This analysis revealed that there was a statistically significant difference between students who felt indifferent about "The student center is a comfortable place for students to spend their leisure time," and respondents who categorized it as a must-be (M_D=-2.571, SE=.530) or as a satisfier (M_D=-2.333, SE=.474). The other two groups (delighter and reverse) had fewer than 15 members each, and so they were not included in the ANOVA.

Residence Hall Regulations Are Reasonable

An analysis of variance (ANOVA) was conducted between students' self-reported importance scores for the reasonability of the residence hall regulations (SSI question 40) and the relationship to students' self-reported determinations of this variable as a must-be, satisfier, or indifferent element. The ANOVA revealed no statistically significant difference between the level of importance and assigned Kano category at the .05 level: (F(2,47)=2.047, p=.140).

New Student Orientation Services Help Students Adjust to College

An analysis of variance (ANOVA) was conducted between students' self-reported importance scores for orientation services helping students adjust to college (SSI question 64) and the relationship to students' self-reported determinations of this variable as a must-be, satisfier, or indifferent element. The ANOVA revealed that there was not a statistically significant difference between the level of importance and assigned Kano category at the .05 level: ($F(2,50)=2.104$, $p=.133$).

Summary

This chapter provided a detailed explanation of the demographic breakdown of the respondent group and the means for the SSI importance ratings. The chapter then presented the results for the four research questions. Research question one asked how students categorized the items related to academic advising effectiveness. It was found that items related to the personal relationship the advisor had with the student tended to be categorized primarily as a satisfier, meaning that meeting expectations for this item would result in a small, linear increase in satisfaction levels. The second-largest group for these items marked them as must-be elements, meaning that failing to meet expectations would result in a very large increase in dissatisfaction for these respondents. Many respondents considered advisor goal-setting to be a delighter. For these respondents, advisors helping with student goal-setting was an unexpected bonus and would result in a large, non-linear increase in satisfaction.

The two items related to major requirements were both found to be must-be elements by the majority of the respondents, with a large second group answering that both were satisfiers instead. For all five items, few respondents found them to be indifferent elements, and only one person marked one item as a reverse quality element.

Research question two was similar to question one, except it focused on the items pertaining to campus life. Items relating to cafeteria food selection, ease of involvement in campus organizations, comfortability of residence halls and student center, reasonability of residence hall regulations, and equitability of access to athletics participation for the genders all had their largest group of respondents identify them as satisfiers. For all but one of these items, the second largest group of respondents felt that these items were must-be elements and the third largest group of respondents labelled the items as indifferent elements. For the item related to campus organizations, the second largest group was indifferent element and third-largest was must-be element.

The items relating to orientation services, use of activities fees, disciplinary procedures, and freedom of expression all had must-be element as the largest group. The second largest group for all four items was satisfier and third largest was indifferent. Three items—residence hall staff showing concern, athletics and school spirit, information in the student handbook, and intramurals and weekend activity variety—had indifferent as the largest group. The second largest group was mostly satisfier, with the question pertaining to athletics having an even split between delighter and satisfier as the second-largest group and the item pertaining to the student handbook having must-be as the second largest. Only four of the fifteen items had any responses—albeit only one or two each—categorizing them as reverse-quality elements. These were the items pertaining to cafeteria food, orientation services, residence hall staff showing concern, and athletics and school spirit.

Research question three sought to assess if there was a relationship between Kano categorization and importance rating for items related to academic advising effectiveness. Of the academic advising effectiveness items, only item 19, "my academic advisor helps me set goals to

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work toward," had more than two groups of analyzable size. Therefore, this item was analyzed via ANOVA. There was not a statistically significant result. The remaining four items were analyzed via *t*-test since each had only two groups of analyzable size—must-be and satisfier. None of the items proved to have a statistically significant result.

Research question four similarly sought to identify a relationship between categorization and importance for campus life items. Of 15 total items, two could not be analyzed due to having fewer than two groups of analyzable size. These were item 63, "student disciplinary procedures are fair" and item 42, "there are a sufficient number of weekend activities for students." For both items, over half of the respondents were in the same group, and the remaining responses were spread out over the remaining categories and did not add up to a second group of at least 15 members.

Seven of the items had enough members in three or more groups to perform ANOVAs. Item 38, "there is an adequate selection of food available in the cafeteria," proved to have a statistically significant difference between groups that identified the item as an indifferent element versus a must-be element. Item 31, "males and females have equal opportunities to participate in intercollegiate athletics," found a statistically significant result between respondents who categorized the item as indifferent and those who categorized it as a satisfier. Item 24, "the intercollegiate athletic programs contribute to a strong sense of school spirit," found a statistically significant difference between those who categorized the item as indifferent and those who categorized it as a satisfier or a delighter.

Item 56, "the student handbook provides helpful information about campus life," found a statistically significant difference between those who categorized the item as indifferent and those who categorized it as a must-be or a satisfier. Finally, item 52, "the student center is a

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comfortable place for students to spend their leisure time," also had a statistically significant result, again between those who categorized the item as indifferent versus those who categorized it as a must-be or satisfier element. The remaining two items, item 40, "residence hall regulations are reasonable" and item 64, "new student orientation services help students adjust to college" did not yield statistically significant results.

The remaining six items had only two groups of analyzable size each, so independent samples *t*-tests were performed. Of these, only two proved to have statistically significant results. These were item 46, "I can easily get involved in campus organizations" and item 9, "a variety of intramural activities are offered." Significant results were found between the indifferent and satisfier groups, meaning that respondents who were indifferent to an item gave significantly different importance scores to the item than did those who were in the satisfier group. The remaining four items did not yield significant results. These items were item 30, "residence hall staff are concerned about me as an individual;" item 73, "student activities fees are put to good use; item 67, "freedom of expression is protected on campus;" and item 23, "living conditions in the residence hall are comfortable." Except for item 30, the comparison groups were must-be and satisfier. Item 30—regarding residence hall staff showing concern—is the only *t*-test wherein the categorization as indifferent did not prove to have a significant difference when compared to another group, in this case satisfier.

CHAPTER V

DISCUSSION AND CONCLUSION

The purpose of this quantitative, cross-sectional study was twofold:

1. To see how students categorized items related to academic advising and campus life according to the Kano Model's five dimensions in order to see if the categorizations were consistent.

2. To test how the respondents' importance rating of the academic advising and campus life items, as measured by the Ruffalo Noel Levitz Student Satisfaction Inventory, relate to their assignment of those same items to the Kano Model's five categories of satisfaction: must-be, satisfier, delighter, indifferent, and reverse quality elements.

In order to achieve the above purpose, the Kano Model of Satisfaction (1984) was explored for its potential to transform the way in which researchers and administrators alike understand how individual elements of the college experience, specifically in this study campus life and academic advising, affect overall (dis)satisfaction. As Kano's model had not previously been applied to student satisfaction with the holistic higher education product, it provided a different way of understanding the ways in which individual elements impact a student's overall satisfaction. Because each Kano dimension (must-be, satisfier, delighter, indifferent, or reverse quality element) results in a very different effect on the individual's overall level of (dis)satisfaction, knowing how students categorize service elements has the potential to provide administrators with the information they need to make effective decisions in regard to resource investment and program design in order to improve (dis)satisfaction levels.

As shown by the literature review in chapter two, college student (dis)satisfaction has been widely studied. It has been fairly well established in the literature that student satisfaction is akin to other forms of satisfaction, particularly customer satisfaction (Giese & Cote, 2002; Dado et al., 2012; Athiyaman, 1997). It has further been fairly well established that while the student-institution relationship is complex and can be defined in many different ways—from student as product to student as customer—students constitute an educational institution's primary customers (ASHE, 2008; de Lourdes Machado et al., 2011; DeShields Jr. et al., 2005; Sultan, & Wong, 2011). Finally, while higher educational institutions (HEIs) are complex entities which serve a wide variety of roles, most researchers agree that the industry they most closely resemble is that of the service industry (DeShields Jr. et al., 2005; Temizer & Turkyilmaz, 2012; Butt & Ur Rehman, 2010; de Lourdes Machado et al., 2011). Therefore, student satisfaction is often understood in the context of customer satisfaction with a service provider.

Having now cast students as consumers of HEIs' services, it is important to understand that their satisfaction has much deeper and more meaningful impact upon a HEI than simply influencing the customer/student's repurchase intentions, which is where customer satisfaction often has the primary impact for industry (Athiyaman, 1997; Oliver, 1999; Brown & Mazzarol, 2009; Dado et al., 2012). While student satisfaction has been tightly linked to student retention (Athiyaman, 1997; Elliott, 2003; Elliott & Healy, 2001; Dado et al., 2012), as well as to the recruitment of new students and relationships with various stakeholder groups (Brown & Mazzarol, 2009; Elliott, 2003; Elliott & Healy, 2001), it has also been tied to items more directly tied to the educational mission of HEIs, including student success (Alves & Raposo, 2008; de Lourdes Machado et al., 2011; Elliott, 2003; Bean & Bradley, 1986; Moro-Egido & Panades, 2010), student motivation (Elliott, 2003; Bean & Bradley, 1986; Moro-Egido & Panades, 2010;

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Howard & Maxwell, 1980), and student and stakeholder perceptions (Elliott, 2003; Palacio et al., 2002; Sohail & Shaikh, 2004; Brown & Mazzarol, 2009). Given the widespread impact which success has on nearly all aspects of the institution and its ability to fulfill its mission, it is clear that achieving positive levels of overall student satisfaction are of vital importance for the success of HEIs and students alike.

Many studies have focused on measuring student satisfaction, or trying to gauge how satisfied the student is with his college experience. One tool which has become widely used by HEIs to measure their students' levels of satisfaction with various aspects of their experiences is the Ruffalo Noel Levitz Student Satisfaction Inventory (SSI). The SSI tool has been well validated across many different types and sizes of institutions (Ruffalo Noel Levitz, 2014b; Schreiner & Juillerat, 1994; Obiekwe, 2000; Odom, 2008). Because of its widespread use and high reliability, the SSI's 12 dimensions for student satisfaction were chosen for this study. For practical reasons, this exploratory study decided to focus on two of the twelve, identifying academic advising effectiveness and campus life as the dimensions to which the Kano model was applied.

The primary reason for choosing these two out of the twelve possible choices was the powerful effect that student satisfaction has on student retention, a performance metric that has recently become of increasing importance in meeting stakeholder expectations as well as those of overseeing bodies, such as accreditors, state boards, and the Department of Education (Elliott, 2003; Tinto, 2012; DeShields et al., 2005). Because of this, Tinto's (1975) model was used to help identify two key areas to study, namely academic advising, as a representative of academic integration, and campus life, as an important aspect of social integration. Interestingly, SSI results have often found these two dimensions to have widely differing overall importance scores

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(Elliott & Healy, 2001; Erickson & Williams, 2010; Roberts & Styron, 2010; Schertzer & Schertzer, 2008), indicating that perhaps these self-reported importance scores do not tell the whole story in terms of campus life's actual impact on overall satisfaction

Participants were asked to complete both the SSI and the Kano survey tool which was adapted from the SSI specifically for this study. Reponses to both survey tools were paired and only those who had completed both tools were kept in the final respondent pool. Research questions one and two were about how students tended to categorize the items contributing to academic advising effectiveness and campus life, in Kano terms. The method for achieving this was fairly simple, consisting of charting the responses to the functional and dysfunctional version of each adapted SSI question on a chart to yield a final categorization for that item. Once this first step was achieved, a series of one-way analysis of variance tests (ANOVA) and independent samples t-tests were performed on each item, seeking to identify if there was a difference between Kano categorization and importance rating that was assigned by the student to the item. While chapter four provided a detailed overview of the results, this chapter provides a summary of the results and a discussion of their meaning. Finally, the chapter provides some recommendations for future research as well as implications for practice.

Summary of Results

This section provides a summary of the major results of the study. The findings from each research question will be summarized in order. Findings regarding Kano categorization will be presented for research questions one and two. Then a summary of results by t-test or ANOVA will be presented for research questions three and four.

Research Question One: Kano Categorization of Academic Advising Effectiveness Items

Academic Advising Effectiveness consisted of five functional/dysfunctional paired items. These items were "How do you feel when your academic advisor is/is not approachable," "How do you feel when your academic advisor is/is not concerned about my success as an individual," "How do you feel when your academic advisor helps/does not help you set goals to work toward," "How do you feel when your academic advisor is/is not knowledgeable about requirements in your major," and "How do you feel when major requirements are/are not clear and reasonable."

For three of these items—advisor approachability, advisor individual concern, and advisor goal setting; between 50 to 53 percent of respondents felt each was a satisfier. For the remaining two questions, both of which pertained to academic major requirements, sizeable portions of responses—35 to 38 percent—also categorized the items as satisfiers. Categorization as a satisfier meant that students would still consider the overall academic advising service to be useful without the service element being met, meaning absence of these advisor services would not cause an increase in dissatisfaction. As a satisfier, fulfilling the service would cause a linear increase in satisfaction. Failing to fulfill them would cause an absence of satisfaction, but not an actual increase in dissatisfaction levels. In short, if the total advising experience does not manage to fulfill enough satisfier items, a student will not be satisfied by the advising experience. They won't be actively dissatisfied, but neither will they be satisfied.

The next largest group of students categorized all of these items as a must-be item: 60 percent for reasonability of major requirements, 59 percent for advisor knowledge of major requirements, 38 percent for advisor approachability, 41 percent for advisor individual concern, and 22 percent for advisor goal setting. For those that felt these services were must-be items, the

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absence of the service in their academic advising experience would cause a large, non-linear increase in dissatisfaction. For these respondents, these advising services were must-haves, and the advising experience would be was greatly reduced in usefulness without them.

The much smaller groups of respondents felt these items were a delighter or an indifferent item. For those that felt the item was a delighter, this meant that this service was an unlooked for bonus that gave them a large, nonlinear increase in satisfaction. While four items—advisor approachability, individual concern, advisor knowledge of major requirements, and reasonability of major requirements—had very small percentages of respondents in the delighter group, the fifth was different. Nearly 18 percent of respondents felt that advisor goal setting was a delighter, nearly matching the 22 percent of respondents who felt that behavior was a must-be element.

Finally, for those few that felt an item was an indifferent element, it meant that they did not care one way or the other if their advisor engaged in this behavior. For this group, it seems most likely that they are not interacting with their advisor very often, or perhaps they do not seek a personal relationship with their advisor. While between 3-5 respondents answered that the relationship and goal-setting behaviors were indifferent elements, only one respondent answered that the two questions pertaining to major requirements were indifferent. This shows that while a few people may be disinterested in developing a personal relationship with their advisor, almost no one is disinterested in having clear and reasonable major requirements or having an advisor well versed in those requirements.

It was interesting that out of all five academic advising effectiveness items, only an extremely small number of students responded that they were indifferent to any of the items. This is probably reflective of the fact that nearly all students, no matter their levels of

engagement in any other academic or campus activity, at some point in their college career will partake of academic advising services, even if only to get a signature on an add/drop form. Because of the ubiquity of academic advising to the college experience, nearly all respondents felt that these particular services had some kind of impact on their (dis)satisfaction levels. This differed markedly from the responses to the campus life items, where many more respondents answered that they were indifferent to an item. This difference between academic advising and campus life responses is discussed more in depth in the following section.

Research Question Two: Kano Categorization of Campus Life Items

Campus Life consisted of 15 items. These items were "How do you feel when there is/is not an adequate selection of food available in the cafeteria," "How do you feel when you can/cannot easily get involved in campus organizations," "How do you feel when new student orientation services help/do not help students adjust to college," "How do you feel when residence hall staff are/are not concerned about you as an individual," "How do you feel when intercollegiate athletics do/do not contribute to a strong sense of school spirit," "How do you feel when the intercollegiate athletic programs do/do not contribute to a strong sense of school spirit," "How do you feel when the student handbook does/does not provide helpful information about campus life," "How do you feel when student activities fees are/are not put to good use," "How do you feel when student disciplinary procedures are/are not fair," "How do you feel when freedom of expression is/is not protected on campus," "How do you feel when conditions in the residence halls are/are not adequately comfortable," "How do you feel when the residence hall regulations are/are not reasonable," "How do you feel when males and females do/do not have equal opportunities to participate in intercollegiate athletics," "How do you feel when there

are/are not a sufficient variety of intramural activities," and "How do you feel when there are a sufficient number of weekend activities."

For five of these items, the largest category was the indifferent element. These items were "sufficient weekend activities" at 52 percent, "variety of intramural activities" at 50 percent, "residence hall staff show individual concern" at 44 percent, "the student handbook provides info about campus life" at 40 percent, "athletics and school spirit" at 39 percent. Two items, "comfortability of the student center" and "ease of involvement in campus organizations" had indifferent as the second largest category with 23 percent of respondents each. All remaining items had indifferent as the third largest group. This meant that for these respondents, their overall levels of (dis)satisfaction was unaffected by the presence or absence of these services.

It is clear that many more respondents felt indifferent to one or more campus life items than they had for the academic advising effectiveness items. The largest group of indifferent responses out of the advising items was "advisor goal setting" with 7.4 percent. Comparatively, five campus life items had their largest group of participants in the indifferent category, and all items had it in the top three groups. Interestingly, despite the high numbers of respondents reporting they were indifferent to the inclusion of the service in their campus life experience, the importance score means for these items ranged from 6.42 at the highest to 5.11 at the lowest.

"Satisfier" was the largest group for six items, "cafeteria food selection," "ease of involvement in organizations," "comfortability of residence hall conditions," "comfortability of the student center," "reasonability of residence hall regulations," and "gender equality in athletics opportunities." Eight items—"orientation services," "residence hall staff concern," "athletics' contribution to school spirit," "use of fees," "fairness of disciplinary procedures," "protection of freedom of expression," "variety of intramural activities," and "sufficiency of

weekend activities"—had satisfier as the second largest group. The remaining item, "student handbook provides helpful information," had satisfier as the third largest group. These respondents would experience a small increase in satisfaction when the service was present in their campus life experience. It is clear that while many students may have been indifferent to these items, just as many felt that the item was essential to their satisfaction with campus life. If the institution did not meet many, or worse—any, of these items, these respondents would not experience any positive satisfaction with their campus life experience.

The must-be category was the largest category for four items: "orientation services help students adjust to college," "use of student fees," "fairness of disciplinary procedures," and "protection of freedom of expression." Six items had the must-be category as the second largest grouping. These items were "cafeteria food selection," "student handbook provides helpful information," "comfortability of residence hall conditions," "comfortability of student center," "reasonability of residence hall regulations," and "equal opportunities in athletics." Two additional items had must-be as the third largest group. These were "ease of involvement in organizations" and "residence hall staff showing individual concern." The final two items had must-be as their smallest group, these being the questions pertaining to intramurals and weekend activities.

For these respondents, their level of dissatisfaction with campus life would increase greatly when this item was not met. For any students who rated the item as must-be, it meant that the item was absolutely essential to their campus life experience. Failing to fulfill these items would cause a drastic increase in dissatisfaction, which could in turn have negative impacts for this group in terms of success, motivation, and retention due to the relationship between

satisfaction and these important constructs (Dado et al., 2012; Brown & Mazzarol, 2009; Moro-Egido & Panades, 2010; Bean & Bradley, 1986).

For all but three items, the delighter group was either the smallest or second to smallest group. Only the items pertaining to school spirit, intramurals, and weekend activities placed delighter as the second or third largest group. For the rest, the delighter category ranged from 2.9 percent (student handbook helpfulness) up to 15.7 percent (ease of involvement in organizations). For these respondents, these items were unlooked-for bonus services in their campus life experience, and meeting these items would cause a large jump in satisfaction levels. The relatively low numbers of respondents identifying an item as a delighter is a sign that the SSI tool had correctly identified the elements that comprise campus life and were important to students. Had many respondents consistently identified these items as delighters, it would mean that they have never once considered these services as a standard aspect of the campus life experience, and their inclusion was a pleasant surprise. Rather, the tendency to categorize these items as must-be, satisfier, or even indifferent signaled that respondents were familiar with these aspects of campus life and were expecting to see these items as part of their experiences. The same pattern had been evident in the academic advising effectiveness responses.

Bringing up the rear for all items was the reverse quality category. Only four items had one or two respondents answer that the item was a reverse quality element. These were the items pertaining to the selection of food in the cafeteria, helpfulness of new student orientation in adjusting to college, concern of residence hall staff, and contribution of athletics toward developing a strong sense of school spirit. For these students, the inclusion of these services in their campus life experience was apparently a negative, and their presence would cause an increase in dissatisfaction with campus life. Alternatively, it is possible that these few

respondents perhaps were not reading the questions closely enough, and mistakenly answered that they did *not* like having sufficient numbers of weekend activities or an adequate variety of food in the cafeteria.

Research Question 3: Statistical Analysis of SSI and Kano Results for Academic Advising Effectiveness

Of the five academic advising effectiveness items, four were analyzed via independent samples *t*-tests and one via ANOVA. The reason for this was that, in four of the items, there were only two groups with 15 or more members, so a *t*-test was deemed most appropriate for these items. The *t*-test items were "my academic advisor is concerned about my success as an individual," "my academic advisor is approachable," "my academic advisor is knowledgeable about my requirements in my major," and "major requirements are clear and reasonable." For all four questions, the only two response groups large enough for analysis were must-be and satisfier. None of the *t*-tests showed a statistically significant difference between categorization as a must-be or a satisfier and SSI importance score.

The fifth item, "my advisor helps me set goals to work toward," did have more than two groups of analyzable size, so an ANOVA was performed. Three groups in total were compared. These were satisfier, must-be, and delighter. Responses in the indifferent category were removed as there were too few for meaningful analysis, and no responses had categorized it a reverse quality element. As with the *t*-tests, the ANOVA did not reveal a statistically significant difference between Kano category and SSI importance score.

These results are not unexpected, as the importance score mean for each of the academic advising effectiveness items was in the 6.14 to 6.8 range, and the standard deviations for most items were less than 1 Likert scale point apart. This shows that on the SSI, most respondents

indicated that they all felt about the same regarding the importance of the item to their advising experiences. It is only when the Kano questionnaire was applied that it became apparent that the respondents actually did not all feel the same way about the impact that item had on their levels of satisfaction, as reflected by the diversity of categorizations present in the responses. Further, there seemed to be no direct tie between the importance score given and Kano categorization as must-be, satisfier, or delighter, as demonstrated by the lack of statistically significant results for each test.

The lack of connection between importance score and Kano category suggests that it is likely not possible to judge the actual impact an item has on (dis)satisfaction based only on the SSI importance score. In turn, this reinforces the value of using the Kano model to better understand which items will offer the institution the "biggest bang for its buck," in terms of making strategic investments into improving key services in an effort to improve overall (dis)satisfaction levels with a given service area.

Research Question 4: Statistical Analysis of SSI and Kano Results for Campus Life

Campus Life consisted of 15 items. Of these, two could not be analyzed due to not having at least two groups with 15 or more members. These items were "student disciplinary procedures are fair" and "there are a sufficient number of weekend activities." For the item pertaining to disciplinary procedures, over 63 percent of responses marked it as a must-be, leaving the other groups too small for a comparative analysis. Similarly, the item pertaining to weekend activities had over 51 percent of respondents in the indifferent group, again leaving the other groups too small to be able to run a meaningful statistical test.

For the remaining 13 items, six were analyzed via independent samples *t*-tests and seven via ANOVA. The reason for this was that, in six of the items, there were only two categories

with 15 or more members, so a *t*-test was deemed most appropriate for these items. These six items were the items regarding ease of involvement in campus organizations, variety of intramural activities, residence hall staff concern, use of activities fees, protection of freedom of expression, and comfortability of residence hall conditions.

Only two of these six items were found to have a statistically significant difference between Kano categorization as satisfier or indifferent and the SSI importance score. These two were "ease of involvement in organizations" and "variety of intramural activities." These two items were comparing the indifferent and satisfier groups. The remaining four items did not yield statistically significant results. One of the four non-significant items was similarly comparing the indifferent and satisfier groups. This item was the one pertaining to residence hall staff showing individual concern. The remaining three items were comparing must-be and satisfier elements. The lack of statistically significant results was consistent with the results obtained for the academic advising effectiveness items which had compared the same two groups.

The statistically significant results in tests between indifferent and any other category makes intuitive sense. A student who feels something is a must-be, delighter, or satisfier has a relatively strong opinion on the inclusion of that item in their campus life experience. These respondents tended to have a higher mean importance score than did the indifferent respondents. Based on importance score alone, it would be easy for a researcher or a practitioner to interpret that service area as simply one that had a strong positive impact on student satisfaction. It was only once the Kano model was applied that it was clear that the actual effect was much more nuanced, with the effect ranging from a powerful increase in dissatisfaction, a marginal increase in satisfaction, or a large increase in satisfaction. Knowing which services had what effect, and

for which students, could greatly improve administrators' ability to make strategic program design decisions.

The remaining seven items were able to be analyzed via ANOVA as they had more than two groups of analyzable size in each. These items were "there is an adequate selection of food available in the cafeteria," "males and females have equal opportunities to participate in intercollegiate athletics," "the intercollegiate athletic programs contribute to a strong sense of school spirit," "the student handbook provides useful information about campus life," "the student handbook is a comfortable place for students to spend their leisure time," "residence hall regulations are reasonable," and "new student orientation services help students adjust to college."

Of these, six had the same categories included, which were must-be, satisfier, and indifferent. Four of these, "adequate selection of food," "males and females have equal opportunities in athletics," "the student handbook provides helpful information," and "comfortability of the student center" had statistically significant results. The last two of the six did not have significant results. These were "residence hall regulations are reasonable" and "orientation services help students adjust."

The seventh item, "athletic programs contribute to a strong sense of school spirit," included the indifferent, delighter, and satisfier categories in the analysis. This item had statistically significant results. For all items with statistically significant results, the statistical difference lay between students who categorized the item as an indifferent element versus another category. For two items, the significance lay only between indifferent and satisfier, for another between indifferent and must-be. For three of the items, the significance lay between indifferent and both of the other two groups under comparison. This mirrors the same pattern of

significance seen in the campus life *t*-tests. For those that felt an item had an impact other than indifference on their levels of (dis)satisfaction, the specific category did not reveal a marked difference in the level of importance score assigned to the item on the SSI.

Discussion

This study represented a first exploratory effort in learning how to apply the Kano Model to improve understanding of student satisfaction, and how to use that knowledge to improve overall (dis)satisfaction levels. By better understanding how individual service elements affect students' overall (dis)satisfaction levels with a service area, practitioners could hopefully improve student recruitment, retention, and success at their institutions. No previous study that the researcher was aware of had made an attempt to apply the Kano Model to college student satisfaction in this way. Rather, previous studies of higher education which used the Kano Model had focused on narrow, specialized aspects, such as exploring how to build the ideal online course, how to better clarify professor expectations for students to improve success, or how professor characteristics impact students' satisfaction (Dominici & Palumbo, 2013; Emery, 2006; Gruber et al., 2012).

Understanding the Results

What was most interesting about the ANOVA and *t*-test results was that only the responses in the "indifferent" group yielded a statistically significant difference between the SSI importance score and the importance scores for any other category of responses. For all other categories, importance scores tended to be higher than those for indifferent students, but were otherwise indistinguishable by category. These results mean that while those students who were indifferent tended to give relatively uniform importance scores, students who felt an item was a

must-be, satisfier, delighter, or even a reverse quality element were likely to have overlap between their importance scores.

The lack of a difference between importance score and assigned category for any category except indifferent confirms the basic premise of this study: administrators are missing out on information they could use to make better localized, strategic decisions. While the SSI provides an importance score as well as the performance gap where the institution is not meeting student expectations for a performance scale, this study seems to suggest that the SSI results are not necessarily reflective of the true impact that a given service element has on students' satisfaction with the service area as a whole. An importance score of six could mean that the item is any category—a must-be, a satisfier, a delighter, or even a reverse quality element.

As each of these categories has a very different impact on overall (dis)satisfaction, investing resources based purely on the performance gap could lead to underwhelming results. After all, if it happens that the institution chooses to improve performance in three campus life items, and all three turn out to be satisfiers, it could still find itself dealing with high levels of dissatisfaction despite having bolstered its services. If it had instead chosen to bolster two flagging must-be items and one satisfier, it would have likely had a greater positive impact on overall (dis)satisfaction levels. A performance gap only tells administrators if they are or are not currently meeting expectations in that area. From there, it is necessary to find the most efficient way to enact positive change. In a reality of limited resources—both human and financial, knowing if a given item is considered a must-be, satisfier, delighter, indifferent, or reverse quality element for the target audience would be invaluable for targeted decision making.

Putting It into Context

Given the exploratory nature of this study, its methods and results do not have many direct comparisons with previous work on student satisfaction. Previous studies sought to determine which services or elements had the largest individual impact on a student's overall (dis)satisfaction with the entire college experience; e.g., did academic advising effectiveness or campus life have the larger impact on overall (dis)satisfaction? Some such studies were undertaken by Elliott (2003), Dominici and Palumbo (2013), Shahdadnejad and Alroaia (2013), Ravindran and Kalpana (2012), Zhu (2012), De Lourdes Machado et al. (2011), and Gibson (2010).

This study, by contrast, sought to determine which elements of a particular service area had a specific type of impact on (dis)satisfaction with just that one service. After all, if a performance gap on the SSI reveals that the university is not performing well in the area of academic advising effectiveness, for example, it then becomes necessary to develop a plan to improve performance in that area. By knowing which of the elements of academic advising is a must-be, satisfier, delighter, or indifferent element, decision-makers can quickly narrow down which specific areas they need to focus on in order to most efficiently improve performance in the area of academic advising as a whole. The same could be said for campus life, and likely also for the other SSI service areas which were not included in this exploratory study.

Additionally, because most conventional tools for assessing student satisfaction rely on a self-reported importance rating in order to achieve the final performance gap, it was important to test what an importance rating really meant in terms of Kano category. If importance rating proved to consistently be different based on the Kano category assigned, it could mean that administrators already had the information they needed to prioritize program improvements,

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simply by mapping their existing student satisfaction assessment data to the appropriate Kano categories. In this scenario, historical data which had been collected using the performance gap method could be converted into Kano categories based on the importance scores. This would have saved institutions and researchers from having to reassess their students using the combined importance gap and Kano methods.

However, it was clear from this study that importance score is only somewhat consistently different for students who are indifferent—the rest of the Kano categories were indistinguishable in terms of importance score differences. Because of the overlap in importance scores for all Kano categories, performance gaps alone seem to be an unreliable tool for developing a roadmap for efficiently enacting positive change in existing programming within a specific service area, such as campus life.

Comparatively, the information provided by applying the Kano Model to delivery of services in higher education could allow for the building of a clear roadmap for how to make progress toward closing that performance gap. As Chen and Chuang (2008) describe, "if two criteria cannot be promoted simultaneously due to technical or financial reasons," the Kano Model "provides valuable guidance in tradeoff situations during the product development stage" (p. 668).

If four or five elements have similarly-sized performance gaps, it is unlikely that an institution or department will have enough financial and human resources to make meaningful progress on all five simultaneously. It then becomes necessary to find a method other than gap size to prioritize action items. By applying the Kano Model and the methods in this study to the student population in question, it becomes possible to understand which elements should become

priority number one in order to have the greatest possible impact on overall (dis)satisfaction levels in that service area.

If an item is primarily categorized as a must-be by the target audience, and it has a large performance gap, it should be at the top of the action list. Failing to fulfill a must-be element has a large, negative impact on dissatisfaction; an impact unlikely to be counterbalanced by the potential positive impact that fulfilling a satisfier item would generate (Barker et al., 2005). Because of the large effect must-be elements have on dissatisfaction levels, any must-be item needs to be met before overall (dis)satisfaction levels will rise to a desirable level.

Once must-be elements are being met to an optimal degree, institutional leaders' focus should turn to any reverse quality elements. While this study did not yield more than a few singular responses marking items as reverse quality elements, it cannot be assumed that no services or items related to the college experience will prove to be reverse quality elements in later studies. Because of the negative impact these elements have on overall (dis)satisfaction, it becomes important to ensure that they are appropriately managed in order to minimize the negative impact on (dis)satisfaction. Can any reverse quality elements be eliminated, or if not, be made less arduous, intrusive, or arbitrary?

After the elements causing increases in dissatisfaction have been appropriately managed, practitioners should focus on achieving increases in satisfaction. The best that can be achieved with must-be and reverse elements is a lack of dissatisfaction, which on its own is not likely to cause an increase in student loyalty (retention) or student success. By focusing on meeting satisfier elements, they can ensure a steady, linear increase in satisfaction (Gruber et al., 2012; Barker et al., 2005).

Delighter elements, on the other hand, are likely to be difficult to identify and liable to quickly change based on evolution of the audience's tastes and expectations. If a delighter element proves to be low-hanging fruit in terms of being easily fulfilled, investment here can cause a large increase in satisfaction. However, because delighters are something which never occurred to the customer that they even wanted, delighters can be difficult to identify, and may be prohibitively expensive in terms of finances, space, technology, or human resources. Furthermore, once an audience has been steadily introduced to a delighter, it is liable to morph into a satisfier. Then, over a long enough timespan, it could even become a must-be element, as the audience comes to expect that element as part of the service they receive (Stroud, n.d.). Because of their somewhat capricious nature, delighter elements should not be relied upon as the primary means of achieving satisfaction, but rather as supplements to a healthy list of fulfilled satisfiers and must-be elements.

Finally, if an item is judged by and large to be an indifferent element, it of course is likely not worth making an additional investment in that area, as it will have marginal impact on (dis)satisfaction. In fact, if there is a shortage of resources, it would be wise to reduce or eliminate the resources that are being allocated to the operation of that indifferent element in favor of meeting a must-be or satisfier instead. That being said, many of the items in this study which proved to have large proportions of indifferent responses were items which are often lauded as being essential to the campus life experience. It is probable that only certain types of students are indifferent to campus life items. Others, as shown by the results here, considered them must-be elements, satisfiers, or delighters. This presents an area for future research, which will be discussed in the next section.

Limitations and Recommendations for Future Research

Because of the exploratory nature of this study, there were a number of limitations as well as areas left unexplored for future researchers. One limitation was the lack of similar studies with which to compare methods and results. There was no pre-existing survey tool which had been independently tested and validated, so the researcher adapted one using the SSI as a guide. While the results indicated that this tool was relatively reliable, additional testing should be conducted to further hone and test this tool across various audiences, as well as expanding it to cover additional SSI scales. Beyond this, the length of the SSI itself may have served as a barrier to completion of the second survey tool, making the SSI a difficult co-survey when striving for paired results.

An additional limitation was the decision to only explore two of the twelve SSI scales. This leaves a great deal of territory unexplored, and it would be a great area for additional study to see if all 12 scales produced similar results, wherein only indifferent responses revealed statistically significant differences compared to the other groups. Additionally, it would be very interesting to see if certain groups of students tended to categorize items the same way, such as groups by class level, gender, age, ethnicity, major, or rural versus urban upbringing.

This could help explain the results obtained under campus life, wherein fairly sizable groups of students indicated that they were indifferent to campus life items, while others marked them as must-be elements, satisfiers, and delighters. It would be useful to know if it were possible to better target services at specific student groups, rather than investing effort in a widespread scale to drive student engagement via involvement in these activities. After all, if specific types of students are known to be indifferent to an activity, it may be possible to better target the activities offered toward those student groups which are interested, and stop efforts to

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expand services for those who are indifferent. In addition, students at other types of institutions, such as community colleges or large, public institutions, may categorize each service element in very different ways than did the students who participated in this study. This kind of information could enable targeted program changes to improve satisfaction for sub-groups of students who may be at higher risk of failure or drop-out than others.

The disparity in categorizations of the same item opens up another possibility, however. It could also be that there is little predictability in which students are liable to place a given service into a specific Kano category. If this is the case, Kano could prove less than useful in truly helping institutions to set priorities based on the category. If students are liable to be spread across all five categories on any given item, then all practitioners are liable to learn from a Kano survey is that yes, students who rated this item highly on importance do indeed feel that this item affects their overall (dis)satisfaction in some way. Since the results of this study suggest that a lower importance score indicates indifference and a higher score yields anything from satisfier to delighter to must-be, there is little more to learn from the Kano Model if student groups do not tend to categorize in the same way. Additional research is needed to see if the Kano Model can be used as a more targeted, strategic tool when analyzed by demographics or other breakdowns of participants.

Implications for Practice

Administrators and practitioners will hopefully find the results of this study helpful in strategic decision making and program development. While the immensely popular method of measuring student satisfaction provided by the Ruffalo Noel-Levitz Student Satisfaction Inventory (SSI) provides administrators with areas of weakness in terms of performance gaps, it does not provide them with a clear roadmap to follow in terms of making program or service

enhancements. This is made clear by the results of this study, wherein the importance score on the SSI did not differ by Kano category excepting for those respondents that were indifferent. This suggests that the information provided by an importance score is insufficient for understanding the effect a single service has on an overall service area, such as academic advising or campus life.

This information vacuum can lead to haphazard decision making, with practitioners attempting to guess at ways to improve an individual service or program, without having any meaningful data on which to base their decisions. After having identified areas of weakness using a student satisfaction assessment tool such as the SSI, it would be useful to follow up with a Kano questionnaire which is focused specifically on the service areas of weakness. The Kano data could then be leveraged to find the most effective and efficient areas to focus on to improve overall (dis)satisfaction with the service area.

The Kano Model was designed as a tool for use in product development as well as assessing satisfaction with a current product. This makes it well suited for use in enhancing program design efforts. When trying to improve a current program or service, or design a new one from scratch, practitioners can employ the Kano Model and its methods to assess which program aspects are most important to students. By first identifying all must-be elements that comprise a service or program, then identifying a sufficient number of satisfiers, and—if lucky— find one or two delighters, practitioners can quickly tailor programs and services to best meet student expectations.

One final point for practitioners is the necessity of ongoing assessment of their student bodies' changing expectations and tastes. A service element is liable to change categories as time goes on and audience expectations change (Stroud, n.d.). In addition, different groups of

students, as shown by this study, are likely to have different opinions on which elements fall into which categories. Because of this, any changes made need to be carefully targeted to the correct audience, then assessed for effectiveness once the changes have been implemented to ensure that it was in fact having the expected impact on overall (dis)satisfaction.

By incorporating the Kano Model and its methods into ongoing student satisfaction assessment efforts, practitioners can begin to build a body of knowledge concerning the expectations, needs, and interests of their specific audiences. This can vastly improve their ability to make strategic decisions in regard to allocation of resources and program design; decisions which are tailor-made to best benefit their unique students and institutions. Hopefully, this type of targeted decision making can help higher education begin to close the gap on student retention, motivation, and success levels as a whole, meeting the growing national and international concerns over the state of higher education head-on with strategic action.

Summary

This study contributed to the research on student satisfaction in that it applied a valuable new framework to the study of college student satisfaction. The application of the Kano Model to this field gives researchers a new tool to move beyond simply measuring student satisfaction via performance gaps and prioritizing actions based simply on gap size, as this method often leaves practitioners forced to choose between investments in items with performance gaps that are separated by minute decimal dust. The Kano Model provides a new level of information about which specific service elements have the greatest impact on overall (dis)satisfaction with that service area. This enables researchers and practitioners to identify which areas have the greatest performance gaps, then prioritize which of those items to invest in based on which Kano category the target student audience assigned to that item. This makes for a significantly more

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efficient method for making service improvements which will give the institution the largest

impact for the least investment in terms of impact on overall (dis)satisfaction.

APPENDICES

Ruffalo Noel Levitz Student Satisfaction Inventory Questions

SCALE 1: Student Centeredness

Item Number	Item Description
1	Most students feel a sense of belonging here.
59	This institution shows concern for students as individuals.
29	It is an enjoyable experience to be a student on this campus
2	The campus staff are caring and helpful.
45	Students are made to feel welcome on this campus.
10	Administrators are approachable to students.

SCALE 2: Campus Life

Item Number	Item Description
40	Residence hall regulations are reasonable.
23	Living conditions in the residence halls are comfortable (adequate space, lighting, heat, air conditioning, telephones, etc.)
30	Residence hall staff are concerned about me as an individual.
38	There is an adequate selection of food available in the cafeteria.
42	There are a sufficient number of weekend activities for students.
24	The intercollegiate athletic programs contribute to a strong sense of school spirit.
9	A variety of intramural activities are offered.
31	Males and females have equal opportunities to participate in intercollegiate athletics.
46	I can easily get involved in campus organizations.
52	The student center is a comfortable place for students to spend their leisure time.
63	Student disciplinary procedures are fair.
64	New student orientation services help students adjust to college.
73	Student activities fees are put to good use.
56	The student handbook provides helpful information about campus life.
67	Freedom of expression is protected on campus.

SCALE 3: Instructional Effectiveness

Item Number	Item Description
16	The instruction in my major field is excellent.
8	The content of the courses within my major is valuable.
69	There is a good variety of courses provided on this campus.

39	I am able to experience intellectual growth here.
53	Faculty take into consideration student differences as they teach a course.
25	Faculty are fair and unbiased in their treatment of individual students.
58	The quality of instruction I receive in most of my classes is excellent.
68	Nearly all of the faculty are knowledgeable in their field.
47	Faculty provide timely feedback about student progress in a course.
70	Graduate teaching assistants are competent as classroom instructors.
61	Adjunct faculty are competent as classroom instructors.
41	There is a commitment to academic excellence on this campus.
3	Faculty care about me as an individual.
65	Faculty are usually available after class and during office hours.

SCALE 4: Recruitment and Financial Aid Effectiveness

Item Number	Item Description
12	Financial aid awards are announced to students in time to be helpful in college planning.
5	Financial aid counselors are helpful.
17	Adequate financial aid is available for most students.
4	Admissions staff are knowledgeable.
43	Admissions counselors respond to prospective students' unique needs and requests.
48	Admissions counselors accurately portray the campus in their recruiting practices.

SCALE 5: Campus Support Services

Item Number	Item Description
18	Library resources and services are adequate.
26	Computer labs are adequate and accessible.
44	Academic support services adequately meet the needs of students.
32	Tutoring services are readily available.
54	Bookstore staff are helpful.
13	Library staff are helpful and approachable.
49	There are adequate services to help me decide upon a career.

SCALE 6: Academic Advising Effectiveness

Item Number	Item Description
14	My academic advisor is concerned about my success as an individual.
6	My academic advisor is approachable.
19	My academic advisor helps me set goals to work toward.
33	My academic advisor is knowledgeable about my requirements in my major.
55	Major requirements are clear and reasonable.

SCALE 7: Registration Effectiveness

Item Number	Item Description
50	Class change(drop/add) policies are reasonable.
34	I am able to register for classes I need with few conflicts.
27	The personnel involved in registration are helpful.
11	Billing policies are reasonable.
20	The business office is open during hours which are convenient for most students

SCALE 8: Safety and Security

Item Number	Item Description
7	The campus is safe and secure for all students.
36	Security staff respond quickly in emergencies.
28	Parking lots are well-lighted and secure.
21	The amount of student parking space on campus is adequate.

SCALE 9: Concern for the Individual

Item Number	Item Description
25	Faculty are fair and unbiased in their treatment of individual students.
3	Faculty care about me as an individual.
14	My academic advisor is concerned about my success as an individual.
30	Residence hall staff are concerned about me as an individual.
22	Counseling staff care about students as individuals.
59	The institution shows concern for students as individuals.

SCALE 10: Service Excellence

Item Number	Item Description
13	Library staff are helpful and approachable.
15	The staff in the health services area are competent.
22	Counseling staff care about students as individuals.
2	The campus staff are caring and helpful.
71	Channels for expressing student complaints are readily available.
60	I generally know what's happening on campus.
57	I seldom get the run-around when seeking information on this campus.
27	The personnel involved in registration are helpful.

SCALE 11: Responsiveness to Diverse Populations

Item Number	Item Description
84	How satisfied are you that this campus demonstrates a commitment to meeting the needs of part-time students?
85	How satisfied are you that this campus demonstrates a commitment to meeting the needs of evening students?
86	How satisfied are you that this campus demonstrates a commitment to meeting the needs of older, returning learners?
87	How satisfied are you that this campus demonstrates a commitment to meeting the needs of under-represented populations?
88	How satisfied are you that this campus demonstrates a commitment to meeting the needs of commuters?
89	How satisfied are you that this campus demonstrates a commitment to meeting the needs of students with disabilities?

Scale 12: Campus Climate

Item Number	Item Description
1	Most students feel a sense of belonging here.
59	This institution shows concern for students as individuals.
29	It is an enjoyable experience to be a student on this campus
37	I feel a sense of pride about my campus.
51	This institution has a good reputation within the community.
41	There is a commitment to academic excellence on this campus.
2	The campus staff are caring and helpful.
45	Students are made to feel welcome on this campus.
10	Administrators are approachable to students.
57	I seldom get the run-around when seeking information on this campus.
60	I generally know what's happening on campus.
66	Tuition paid is a worthwhile investment.
62	There is a strong commitment to racial harmony on this campus.
71	Channels for expressing student complaints are readily available.
67	Freedom of expression is protected on campus.
3	Faculty care about me as an individual.
7	The campus is safe and secure for all students.

Stand-alone items:

72	On the whole, the campus is well-maintained.
35	The assessment and course placement procedures are reasonable.

Kano Survey Tool

Kano Model Student Satisfaction Survey

APPLYING THE KANO MODEL TO STUDENT SATISFACTION CONSENT FORM

This additional survey is purely voluntary and is being offered as part of a research project for a doctoral candidate in higher education leadership at the University of North Dakota; your previous participation in the Student Satisfaction Inventory (SSI) survey does not obligate you to continue on and complete this survey as well. The purpose of this study will be to develop a better understanding of how students perceive academic advising and campus life in terms of their satisfaction with their higher education experiences. Participation in this study represents minimal risks to you, such as the potential for fatigue while completing the survey, and your responses will be kept confidential. Please note that your consent to participate in this survey will include releasing your responses to both the questions on this optional survey and to the SSI (the survey you just completed) to the researcher. Your student ID will be collected and used for the sole purpose of pairing your responses here to your answers on the SSI survey form. Once the responses are matched up, your student ID and any other information that could be used to identify you will be deleted before being shared with the researcher.

The importance rating that you gave to the questions about academic advising and campus life on the SSI will be compared to the way you categorize the same items on this survey, in terms of perceiving them as essential to your satisfaction with higher ed (a must-be factor), as being non-essential but adding some measurable degree of satisfaction with your higher ed experience (a satisfier), or as greatly exceeding your expectations (a delighter). In this survey, the questions about academic advising and campus life from the SSI will be repeated, albeit with slight modifications in the question layout and responses. Data gathered will be used as part of a doctoral candidate's dissertation research project, the goal of which is to establish a general understanding of how college students perceive academic advising and campus life's essentiality to their satisfaction with their higher education experience.

There are 40 questions on this survey – answering all questions should take between 5-10 minutes of your time.

Please read through the below paragraph, then indicate it you are willing to participate. If you have any questions or concerns, contact Melissa McDowall at ████████████. Thank you for your time!

"My agreement below acknowledges my voluntary participation in this research project. Such participation does not release the researcher, the ████████████, or other agencies from their professional and ethical responsibilities to me. Potential risks from participation in this research project have been disclosed to me. I acknowledge that unforeseeable and/or unknown risks or discomforts may occur. In the event that medical treatment occurs as a result of normal participation in this research project, the ████████████, or other agencies will not be responsible for my medical costs or other damages incurred in the absence of fault on their behalf."

*

◯ I agree and wish to participate in the study.

◯ I do not wish to participate in the study.

In order to match your answers on this survey to the answers on the SSI, please provide your ████ student ID and email in the boxes provided. This information will be purged by the Office of Academic Affairs prior to sharing any data with the researcher.

Student ID

[   ]

Email Address

[   ]

Please choose the best answer for each question.

	I like it that way	It must be that way	I am neutral	I can live with it that way	I dislike it that way
How do you feel if your academic advisor is approachable?	○	○	○	○	○
How do you feel if a variety of intramural activities are not offered?	○	○	○	○	○
How do you feel if you can easily get involved in campus organizations?	○	○	○	○	○
How do you feel if males and females do not have equal opportunities to participate in intercollegiate athletics?	○	○	○	○	○
How do you feel if your academic advisor is concerned about your success as an individual?	○	○	○	○	○
How do you feel if student activitiy fees are not put to good use?	○	○	○	○	○
How do you feel if the student handbook provides helpful information about student life?	○	○	○	○	○
How do you feel if your academic advisor is not knowledgeable about requirements in your major?	○	○	○	○	○
How do you feel if the intercollegiate athletic programs contribute to a strong sense of school spirit?	○	○	○	○	○
How do you feel if the student center is not a comfortable place for students to spend their leisure time?	○	○	○	○	○

Please choose the best answer for each question.

	I like it that way	It must be that way	I am neutral	I can live with it that way	I dislike it that way
How do you feel if your academic advisor helps you set goals to work toward?	○	○	○	○	○
How do you feel if residence hall regulations are not reasonable?	○	○	○	○	○
How do you feel if residence hall staff are concerned about you as an individual?	○	○	○	○	○
How do you feel if living conditions in the residence halls are not comfortable (inadequate space, lighting, heat, air, etc.)?	○	○	○	○	○
When there is an adequate selection of food available in the cafeteria, how do you feel?	○	○	○	○	○
How do you feel if your major requirements are not clear and reasonable?	○	○	○	○	○
How do you feel if new student orientation services help students adjust to college?	○	○	○	○	○
How do you feel if your academic advisor is not approachable?	○	○	○	○	○
How do you feel if student disciplinary procedures are unfair?	○	○	○	○	○
How do you feel if a variety of intramural activities are offered?	○	○	○	○	○

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Please choose the best answer for each question.

	I like it that way	It must be that way	I am neutral	I can live with it that way	I dislike it that way
How do you feel if freedom of expression is not protected on campus?	○	○	○	○	○
How do you feel if males and females have equal opportunities to participate in intercollegiate athletics?	○	○	○	○	○
How do you feel if the student handbook doesn't provide helpful information about student life?	○	○	○	○	○
How do you feel if living conditions in the residence halls are comfortable (adequate space, lighting, heat, air, etc.)?	○	○	○	○	○
How do you feel if your academic advisor is knowledgeable about requirements in your major?	○	○	○	○	○
How do you feel if residence hall staff are not concerned about you as an individual?	○	○	○	○	○
How do you feel if student activitiy fees are put to good use?	○	○	○	○	○
How do you feel if you cannot easily get involved in campus organizations?	○	○	○	○	○
How do you feel if freedom of expression is protected on campus?	○	○	○	○	○
How do you feel if your academic advisor doesn't help you set goals to work toward?	○	○	○	○	○

Please choose the best answer for each question.

	I like it that way	It must be that way	I am neutral	I can live with it that way	I dislike it that way
How do you feel if the student center is a comfortable place for students to spend their leisure time?	○	○	○	○	○
When there is not an adequate selection of food available in the cafeteria, how do you feel?	○	○	○	○	○
How do you feel if your major requirements are clear and reasonable?	○	○	○	○	○
How do you feel if there are not a sufficient number of weekend activities for students?	○	○	○	○	○
How do you feel if residence hall regulations are reasonable?	○	○	○	○	○
How do you feel if the intercollegiate athletic programs do not contribute to a strong sense of school spirit?	○	○	○	○	○
How do you feel if student disciplinary procedures are fair?	○	○	○	○	○
How do you feel if your academic advisor is not concerned about your success as an individual?	○	○	○	○	○
How do you feel if there are a sufficient number of weekend activities for students?	○	○	○	○	○
How do you feel if new student orientation services do not help students adjust to college?	○	○	○	○	○

* Indicates Response Required

Submit

University of North Dakota IRB Approval

U N I V E R S I T Y O F
UND NORTH DAKOTA

DIVISION OF RESEARCH & ECONOMIC DEVELOPMENT

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Institutional Review Board
c/o Research Development
and Compliance
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October 7, 2014

Principal Investigators:	Melissa McDowall
Project Title:	"Applying the Kano Model: Moving Beyond Measuring Student Satisfaction to Leveraging Student Satisfaction"
IRB Project Number:	IRB-201410-086
Project Review Level:	Exempt 2
Date of IRB Approval:	10/06/2014
Expiration Date of This Approval:	10/05/2017

The application form and all included documentation for the above-referenced project have been reviewed and approved via the procedures of the University of North Dakota Institutional Review Board.

If you need to make changes to your research, you must submit a Protocol Change Request Form to the IRB for approval. No changes to approved research may take place without prior IRB approval.

This project has been approved for 3 years, as permitted by UND IRB policies for exempt research. You have approval for this project through the above-listed expiration date. When this research is completed, please submit a Termination Form to the IRB.

The forms to assist you in filing your project termination, adverse event/unanticipated problem, protocol change, etc. may be accessed on the IRB website: http://und.edu/research/resources/human-subjects/

Sincerely,

Michelle L. Bowles, M.P.A., CIP
IRB Coordinator

MLB/jie

Enclosures

Cc: Dr. Deborah Worley

The University of North Dakota is an equal opportunity / affirmative action institution.

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