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The Relationship between College Students' Use of Facebook and their Feelings of Alienation from their Institution

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ABSTRACT

Today's college students are digital natives who have grown up using technology, such as social network systems (SNSs). SNS use, and specific behavior patterns, have been linked to a variety of psychological and social outcomes. The sense of disconnection from a student's institution, known as alienation, is one significant factor that can be detrimental to students' social and academic experience and performance in college (Gordon, 1998; Loo & Rolison, 1986; Suen, 1983). This study explores the association between Facebook relationship maintenance behaviors (FRMB; Ellison, Vitak, Gray, & Lampe, 2014) and alienation from their university, and whether FRMBs and alienation are affected by demographic factors of gender and year in school among undergraduate students (N = 151) at a regional comprehensive university. The results found that the prevalence of Facebook interactions with university peers was associated with a decreased sense of social estrangement (r = -.305, P = .005). Meanwhile, no significant associations were found between FRMBs and the alienation dimensions of powerlessness, meaninglessness, and social estrangement measured by the University Alienation Scale (Burbach, 1972). These findings suggest that higher education needs to be more proactive in harnessing the potential of technology to engage undergraduate students.

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CHAPTER I:

INTRODUCTION

College can be an exciting and challenging time for students. Academic

challenges are but one of the many new experiences students negotiate as they begin and

progress through their programs. Other challenges include developing social skills, ways

to understand themselves, making their own decisions and taking responsibility for them,

all as part of developing identity (Chickering & Reisser, 1993). How students manage to

negotiate these and other challenges can have impact on their college success and overall

experience (Loo & Rolison, 1986; Tinto, 1975). Successfully meeting them can be

facilitated by the individual's feeling of connectedness to his or her environment, a sense

of belonging (Tinto, 1975).

Student Alienation

Belonging is a significant aspect of human experience. It can be conceptualized in

the positive terms such as "belonging," "engagement," or in terms of its antithesis –

alienation. Alienation is defined as a state or experience of disconnection where

connection is not only desired, but possibly expected; the object of such sense of

disconnection can be people, things, organizations, institutions or other social entities, or

even one's own feelings or experiences (see Case, 2007, 2008; Mann, 2001; Seeman,

1959, 1983). Furthermore, scholars consider alienation to be a complex and multifaceted

umbrella construct that consists of six complementary, though independent, dimensions:

powerlessness, meaninglessness, normlessness, social isolation, and self-estrangement;

each of which can be relatively independent from each other (Seeman, 1983; 2001). For

college students alienation can be a serious obstacle to success as it is associated with

increased attrition rates (Suen, 1983; Loo & Rolison, 1986), decreased self-confidence and self-worth (Galassi & Galassi, 1973; Gordon, 1998), lack of long range goals, feeling of support, and leadership and community service experiences (Gordon, 1998). In addition, alienation is a subjective and context-bound experience that often, but not always, is related to specific conditions in the environment (Burbach, 1972; Dean, 1961; Seeman, 1959, 1983). As a result, it is no surprise that college students from different backgrounds may experience different levels and aspects of alienation as they enter their new college or university environment.

The environment of the school a student attends can contribute to their alienation. Tomlinson-Clarke and Clark (1996) compared alienation among students at a 2-year college, a comprehensive college, and a research university. Students at the 2-year college reported experiencing a lower sense of meaninglessness alienation than their counterparts at the other two institutions, whereas the students at the research university experienced greater powerlessness (Tomlinson-Clarke & Clark, 1996). In the same vein, Gordon (1998) found significant college-by-ethnicity and college-by-gender interactions among students attending three community colleges in the Northeast, suggesting that some features of the environment at each institution may have offered better opportunities to find a sense of belonging for representatives from different cultural groups and for women.

Students' background demographic factors have also been an important focus of research of college students' alienation. At one time or another, students from any background can feel alienated. Men and women, for instance, have been shown to experience varying kinds and levels of feelings of alienation in different school environments and at different stages of their college careers (Galassi & Galassi, 1973;

Gordon 1998; Tomlinson-Clarke & Clark, 1996). However, research also has shown that students from African American, Hispanic, Asian, and international backgrounds—representatives of minority groups that experience oppression and discrimination—as well as those who come from different (domestic or international) cultures, distinct from the white middle class culture that is at the foundation of the American academy, have experienced higher rates of alienation (Burbach & Thompson, 1971; 1973; Gordon, 1998; Loo & Rolison, 1986; Suen, 1983). This is particularly alarming as higher education is striving to increase diversity and diverse students' success (Gordon, 1998).

Alienation, a conceptual antithesis of the sense of belonging, can be a serious obstacle for college students as they progress through their programs, colleges, and universities. Although any student can experience difficulty forming meaningful connections with their new college environments, some, especially students from minority cultural or international backgrounds, are at higher risk (Burbach & Thompson, 1971; 1973; Gordon, 1998; Loo & Rolison, 1986; Suen, 1983) of having a difficult time finding ways to make sense and fitting in with their peers, institutional cultures, and academic and social norms and processes. As a result, they may feel alienated, which can lead to poor performance and dropping out (Burbach & Thompson, 1971; 1973; Loo & Rolison, 1986; Suen, 1983). For these reasons it is important to consider different social aspects of the college experience that may facilitate students' efforts to fit in, make sense of, and feel connected at their institutions. One of the most recent developments in the social landscape of college experience are social networking sites (SNSs), such as Facebook, which could potentially impact how students connect and interact with their peers and institutions (Selwyn, 2009; Yu, Tian, Vogel, & Kwok, 2010).

Social Networking Sites and Facebook

The recent emergence and boom in Web 2.0 and social media, and particularly social networking sites, coupled with the popularity of these technologies among college students, have extended some of the college experiences and the challenges associated with them into a new, virtual, environment (Selwyn, 2009; Yu et al. 2010). Early on, SNSs, such as Facebook, were designed as a new way for public, semi-private, or private social interactions and as a way to connect with others and traverse one's network of profiles of others (Ellison & boyd, 2013). With the advent of Web 2.0, the focus of SNSs shifted to more fluid user-generated content (Ellison & boyd, 2013). With these changes SNS systems have evolved new features and usage norms. The focus increasingly shifted from "traversing the profiles" and connections (which became more infrastructural, i.e. parts of the system that enable its technical and social functionality), to aggregated "media streams" consisting of snippets of user-generated and system-generated content and media, activity reports, such as "status updates," "wall posts," and shared photos and videos or other media (Ellison & boyd, 2013). This evolution also saw a huge growth in membership and popularity. In 2010 the amount of time spent on social networking sites by Internet users was staggering, accounting for about 23% of all time spent online (Nielsen, 2010).

College students may be engaged in multiple social networks, but Facebook is one of the most popular social networking sites, on which 92% of all SNS users have a profile (Ellison, 2007). Unrivaled by other social network sites, Facebook's size and reach are staggering. A system that started in 2004 to network Harvard students has grown in June 2016 to 1.13 billion monthly active users all over the world, with 1.3 billion logging on daily, and 84.5% of whom are outside the United States (Facebook

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Newsroom, 2016). In 2011 an average Facebook user actively participated by posting content 90 times a month, was connected to 80 groups, events, or other pages (Facebook, 2011).

Not surprisingly, Facebook's pervasiveness and popularity among students has made it a key element of students' socialization to being a student and the college environment (Yu, et al., 2010). Moreover, Facebook has become one of the vehicles for "informal, cultural learning of 'being' a student," experimenting with identities, and learning values, norms, and roles of the new community students find themselves in (Selwyn, 2009, p. 18). Indeed, social learning is an important element of SNS use, which was confirmed by Burke, Marlow, and Lento, (2009) who found that users closely watch and learn from their friends the norms of the SNS as a medium early upon signing up, and that their behaviors in the first two weeks of Facebook membership predicted future activities. Consequently, this has prompted a growing interest in the impact of Facebook behaviors have on college student-users.

Uses of Facebook among college students vary from connecting with friends to seeking emotional support, playing games, and sharing pictures (Lenhart, 2009), and more recently has been extended to collaboration and networking (Lampe et al., 2011). While Facebook is popular among people of a wide age range, one study showed that among college students, age and year in school made a difference in becoming a Facebook user and the amount and kinds of activities on the site, "with younger cohorts having more presence on the site than older cohorts" (Valenzuela, Park, & Kee, 2009). Curiously, among college student users, while women were more likely to have an account on Facebook (Valenzuela, Park & Kee, 2009) and considered Facebook a useful source of information and a potential resource to request information from their networks

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(Lampe et al., 2012), men tended to be more likely to collaborate using Facebook (Lampe et al., 2011).

Despite the features that have made it easier to manage large networks, Facebook users have struggled seeing beyond its use for strictly social purposes (Lampe et al., 2012). Nevertheless, 73% of prospective college students considered Facebook friends a potential wellspring for college-related "resources," such as information and advice, even despite the fact that first-generation prospective students reported having lower levels of such resources (Wohn, Ellison, Khan, Fewins-Bliss, & Gray, 2013, p. 16).

As users seem to use Facebook for a range of purposes, research has begun moving past the descriptive studies of users and toward examining the relationships among their behaviors and psychological and psychosocial variables began to emerge. As any medium, Facebook use can offer benefits as well as hidden dangers for its users. Kross et al. (2013) studied the relationship between Facebook use and users' well-being and conclude that it "may be more nuanced and potentially influenced by multiple factors including number of Facebook friends, perceived supportiveness of one's online network, depressive symptomatology, loneliness, and self-esteem" (p. 1).

Among the benefits of new opportunities to extend individuals' offline networks of relationships created by Facebook, researchers have cited greater overall well-being (Burke, Marlow, & Lento, 2010); increases in bridging and bonding social capital, especially for students with lower self-esteem (Burke, Marlow, & Lento, 2010; Ellison, Steinfeld, & Lampe, 2007; Lampe, Vitak, & Ellison, 2013; Steinfeld, Ellison, & Lampe 2008); life satisfaction (Ellison et al., 2007; Steinfeld et al., 2008; Valenzuela, Park, & Kee, 2009); and social trust and higher civic participation (Valenzuela et al., 2009).

In addition to general intensity of Facebook use, certain behaviors and activities on Facebook have been found to be related with specific outcomes. For instance, users who reported greater social capital reported being more present in their social network by engaging their Facebook friends and signaling their relational investment as they communicated their support for others or responded to information requests (Lampe, Vitak, Gray, & Ellison, 2012). Of the three Facebook communication strategies, social information seeking was the only one related to bridging social capital, while initiating and maintaining strategies (focused on close offline friends) showed no relationships with social capital (Ellison, Steinfeld, & Lampe, 2011). However, Facebook relationships maintenance behaviors (FRMBs) – activities intended to signal and create expectations of reciprocal attention, which can be as simple as wishing a friend happy birthday – were positively related to bridging social capital (Ellison, Vitak, Gray, & Lampe, 2014). Browsing one's strong ties on Facebook enhanced users' self-esteem, but browsing weak ties did not (Wilcox & Stephen, 2013). Moreover, browsing one's network while focusing on strong ties ("actual" friends) and thinking about information the user him- or her-self shared can creates momentary increases in self-esteem (Gonzales & Hancock, 2011). Furthermore, active "extractive searching," such as checking specific friends' profiles, was shown to be associated with greater experience of pleasure (as measured by physiological indicators in a lab observation), as compared to passive consumption, such as purposeless browsing of the Newsfeed (Wise, Alhabash, & Park, 2010). Directed communication behaviors (vs. passive consumption of Facebook) were positively related to bridging social capital and negatively related to loneliness (Burke, Marlow, & Lento, 2010). Numbers of Facebook friends were predictive of bridging self-efficacy— "students' perceived ability to form helpful social ties on campus" (p. 4) and, indirectly,

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of academic self-efficacy (DeAndrea et al., 2011); and social capital (Burke, Marlow, & Lento, 2010; Ellison, Steinfeld, & Lampe, 2011). While the number of "actual" friends whom users considered to be close, was more predictive of greater social capital than the total number friends (Ellison, Steinfeld, & Lampe, 2011), the total number of friends was also inversely related with loneliness (Burke, Marlow, & Lento, 2010).

While SNSs and Facebook use are touted for positive outcomes, research shows that it can also have negative effects. For instance, the short-term increases in self-esteem from browsing one's strong ties led to short term lapses in self-control in a range of domains, from health, to mental persistence, to spending and finances (Gonzales & Hancock, 2011). In addition, although SNSs have been thought of as a unique opportunity for individuals with low self-esteem to express themselves and find social support, this potential is often unrealized (Forest & Wood, 2012). Users with low self-esteem appear to use Facebook as much as those with average or high self-esteem, but the negativity of their disclosures on Facebook make them less liked by strangers and does not appear to change the dynamic from the off-line communication where negative statements attract less attention and elicit less support from closer friends, while the positive status updates are better liked and elicit more supportive responses than the negative comments (Forest & Wood, 2012). Furthermore, in an in-vivo experience-sampling study conducted over a period of 14 days, researchers found that Facebook use predicted declines in affective well-being—"how people feel moment to moment" particularly once they experienced moderate to high levels of direct/offline social contact, and cognitive well-being—"how satisfied that are with their lives" (Kross et al., 2013, p.4).

Online social networking, as new as it is, has permeated virtually every aspect of people's lives and, as the brief discussion above suggests it has changed the manner in which people interact with one another and maintain relationships (Donath & boyd, 2004). As with any new pervasive technology, it offers users new opportunities and potential challenges, including in the realm of social and psychological well-being. For instance, different patterns of Facebook use are associated with gratification or distress (Kross et al., 2013; Wise, Alhabash, & Park, 2010); increases or decreases in one's sense of having social resources and support (Ellison et al., 2007); increases or reductions in the sense of social trust and life satisfaction (Valenzuela et al., 2009); etc. Yet, it is unknown whether SNSs and Facebook make a difference in a college student's sense of connection to of alienation from his or her school.

College students as a major group of SNS and Facebook users appear to be at the forefront of the evolution of these systems, especially as these sites have become a major tool for socialization into college (Selwyn, 2009; Yu et al. 2010). In many ways they have become an important part of the college experience, or its social environment. Yet there is little research concerning the implications of Facebook use, or SNS use in general, on college students' experiencing a connection with and sense of belonging at their institutions, or, on the opposite side, feeling alienated. Furthermore, although students use different features of the Facebook SNS in a variety of ways and for a wide a range of purposes, little is known whether and how these are related to alienation or any of its dimensions. Meanwhile, institutions and their various departments and offices, from Information Technology (IT) to administrators, to faculty, to librarians, to counselors and student affairs staff, have grappled with developing appropriate policies and strategies for using SNSs (including Facebook) appropriately and efficiently to meet their own goals,

often reaching out and making themselves available to students in different ways. Although they may have considered how their Facebook activities may influence students' sense of belonging, they have limited empirical data upon which to base their decisions and efforts (DeAndrea, Ellison, LaRose, Stein, & Fiore, 2010).

These problems are especially notable since the implications of alienation for students can be very serious, ranging from robbing them of educational opportunities, leading them to pass up developmental opportunities, and even contributing to students dropping out. This is particularly problematic considering that students from diverse backgrounds, who may already face additional challenges, are more likely to feel alienated (Gordon 1998; Loo & Rolison, 1986; Suen, 1983; Tomlinson-Clarke & Clark, 1996). Consequently, focusing on a single SNS, Facebook, this study explores Facebook usage and alienation among college students.

Purpose of the Study

The purpose of this study is to examine the relationship between Facebook use and students' sense of alienation from their institutions and educational experiences. More specifically, it explored whether any relationships exist between Facebook relationship maintenance behaviors (FRMBs), as measured by the FRMB scale (Ellison. Et al., 2014), and three alienation dimensions of meaninglessness, powerlessness, and social isolation as presented in the University Alienation Scale (UAS; Burbach et al. 1972).

Research Questions

The research questions of this study explored relationships among college students' Facebook use and behaviors and their sense of alienation in relation to their university:

1. What is the relationship between the independent variable of students' Facebook relationship maintenance behaviors scale score and the dependent variable of alienation along the dimensions of meaninglessness, powerlessness, and social estrangement?

2. Are there significant differences based on gender and year in school in students' alienation scores along the dimensions of meaninglessness, powerlessness, and social estrangement and on Facebook relationship maintenance behaviors scale scores?

Since the research question 1 (RQ) is primarily concerned with relationships between variables, but also due to the limitedness of theoretical research available on the subject of online social networking (Wilson et al., 2012), and the novelty and ever-changing nature of online social networks (Ellison & boyd, 2013), a descriptive correlational research design was the most appropriate (Heppner, Wampold, & Kivlighan, 2008).

RQ 2 is designed to examine differences in students' Facebook use and feelings of alienation based on the variables of gender and year in school, since these have been shown to be associated with both alienation (Galassi & Galassi, 1973; Gordon 1998; Tomlinson-Clarke & Clark, 1996) and patterns of Facebook use (Lampe et al., 2011; Lampe et al., 2012; Valenzuela, Park, & Kee, 2009). Further, this study's analyses were based on the probability theory, and Null Hypothesis Statistical Testing (Heppner, et al., 2008) was used to evaluate two null hypotheses:

H0a: No significant relationship exists between Facebook use and alienation dimensions of meaninglessness, powerlessness, and social estrangement.

More specifically, the data pertinent to the RQ 1 in this study were analyzed using regression—a statistic well suited for exploring relationships between two (or more)

variables, a predictor variable and a criterion variable (Heppner, et al., 2008). RQ 1

sought to determine the relationship of Facebook Relationship Maintenance Behaviors

scale score (FRMB; Ellison, Vitak, Gray, & Lampe, 2014), the predictor variable; and the

dependent variables of alienation. More specifically, the University Alienation Scale

(Burbach, 1972) subscale scores of meaninglessness, powerlessness, and social

estrangement dimensions of alienation were be used as the dependent variables for the

regressions.

> H0b: No significant differences exist based on the demographic variables of
>
> gender and year in school in students' FRMB scale score (Ellison, Vitak, Gray, &
>
> Lampe, 2014), as well as scores on alienation dimensions of meaninglessness,
>
> powerlessness, and social estrangement measured by the UAS (Burbach, 1972).

RQ2 is designed to test this hypothesis by analyzing the demographic data with

descriptive statistics to describe the participant characteristics and grouping them.

Further, these demographic data were used as bases for comparisons of the respondents'

scores on the Facebook intensity and behavior variables grouped by their demographic

variables of gender and year in school using a series of factorial analyses of variance

(ANOVA)—a statistic especially suited for making comparisons of several independent

and dependent variables and the interactions between them (Cronk, 2006).

Limitations of the Study

The sample for this study is drawn from undergraduate students at a regional

Midwestern university. Several factors associated with this sample may affect the

generalizability of the findings. As a convenience sample, it consisted of traditional-aged

students, limiting the age range. Furthermore, the university student body is not very

diverse. These factors limits the generalizability of the findings and the potential for

uncovering differences in student alienation as well as Facebook use patterns by race/ethnicity, and age.

Although exploring the relationship between alienation and Facebook use would not demonstrate causality, it would contribute to our understanding of the implications of Facebook use for college students, and makes it possible to further pursue research into causal relationships among these and other variables. In addition, elucidating the relationships among Facebook use and alienation enable higher education professionals and stakeholders make informed decisions regarding IT or social network policies, as well as strategies for using Facebook or other similar SNSs in ways that diminishes alienation and its effects, and increases students' sense of connection to their institutions. In addition, this study contributes to educators' understanding of Facebook and offer insights for using it and other social networking sites for programming and student activities targeting student sense of belonging, adjustment, overall development. Furthermore, it is possible that the findings of this project contribute to identifying Facebook use patterns that may indicate a risk for alienation and inform intervention strategies to alleviate this risk or address students' feelings of alienation.

Definitions of Terms

Online Social Network Sites (SNSs): Ellison and boyd (2013) offer an authoritative definition of SNSs as networked communication platforms, which provide technical means for participants to create and continually update profiles containing personal information and media, as well as other user- and system-generated content; to articulate and display relationships with others by connecting to their profiles and setting access and editing privileges; and to "consume, produce, and/or interact with *streams of*

user generated content provided by their connections on the site." [authors' original emphases in italics] (p. 159)

Facebook: Facebook is one of the most popular SNSs at the time of this writing, was started in 2004 as a college student network at Harvard, and later offered access to students at other colleges and universities, before eventually becoming open to the public. By June 2016 Facebook has grown to serve 1.13 billion monthly active users all over the world, 1.03 billion of whom log on daily; and 84.5% of whom are outside the United States (Facebook Newsroom, 2016).

Alienation. Alienation has been referred to as a state or experience of disconnection where connection is not only desired, but possibly expected; the object of such sense disconnection can be people, things, organizations, institutions or other social entities, or even one's own feelings or experiences (see Case, 2007, 2008; Mann, 2001; Seeman, 1959, 1983;). Alienation is a multifaceted construct consisting of a number of dimensions, including powerlessness, meaninglessness, normlessness, social isolation, self-estrangement (Seeman, 1959, 1983), and cultural disengagement (Seeman, 2001) each of which can be relatively independent from each other.

CHAPTER II:

LITERATURE REVIEW

As students embark on their higher education journeys they come across a range of encounters, negotiating which can contribute or detract from their potential and success. The college experience can be exciting and challenging at the same time, consisting of many lessons to learn, problems to solve, and experiences to negotiate. Through these experiences students get to know themselves and learn new, independent, ways to relate to each other and the world in novel ways and contexts, and ultimately, develop their own sense of identity (Chickering & Reisser, 1993). Many factors contribute to these processes, one important of which is the sense of connection with their peers and engagement with their college community and institution as a whole (Loo & Rolison, 1986; Tinto, 1975). In contrast to engagement, a sense of disconnection, known as alienation, can play an important role in making students' college progress more challenging (Loo & Rolison, 1986; Tomlinson-Clarke & Clark, 1996).

In this light, the popularity of online social networking systems (SNSs) that offer new ways to interact with larger communities of people than ever before (Ellison & boyd, 2013), becomes more than a pop-culture trivia curiosity. College students were pioneers of this new medium since the early days of Friendster and Facebook (boyd [sic.], 2008). Considering the popularity of SNSs among college students today, it is not difficult to imagine that students' SNS use has the potential for making a difference in the ways students engage with each other, their institutions, their academic communities, as well as network with other people with whom they might have had few opportunities to interact with before. Consequently, it is possible that SNSs can also affect students' sense of disengagement and alienation, which have important implications for educators.

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Unfortunately, currently there is no published research that explores the relationship between SNS use and students' sense of alienation or engagement. In order to develop a deeper understanding of the phenomena involved, this chapter reviews the research on alienation and online social networking, particularly in the context of higher education.

Alienation

Belonging is a significant aspect of human experience. It has been conceptualized both in the positive terms of "engagement" or "connectedness," and in terms of its antithesis – alienation (Seeman, 1983). In various texts the phenomenon of alienation has been referred to as a state or experience of disconnection where connection is not only desired, but possibly expected; the object of such sense disconnection can be people, things, organizations, institutions or other social entities, or even one's own feelings or experiences (see Casey, 2007, 2008; Mann, 2001; Seeman, 1959, 1983). Research has shown the multifaceted nature of alienation, and six inter-related but relatively independent dimensions of alienation have been defined to conceptualize the various aspects of this phenomenon (Seeman 1983, 2001).

In his seminal and frequently cited systematic definition of alienation from a social-psychological perspective, Seeman (1959) initially proposed that alienation consisted of five dimensions, to be thought of as an "individual's expectancies" (p. 784). He proposed that alienation could take the forms of powerlessness, meaninglessness, normlessness, social isolation, and self-estrangement, each of which can be relatively independent from each other (although, normlessness and social isolation were found comparatively more independent from the rest; Seeman, 1959). In a later work, Seeman (2001) also distinguished the sixth dimension – cultural disengagement.

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The alienation dimension of powerlessness is related to Marx's and Weber's conceptions of alienation as separation from the means of activity in which an individual is active (Seeman, 1959). Powerlessness, then, is "the expectancy of the probability held by the individual that his own behavior cannot determine the occurrence of outcomes, or reinforcements, he seeks" (Seeman, 1959, p. 784). Importantly, powerlessness is subjective, based on one's perceptions, though the objective conditions can be "relevant … in determining the degree of realism involved in the individual's response to the situation" (Seeman, 1959, p. 784). Departing from the Marxian definition, Seeman (1959) also notes that the socio-psychological definition of powerlessness need not include the value of control and the individual's judgment or reaction to the lack of control over the consequences (Seeman, 1959, p. 784). However, he did not argue against the possibility of exploring the value and reaction to powerlessness; rather, he warned against confusing the two with the construct itself (Seeman, 1959, p. 785) and warned against confounding the concept of powerlessness with maladjustment that leads an individual to feel that he or she "has a generally low expectation that he can, through his own behavior, achieve any of the personal rewards he seeks." (Seeman, 1959, p. 785)

The next concept of meaninglessness is conceptualized as a dimension of alienation developed from Mannheim's thinking of meaninglessness as based on the increasing complexity of the society taking away the individual's "capacity to act intelligently in a given situation on the basis of one's own insight into the interrelations of events" (Mannheim, in Seeman, 1959, p. 786). Meaninglessness, consequently, refers to the lack of understanding of the situation at hand sufficiently clearly for rational, confident, and insightful decision making (Seeman, 1959, p. 786). The individual,

therefore, "has a low expectancy that satisfactory predictions about the future can be made" (Seeman, 1959, p. 786).

Normlessness as a dimension of alienation is related to the sociological concept of anomie, expressed in terms of social-psychological expectancies (Seeman, 1959). Normlessness is an individual's strong belief that only "socially unapproved behaviors" make it possible to achieve his or her goals (Seeman, 1959, p. 788). Citing Goffman's discussion of normlessness even on the smallest level of human interaction, the conversation, Seeman (1959) suggests, that anomie can be experienced on a variety of levels of human experience, beyond the social and economic domains. (Seeman, 1959, p. 788). He also notes that normlessness is more or less independent from the other dimensions of alienation. (Seeman, 1959, p. 789)

The alienation dimension of social isolation refers to estrangement from the society and the culture it carries (Seeman, 1959). From the socio-psychological perspective (i.e. as an expectancy or value), Seeman (1959) defined this concept as "assigning low reward value to goals or beliefs that are typically highly valued in the given society" (Seeman, p. 788). Durkheim, and based on his work, Middleton (1963) conceptualized social isolation or estrangement as a sense of loss of community in modern society, a subjective feeling "of loneliness," of "lack or loss of companionship" (p. 974). Seeman (1959) also contrasts and warns of confounding isolation as alienation and isolation as a "'lack of social adjustment'—of the warmth, security, or intensity of an individual's social contacts" (Seeman, 1959, p. 788). The cultural disengagement as a dimension of alienation was later distinguished from the umbrella of social isolation as an individual's sense of distance or detachment from the dominant values of the society (2001).

The dimension of self-estrangement brings together two complementary but distinct conceptualizations of estrangement. These include the estrangement from the intrinsic value of an activity and the other-orientation of the reward expectancy of that activity (Seeman, 1959, pp. 789-790). More specifically, self-estrangement is defined as the "inability to find self-rewarding activities" or the "the degree of dependence of the given behavior upon anticipated future rewards" (Seeman, 1959, p. 790).

Speaking of the unity of the construct of alienation, Seeman (1983) argues that it should not be viewed as an overarching and stringently unified concept consisting of closely interrelated dimensions. Instead it should be treated "like a domain of investigation" consisting of loosely related conceptions of alienation, each with its philosophical and scholarly roots, and a concept that "collects sociological interests in the individual's sense of 'separation' in social relations" (Seeman 1983, p. 181).

Research also shows that alienation is highly embedded in the context of the person experiencing it, which can range greatly in scope. Seeman (1959, 1983) emphasized its highly contextual nature, which "can be applied to as broad or as narrow a range of social behavior as seems useful" and can range from "fleeting microsettings [sic.] (as momentary aspects of interaction) [to]… more stable cross- situational and institutionally-based relationships" (p. 173). Based on finding statistically significant but weak (between .07 and .26) correlations among dimensions of alienation and demographic variables in a random sample of residents of Columbus, Ohio, Dean (1961), not only suggested that alienation was a "situation-relevant variable" (Dean, 1961, p. 757), but that "alienation from Society is experienced with reference to primary groups or voluntary associations" rather than "alienation as a phenomenon of Society" (Dean, 1961). Further research was both based on this premise and confirmed it through its

findings. For instance, college students' level of alienation was shown to be related to their year in school (and potentially the developmental decisions associated with their progress), and varied by gender (Galassi & Galassi, 1973). As students progressed through college the feelings of alienation among women decreased, while increasing among men. As college women grew to feel as a part of the college community with time, for college men, "the camaraderie" of the first year seems to diminish with growing commitment to their majors and life choices. (Galassi & Galassi, 1973).

In addition to pointing out the subjective nature of specific dimensions of alienation, researchers note that another important property of the concept of alienation as a whole is its great degree of subjectivity (Burbach, 1972; Dean, 1961; Seeman 1959, 1983, 2001), although most agree that the subjective feeling of alienation is usually related to objective conditions. The various dimensions of the phenomenon of alienation, Seeman's (1983) argued, share a common conceptual characteristic of being an individual's subjective sense of separation (or connectedness, on the flip side), regardless of whether they are within the individuals' awareness, rather than a direct result of objective alienations. He states "the alienation aspect ... lies in the sentiments (directly measured or inferred) not the [objective] structures" (Seeman's 1983, p. 181).

Contemporary Research Constructs Related to Alienation

It is worth noting that despite the negative connotation of the term "alienation," when considered "in its positive side and in a broad sense, [it] signifies 'membership'— meaning that the variety of fundamental ways in which the individual is grounded in society: by way of the sense of efficacy, inclusion, meaningfulness, engagement, trust and value commitment" (Seeman, 1983, p. 182). Consequently, Seeman (1983) argued, positive constructs, such as engagement, contain, or are closely related to, various aspects

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of alienation at the opposite end of the scale—disengagements, in this example. While referring to these as "hidden alienations" Seeman (1983) argued that when focusing on positive concepts it is not only important to explore both ends of the spectrum—e.g., engagement and disengagement—but also draw on alienation research when it can contribute to further understanding of the construct of interest.

To illustrate these assertions, Seeman (1983) discussed several examples of "hidden alienations" in non-alienation scholarship. The concept of control, and the sense of having or not having control (as in the powerlessness dimension of alienation), plays an important role "in the development of anxiety and depression, in childhood and adolescent personality disorders, and even in psychosomatic death," as shown by Seligman (1975, cited in Seeman, 1983).

Similarly, Seeman (1983) explored the underlying concept of social isolation alienation as it appears in the conceptualizations of "social supports," "friendship- or social-networks" (pp. 178-179). He cites a range of studies presenting evidence "that those who are not integrated into supportive social networks suffer a wide range of negative consequences, since the effects of stressful circumstances can be moderated or eliminated for those who are not isolated." (Seeman, 1983, p. 178). Taking this example yet further, Seeman (1983) explains that even research which focuses on objective variables, such as the numbers of friends and frequencies of contacts common in structural analyses of social networks, are in fact related to alienation because "even where the structure of networks is depicted, it is typically the inferred sense of social support that provides the dynamic in the proposed hypotheses." (p. 181)

Alienation Research in Higher Education and Student Affairs

Over the decades alienation scholarship has ranged widely in the contexts of application and kinds of research questions; however, most of it drew on the same conceptual base put forth by Seeman (1959). This led to a deeper understanding of alienation as a phenomenon of society, as well as alienation among college students and its implications. As numerous studies had shown that experiencing alienation in any of its dimensions was associated with a range of negative consequences (Seeman, 1983), educators sought to explore the implications of alienation among college students.

Early studies sought to compare alienation and its effects for students of different races, who, because of the oppression they experienced were hypothesized to experience greater levels of alienation while in college. Burbach and Thompson (1971, 1973) used the Dean Alienation Scale (Dean, 1961) to compare alienation among White, Puerto Rican, and Black/African American students on an urban university campus (Burbach & Thompson, 1971) and to explore a relationship between the alienation and attrition by race among (Burbach & Thompson, 1973). They found that African American and Puerto Rican students indeed experienced greater alienation than their White counterparts (Burbach & Thompson, 1971). Moreover, African American students had significantly higher total alienation scores than the other two groups, and scored significantly higher on the Powerlessness and Normlessnes sub-scales.

However, Burbach and Thompson (1973) failed to find a relationship between alienation and college attrition among these three groups when they compared college students who remained enrolled and those who dropped-out between 1969 and 1971 by race (Burbach & Thompson, 1973). The results showed that although the attrition rates among Puerto Rican (46.51%) and Black/African American (37.11%) students where

significantly higher than among the White students (21.26%), the alienation scores and scores on the three dimensions did not differ significantly by race among students who remained enrolled and those who dropped-out. In light of these counterintuitive results showing no relationship between alienation and attrition Burbach and Thompson (1973) wondered whether the "self-society feelings of alienation have little or no effect on a context-specific variable like student attrition" (p. 274). As later research showed clear presence of such a relationship, as well as additional implications of alienation on other student outcomes, it is possible that the use of the context-free Dean Alienation Scale to measure "a context-specific variable like student attrition" (Burbach & Thompson, 1973, p. 274) may have contributed to this result.

Building on Dean's (1961) scale development work, and the alienation research by Burbach and Thompson (1971, 1973), Suen (1983) explored the relationship among alienation, academic success, and attrition of Black and White students at a predominantly White Midwestern college. The UAS, designed to assess three of the dimensions of alienation in the context of the students' university, was used to assess students' levels of alienation, while the academic records were represented by the students' GPAs (Suen, 1983). The results were consistent with the earlier findings by that Black students felt more alienated and dropped out at greater rates than White students (Suen, 1983). However, in contrast, total Alienation scores, as well as scores on each of the dimensions, were significantly related with attrition among Black students. In addition, the results also showed statistically significant correlations between the total alienation scores and Meaninglessness scores and attrition among Black students; for White students these relationships were not found (Suen, 1983).

In the same vein, Loo and Rolison (1986) set out to "assess the extent and nature of sociocultural alienation and academic satisfaction" of minority and white students and compare them, and then compare the students' attitudes. In contrast to other alienation studies, Loo and Rolison (1986) closely aligned alienation concepts and research methods with Tinto's (1975) model of dropout and retention behavior, which, as unconventional as it is, does echo Seeman's (1983) ideas about hidden alienations discussed above. However, because they used Tinto's model, Loo and Rolison (1986) chose not to employ objective alienation scales; rather they used a range of research methods and data sources (Loo & Rolison, 1986)

Drawing parallels with Seeman's social isolation dimension of alienation, Loo and Rolison's (1986) definition of alienation also draws on Tinto's (1975) concept of "malintegration," specifically its two aspects: the result of "holding values highly divergent from those of the social collectivity," and insufficient interaction with other members of the collectivity." (p. 59-60). Tinto's (1975) theory conceives the higher education system as consisting of the social and academic subsystems, within each of which Loo and Rolison (1986) sought to compare the minority and White students' feelings of alienation. Due to limited availability of the two areas in which Tinto (1975) states alienation can occur, namely intellectual growth and academic success measures, the examination of the academic subsystem consisted of investigating the "perceptions of academic difficulty and satisfaction." (Loo & Rolison, 1986, p. 60). In addition, Loo and Rolison (1986) examined the quality of the faculty-student relationships because faculty-student relationships are an important element of the students' social integration according to Tinto's (1975) model and "are especially significant for minority students

because most faculty are white and come from class backgrounds different from many minority students" (p. 61).

Loo and Rolison (1986) drew four key conclusions from their study. They concluded that consistent with previous research, minority students experience greater alienation on a predominantly white campus, primarily in the forms of "feelings of cultural domination and ethnic isolation" (p.71). However, this study also discovered that sociocultural alienation "can be distinct from academic satisfaction," and serve as an additional factor influencing the retention of ethnic students (Loo & Rolison, 1986, p.71). In addition, they found that Black and Chicano students' "poorer academic preparation in high school and the 'culture shock' of encountering a class and culture distinctively different from their background" led to their increased feelings of alienation. Finally, Loo and Rolison's (1986) research also showed how institutional factors, including the proportions of ethnic students and faculty, support from the faculty community, and effective minority student services, play a significant role in alleviating the sense of alienation among these students.

Another direction of alienation research has focused on comparing the experience of alienation among students attending different kinds of institutions. For instance, Tomlinson-Clarke and Clark (1996) compared alienation among students attending a 2-year college, a comprehensive college, and a research university. They found that students attending the 2-year college reported experiencing lower sense of meaninglessness, whereas students at the research university experienced greater powerlessness that their counterparts at the other two institutions (Tomlinson-Clarke & Clark, 1996). In addition, women in the study reported feeling less alienated then the

men, who felt less certain about persisting to degree completion (Tomlinson-Clarke & Clark, 1996).

Similarly to Tomlinson-Clarke and Clark (1996), Gordon (1998) sought to compare alienation among students attending three different colleges and explore the role of non-cognitive variables in persistence and perceptions of alienation and of their institutions among minority students' attending three different community colleges in the Northeast. Tracey and Sedlacek's (1984, cited in Gordon, 1998) Non-cognitive Questionnaire (NCQ) was used in conjunction with the UAS to determine whether there were relationships between non-cognitive variables and persistence; whether relationships existed between alienation and non-cognitive predictors of success; and to explore the differences between men and women students' perceptions of non-cognitive variables as well as alienation on their campuses (Gordon, 1998).

Gordon's (1998) results showed that total alienation scores were negatively correlated with non-cognitive variables of confidence, self-appraisal, support, leadership experience, and community service. Powerlessness was negatively associated with self-confidence, long range goals, and support; social estrangement—with self-confidence, support, and community service Gordon (1998). By ethnicity, among Black students total alienation was negatively correlated with long range goals, support, and leadership experience, whereas for Hispanic students an inverse relationship existed between alienation and confidence, long range goals, and support (Gordon, 1998). The analysis of variance (ANOVA) showed that the differences among participants' alienation at the three colleges revealed a main effect for ethnicity, and for two of the three colleges – a significant college by ethnicity interaction where Hispanic students experienced more

alienation than Blacks (and at the third they were similar, though not significant) (Gordon's, 1998).

Although researchers have explored the differences in the feelings of alienation among ethnically and racially diverse students in a range of institutional environments, historically the majority of the studies did not consider gender differences (e.g., Burbach & Thompson, 1971; 1973; Loo & Rolison, 1986; Suen, 1983). Only a few studies have focused on differences in the feelings of alienation by gender, and the findings have also been inconsistent. Some studies suggest that men and women students may experience different feelings of alienation in the same environment. As mentioned earlier, Gordon (1998) found an interesting set of differences in the feelings of social estrangement among men and women. While in the combined sample of students from the three community colleges there were no gender based differences in alienation, an examination of social estrangement at each college individually showed that at one of them there was no gender based difference, while at the other two the results were opposite of each other: at one college men felt more loneliness, while women did at the other. Moreover, Galassi and Galassi (1973) found that in their sample as students advanced through their college careers, women's interpersonal alienation decreased, while men's increased (Galassi & Galassi, 1973). In addition, Tomlinson-Clarke and Clark (1996) showed that women reported feeling less alienated than men, who felt less certain about persisting to degree completion.

However, other studies also show no differences in alienation among men and women. Lewis et al. (2015), for instance, has specifically looked at gender differences in college students' sense of alienation and their perception of value and discomfort with face-to-face and online counseling. Although there were differences in the attitudes

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toward the different modalities of counseling, they found no gender differences in the respondents' feelings of alienation (Lewis et al. 2015).

Summary of Alienation Research

Alienation, a conceptual antithesis of the sense of belonging, is a multifaceted umbrella construct that consists of six complementary though independent dimensions (Seeman, 1983; 2001). Alienation is associated with a wide range of negative implications for people experiencing it in many contexts (Seeman, 1959, 1983). Higher education studies over the past several decades have demonstrated that alienation also affects college students in multiple ways. Since alienation is contextual and subjective (Burbach, 1972; Dean, 1961; Seeman, 1959, 1983) and can be related to the conditions in the environment, students from culturally diverse backgrounds have been found to be more likely to experience feelings of alienation than the white middle class students (Loo & Rolison, 1986; Suen, 1983). Studies also suggest that gender differences may play a role in the experiences of alienation at different times in students' college careers (Galassi & Galassi, 1973; Gordon 1998; Tomlinson-Clarke & Clark, 1996). However, research also showed that the environment at any given college can contribute to differences in the sense of alienation and its dimensions among different groups of students, and even among different institutions, comparable and across the range of institutions types (Gordon's, 1998; Tomlinson-Clarke & Clark, 1996). These are important findings considering that higher alienation scores are associated with a range of negative consequences for students such as increased attrition rates (Loo & Rolison, 1986; Suen, 1983), decreased self-confidence and self-worth (Galassi & Galassi, 1973; Gordon's, 1998), lack of long range goals, feeling of support, and leadership and community service experiences (Gordon's, 1998), to name a few. For these reasons it is

important to consider the different social aspects of the college experience which may

facilitate students' efforts to fit in, make sense of, and feel connected at their institutions.

Since online social networking sites (SNSs), such as Facebook, have the potential to

influence how students connect and interact with their peers and institutions (DeAndrea

et al. 2011), the following sections review the relevant research on SNSs, their uses, and

their implications for college students.

Online Social Network Systems

Since Friendster ushered in the era of the SNSs in 2004 (boyd, 2008), some SNSs,

such as Facebook, have maintained their popularity, while others, including Friendster

itself, as well as MySpace, to name a few formerly popular sites, have peaked and waned

in popularity. In addition, a wide range of SNSs varying in audiences and popularity

emerged. Each had its own specific set of features and user base. Nevertheless, their "key

technological features" were consistent and included the use of profiles made visible to

other users of the same SNS, and connections to profiles of other users (boyd, 2008, p.

210). Profiles are usually generated by the SNS systems based on user-entered

demographic and other personal information. While initially SNSs strove to ensure that

profiles represented individuals, profiles with features geared for groups, bands, and later,

organizations, were added (boyd, 2008). Many SNSs allowed a certain degree of

modifications to the look and feel of users' profiles. Such modifications ranged from

uploading of pictures to the use of other multimedia in addition to the text-based

information entered at the time of registration (boyd, 2008).

In 2008 boyd offered one of the first comprehensive and concise definitions of

online social network sites:

[SNSs] are web-based services that allow individuals to (1) construct a public or

semi-public profile within a bounded system, (2) articulate a list of other users

with whom they share a connection, and (3) view and traverse their list or

connections and those made by others within the system (p. 211).

It was the articulation of connections and the ability to view and interact with one's own

and their friends' connections that set social networking systems apart from earlier online

communication tools, such as discussion forums (boyd, 2008).

The primary implication of the SNSs design to increase and simplify

opportunities for communication and sharing among users was that they had begun to

"reshape the kinds of networks that people are able to build and support" (Ellison &

boyd, 2013, p. 8). The advent of SNSs signaled a change in how users engaged with

online communities, a shift toward relationship-based communities and away from

interest-based communities of earlier age of bulletin- and/or discussion-boards (Ellison &

boyd, 2013).

In the early years of online social network growth and development, these

systems were profile-centric, allowing users to present information and pictures about

themselves, connect with other SNS users by linking to their profiles, and view, explore,

and interact with their "friends' " profiles (Ellison & boyd, 2007). Although profiles were

created by users and remained largely "static portraits," from the beginning interactions

with other linked users were available for others to view as part of the profiles

themselves, meaning that profiles were co-constructed by the user and others they linked

to (Ellison & boyd, 2013).

Despite the fact that different SNSs use different names for the connections (e.g.

Facebook – "Friends," LinkedIn-"connections," Google Plus – "People" in "Circles,"

Twitter – "follower", etc.) and have different affordances to configure them, they are based on the same principle. Early on connections and communications between users tended to be symmetrical—"friends" linked to each other and could access all of the profile and friend list information available (Ellison & boyd, 2013). However, there have always been ways users could make them less symmetrical, which, depending on the SNS, range from selectively sharing of updates or activities with others, as on Facebook, to Twitter's "following" model where users could "follow" without having a reciprocated connection (Ellison & boyd, 2013). While the approaches that SNSs adopt for managing connections vary, they have two goals—to facilitate communication among the users while helping manage large networks of individuals from diverse, often incompatible, contexts, e.g., family, friends, colleagues, in which individuals in the offline circumstances would manage self-presentations differently (Ellison & boyd, 2013).

By 2011, of the adult Americans who used the Internet, 65% used social networking sites (SNS; Madden & Zickuhr, 2011). Although there are many different SNSs offering a different sets of features, today they all still have a range of characteristics in common: they all enable multiple forms of communication, including synchronous and asynchronous, public and private, one-to-one and one-to-many, as well as text-based and multimedia (Ellison & boyd, 2013).

With the arrival of Web 2.0 and its shift to more fluid user-generated content, SNS systems have evolved new features and usage norms. The focus increasingly shifted away from "traversing the profiles" and connections, which became more infrastructural (Ellison & boyd, 2013). These changes in the SNS systems' affordances and users' behaviors turned out to be so profound that they warranted a revision of the definition of

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SNSs offered by boyd (2008). Ellison and boyd (2013) offered the following updated

definition to account for these changes:

> A social network site is a networked communication platform in which
>
> participants 1) have uniquely identifiable profiles that consist of user-supplied
>
> content, content provided by other users, and/or system-provided data; 2) can
>
> publicly articulate connections that can be viewed and traversed by others; and 3)
>
> can consume, produce, and/or interact with streams of user generated content
>
> provided by their connections on the site. (p. 159)

Instead, aggregated "media streams" consisting of snippets of user-generated and system-

generated content and media, including activity reports, "status updates," "wall posts,"

and shared photos and videos, became the focal point of the systems and their users

(Ellison & boyd, 2013).

Despite this ongoing evolutionary development, the main focus has remained on

fostering interaction among users (Buffardi & Campbell, 2008; Ellison & boyd, 2013;

Tufekci, 2008). The feature that has made SNSs "social" and remained unchanged, was

the ability "to mark and display relationships, delineate who can access what content, and

serve as a filter through which viewers can browse profiles and discover friends in

common" (Ellison & boyd, 2013, p. 5).

Issues of SNS and Facebook Research

SNSs have become an important part of our culture, accounting for nearly a

quarter of all time spent by US users online (Nielsen, 2010), and available not only to PC

users but expanding its reach to mobile devices (Costine, 2014) and even embedded into

a range of devices, including smart TVs, video players (Samsung, 2012). The ubiquity

and pervasiveness of Facebook, its integration with the "real world" lives of millions of

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people, combined with its nature as a social laboratory that both reflects existing and creates new social processes and leaves recorded artifacts of them in real time has not gone unnoticed by scholars in many disciplines, including the social sciences, law, economics, information technology, and even business and marketing (Wilson et al., 2012).

Since online social network systems are such a new yet unique phenomenon, they present a new set of research and methodological issues to consider. While research abounds into various aspects of SNSs, their uses and implications, scholarship comes from the contexts of a wide range of disciplines and is thus fragmented and "discipline-bound … [and, as a result] provides only narrow windows into what is known about Facebook" and other SNSs (Wilson et al., 2012, p. 204). Additional challenges for SNS research stem from the changing nature of the socio-technological context and the consistency of focus of the research (ranging from multiple SNSs to a single SNS) (Ellison & boyd, 2013; Wilson, et al., 2012).

Since SNS research usually focuses on the current features of version(s) of the contemporary SNS technologies in addition to the social norms and expectations that exist (and evolve) at the time that the research is conducted (Ellison & boyd, 2013), the technical contextual information about features and affordances of the SNSs in question is crucial for reporting and interpreting its results. To make a meaningful contribution to the body of knowledge about online SNSs it is crucial to not only carefully document and present this socio-technological context, but also design the research questions and methods in such ways that the findings can be relevant even after the given site and its social practices inevitably change with time. (Ellison & boyd, 2013; Wilson et al., 2012)

Another challenge of SNS research is the consistency of its focus. While some research focuses on a single SNS, others may include data on different SNSs, blurring "potentially consequential distinctions across OSNs [SNSs] in terms of OSN specific demographics, functionality, and network development" (Wilson et al., 2012, p. 205). As a result, focusing on one SNS at a time produces most meaningful results, and when studies involve more than one—reporting findings by each SNS separately to determine which of them offer insight into general SNS body of knowledge and which are unique to the specific SNSs studied (Wilson et al., 2012, p. 205).

Facebook – From the Dorm Room to Ubiquity

As pervasive as Facebook has become today, its beginnings were much less ambitious as it got its start as a network by and for college students at its founders' alma mater Harvard. Today, a decade later, college students, along with the majority of Internet users, may be engaged in multiple social networks, but Facebook is still one of the most popular social networking sites, on which as many as 92% of all SNS users had a profile by 2007 (Ellison 2007). Unrivaled by other social network sites, Facebook's size and reach are staggering. A system that started in 2004 in a Harvard residence hall to network only Harvard students, in 2016 has grown to serve 1.13 billion monthly active users all over the world, 1.03 billion of whom log on daily, and 84.5% of whom are outside the United States (Facebook Newsroom, 2016). The percentage of Facebook users among the total number of population of a region, known as "Facebook penetration," shows that Facebook is used by 50% of North Americans, 38% of Australians/Oceanians, and over a quarter of all Europeans, South and Central Americans. ("New Facebook Statistics," 2014; Miniwatts Marketing Group, 2014).

Facebook Usage Patterns

The sheer numbers of users tell only a part of the story of how people use Facebook. The data available on the users, their online networks, and their activities offer a fuller understanding of the Facebook phenomenon. In 2011 an average Facebook user actively participated by posting content 90 times a month, was connected to 80 groups, events, or other non-profile pages, and had 130 friends (Facebook, 2011).

Research has uncovered other prevalent patterns in Facebook use, including that users tend to connect and maintain relationships with offline contacts rather than meet new people (Lampe, Ellison, & Steinfeld, 2006), that numbers of verifiable profile elements predicted network size (Lampe, Ellison, & Steinfeld, 2007); and that users' behaviors on the site could be classified as social interaction, relationship maintenance, and social surveillance (Joinson, 2008). Half of the users had over 100 friends, while 20% of users had fewer than 25; in addition, users' friends were most likely to reside in the same country and be of a similar age (Backstrom, 2011; Backstrom et al., 2011; Ugander et al., 2011).

Usage patterns have also been shown to vary by different demographic groups. For instance, among college student users women were more likely to have an account on Facebook (Valenzuela, Park & Kee, 2009) and considered Facebook a useful source of information and a potential resource to request information from their networks (Lampe et al., 2012) compared to college men. However, men tended to be more likely to collaborate using Facebook (Lampe et al., 2011).

Furthermore, Facebook use and numbers of friends have been shown to be inversely correlated with age (Archambault & Grudin, 2012; Quinn, Chen, & Mulvenna, 2011) and, for college students, year in school (Valenzuela, Park, & Kee, 2009).

Curiously, where friends are concerned, from among the list of all Facebook friends, users distinguish approximately 25%-30% as "actual" friends (Ellison & boyd, 2013; Ellison, Steinfield, & Lampe, 2011; Ellison, Vitak, Gray & Lampe, 2011). Consistently with this number, Facebook users also report interacting offline and face-to-face with only a quarter of their SNS friends (Forest & Wood, 2011).

Since online social networks in general, and Facebook in particular, are first and foremost a social phenomenon, social sciences, psychology, and related fields have undertaken the challenge of making sense of the processes associated with it and their meaning. Research has shown that the reasons people use Facebook include a number of internal motivators, such as the desire to stay in touch with existing friends (Ellison, Steinfield, & Lampe, 2006; Joinson, 2008; Lampe, Ellison, & Steinfield, 2006; Saleh, Jani, Marzouqi, Khajeh, & Rajan, 2011; Sheldon, 2008), opportunities to engage in "social grooming"—maintaining social bonds and staying informed about the network members' activities (Gosling, 2009), reducing the sense of loneliness (Burke et al., 2010), and alleviating boredom (Lampe, Ellison, & Steinfield, 2008). In addition, research shows that, consistent with the aforementioned motivators, uses of Facebook vary from connecting with friends, to sharing pictures, seeking emotional support, and playing games, (Lenhart, 2009), but more recently began to include professional networking, collaboration, and research/information seeking (Lampe et al. , 2011).

However, Lampe Vitak, Gray, and Ellison (2012) found that despite the fact that Facebook made it easier to manage large networks, few users considered it a useful source of information and a potential resource to request information from their networks. However, the people who were more likely to engage in these activities had a number of common characteristics, which included spending more time on Facebook,

having a higher number of Friends, frequently engaging in reciprocal communications with their network, and age (being younger) and gender (female) (Lampe et al., 2012).

As people seem to use Facebook for a range of purposes, research on the relationships among their behaviors and psychological and psychosocial variables began to emerge. As any medium, Facebook use can offer benefits as well as (often hidden) dangers for its users. Most recent research has shown that "the relationship between Facebook use and well-being may be more nuanced [than thought earlier] and potentially influenced by multiple factors including the number of Facebook friends, perceived supportiveness of one's online network, depressive symptomatology, loneliness, and self-esteem" (Kross et al., 2013, p. 1)

Among the benefits of Facebook's ability to extend individuals' offline networks of relationships, researchers often cite the increases in social capital (Ellison & Steinfeld, & Lampe, 2007; Steinfeld, Ellison, & Lampe 2008), a "construct that captures how likely individuals feel they are able to convert network connections into things like favors or information" (Lampe et al. 2012), which is also related to greater overall well-being (Burke, Marlow, & Lento, 2010). Moreover, research shows that Facebook use is associated with two kinds of social capital, namely "bridging social capital, or access to new information through a diverse set of acquaintances, and bonding social capital, or emotional support from close friends" (Burke, Marlow, & Lento, 2010)

Ellison, Steinfeld, and Lampe (2008) found that college students' engagement with Facebook significantly contributed to bridging social capital, along with students' life satisfaction at their university. Their findings showed that bridging social capital was more significantly associated with Facebook intensity for students who reported lower self-esteem and life satisfaction; while low self-esteem and life satisfaction were also

much lower for students who reported low bridging social capital and were light

Facebook users (Ellison, Steinfeld, & Lampe, 2007). In addition, bonding social capital

was also associated with Facebook intensity, as well as self-esteem, and life satisfaction,

among other variables (Ellison, Steinfeld, & Lampe, 2007).

Conversely, Lampe, Vitak, and Ellison (2013) examined the interactions between

social capital, Facebook use, and Facebook adoption among Facebook users and non-

users (Lampe, Vitak, & Ellison, 2013). They found that bonding social capital, age, and

perceptions of Facebook's usefulness strongly predicted whether a person used

Facebook, whereas Internet efficacy was not significantly associated with joining the site

(Lampe, Vitak, & Ellison, 2013). Light users of Facebook reported having fewer actual

friends and lower bonding social capital both non-users and heavy users (Lampe, Vitak,

& Ellison, 2013). Bridging social capital was greatest for heavy Facebook users

compared to light and non-users of Facebook (Lampe, Vitak, & Ellison, 2013).

Burke, Marlow, and Lento (2010) found that social capital was also positively

correlated with the size of one's Facebook network. In addition, a positive relationship

existed between both types of social capital and total numbers of Facebook friends

(bridging r=.14; bonding r=.12), which were also inversely related with loneliness (r=-

.08) (Burke, Marlow, & Lento, 2010). Loneliness was also negatively correlated with

self-esteem (r=-.53), and somewhat related to life satisfaction (r=-.16), consumption (r=-

.15), and directed communication (r=-.11) (Burke, Marlow, & Lento, 2010).

Interestingly, while age did not affect loneliness and bridging social capital, bonding

social capital was inversely related with age (Burke, Marlow, & Lento, 2010). They also

found that women felt slightly greater bonding social capital (r=.10) and reported feeling

less lonely (r=-.08). Curiously, the number of friends was not related to any of the well-being variables. (Burke, Marlow, & Lento, 2010).

Looking at the usage patterns, Burke, Marlow, and Lento (2010) found that the more time users spent on the site, the more friends they had and the more content they contributed. (Burke, Marlow, & Lento, 2010). Contributing content was also positively correlated with bridging social capital (r=.09), while consumption was negatively related to bridging social capital (r=-.10) and positively related to loneliness (r=.15) (Burke, Marlow, & Lento, 2010). These findings led the researchers to conclude that "people who feel a discrepancy between the social interactions they have and those that they desire tend to spend more time observing other people's interactions." (Burke, Marlow, & Lento, 2010, p. 4).

Burke, Marlow, and Lento (2010) found that directed communication was positively related to bonding social capital (r=.11) but negatively related to loneliness (r=-.11), while bridging social capital was predicted by the number of friends. Moreover, after controlling for directed communication, bridging social capital was negatively related to consumption. They concluded that, despite the finding of the correlation between consumption and loneliness, the "engagement with Facebook is correlated with greater overall well-being" (Burke, Marlow, & Lento, 2010).

Valenzuella, Park, and Kee, (2009) examined Facebook use and life satisfaction. They also examined the interactions of Facebook use and life satisfaction with social trust and civic participation because they contended that life satisfaction, a "general evaluation of one's surroundings," or subjective happiness, is it at least in part is determined by social ties and associated with norms of reciprocity and trust, so (Valenzuela, Park & Kee, 2009). The results showed that although Facebook intensity was associated with

both life satisfaction and social trust, the relationship with life satisfaction was stronger; and that users who spent a lot of time on Facebook also showed higher civic participation and social trust (Valenzuela, Park, & Kee, 2009). Curiously, the study also found that life satisfaction and social trust did not moderate the association of Facebook use and social capital (Valenzuela, Park & Kee, 2009). In addition, Valenzuela, Park and Kee (2009) determined that life satisfaction and social trust, along with Facebook use intensity, were strongly associated with civic participation, but not political participation. Political participation was, on the other hand, associated with membership in Facebook political groups (Valenzuella, Park, & Kee, 2009). Meanwhile, the strength of motivation for Facebook group use and participation in social and political activities were related to year in school, albeit weakly—the farther the students progressed, the less eager they were to look on Facebook for information about events and social activities, as well as participate in social and political activities. (Valenzuela, Park, & Kee, 2009)

Research has shown that different kinds of activities on Facebook have different effects on the user. For instance active Facebook consumption, or "extractive searching," such as checking specific friends' profiles, was shown to be associated with greater experience of pleasure (as measured by "physiological indicators" in a lab observation), as compared to passive consumption, such as purposeless browsing of the NewsFeed (Wise, Alhabash, & Park, 2010). Furthermore, users who are more present in their social network by engaging their Facebook friends and signaling their relational investment as they communicate their support for others or respond to information requests, reported greater social capital (Lampe, Vitak, Gray, & Ellison, 2012). While social capital was unrelated to passive consumption or initial posting of updates, one form of it, bridging social capital, was shown to be predicted by "directed communications" from other users,

such as likes, tags, and comments (Burke, Marlow, & Lento, 2010). Moreover, whereas active contribution of content to Facebook via "directed interaction with others" was not only related to increased sense of social capital, but also to lower feelings of loneliness, mere passive browsing as a dominant Facebook activity "increased loneliness and reduced social capital" (Burke et al. 2010).

Even browsing the information of actual friends vs. acquaintances (strong ties vs. weak ties in the social capital framework) has been shown to have different effects on users' psychological states. Researchers have long established that Facebook users distinguish "actual" friends from the rest of their Facebook connections, and that this number of "actual" friends was more predictive of their social capital than the total number of friends (Ellison, Steinfeld, & Lampe, 2011). Wilcox and Stephen (2013), further found that browsing strong ties on Facebook enhanced users' self-esteem, which was not the case for those users who browsed weak ties. Gonzales and Hancock (2011) also found that Facebook users who focused on strong ties while thinking about their own information to share with others experienced momentary increases in self-esteem as compared to users who focused on what others presented, even if they also were strong ties. However, these short-term increases in self-esteem also led to poor self-control in a range of domains, from health, to mental persistence, to spending and finances (Gonzales & Hancock, 2011)

The aforementioned finding of loss of self-control that followed the boost in self-esteem (Gonzales & Hancock, 2011) suggests that, while SNSs have been found to offer a range of benefits associated with extending and strengthening social ties, they can also have diverse effects potential dangers (Wilson et al., 2012). Not only have some studies found a detrimental consequence of a positive effect, as described by Gonzales &

Hancock (2011) finding of reduction of self-control while experiencing momentary increases in self-esteem, but also some direct negative effects stemming from Facebook use.

Facebook has generally been viewed to have great potential as a tool for people with low self-esteem to "enrich their relationships by sharing things they otherwise would not" because they perceive it as an appealing and safe environment for self-disclosure (Forest & Wood, 2012, p. 300). From this perspective the statistics that showed that people with low self-esteem appear to use Facebook as much as those with average or high self-esteem would be encouraging. However, Forest and Wood (2012) found that low self-esteem individuals' negative status updates can undermine the positive potential of Facebook use. It turned out that low self-esteem users' status update disclosures tend to be more negative/less positive than those of people with high self-esteem (Forest & Wood, 2012) Consequently, the negativity of these users' status updates were found to make them less liked by strangers, as well as attract less attention and elicit less support from closer friends; the rare positive status updates, however, are better liked and elicit more supportive responses than the negative comments (Forest & Wood, 2012)..

In addition, in an in-vivo experience-sampling study conducted over a period of 14 days Kross et al. (2013) showed that Facebook use "predicts declines in two components of subjective well-being: how people feel moment to moment and how satisfied that are with their lives," or affective well-being, and cognitive well-being, respectively. Using an in-vivo experience sampling method over a period of 14 days, combined with the results of a life satisfaction questionnaire, Kross et al. (2013) sought to elucidate the effects of Facebook use over time. Loneliness predicted Facebook use over time, showing a positive relationship where the lonelier one feels, the more likely they

are to use Facebook (Kross et al., 2013). Nevertheless, neither loneliness nor worry

interacted Facebook use "to predict changes in affective or cognitive well-being" (p. 4).

Curiously, Kross et al. (2013) also found that direct (offline) social contact affected the

relationship between affective well-being and Facebook use, where Facebook use

predicted "significant declines in well-being when participants experienced" moderate to

high levels of direct social contact, but in its absence or with little direct contact,

Facebook use "did not predict significant declines in affective well-being" (p. 4)

Clearly Facebook use brings with it a complex set of social interactions and

processes that can be as diverse as their users. Research has shown that the social and

psychological implications of these processes can also range widely and depend on the

wide variety of factors, including users' state of mind and behavior patterns on and off

Facebook (Ellison & boyd, 2013; Wilson et al., 2012). While offering previously

unavailable opportunities to interact with people and extend users' social networks,

Facebook use can have positive and negative social, emotional, and psychological

implications for its users (Gonzales & Hancock, 2011). In the context of these findings,

the next section explores what is known about Facebook use and its implications in the

context of Higher Education.

Facebook Research in Higher Education and Student Affairs

It is important to recognize that a large portion of SNS and Facebook research to

date has been carried out among college students, who tend to be the easiest pool of

participants for researchers to recruit. For instance, most of the research carried out by

Ellison and colleagues (Ellison et al., 2007; Ellison et al., 2009; Ellison et al., 2011;

Ellison et al., 2012) has involved college students. However, few if any of these and

related studies involving students have focused on SNS and Facebook use implications for students in direct reference to their education, development, or institution.

SNS and Facebook research specific to higher education and students affairs appears to be somewhat limited. Such studies have ranged from examining of the impact of Facebook use on college students' learning the norms of being a student (Selwyn, 2009), as well as student development and well-being specifically in the context of their institutions (Yu, Tian, Vogel, & Kwok, 2010), to examination of the role of Facebook in college aspirations and its value for college related information (Wohn et al. 2013), and, finally, to intervention-based studies in which Facebook and/or other SNS systems are adopted or created for use with college students (DeAndrea et al. 2011),

Social learning is an important element of SNS use, which was confirmed by several studies. Burke et al. (2009) found that users closely watch and learn from their friends the norms of the SNS as a medium early upon signing up. Furthermore, users' behaviors in the first two weeks of Facebook membership predicted future activities (Burke et al., 2009). Consistently with this finding, in the field of higher education, research has shown that Facebook is so closely integrated into student social life, that it in fact has become one of the places where students learn student-ship (Selwyn, 2009; Yu et al. 2010).

Selwyn's (2009) "non participant ethnographic study" (content analysis) of Facebook pages of UK university students concluded that Facebook has become an important platform for "informal, cultural learning of 'being' a student," experimenting with identities, and learning values, norms, and roles of the new student community they find themselves in (Selwyn, 2009, p. 171). Although Selwyn (2009) found that students' use of Facebook were often related to negotiating the logistics of the undergraduate

experience and referenced education-related topics relatively infrequently. He categorized education-related posts into five types: "(1) recounting and reflecting on the university experience; (2) exchange of practical information; (3) exchange of academic information; (4) displays of supplication and/or disengagement; and (5) 'banter' (i.e., exchanges of humour and nonsense)" (Selwyn, 2009, p. 161). The importance of such Facebook interactions is found in their "post hoc" reconstruction and "meaning making activities … [that] confer meaning onto the overarching university experience" (Selwyn, 2009, p. 171). Moreover, for students Facebook can serve as an important place the offers opportunities to "be disruptive, challenging, and resistant 'unruly agents'," a place to "relax out of [official student] role" (Selwyn, 2009, p. 171), much akin to Goffman's (1959) back-stage.

Further Yu, Tian, Vogel, and Kwok (2010), used the framework of Bandura's social learning model to demonstrate that Facebook has become an element of students' social learning environment, particularly while in college. They echo and confirm Selwyn's (2009) findings that as students continually interact with this environment they learn social norms, including the norms of what it means to be a college student. In their study, Yu, Tian, Vogel, and Kwok (2010) found moderate (between $r = .2$ and $r = .3$) relationships between Facebook engagement and several psychosocial factors of university experience, including a sense of social acceptance, acculturation, self-esteem, satisfaction with university life, and performance proficiency. Using structural modeling Yu et al. (2010) showed that students' networking on Facebook facilitates social acceptance and acculturation, which in turn are related to self-esteem, satisfaction with university life, and performance proficiency (Yu et al., 2010). Yu et al. (2010) structural model also shows that students' interaction with peers that fosters social acceptance

affects their "cognitive and skill-based learning," which suggests that the process of "learning about peers" itself is more cognitive and instrumental in its nature." (Yu, Tian, Vogel, & Kwok, 2010, p.1500). In contrast, "individuals' acculturation shaped by the interaction with the situated environment" influences their life satisfaction, suggesting that "learning about the university environment is an emotional cultivation." (Yu, Tian, Vogel, & Kwok, 2010, p.1500).

Consequently, Yu et al. (2010) conclude that online social networking, although perceived by students to be a "fun" activity unrelated to learning, can be intentionally used in various education activities, such as peer coaching or mentoring since they "can partially promote self-initiated networking towards individuals' psychological well-being development, such as in the formation of self-concept and self-esteem," as well as "nurturing satisfaction with the university, and performance proficiency." (Yu et al., 2010, p. 1501)

In a more practical study, looking to verify the potential benefits of social capital increases among student Facebook users (see Donath & boyd, 2004; Ellison et al., 2007; Ellison & boyd, 2013), Wohn, Ellison, Khan, Fewins-Bliss, and Gray (2013) examined its role in college application efficacy and expectations for college success among first-generation and non-first-generation high school students. This study found that the majority of students (73%) considered Facebook a potential wellspring for college-related resources, despite the fact that non-first-generation students "reported lower levels of college related Facebook resources" (p. 16). The study also showed, however, that their Facebook network played a greater role for first-generation students' college aspirations than the aspirations of the traditional students. Wohn et al. (2013) also found that the number of Facebook friends was related to their college aspirations. For first-generation

students, their Facebook network was able to compensate for some of the shortcomings of their immediate offline social network(s) in terms of increasing students' sense of college application efficacy and expectation of college success. (Wohn et al., 2013). The sense of being able to find and use resources available through Facebook friends was also positively related with expectation of both college application efficacy and expectation of college success (Wohn et al., 2013). Facebook friends' instrumental support also positively predicted college application efficacy for first-generation students. (Wohn et al., 2013).

However, not all Facebook variables played a positive role in students' college-going aspirations (Wohn et al., 2013). The frequency of Facebook use was found to have a negative relationship with the students' expectation of college success. (Wohn et al., 2013). Moreover, among first-generation students emotional support from Facebook friends showed a negative relationship with college application efficacy (Wohn et al., 2013). For traditional students, college application efficacy was also negatively related to the number of Facebook friends. (Wohn et al., 2013). Clearly, Facebook can be an important resource for students, but also harbor potential distractions and dispiriting factors.

Among new entering freshmen the idea of taking intentional steps to facilitate local community development using an SNS has been implemented by DeAndrea et al. (2011). In an effort to take advantage of the potential of SNSs to facilitate student adjustment to college by facilitating their connectedness to other students and the institution by offering additional avenues for communication with peers, and increasing their "efficacy regarding success in college," DeAndrea et al. (2011), in parallel to Facebook, developed and implemented a proprietary SNS-like system titled

SpartanConnect custom built for their campus and reported results of their institution's intervention. They found that activity on SpartanConnect and the number of Facebook friends from students' residence halls, were significant predictors of bridging self-efficacy—"students' perceived ability to form helpful social ties on campus" (p. 4) and, indirectly, of academic self-efficacy. (DeAndrea et al., 2011)

Summary

Online social networking, as new as it is, has permeated virtually every aspect of life and, as the brief discussion above suggests it has changed the manner in which people interact with one another and maintain relationships (boyd, 2008). As with any new pervasive technology, it offers users new opportunities and potential challenges, including in the realm of social and psychological well-being. For instance, different patterns of Facebook use can contribute to gratification or distress (Kross et al, 2013), increases or decreases social capital (Ellison et al, 2007), or in the sense of social trust and life satisfaction (Valenzuela et al., 2009) to name a few examples. For college students, Facebook has become an integral part of the college experience and a platform for learning the norms of the college student community (Yu et al., 2010) and for making sense of college (Selwyn, 2009).

Yet, to date it is unknown whether SNSs and Facebook are associated with college students' sense of connection to/or alienation from their school. This study attempts to fill this gap in the research. The chapter that follows discusses the research method, including the instruments associated with the construct of alienation, with different aspects of SNS use that have been found to be associated with social and psychological factors, as well as the intended participant pool.

CHAPTER III:

METHOD

The purpose of this study is to examine the relationship between college students'

intensity of use and behaviors on the Facebook social networking system and their

feelings of alienation. Alienation is known to contribute to poor performance and attrition

(Burbach & Thompson, 1971; 1973; Loo & Rolison, 1986; Suen, 1983), but little is

known about the implications students' Facebook behaviors have for their feelings of

alienation, despite the fact that the majority of college students today use Facebook

and/or other SNSs. This chapter discusses the research method, including the participants,

instruments, procedures, and research design.

Participants

This study uses a convenience sample of university students recruited from a

range of undergraduate classes offered at a regional comprehensive Midwestern

university in the spring 2016 semester. These included Counseling CD Family and

Introduction to Alcohol and Drug Studies, along with classes offered by the English

Department, namely Technical Communication, Desktop Publishing, and Technical

Documents and Policies. In the spring semesters, combined these course usually attract

around 200 undergraduates from across many university majors. Student participants

were likely to range in age from 18 to 30 years. It was impossible to predict the gender

and racial/ethnic make-up of the sample, although because the university's population is

mostly White, it was unlikely to include significant number of students from different

ethnic backgrounds.

Procedure

Once IRB approval was achieved, the instructors of the courses were contacted to request permission to invite the students to participate and have them fill out the surveys in the classrooms. Upon approval from the course instructors, the investigator arranged to come to each class, introduce the project, distribute and review the informed consent form (see Appendix C). The participants were informed of the potential risks and their rights as participants through a brief oral presentation and the text of the consent form. The investigator first went over the consent form and answered any questions. Then, participants were asked to read and sign the consent form before completing the survey. Students were informed that not participating in the study would in no way affect their grades.

Students who agreed to complete the consent form were asked to complete in class the demographic questionnaire (see Appendix D) that includes information about participants' race/ethnicity, age, gender, whether they use Facebook and/or other SNSs, how many friends they have on Facebook (total number and how many of them they consider "actual" friends), and whether most of the friends they regularly interact with are fellow students at their university; the five-item Facebook Relationship Maintenance Behaviors scale (FRMB; Ellison, Vitak, Gray, & Lampe, 2014); and the 24-item University Alienation Survey (UAS; Burbach, 1972). Participants were not be asked to provide any identifying information and their responses were only used by the researcher, and will remain confidential. The participants were given 30 minutes in class to complete the questionnaires, and returned them to the investigator.

Participation in the study was voluntary and not associated with class activities; nor did students participating in the study gain any advantage over the non-participants.

Instruments

Two instruments were used to collect data. The UAS (see Appendix E) was used to collect data on students' sense of alienation (and its three dimensions). The Facebook related scale used in this study was the FRMB scale (see Appendix F). Both instruments were used with permission from their developers. Dr. Burbach gave his permission of this study to use the UAS by email (see Appendix G). The FRMB scale was used in accordance with Dr. Ellison's permission to use her published scales, which states that "researchers are free to use these [scales] as long as they provide correct citations" stated on her web site (Ellison, n.d.; see Appendix H).

University Alienation Scale

Over decades alienation scholarship ranged widely in the contexts of application and kinds of research questions; however, most of it drew on the same conceptual base put forth by Seeman (1959). This led to a deeper understanding of alienation among college students and its implications, as well as the development of valid and reliable measures of its dimensions.

Based on Dean's (1961) scale and research, and Burbach and Thompson (1971, 1973) studies, and the premise that alienation is a contextual phenomenon (Seeman, 1959; 1983) Burbach (1972) developed an instrument contextualized in reference to the university the students attended—the UAS (see Appendix E). Seeman's (1959) definitions of meaninglessness and powerlessness, and Dean (1961) and Middleton's (1962) conceptualizations of social estrangement served as the bases for the development of the instrument. The development of the items was based on the assumption that while "the university ... contains the alienating features of the larger society," it would be

invaluable to "measure these components of alienation in college freshmen with reference to their university." (Burbach, 1972, p. 226).

Burbach (1972) contextualized the instrument by including the referent of the university in the items, and developed eight meaninglessness, nine powerlessness, and seven social estrangement related five point Likert scale items (see Appendix E). For each dimension, higher scores indicate greater sense of alienation. Factor analysis confirmed the groupings around the three dimensions; yet the strengths of correlations among the factors (Factors I and II, $r = .69$; Factors I and III, $r = .68$; and Factors II and III, $r = .46$) suggested the presence of a generalized factor of alienation. Burbach (1972) assessed construct validity by item-to-total analysis and factor analysis procedures, while the criterion-related validity was demonstrated by the significance of correlations of the UAS and the earlier Dean (1956) scale ($r = .58$, p < .01). The Spearman-Brown split-half reliability coefficient of .92 for the total scale and demonstrated the instrument's reliability. The subscale reliability coefficients ranged from .72 for social estrangement, to .79 for powerlessness, to .89 for meaninglessness.

Consequently, the UAS proved to be a valid and reliable measure of the three dimensions of alienation, namely meaninglessness, powerlessness, and social estrangement, and showed that the construct of alienation "retains its multidimensionality" even the measurement is contextualized and "reduced and held constant" (Burbach, 1972, p. 232) to the university setting. Further research confirmed validity and reliability of the UAS. Cooke's (1994) study of the relationships of Alienation, Affective Commitment, and attrition provided evidence of internal consistency and discriminant validity of the UAS (Cooke, 1994). Consequently, in higher education and student affairs research, the UAS provided a new valuable conceptual

framework for understanding student experience and exploring relationships between alienation (total and the three dimensions measured) and various student outcomes (Gordon, 1996; Suen, 1983)

Facebook-related scales

Because online social networking in general, and Facebook in particular, are such a novel topic for research, limited number of instruments are available that go beyond the factual descriptive questions. The work of Ellison, Lampe, and other colleagues at The Online Interaction Lab (TOIL) at Michigan State University, funded by the National Science Foundation ("TOIL", n.d.) has made major contributions to both the understanding of the dynamics and implications of Facebook use, particularly as it is related to social capital, as well as research methods for Facebook research. The Facebook Relationship Maintenance Behaviors scale (Ellison, Vitak, Gray, & Lampe, 2014; see Appendix F) scale used in this study, are drawn from this work.

Relationship Maintenance Behaviors Scale.

The FRMB is designed to assess the degree to which Facebook users attempt to engage in directed communications in response to implicit or explicit requests from their network. Relationship maintenance on Facebook, or "social grooming" behaviors, take the form of using small but meaningful actions signaling attention to others though various SNS affordances, including "public comments between two users generally served to initiate and maintain contact with Friends via brief exchanges, such as 'happy birthday' posts." (Ellison, et al., 2014).

The instrument (see Appendix F) consists of five Likert scale type items that range from strongly agree (1) to strongly disagree (5) and assess "engagement in interactive communications, including measures of behaviors, … frequency, … and

motivations" (Ellison et al., 2014, p. 860). Higher scores indicate greater degree of engagement in these behaviors. Factor analysis confirmed the five factor model with high level of reliability (Cronbach's alpha equaling .90).

Research Design

Since the study is primarily concerned with relationships among variables, the descriptive research design, indicated by Heppner, et al., (2008) was most appropriate. A number of factors contribute to making descriptive design the best fit for this study. These include the limited theoretical research available about online social networking (Wilson et al., 2012) and the novelty and ever-changing nature of online social networking technology on which it is based (Ellison & boyd, 2013). Perhaps most importantly, the study is designed to contribute to a better understanding of the relationship among the intensity and interactional patterns of Facebook users and their feelings of alienation, which fits the definition of descriptive correlational research (Heppner, et al., 2008).

The first research question (RQ 1) of this study explored the relationship between college students' Facebook behavior and their university alienation experience:

1. What is the relationship between the independent variable of students' Facebook relationship maintenance behaviors scale score and the dependent variable of alienation along the dimensions of meaninglessness, powerlessness, and social estrangement?

The RQ 2 of this study is concerned with exposing differences in students' intensity and behaviors on Facebook, as well as their sense of alienation, based on their gender and year in school:

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2. Are there significant differences based on gender and year in school in students'
alienation scores along the dimensions of meaninglessness, powerlessness, and
social estrangement and on Facebook relationship maintenance behaviors scale
scores?

For RQ 1, the statistical method of regression was chosen for data analysis
because it is best suited for exploring relationship between one (or more) predictor
variable(s) and a criterion variable (Heppner, et al., 2008), particularly the strength of this
relationship (Levin & Fox, 2006). Regression is a "statistical method for studying the
separate and collective contributions of one or more predictor variables to the variation of
a dependent variable." (Heppner, et al., 2008, p. 247).

In regression, the correlation coefficient R, which signifies the relationship
between a "dependent," or criterion, variable and an "independent," or predictor, variable
is a measure of how well the predictor scores correspond to the actual scores of
dependent variables" (Heppner, et al., 2008, p. 247). The proportion of the variance in the
criterion variable explained (not in terms of causality, but as association) by the predictor
variable is denoted by the square of the correlation coefficient (R^2).

The use of the regression statistic, however, also requires that a number of
assumptions be met. These include a sufficient number of cases, accounting for the
effects of outliers, as well as meeting the normality, linearity, homoscedasticity, and
independence of residuals criteria (Tabachnick & Fidell, 2007). Prior to the regression
analysis, in the data verification stage that preceded further statistical analyses, steps such
as examination of scattergrams, were taken to ensure the assumptions necessary for valid
use of the regression statistic are met (Coakes, 2005, p. 169). The number of cases per

independent variable in the regressions needed to be at least five, but ideally—over 20 (Coakes, 2005, p. 169); the anticipated size of the sample of over 113 respondents would ensure this assumption was met.

Further, to ensure all assumptions were met, the data were reviewed to detect extreme cases, determine whether they were random or systematic (Levin & Fox, 2006), and where appropriate, make decisions about removing or transforming them (Coakes, 2005). Furthermore, as the regression commands were entered into SPSS, the properties were set to screen the variables to ensure normality, linearity, homoscedasticity, and independence of residuals using SPSS histograms, Residual plots, and Normal probability plots (Coakes, 2005).

In addition to ensuring that the assumptions of regression analysis were met, this study also took steps to account for the familywise error rate problem. The UAS consists of three subscale scores (the Meaninglessness dimension, Powerlessness dimension, and the Social Estrangement dimension scores), each of which serves as criterion variable in the series of multiple regressions used in this study; meaning that a total of three regressions were planned. However, increasing the number of statistical tests leads to the increase in probability of making a Type I error in the set of comparisons performed, known as the familywise error rate (Coakes, 2005; Tabachnick & Fidell, 2007). To address this problem and control this error rate, a stricter alpha would be used (Tabachnick & Fidell, 2007). In this study, to determine the appropriate alpha level for evaluating the significance of the results in each of the regressions, the Bonferroni correction procedure was used, in which the alphas are determined by dividing the initial alpha ($\alpha = .05$) by the number of the tests performed (in this case, three), resulting in the $\alpha = 0.05 / 3 = 0.016$.

Furthermore, in order to ensure the usefulness and meaningfulness of this study's results and to determine the appropriate sample size, a-priori sample calculation procedures were used. Two sets of a-priori sample calculation procedures were carried out, one for each of the chosen statistical analyses, namely regression and factorial analysis of variance (ANOVA). Prior to calculating the required sample size, some common assumptions were made. These included determining the desired power values $(1 - \beta)$, the alpha (α) used in determining the significance of the findings, and the desired effect size (ρ). The target power value was selected to be $1 - \beta = .80$, as is commonly recommended (Maxwell, 2000; Tabachnick & Fidell, 2007). The minimum discernable effect size was assumed to be in the medium range (Tabachnick & Fidell, 2007) and equal $\rho = .3$, since this value would account for 9% $(\rho 2 = .09)$ of the variance, while any smaller value would be meaningless for interpretation and application of the results. Further, separate a-priori sample calculations were carried out based on these, as well as additional assumptions specific to regression and factorial ANOVA tests. G*Power (ver. 3.1.9.2) stand-alone statistical power analysis software (Faul, Erdfelder, Lang, & Buchner, 2009) which bases its power calculations on Cohen's (1988) seminal work was used for these calculations.

For RQ 1 regression analyses, as discussed earlier, the alpha in the three regressions was determined by using the Bonferroni correction procedure to avoid family error. It was calculated by dividing the initial conventional alpha $(\alpha = .05)$ by the number of the tests performed (in this case, three), resulting in $\alpha = .05 / 3 = .016$. The resulting a-priori sample calculation determined that for the assumed power values $1 - \beta = .8$, $\alpha = 0.016$, and desired effect size $\rho = .3$, the total minimal sample size was $N \geq = 113$ (the complete G*Power analysis output can be found in Table 1).

For RQ 2 factorial ANOVA analyses, as discussed earlier, the alpha for the four ANOVA tests run was determined by using the Bonferroni correction procedure by dividing the initial conventional alpha ($\alpha = .05$) by the number of the tests performed (in this case, four), resulting in the $\alpha = .05 / 4 = .013$. The resulting a-priori sample calculation determined that for the assumed power values $1 - \beta = .8$, $\alpha = 0.013$, and desired effect size $\rho = .3$, the total minimal sample size was $N \geq = 153$ (the complete G*Power analysis output can be found in Table 2).

Consequently, the a-priori sample size calculations set the desired sample sizes of $N \geq = 113$ for RQ 1 regression analyses; and $N \geq = 153$ for RQ 2 factorial ANOVA analyses. If the desired sample sizes were not obtained, and significant results were found, post hoc effect size analyses would be calculated and their results reported for the significant statistics.

Whereas RQ 1 was concerned with exploring relationships, RQ 2 is concerned with exposing significance of differences among groups of students varying by gender and year in school:

2. Are there significant differences based on gender and year in school in students' alienation scores along the dimensions of meaninglessness, powerlessness, and social estrangement and on the Facebook relationship maintenance behaviors scale score?

Consequently, RQ 2 required the use of statistics that were effective for testing the significance of differences in dependent variables using unrelated grouping factors. The factorial analysis of variance (ANOVA) test was the statistic that met these requirements (Cronk, 2006) and was used for answering RQ 2. The use of factorial ANOVA, however, also required that some assumptions were met. These include the use

of interval or ratio variables, normality of the distribution, and independence of the grouping variables (Cronk, 2006). To meet these assumptions the data was screened for missing data and outliers, and further examined for normality using scatterplots and histograms. (Tabachnick & Fidell, 2007). Further, this study's UAS and FRMB scale scores are interval, and the grouping variables of gender and year in school are independent of each other.

Furthermore this study also took steps to account for the familywise error rate problem in running the series of mean comparison factorial ANOVA tests as to avoid the increase in probability of making a Type I error as a result of increasing the number of statistical tests (Coakes, 2005; Tabachnick & Fidell, 2007). To address the problem, a stricter alpha calculated using the Bonferroni correction procedure was used in each of the factorial ANOVAs calculated. More specifically, the alphas were determined by dividing the initial alpha ($\alpha = .05$) by the number of the tests performed. As a separate factorial ANOVA tests were run using gender and year in school as grouping variables to analyze variance of each of the three UAS subscale scores (Meaninglessness, Powerlessness, and Social Estrangement), and the FRMB scale score, a total of four factorial ANOVAs were planned. Consequently, Bonferroni correction procedure resulted in $\alpha = 0.05 / 4 = 0.013$.

Data Screening and Descriptive Statistics

The forms were coded and data were entered into an SPSS file for further analyses. The data were screened for errors, such as out of range values and missing cases, by reviewing SPSS descriptive statistics, including frequencies (Coakes, 2005). Further, correlation matrices were generated for the RQ 1 data to show the relationships among all the variables (Levin & Fox, 2006). Due to the potential pitfalls of simple

correlation matrixes, which include the possible chance correlations, irregularities in the data, and violations of assumptions for Pearson *r*, and in order to make the descriptive data more meaningful, each pair of the correlations were examined with scatterplots to "visually display all the information contained in a correlation coefficient, both in the direction ... and its strength" (Levin & Fox, 2006, p. 344).

Research Questions

1. What is the relationship between the independent variable of students' Facebook relationship maintenance behaviors scale score and the dependent variable of alienation along the dimensions of meaninglessness, powerlessness, and social estrangement?

The purpose of this question was to determine the relationship between students' Facebook behaviors related to relationship maintenance, FRMB and their alienation scores from the UAS.

The statistical method chosen to examine the relationship was regression because (1) it is consistent with the descriptive correlational research design (Heppner, et al., 2008); and (2) it explores the relationship/association between one (or more) predictor variable with a criterion variable (Heppner, et al., 2008).

A series of three regression analyses were performed to answer this research question. A separate regression model was calculated for each of the following Alienation criterion variables: (1) meaninglessness dimension score, (2) powerlessness dimension score, and (3) social estrangement dimension score from the UAS. The FRMB scale score was entered as the predictor variable in each of them.

2. Are there significant differences based on gender and year in school in students' alienation scores along the dimensions of meaninglessness, powerlessness, and

social estrangement and on Facebook relationship maintenance behaviors scale scores?

The purpose of this question was to determine whether meaningful and statistically significant differences exist in students' FRMB scale score based on the demographic variables of gender and year in school. Gender is known to be associated with differences on both Facebook activities (Lampe et al., 2012) and alienation (Gordon 1998), and year in school is associated with difference in the feelings of alienation (Galassi & Galassi, 1973).

To answer RQ 2, the demographic data were first analyzed with descriptive statistics to describe the participant characteristics and group the participants. Next, the factorial ANOVA statistics were run using SPSS in which the demographic data of gender and year in school served as the grouping (independent) variables in comparing the respondents' scores on the FRMB score; and the UAS alienation subscale scores of (1) meaninglessness dimension score, (2) powerlessness dimension score, and (3) social estrangement dimension scores (Burbach, 1972).

Summary

This study used a descriptive design. RQ 1 used regression analysis, because according to Heppner, et al., (2008) this design and statistic are well suited for exploring relationships among one (or more) predictor and a criterion variable, in this case Facebook relationship maintenance behavior variable and the dimensions of alienation variables. For RQ 2 the factorial ANOVA tests of significance of the differences by gender and year in school compared the scores on the variables of students' Facebook behavior and feelings of alienation. The sample was recruited from a several undergraduate courses at a comprehensive regional Midwestern university. The study

uses a number of scales, which have shown high reliability scores and offer evidence for

their validity. These include the UAS (Burbach, 1972); and FRMB scale (Ellison, Vitak,

Gray, & Lampe, 2014).

CHAPTER IV:

FINDINGS

This chapter discusses the data collected, the analyses, and findings of this study. First, data cleaning and scale calculation are presented, followed by a summary of descriptive results. It will also discuss the extent to which the data met the assumptions for inferential analyses, namely, linear regression and analysis of variance. Finally, the results of the statistical analyses for the research questions 1 and 2 are presented.

After the completion of data collection in the spring 2016 and initial data entry into SPSS, scale scores were calculated and data cleaning was conducted by examining the results of each item in the dataset. The data were screened for errors, including out of range values and missing cases by reviewing SPSS descriptive statistics and frequencies (Coakes, 2005; Tabachnik & Fidell, 2007). Following these procedures, descriptive and inferential statistical analyses were carried out to answer the two research questions.

Scale Calculation

The FRMB score and the UAS subscale and total scores were calculated using SPSS Transform->Compute Variable function. The FRMB scale score was calculated by summing the scores of the five questions, as per Ellison, et al. (2014). The UAS subscales and totals were calculated by summing the appropriate subscale items. To calculate the Meaninglessness subscale score, the scores on items 1, 5, 7, 12, 15, 16, 22, and 23 were summed. The Powerlessness subscale was calculated by summing items 2, 3, 4, 9, 14, 18, 19, and 20, and using a reversed score of item 11. The Social Estrangement subscale scores were calculated by summing scores on items 10, 13, 17, 24, and the reversed scores of items 6, 8, and 21. The total UAS score was calculated by summing the scores of the three subscales of Powerlessness, Meaninglessness, and Social Estrangement.

Data Cleaning Results

Data cleaning procedures were conducted using SPSS frequencies reporting functions. Three separate reports were created. The first report focused on verifying the accuracy and integrity of the data obtained from the Demographic Information sheet of the survey. The second report focused on the results of the FRMB scale items results and the total scale score, and the third report focused on the results of the UAS items results, Powerlessness, Meaninglessness, and Social Estrangement subscale scores.

The examination of the frequencies uncovered some interesting findings in the Demographic Information and General Information about Internet Use of Social Networking Sites. Several missing values were discovered. Furthermore, some responses, such as age and number of friends, appeared to be out of range or inconsistent with each other. In addition, responses to questions related to primary SNS compared to other SNSs used also produced unexpected responses, such as such as "check all equally," "n/a," or "none," or included more than one SNS. None of these demographic and general information questions, however, were a part of the statistical tests for RQ1 and RQ2, so the records were still reported and included in the analyses.

The evaluation of the FRMB item and scale data raised no significant concerns. Although there were 11 records missing FRMB values, these were in the records of respondents who reported not using Facebook and skipped responding to this section.

In addition, the evaluation of the UAS item and scale results showed no major issues. There were four items with missing values, rendering these records unusable in calculating the subscale scores and the total score. To be conservative and preserve the integrity of the results these were excluded from any further analyses.

Descriptive Statistics

Demographics

The sample consisted of 151 participants. Of the participants, 67% ($n = 101$)

identified as female, 32% ($n = 46$) identified as male, and .7% ($n = 1$) identified as other.

The mean age of the participants was 20.43 ($SD = 3.498$, with one student, or .7%, not

reporting age), with freshman students making up 42.4% ($n = 64$), sophomores – 14.6%

($n = 22$), juniors – 23.2% ($n = 35$), and seniors – 19.2% ($n = 29$) of the sample.

The sample reflected the racial/ethnic homogeneity of the student body at the

university. The majority of the respondents identified as Caucasian 85.4%, ($n = 129$),

3.4% ($n = 5$) identified as African American, 3.4% ($n = 5$) as Asian American, 4% ($n = 6$)

as Latino, 2.6% ($n = 4$) reported as Other, and 1.3%, or two, chose to not respond to this

question). Of the four (2.6%) respondents who reported their Race/Ethnicity as "Other,"

one reported being "mixed," and another – "multiracial," one listed "Indian

Subcontinent," and one left this blank.

Online Social Networking Use

Of the 151 respondents, the majority (92.7%, $n = 140$) reported using Facebook.

Of these, 52.8% ($n = 76$) reported using Facebook more than other social networking

sites. For those who did not use Facebook or used a different SNS more frequently,

Instagram (38.8%), Twitter (25.4%), and Snapchat (17.9%) were the most popular,

followed by Reddit (6%), Tumblr (7.5%), while YouTube, Vine, and "check all equally"

each reported once (equaling 1.5%).

For the non-primary alternative SNSs, Twitter was used by 29.8% of the students,

while Snapchat and Instagram were used by 25.3% of the students, each. In addition to

these SNSs, participants also listed Imgur, Pinterest, VSCO, Tinder, Timehop, YikYak,

Gmail, Whatsapp, and an unidentified "messenger" as additional SNSs they use, even though some of these, such as Gmail, Google's email system, cannot be considered an SNSs.

Furthermore, participants were asked to report the numbers of friends, total, and actual (those they consider friends offline also) they have on Facebook. The total number of Facebook friends reported was between zero and 3,000, with the mean of 496, and median and mode of 400. The number of actual Facebook friends reported was between zero and 3,000, with the mean of 101, and median and mode of 50.

Finally, participants were asked to indicate, on the Likert scale from 1 to 5, their agreement with the statement "most of my friends with whom I regularly interact on Facebook are MSU students," to explore whether their alienation scores of meaninglessness, powerlessness, and social isolation would be associated with their main Facebook audiences. Of those 141 who answered this question (10 respondents, or 6.6% did not), the participants' responses showed that most of their Facebook interactions were with friends from outside of the university: 38.3% ($n = 54$) disagreed, or 22.5% ($n = 34$) strongly disagreed; while only 13.5% ($n = 19$) were uncertain, 19.9% ($n = 28$) agreed, and 4.3% ($n = 6$) strongly agreed.

Several demographic and SNS use variables were not included in the inferential analyses, but were collected to help explain the findings of the inferential statistical results. Correlations among them were run to explore the data. These offer some interesting insights. Several significant correlations were found among some of the demographic and SNS use variables. For instance, a significant negative weak correlation ($r = -.305$, P = .005) was found between the results of the question addressing the predominant focus of students Facebook interactions (friends outside their university or

fellow students at the institution) and social estrangement alienation score. The more

students interacted with fellow university students, the lower was their sense of social

estrangement.

Furthermore, students' age was positively, albeit weakly, correlated with their

FRMB scale scores ($r = .234$, P = .008), showing that older students engaged in greater

relationship maintenance behaviors than the younger students. Surprisingly, year in

school, although highly correlated with age ($r = .552$, P = .000) was not correlated with

FRMB scores. Moreover, age was also weakly and negatively correlated with the number

of Facebook friends ($r = .253$, P = .005), meaning that older students had fewer friends

on Facebook. In addition, the total number of friends was correlated with the number of

actual friends ($r = .423$, P = .000).

The Facebook Relationship Maintenance Behaviors Scale

Among the students who used Facebook, all responded (N = 140) to FRMB scale.

Students' scores on the FRMB scale ranged from 5 to 25, with a mean score of 15.53, and

standard deviation of 4.38. The Cronbach Alpha reliability coefficient of the FRMB scale

in this study was .771, with item-total statistics also suggesting acceptable reliability

levels (see Table 3).

The absence of outliers and normality are among the assumptions of running

inferential statistics, including regressions and analyses of variance (Tabachnik & Fidell,

2007) that are part of the design of this study. For this reason descriptive statistics were

also used to examine the data for outliers and normality of the distributions. SPSS

Descriptives of FRMB scale score (Table 4) showed the low skewness and kurtosis

values of -.269 and -.023, respectively for the FRMB variable. Further, histograms

(Figure 1), along with expected normal probability plot (Figure 2), and detrended

expected normal probability plot (Figure 3), suggested an acceptable level of normality of the distribution. However, these also suggested the existence of outliers in the sample. Following, the presence of outliers was examined using the extreme values table (Table 5), a stem-and-leaf plot (Figure 4), and a box plot (Figure 5), which showed a presence of four outlier cases (34, 51, 62, and 67), all with the same value of 5.

After removal of the outliers, descriptive statistics were run again to examine the data for outliers and normality of the distribution of FRMB scores with the outliers removed. The FRMB descriptives table with outliers removed (Table 6) showed a lower level of skewness at -.054, but a slightly increased kurtosis value of -0.203. Further, with outliers removed, histograms (Figure 6), along with expected normal probability plot (Figure 7), and detrended expected normal probability plot (Figure 8), suggested an improved level of normality of the distribution. In addition, an extreme values table (Table 5), a stem-and-leaf plot (Figure 9), and a box plot (Figure 10) were used to further examine normality and ensure absence of outliers. These showed the absence of any additional outliers. Furthermore, the box plot (Figure 10) clearly showed a more normal distribution.

University Alienation Scale

The results of the UAS are provided in Table 7, and show that while 151 participants completed this scale, 4 records had missing data and were excluded from the scale calculation, giving the final N = 147. The calculated scale scores ranged from 8 to 38 for the Meaninglessness dimension, with a mean of 17.59 (SD = 5.86); 10 to 42 for the Powerlessness dimension, with a mean of 22.37 (SD = 6.08); and 8 to 28, with a mean of 18.38 (SD = 4.35) for the Social Estrangement dimension. The total scores, obtained by adding the subscale scores, ranged from 32 to 95, with a mean of 58.34 (SD

= 13.73). In this study the UAS showed good reliability, with Cronbach's alphas of .849 for the Meaninglessness subscale; .836 for the Powerlessness subscale; and .639 for the Social Estrangement subscale. The reliability alpha was .897 for the total UAS.

Further, descriptive statistics were also used to examine the data for outliers and normality of the distributions of the UAS scale scores. The examination of Meaninglessness, Powerlessness, and Social Estrangement scale descriptives, and the total Alienation score descriptives (Table 7; Table 8) showed low skewness and kurtosis values, all below the value of 1. Further, histograms, along with expected normal probability plots, and detrended expected normal probability plots, were used to examine normality of the distributions of the Meaninglessness (Figures 11-13), Powerlessness (Figures 14-16), and Social Estrangement (Figures 17-19) scale scores and the UAS total alienation scores (Figures 20-22).

Meaninglessness alienation scores showed skewness of .36 and kurtosis of -.141 (Table 8). In addition, the histogram (Figure 11) and expected normal probability plot (Figure 12) and detrended expected normal probability plot (Figure 13) showed noticeable skewness, as well as suggested there could be outliers in the data in the upper range of values. The existence of outliers in the Meaninglessness scores was examined using a stem-and-leaf plot (Figure 23), and a box plot (Figure 24), which showed a presence of one outlier case (151), with an extreme value of 38.

After removal of this outlier, descriptive statistics were rerun to examine the data for more outliers and normality of the distribution of Meaninglessness alienation scores with the outlier removed. The descriptive statistic table with the outlier removed (Table 10) showed a lower value of skewness (.151) but a higher value of kurtosis (-.841), which are however, more representative of the distribution. Both values were still small, well

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under the acceptable range of ±2 (George & Mallery, 2010; Gravetter & Wallnau, 2014; Trochim & Donnelly, 2006). Furthermore, with the outlier removed, the Meaninglessness alienation score histogram (Figure 25), expected normal probability plot (Figure 26), the detrended expected normal probability plot (Figure 27), a stem-and-leaf plot (Figure 28), and box plot (Figure 29) showed that the normality of the distribution improved, albeit still imperfect. In addition, stem and leaf plot (Figure 28), and box plot (Figure 29) showed that no other outliers were found in the distribution.

Powerlessness alienation showed skewness of .159 and kurtosis of -.349 (Table 8). In addition, the histogram (Figure 14), the expected normal probability plot (Figure 15), the detrended expected normal probability plot showed some irregularity (Figure 16), and suggested there could be outliers in the upper range of powerlessness scores. The existence of outliers in the Powerlessness scores was examined using a stem-and-leaf plot (Figure 30), and a box plot (Figure 31), which showed a presence of one outlier case (150), with an extreme value of 42.

After removal of this outlier, descriptive statistics were rerun to examine the data for more outliers and normality of the distribution of Powerlessness alienation scores with the outlier removed. The descriptives with the outlier removed table (Table 11) showed a much lower value of skewness (.013) but a higher value of kurtosis (-.832). These, however, were more representative of the distribution. Both values were still less than one. Furthermore, with the outlier removed, the Powerlessness alienation score histogram (Figure 32), expected normal probability plot (Figure 33), the detrended expected normal probability plot (Figure 34), stem and leaf plot (Figure 35), and box plot (Figure 36) showed that the normality of the distribution improved after removing the

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outlier. In addition, a stem-and-leaf plot (Figure 38 35), and box plot (Figure 36) showed that no other outliers were found in the distribution.

Social Estrangement scale showed low skewness of .75 and kurtosis of -.324 (Table 9). In addition, the histogram (Figure 17), the expected normal probability plot (Figure 18), the detrended expected normal probability plot demonstrated the normality of the distribution (Figure 19). The existence of outliers in the Social Estrangement scores was examined using a stem-and-leaf plot (Figure 37), and a box plot (Figure 38), which showed absence of outlier cases.

UAS total score showed skewness of .058 and kurtosis of -.699 (Table 9). In addition, the histogram (Figure 20), the expected normal probability plot (Figure 21), the detrended expected normal probability plot demonstrated the normality of the distribution (Figure 22). The existence of outliers in the Social Estrangement scores was examined using a stem-and-leaf plot (Figure 39), and a box plot (Figure 40), which showed absence of outlier cases.

Assumptions for Inferential Analyses

The assumptions necessary for regression analysis used for answering RQ 1 include having a sufficient number of cases, absence of outliers, normality, linearity, homoscedasticity, and independence of residuals (Tabachnik & Fidell, 2007). Factorial analysis of variance that was used to answer RQ 2 also required normality and independence of variables (Cronk, 2006). As a prerequisite to running inferential analyses, steps were taken to ensure the assumptions necessary for valid use of the regression and factorial ANOVA statistics were met (Coakes, 2005).

The number of cases per independent variable in the regressions of this study was required to be at least five, ideally—over twenty (Coakes, 2005). This study's sample

included 147 valid responses on the UAS and 140 on the FRMB. After the outliers were found and removed from the regression analyses, 130 cases remained, which still far exceed this minimum requirement.

To satisfy the assumption of normality associated with both regression, used to answer RQ 1, and factorial analyses of variance used to answer RQ 2, the examination of outlier cases and normality of the distribution occurred during the examination of descriptive statistics and data cleaning. As discussed earlier in this chapter, skewness and kurtosis values were not zero, i.e. not perfectly normal, suggesting some departure from perfect normality. However skewness and kurtosis values were less than 1; the size of the sample was large; and the examination of histograms, stem-and-leaf plots, box plots, expected normal probability plots, and the detrended expected normal probability plots (Tables 3-10, Figures 1-40), showed sufficient normality for conducting regression analyses (Tabachnik & Fidell, 2007).

Further, linearity, homoscedasticity, and independence of residuals were inspected using the bivariate scatterplots and an examination of residuals and predicted values scatterplots. The scatterplots of the FRMB scale score as and meaninglessness dimension score (Figure 41), FRMB scale and powerlessness dimension score (Figure 42), and FRMB scale score and social estrangement score (Figure 43) showed no curvilinear relationships and had a roughly oval shape, which suggests that both variables in each pair may be linearly related, were normally distributed, and thus showing the required homoscedasticity (Tabachnik & Fidell, 2007). Furthermore, the scatterplots of residuals (differences between obtained and predicted dependent value scores) of meaninglessness (Figure 44), powerlessness (Figure 45) and social estrangement (Figure 46) were also normally distributed on the predicted dependent value scores, and the

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variance of the residuals appeared to be uniform for the predicted scores (Tabachnik & Fidell, 2007).

Research Questions

Research Question 1

The first research question (RQ1) of this study explored the relationship between college students' Facebook behavior and their university alienation experience:

RQ1: What is the relationship between the independent variable of students' Facebook relationship maintenance behaviors scale score and the dependent variable of alienation along the dimensions of meaninglessness, powerlessness, and social estrangement?

A regression was used to examine the relationship as it is both consistent with the descriptive correlational research design and explores the relationship/association between a predictor variable with a criterion variable (Heppner, et al., 2008).

Three regression analyses were performed to answer this research question. A separate simple linear regression model was calculated for each of the following Alienation criterion variables: (1) meaninglessness dimension score, (2) powerlessness dimension score, and (3) social estrangement dimension score from the UAS. The FRMB scale score (Ellison, Vitak, Gray, & Lampe, 2014) was entered as the predictor variable in each of them. As discussed previously, to account for the familywise error rate problem and control Type I error rate, a stricter alpha of 0.016 was calculated using the Bonferroni correction procedure (Tabachnick & Fidell, 2007).

The regression equation predicting subjects' meaninglessness alienation scores based on their FRMB scores was not significant ($F(1,128) = .742$, P = .39) with an R^2 of

.006 (Table 12, 13). Facebook relationship maintenance behaviors were not associated with and cannot be used to predict students' feelings of meaninglessness.

The regression equation predicting subjects' powerlessness alienation scores based on their FRMB scores was not significant ($F(1,128) = .652$, P = .42) with an R^2 of .005 (Table 14, 15). Facebook relationship maintenance behaviors were not associated with and cannot be used to predict students' feelings of powerlessness.

The regression equation predicting subjects social estrangement alienation scores based on their FRMB scores was not significant ($F(1,128) = 0.00$, P = .97) with an R^2 of .00 (Table 16, 17). Facebook relationship maintenance behaviors were not associated with and cannot be used to predict students' feelings of social estrangement.

Consequently, the results of the three regression analyses have confirmed the null hypothesis associated with RQ1:

H0a: No significant relationship exists between Facebook use and alienation dimensions of meaninglessness, powerlessness, and social estrangement.

Research Question 2

The purpose of the second research question was to determine whether meaningful and statistically significant differences existed in students' FRMB scale scores and meaninglessness, powerlessness, and social estrangement alienation subscale scores based on the demographic variables of gender and year in school.

RQ2: Are there significant differences based on gender and year in school in students' alienation scores along the dimensions of meaninglessness, powerlessness, and social estrangement and on Facebook relationship maintenance behaviors scale scores?

To answer RQ 2, the demographic data were analyzed using descriptive comparisons and factorial ANOVA statistics in which the demographic data of gender and year in school served as the grouping (independent) variables in comparing the respondents' scores on the FRMB score; and the UAS alienation subscale scores of (1) meaninglessness dimension score, (2) powerlessness dimension score, and (3) social estrangement dimension scores (Burbach, 1972). A strict Bonferroni corrected P = .013 was used to address the possibility of family wise error.

To compare the FRMB scores for men and women participants and respondents at different years in school a two (gender) by four (year in school: freshman, sophomore, junior, senior) between-subjects factorial ANOVA was calculated (Table 18). The main effect for gender was not significant ($F(1,121) = 5.76$, P = .018). Although this P value was low, it was nevertheless higher than the significance value of P = .013 set by Bonferroni correction procedure. The main effect for year in school was also not significant ($F(3,121) = 1.1$, P = .35). Finally, the interaction was also not significant ($F(3,121) = 1.22$, P = .3). Thus, it appears that neither gender nor year in school has any significant effect on FRMB score.

To compare UAS Meaninglessness scores for men and women participants and respondents at different years in school a two (gender) by four (year in school) between-subjects factorial ANOVA was calculated (Table 19). The main effect for gender was not significant ($F(1,121) = 4.96$, P = .028). Although this P value was low, it was nevertheless higher than the significance value of P = .013 set by Bonferroni correction procedure. The main effect for year in school was also not significant ($F(3,121) = .83$, P = .48). Finally, the interaction was also not significant ($F(3,121) = 1.3$, P = .28). Thus, it

appears that neither gender nor year in school has any significant effect on UAS Meaninglessness score.

To compare the UAS Powerlessness scores for men and women participants and respondents at different years in school A two (gender) by four (year in school) between-subjects factorial ANOVA was calculated (Table 20). The main effect for gender was not significant ($F(1,121)$ = 3.28, p = .073). The main effect for year in school was also not significant ($F(3,121)$ = 1.43, p = .24). Finally, the interaction was also not significant ($F(3,121)$ = 2.23, p = .088). Thus, it appears that neither gender nor year in school has any significant effect on UAS Powerlessness score.

To compare the UAS Social Estrangement scores for men and women participants and respondents at different years in school Estrangement a two (gender) by four (year in school) between-subjects factorial ANOVA was calculated (Table 21). The main effect for gender was not significant ($F(1,121)$ = .63, p = .43). The main effect for year in school was also not significant ($F(3,121)$ = 1.36, p = .26). Finally, the interaction was also not significant ($F(3,121)$ = .72, p = .55). Thus, it appears that neither gender nor year in school has any significant effect on UAS Social Estrangement score.

Consequently, the null hypothesis of no differences in students' scores on the FRMB scale and UAS subscales based on demographic variables was confirmed. The hypothesis stated that:

H0b: No significant differences exist based on the demographic variables of gender and year in school in students' FRMB scale score, as well as scores on alienation dimensions of meaninglessness, powerlessness, and social estrangement measured by the UAS.

It was found that there were no significant differences in the students' FRMB scores. Furthermore, meaninglessness, powerlessness, or social estrangement scores did not differ based on year in school or gender. A strict P value of .013 was used to avoid family error, and main effects of gender on FRMB ($F(1,121) = 5.76$, P = .018) and meaninglessness ($F(1,121) = 4.96$, P = .028) came close, but were short of significance.

Summary

This chapter discussed the results of the statistical analyses to answer the research questions of this study. The results of regression analyses showed that there were no statistically significant associations between FRMB scale scores and UAS subscale scores of meaninglessness, powerlessness, and social estrangement. Furthermore, there were no significant differences in FRMB scale scores and meaninglessness, powerlessness, and social estrangement based on year in school or gender.

The next chapter will discuss these findings in more depth and present implications for educators and implications for future research.

CHAPTER V:

DISCUSSION

Introduction

In the last decade online social networking has grown to virtual ubiquity from initially filling a series of small niches that served individual online communities, whether they were students, such as in case of Facebook, or dating, such as Friendster (boyd, 2008). Since its modest beginning, online social networking has permeated virtually every aspect of modern life and changed the ways people interact with one another, initiate and maintain relationships (boyd, 2008). As with any new technology that turns pervasive, it offers users new opportunities and potential pitfalls, including in the realm of interacting and relating to others, which can have implications for individuals' well-being. For example, certain patterns of Facebook use contribute to gratification or distress (Kross et al, 2013), increases or decreases social capital (Ellison et al, 2007), or in the sense of social trust and life satisfaction (Valenzuela et al., 2009) to name a few examples.

College students have been early adopters of SNSs. As a major group of SNS and Facebook users, they appear to be at the forefront of the evolution of these systems, especially as these sites have become a major tool for socialization into college (Selwyn, 2009; Yu et al., 2010). In many ways SNSs have become an important part of the college experience and its social environment. Yet to date there is little research about the positive impact of Facebook use, or SNS use in general, on college students' experience of belonging to their institutions. Nor is there any research about the negative effects of using Facebook. Furthermore, although students use different features of the Facebook SNS in a variety of ways (Ellison, Steinfeld, & Lampe, 2011) and for a wide a range of

purposes (Lampe et al., 2012, Lampe et al., 2011), little is known whether and how these are related to alienation or any of its dimensions. This is the first study to begin filling this gap in the research by examining students' Facebook relationship maintenance behaviors and their sense of alienation in reference to their institution.

Overview of Study

The research questions of this study explored relationships among college students' Facebook use and behaviors and their sense of alienation in relation to their university and differences in SNS uses and alienation based on a demographic factors:

1. What is the relationship between the independent variable of students' Facebook relationship maintenance behaviors scale score and the dependent variable of alienation along the dimensions of meaninglessness, powerlessness, and social estrangement?

2. Are there significant differences based on gender and year in school in students' alienation scores along the dimensions of meaninglessness, powerlessness, and social estrangement, and on Facebook relationship maintenance behaviors scale scores?

A descriptive correlational research design using regression analyses was most appropriate for answering RQ 1. Meanwhile, factorial analysis of variance statistics were used to answer RQ 2 and examine differences in students' Facebook use and feelings of alienation based on the variables of gender and year in school. Further, descriptive statistics of demographic nature and SNS and Facebook use were used to provide a clearer context for the analyses and their interpretation.

The results of regressions showed there were no statistically significant associations between FRMB scale scores and UAS subscale scores of meaninglessness

($F(1,128) = .74$, P = .39), powerlessness ($F(1,128) = .652$, P = .42), and social estrangement ($F(1,128) = .00$, P = .97).

Furthermore, there were no significant main effects on UAS powerlessness scores of gender *($F(1,121) = 3.28$, P = .073)* or year in school *($F(3,121) = 1.43$, P = .24)*, nor any interactions between them *($F(3,121) = 2.23$, P = .088)*. On UAS social estrangement scores, there were no significant main effects of gender *($F(1,121) = .63$, P = .43)* or year in school *($F(3,121) = 1.36$, P = .26)*, or any interactions *($F(3,121) = .72$, P = .55)* between them.

On FRMB scores, the main effect for year in school *($F(3,121) = 1.1$, P = .35)*, and interactions between gender and year in school *($F(3,121) = 1.22$, P = .3)* were also not significant. Similarly, the main effect for year in school on UAS meaninglessness scores *($F(3,121) = .83$, P = .48)* was not significant, and the interaction between gender and year in school *($F(3,121) = 1.3$, P = .28)* was also not significant. Because of the strict significance value of .013 set by Bonferroni correction to avoid family wise error, the main effects of gender on FRMB scores *($F(1,121) = 5.76$, P = .018)* and on UAS meaninglessness scores *($F(1,121) = 4.96$, P = .028)*, which came close, were short of being significant.

Discussion of Results

The following sections will discuss the findings in more depth and present implications for educators and recommendations for future research.

Relationship between Facebook behaviors scale score and alienation.

To understand the findings that no relationship exists between relationship maintenance behaviors on Facebook and students' feelings of alienation it is necessary to take into account the role and environment of Facebook use and in this context and

consider the constructs and measures used in this study. These results come as no surprise because current students are increasingly representing the new Millennial generation for whom computer and Internet communication technologies are a default, normal mode of interacting with their peers and their world; and because FRMBs are basic online interactions that are focused on all users' friends, not only the on university community, .

On the most basic level, Astin's (1984) concept of student involvement can explain why there did not appear to be a relationship between alienation and FRMBs. Facebook relationship maintenance behaviors as defined by the FRMB scale do not measure student involvement as it does not explicitly focus on behaviors focused on university peers or community. On the other hand, the finding of a significant correlation (r = -.305, P = .005) between students' feelings of social estrangement and and their interactions on Facebook with university vs. non-university friends, reflects the fact that Facebook is becoming just another way for them to get involved and engaged in the university community, thereby validating commonly held perceptions of digital natives.

Selwyn (2009), and Yu, et al. (2010) concluded that Facebook has become an element of students' social learning environment in college. Yu, et al. (2010) even showed a number of positive outcomes of such learning for students. However, Facebook in particular, and SNSs in general, for young people have become an integral element of the greater social environment beyond college.

The notion that online systems such as SNSs today construe a new social environment (Evans, et al., 2010; Selwyn, 2009; Yu, et al., 2010) are further explained by the results of this study that found no significant relationship between relationship maintenance behaviors and alienation. In fact, these finding supported a earlier belief shared before the rise of SNSs and at the dawn of the Internet, Marc Prensky (2001)

discussed the possibility that internet communication technologies (ICTs) would have a tremendous effect on users and non-users. Moreover, Prensky (2001) argued that profound psychological and even neurological differences would develop between people who witnessed the rise of ICTs and adopted them at a more mature age compared to people who grew up using them. For the latter group, ICTs would become the norm, so Prensky (2001) called them "digital natives," whereas those who adopted and learned to use ICTs at a later age were termed "digital immigrants."

College students today are digital natives and were well represented in this study (Mean age = 20). The majority of these students have grown up with ICTs being the norm, more specifically during and after the rise of SNSs like Facebook. They clearly fit the description of Prensky's (2001) digital natives. These students grew up using digital communication technologies and are not likely to view them as anything new or unusual. For instance, digital natives have experienced (in contrast to witnessing and adopting, as the digital immigrants did) the evolution from simple online text communication prevalent around the time of their birth to modern augmented reality (when virtual multimedia is combined with real world images or video) enabled by ICT. They lived through the obsoleting of the basic asynchronous digital communication technologies (such as email); through the rise of synchronous text based communications, such as instant messaging; through the evolution of video entertainment, that switched from predetermined cable TV programming to instantaneous on-demand streaming; through the evolution of social networking from person-profile-based to information-stream focused; through the evolution of multimedia, including audio, still images, and video recording and instantaneously sharing of real-world videos and images; through the evolution of artificially created multimedia, i.e. virtual worlds of games and non-game

applications, such as Minecraft and Second Life; and through the rise of ubiquitous computing, that moved communication and multimedia from the desktop to the pocket-sized always-online mobile gadgets and devices. Furthermore, this evolution is presently culminating in an ever-increasing convergence of social media communities, reality based multimedia (audio and visual recordings), and computer generated multimedia, as exemplified by the Pokemon Go game. The future will likely bring wide adoption of the augmented reality approach which, as Pokemon Go demonstrated, can bring virtual communities of players together to meet and play in the real physical spaces for hunting "virtual creatures" overlaid on the live real-world images from their gadgets' cameras.

Given these experiences, for the digital natives social networking is a small component of a much broader experience of social computing and technologically-augmented relating to others and the world. It involves community creation, maintenance, and interactions via a wider range of avenues than traditional SNSs, including online social blogs and communities that have become hybridized with the offline world, meaning that some parts of them exist strictly offline, while others exist only online, and others are brought together in context- and meaning- rich multimedia environments that have multiple references to both real and virtual worlds.

The results of this study indicate that students are using a wide range of SNSs, many of which focus on different kinds of media, from short asynchronous text messaging of Twitter, to multimedia messaging of SnapChat and Instagram, to multimedia based platforms such as Facebook, which bring together user and computer generated content. The majority of the participants in this study stated that they used several of such SNSs. This shows that students manage their social interaction and relationships by picking and choosing multiple avenues from a widening and ever-more

nuanced range of technologies. In this context, digital natives are likely developing new norms of communication and new dimensions of social relationships, if not entirely new forms of social relationships. This means that such new norms and relationships are only "new" to the digital immigrants, a category to which most educators and researchers still belong; while they are not new but the norm for the digital natives. Furthermore, as various online social networks and communication systems offer different means to interact, digital natives must also develop integrated (and potentially very distinct) social and relational strategies for creating and maintaining relationships on-line, off-line, and somewhere in the middle, in a kind of a hybrid multimedia reality. Consequently, perhaps it should not be surprising that engaging in simple relationship maintenance behaviors on a single SNS like Facebook was not related to students' feelings of powerlessness, meaninglessness, or social estrangement at their university. Moreover, the fact that the correlation between the focus of Facebook interactions on interacting with university or non-university friends was weak ($r = -.305$, P = .005) reflects the fact that Facebook is becoming just another avenue to connect with social circles. It also suggests that the focus of Facebook relationship maintenance behaviors rather than the intensity of these behaviors may be an important factor to explore further.

In addition to offering a new understanding of the expanding nature of SNS integration in users', particularly digital natives', lives, this study also offers new insights into the study of alienation. Previous studies have found a wide range of relationships between Facebook users' activities and a range of social and psychological constructs (Burke, Marlow, & Lento, 2010; Ellison et al., 2007; Ellison, Steinfeld, & Lampe, 2007; Lampe, Vitak, & Ellison, 2013; Kross et al., 2013; Steinfeld et al., 2008; Steinfeld, Ellison, & Lampe 2008; Valenzuela, Park, & Kee, 2009; Valenzuela et al., 2009; Wise,

Alhabash, & Park, 2010). This was the first study to examine Facebook use and alienation. The fact that no significant association was found between alienation and relationship maintenance behaviors on Facebook, however, suggests that alienation can be a construct that is distinct from constructs that Seeman (1982) termed "hidden alienations," which represent the positive end of the alienation continuum, such as engagement, or social capital.

Gender differences

This study also examined the relationship between gender and alienation and Facebook relationship maintenance behaviors. The analysis found that there were no differences in students' Facebook relationship maintenance behaviors or on feelings of alienation based on gender or year in school. The main effect for gender on students FRMB scores was not significant ($F(1,121) = 5.76$, P = .018). It is noteworthy that the P value is low and close to significance, however because of the use of strict Bonferroni corrected significance value of P = .013 used for the ANOVA analyses, it was deemed not significant. The interaction between gender and year in school was also not significant ($F(3,121) = 1.22$, P = .3). Furthermore, the analyses found that there were no significant main effects of gender on feelings of alienation subscale scores of powerlessness ($F(1,121) = 3.28$, p = .073) and social estrangement ($F(1,121) = .63$, p = .43). The main effect for gender on meaninglessness ($F(1,121) = 4.96$, P = .028) was close to being significant, but due to the use of Bonferroni-corrected strict P value of 0.013, it could not be deemed significant. There were no significant interactions between gender and year in school for the UAS subscales of meaninglessness, ($F(3,121) = 1.3$, P = .28), powerlessness ($F(3,121) = 2.23$, p = .088), and social estrangement ($F(3,121) = .72$, p = .55).

The finding of no significant gender-based differences in relationship maintenance behaviors on Facebook are not surprising for several reasons. SNSs in general, and Facebook in particular, present all users with the same design, including visual and interface design; and algorithms such as reminders and encouragements to engage in at least some relationship maintenance interactions.

Facebook offers no customization of the interface or features that could offer contextual opportunities to articulate and interpret a user's identity, including gender identity. Facebook does not allow men and women to customize their experience. It offers users few options to customize their visual experience (such as by uploading "banner" pictures that serve as visual headers of the page, and a profile photo), but does not offer users any options to customize the placement or prominence of their interactional and social interface elements, such as the News Feed; Events, Groups, and Friends, sections; Messages or Notifications links; etc. This uniformity and lack of customizability may be related to and reflective of the lack of diversity among developers. Furthermore, it may be related to gender biases that exist in in web design perceptions. While "gender neutral" web design is preferred by the industry as it is less "exclusionary," design elements can be perceived to be more feminine or masculine; curiously, feminine design elements were associated with lower professionalism ratings, while masculine design elements – with increased professionalism ratings (Stonewall & Dorneich, 2016).

Furthermore, all users, men and women, are offered the same social algorithms and features, such as reminders and encouragements to participate in basic relationship maintenance interactions in streamlined and easily accessible ways. For instance, friends' birthdays are often highlighted in the Notifications area, or even prominently displayed at

the top of the news stream upon first login of the day. Sending birthday wishes is made easy as users do not have to engage in additional effort to make extra clicks or go to any special pages: they can often just type their message right on the main screen. In addition, Facebook often highlights "milestones" of Facebook friendship on top of the news stream, promoting comments and interactions among users that are relational in nature.

In addition, SNSs make much of the communication among members public, or at least accessible and often highlighted in the news stream, to wider audiences of "friends" or "friends of friends." Increased publicness could discourage deeper relational interaction, potentially moving them to more private means of interaction of Facebook (such as Facebook Messenger) or to other SNSs. In addition, as users' get to interact with friends of friends and the degrees of separation increase, their posts and interactions are likely to be less contextual, less relational, and not as influence by gender identity.

Moreover, as profiles, and in a sense, Facebook identities, are becoming more infrastructural (serving as the backbone of the interactions, making them possible) rather than the focus of Facebook activities (Ellison & boyd, 2013), the focus of users' attention and interaction may have shifted to the content of the posts presented to the users as part of the Facebook "media streams."

In addition to demonstrating no gender based differences in Facebook behaviors, this study found no significant gender differences in college students' feelings of alienation. These findings are congruent with the conclusions of some previous studies, as research on gender and alienation is still limited, and both presence and the direction of the differences has not been consistent across different studies. Studies have shown that men and women college students may experience different feelings of alienation in the same environment, but also that institutional environment may play a larger role than

the type of institution. For instance, Gordon (1998) found that at three comparable community colleges statistically significant differences in the feelings of social estrangement among men and women existed for two of the three, while at the third college, no gender based differences in students' alienation scores were found. Moreover, between the two community colleges that showed gender based differences in social estrangement, the results were opposite: at one college men reported being more socially estranged, while at the other – women did (Gordon, 1998).

Other studies have also shown some gender differences in alienation. Galassi and Galassi (1973) found that as students advanced through college, women's interpersonal alienation decreased, while men's increased (Galassi & Galassi, 1973). In addition, Tomlinson-Clarke and Clark (1996) showed that women reported feeling less alienated than men, who felt less certain about persisting to degree completion.

However, it is important to note that the majority of previous studies that focused on gender and alienation were conducted about 20 or more years ago and represent a different era, different proportion of men and women attending, and different generations of students. The society and higher education institutions have changed significantly. Among the many changes are the development of computer and mediated communication technologies. One recent study conducted during a time when technology was already seen as an integral part of society and higher education, Lewis et al. (2015), examined gender differences in college students' sense of alienation and attitudes towards and comfort with online and face-to-face counseling. The study found that while there were gender differences in comfort with face-to-face counseling, there were no gender related differences on students' UAS scores (Lewis et al., 2015). The current study shows a similar result, which is not surprising given that the number of women enrolled on

college campuses is often higher than men, that women are more persistent and academically successful than men on many higher education measures, from enrollment, to academic accomplishment, to graduation rates, and further to post-secondary education and achievement (Conger & Long, 2010).

Year in school based differences in alienation and in Facebook behaviors

In addition to gender, this study also examined whether students' feelings of alienation and their Facebook relationship maintenance behaviors differed based on their year in school. Neither the main effect for year in school *(F(3,121) = 1.1, P = .35)* nor its interaction with gender (*F(3,121) = 1.22, P = .3*) were significant for FRMB scores. Similarly, neither the main effect for year in school nor interaction with gender were significant for powerlessness (main effect for year in school: *F(3,121) = 1.43, p = .24;* interaction with gender: *F(3,121) = 2.23, p = .088*) , meaninglessness (main effect for year in school: (*F(3,121) = .83, P = .48;* interaction with gender: *F(3,121) = 1.3, P = .28*), and social estrangement (main effect for year in school: *F(3,121) = 1.36, p = .26;* interaction with gender: *F(3,121) = .72, p = .55*). In short, year in school was not a factor that made a difference on scores of any dimensions of alienation, nor for FRMB scale scores. While the results such as a lack of year-in-school based differences is contrary to some of the earlier research (Valenzuela, Park, and Kee , 2009) it is not surprising. It is possible that seven years later, with a new generation of students largely comprised of digital natives, Facebook has become so pervasive that among college students year in school truly no longer makes a difference. Furthermore, it is possible that the limitations, particularly the sample sizes across each year in school reduced the statistical power of these tests.

The findings that there were no significant differences based on year in school for students' feelings of alienation, as measured by UAS subscales of powerlessness, meaninglessness, and social estrangement, are consistent with the recent research (Lewis, et al., 2015). In the last 40 years higher education has become more student centered, attuned to student needs, and focused on accountability, access, and retention and as a result, there are a number of student affairs offices that work to help students feel welcome. Institutions have become increasingly diverse as the enrollments of women, students from minority backgrounds and first generation students, as well as adult learners, have been growing. Colleges have worked hard on developing programs to retain and ensure success of their growing constituencies, as well as put new emphasis on recruitment and fundraising efforts (Thelin, 2003).

Facebook and SNS use among current students

In addition to answering the research questions, this study offered new insights into some aspects of Facebook and SNS uses among current students. They show that digital natives have integrated a range of SNSs into their daily lives and their uses of SNSs, and ICTs in a more general sense, are very integrated. First, the results show that students' age (but not year in school) was weakly negatively correlated with the total number of Facebook friends (r = -.25, P = .01), but the correlation with year in school was not statistically significant. This maybe because older students, especially those who are digital immigrants, may use different cyber-relating approaches compared to the younger digital natives for whom cyber relationships are natural and intuitive.

Second, the results show that Facebook remains the most popular social networking site among college students. Consistent with Ellison (2007), 92% of the students surveyed had a Facebook profile. However, it appears that students use other

SNSs as well, as only 52% of the Facebook users in this sample reported using Facebook as their primary SNS (i.e. used it more than other social networks). Facebook is followed by Twitter, Instagram, and Snapchat. In addition to these SNS, a small number of participants also listed other ICT systems, such as Imgur, Pinterest, VSCO, Tinder, Timehop, YikYak, Gmail, Whatsapp, and an unidentified "messenger" as other primary SNSs. Furthermore, it is worth noting that regardless of whether participants listed Twitter, Snapchat, and Instagram, as their primary SNSs, the same three SNSs were the three most commonly used SNSs, with 25% - 29% of all students using them. However, except of these three and Facebook, no other SNSs exceeded four percent.

This is an interesting set of findings that confirms the expansion of boyd's (2008) earlier definition of online social networks articulated by Ellison and boyd (2013), which states that SNSs evolved from systems that merely focused on "viewing and traversing [users'] lists of connections" (boyd, 2008) to systems that were designed for "consuming, producing, and/or interacting with streams of user generated content provided by their connections on the site." (Ellison & boyd 2013, p. 159). Some of the systems reported by the respondents, such as Gmail or Pinterest, can hardly be considered SNSs in the boyd's (2008) earlier definition that focused on profile maintenance and traversing connections, and perhaps are better described as ICTs. Instead many of these offer many opportunities to interact and build communities, as well as utilize machine generated content in conjunction with user generated content. Many of the examples from this list, for example Pinterest, indeed, do not focus much on maintaining and traversing user profiles, but instead use them more as the infrastructure for the interactions among user- and machine- generated content. Interestingly, Gmail was mentioned instead of Google Plus, which may reflect the integration of Plus features into the Gmail interface, along with

Google's use of Gmail addresses in lieu of profiles across its myriad of products on various platforms.

The size of online social networks may also be changing, but not their structure. This further supports the assertion that Facebook and SNSs are being tightly integrated into the digital natives' lives and are becoming a norm for their communication and relationship development and maintenance. On average, the number of friends Facebook users reported having in this study was 400-500 (M = 496, Median = 400), which was significantly higher than those reported previously, which ranged between 130 and 245 (Backstrom, 2011; Backstrom et al., 2011; Facebook, 2011; Ugander et al., 2011). However, it appears that the structure of friend cohorts may not be changing. This study found that, on average, only 50-100 friends (M = 100, Median = 50) were reported as "actual" friends, which is consistent with earlier reports that approximately 25% - 30% of their Facebook friends were also their "actual" friends (Ellison, Steinfield, & Lampe, 2011; Ellison, Vitak, Gray & Lampe, 2011; Ellison & boyd, 2013). Confirming this argument is also the finding that the number of total friends were also correlated with the number of actual friends (r = .423, P = .00). The more friends students had on Facebook, the more of them were actual friends. As this sample included more digital natives than the aforementioned studies would have, this is reasonable and to them participation in SNSs is more of a norm.

Facebook also continues to be primarily used to maintain existing (outside) relationships rather than develop new ones at the university, which echoes numerous other studies (Ellison, Steinfield, & Lampe, 2006; Joinson, 2008; Lampe, Ellison, & Steinfield, 2006; Saleh, et al., 2011; Sheldon, 2008). This also supports the idea that digital natives have integrated SNSs in their lives, but greater social processes govern

their interactions and relationships on SNSs (as well as offline). Although as many as 73% of prospective college students, according to Wohn, et al. (2013), considered Facebook a potential wellspring for college-related resources, the results of this study show that students already at the university seemed to strongly favor interactions with Facebook friends outside the university: as many as 60% of them disagreed or strongly disagreed that most of their Facebook interactions focused on users from outside the university. This finding may be a function of the sample that heavily overrepresented the freshman class as around 40% of the respondents were first year students. Further research with a better balanced sample should help clarify this issue, especially since these findings seems to disagree with the idea that that SNS sites like Facebook have become a tool for socialization into college (Selwyn, 2009; Yu et al. 2010). However, if we consider that SNSs have one of the tools of digital natives' socialization in general, this finding does not appear as surprising.

In addition to highlighting possible new developments in Facebook and SNS use, the findings of this research also offer a contribution to further research SNS research. As SNS researchers have discussed, the area of online social networking is new, and is addressed from varying perspectives of multiple disciplines. This has led to the challenges in research design and methodology that could make the findings relevant (Ellison & boyd, 2013; Wilson, et al., 2012). In terms of methods, this study used a very recent instrument, the Facebook Relationship Maintenance scale (Ellison, et al., 2014). The findings of this study have shown that the FRMB scale is a reliable instrument, with Cronbach alpha of .771. However, it should be noted that although the FRMB scale served this project well, the acceptable level of reliability does not shed light on the validity of the instrument.

Implications for Practice

College students as a major group of SNS and Facebook users continue to be at the forefront of the evolution of social media. Furthermore, they continue to create new ways to use these systems and develop new strategies of incorporating them into their lives. As digital natives, they use SNSs, and ICTs in general, in ever-more complex and integrated ways. For many they have been a tool for socialization into college (Yu et al. 2010; Selwyn, 2009), and for most they likely have been a greater vehicle for general socialization into their social environments. In many ways, SNSs have become an important part of the college experience and its social environment. The finding of a lack of a significant association between students' Facebook relationship maintenance behaviors and alienation suggests that students who are thought to be "living online" are not feeling as disconnected as assumed. Further, it challenges the popular notion that because students are highly engaged online they would feel greater alienation in face-to-face environments, such as the university campus. Moreover, the significant correlation between UAS social estrangement and students' interactions on Facebook (with university vs. non-university friends) suggests that Facebook interactions are a natural extension of students' social lives.

For educators, the findings of this study can inform their efforts in using SNSs for the purposes of reaching students and as a way to direct students' activities on SNSs and Facebook. The fact that FRMBs were not related to alienation shows that this particular behavior is not detrimental, at least form the point of view of increasing alienation.

Moreover, the finding that students' interactions with Facebook friends from the university was significantly negatively correlated with the social estrangement dimension of alienation ($r = -.305$, P = .005) suggests that students' interactions on SNSs university

peers to at least some degree constitutes student involvement described by Astin (1984). Consequently, educators and administrators, faculty and student affairs professionals can use online SNSs to reach students online in hope to engage them in an environment that is natural to them. At the most basic level, they should encourage SNS interconnections or "friending" among students. Further, greater attention should be given to creating and maintaining active groups that attract students and promote interactions with these, as well as interactions with university representatives or organizations. Using images and video posts from offline university activities as references can spur interest and reactions, as well as potentially encourage interactions among students. In addition to using existing SNSs to encourage social interactions among students, institutions can build further on the example of SpartanConnect (DeAndrea, et al., 2010), which strove to create a proprietary online social environment that encouraged social networking and connecting among students. In addition, steps to encourage engagement and interactions among students and between students and faculty on academic LMSs, such as inclusion of collaborative online assignments, can foster student engagement, both social and academic.

Such efforts to encourage engagement also need to be informed by understanding of the distinction between digital natives and digital immigrants. Clarity of the differences between them will enable educators to find most appropriate combinations of modes of communication and interaction with students from varying cohorts. For instance, digital natives, likely to be younger traditional students, like the students in this study, are more likely to approach online environments as a normal part of the college experience as compared to the digital immigrants. Digital immigrants are likely to include adult learners and graduate students who naturally adopted technology at more

mature ages, but also may include younger students who for various reasons had been on the other side of the "digital divide" (U.S. Department of Commerce, 1995), meaning that due to socioeconomic reasons they had not had access to computers and ICT. They may include students from disadvantaged backgrounds or international students. This means that universities should invest in creating LMS and SNS environments that meet digital natives' expectations and the institutions' goals of reaching and engaging them; but also provide support and some off-line redundancy of resources and services for the digital immigrants. This also means that IT departments and communication departments at college and universities need to be flexible to respond to innovations and changes not only in the technology, but also in the interactional dynamics in these environments. Moreover, it may mean giving up some control over interactions in these environments and empowering students.

Meanwhile, institutions and their various departments and offices, from administrators to faculty, to career and mental health counselor, and student affairs staff can use these findings to increase their efforts in addressing students' sense of alienation and increasing their feelings of belonging in ways not necessarily directly related to SNSs and Facebook. However, due to the fact that these students are digital natives, using Facebook and other SNSs will work well since they are among the students' normal ways to communicate.

Limitations of the Study

This study has several limitations as one considers its findings and conclusions. For instance, generalizability of this study is impacted by the lack of ethnic diversity of the participants. However, this is reflective of the Midwestern non-urban region of the country, as well as the student body of this regional Midwestern university. Caucasian

students were clearly the dominant group, comprising 85% of the sample. It would have been interesting to have a more diverse sample. In addition, it is possible that the patterns of Facebook use among diverse students could be different and produce different results. In addition to lacking diversity the sample used was a convenience sample, further leading to limited generalizability of its findings.

Among many factors influencing alienation levels among college students is the institution itself. Previous studies have shown that different groups of students experience varying levels of alienation across different types of institutions, such as a two-year college, a comprehensive college, and a research university (Tomlinson-Clarke & Clark, 1996). Even different institutions of the same type in the same region, e.g. several 2-year colleges, have been shown to have differing levels of alienation (Gordon, 1998). Consequently, it is important to recognize that although some trends in students' feelings of alienation may be common across different institutional environments, it is difficult to ascertain which they are, and whether they would be true in other institutional and geographical environments.

These considerations should be applied when exploring the results of this study. A majority Caucasian student body at this Midwestern university, reflected in the largely homogeneous sample of this study, combined with the young age of participants over-representing the digital natives in the sample, may potentially help understand the lack of variation in alienation scores. In addition, it is possible that the patterns of Facebook use among demographically and generationally diverse students could be different and produce different results.

Recommendations for Further Research

SNSs have become an integral part of digital natives' social interactions and one of the avenues they use to create and maintain social relationships. For this reason research and practice in higher education and student affairs should conceptualize SNSs and ICTs in general, as elements of students' developmental contexts and as environments themselves. Such an approach allows researchers to use existing methods and models to examine these new technological developments in the context of higher education. Many student development theories consider the role of environment in students' psychological and social development, while some even focus directly on examining the impact the environment can have on academic learning and psychosocial development.

For instance, identity development theory (Chickering & Reisser, 1993) focuses on seven vectors of identity development. Three of the vectors focus directly on social issues, namely developing interpersonal competence, managing emotions, and developing mature interpersonal relationships, and deeply depend on students' social experiences (Chickering & Reisser, 1993). Furthermore, identity development itself is another vector, and on Facebook and other SNSs student users are in a unique environment for digital identity presentation, management, but most importantly experimentation (Komarenko & Carlson, 2008). Development along the other vectors is also influenced by the environment. For college students today social interactions involve experiences in multiple social contexts, which in the modern technological world include ICTs in general and SNSs like Facebook, in particular. Chickering's (Chickering & Reisser, 1993) theory specifically addresses student communities and friendships among the factors that can affect students' experiences and development. Today's digital natives

naturally develop and maintain relationships and interact with friends, groups, and communities online and in combined online and face-to-face ways. The finding that social estrangement is related to interacting with fellow students compared to non-students further suggests that Facebook interactions are among the means that can facilitate student involvement and potentially impact students' development.

Future research should also consider how digital environments of SNSs and greater ICTs affect student experience and development through the lens of human and developmental ecology theories. Students' college experience has been conceptualized previously as adapting to institutions' human-built, physical-biological, and socio-cultural environments (Buboltz & Sontag, 1993). Today researchers should consider adding the digital environment to this list. Even though it may seem to span at least two of these categories of environments, the human-built and socio-cultural environments, ICT and SNS environments offer new features and dynamics that warrant separate focus.

Furthermore, Bronfenrenner's (2005) developmental ecology model conceptualizes a student living in a context of a series of nested systems that can facilitate or impede development ranging from microsystems, mesosystems, exosystems, and macrosystems. The microsystems encompass an individual's relationships, activities, and social interactions (Bronfenbrenner, 2005). Mesosystems are comprised of the interactions among two or more settings in which students are engaged; while exo- and macrosystems focus on the elements on an individual's organizational and cultural backgrounds that affect them, albeit indirectly, by setting the greater institutional and cultural norms (Bronfenrenner, 2005). While earlier research had considered only face-to-face interactions in the microsystems, Evans, et al. (2010) suggested that computer mediated environments should also be considered by researches as microsystems. This

study shows that such an approach would be valuable. Moreover, as SNSs, and ICTs in general, tend to transcend the boundaries face-to-face microsystems and facilitate interactions among the different microsystems, future research should also consider them as elements of mesosystems. Furthermore, SNS and ICT research should also explore whether and how SNSs and ICTs in their structure and dynamics of interaction and decision making affect exosystems and even macrosystems of organizations and institutions with which students are engaged, but also the greater culture.

In addition, although SNSs are very popular and offer qualitatively different social environments for college students, higher education also relies on ICTs for teaching and learning. Complex and versatile database systems, such as Blackboard and Moodle, have become popular learning management systems (LMS) that create new environments for academic learning. While they differ from SNSs like Facebook in their purposes and designs, they also share many common features in that they create a computer mediated environment that can facilitate student involvement. LMSs are quickly becoming an important element of the academic environment because institutions increasingly offer online resources for face-to-face students, but also online-only and hybrid courses and programs. Student development and academic teaching and learning research shows the importance of students' involvement in social (Astin, 1984) and academic life of their institutions (Kuh, et al. 2006; Tinto, 1993). Consequently, student development and academic teaching and learning research should include examination of higher education's both social and academic virtual environments, comprehensively approaching them as a complex and complementary system.

Furthermore, because Facebook behaviors evolve with the changes in technology and trends in social interaction, studies should focus on more holistic approaches of

examining communication, psychological, and social processes that occur on this SNS, as well as on others. In addition, studies should focus more on the psychological, social, and relational processes of which Facebook interaction is just one component. Moreover, Facebook is not the only online SNS for most college students, and not even the main one for almost half of them. Consequently, exploring communicative, social, and psychological processes that occur across many modes of computer based and augmented ICT and SNS platforms will enable researchers to gain a deeper understanding of these social and psychological processes in an integrated and comprehensive manner.

These suggestions, however, are very difficult to implement, especially in the paradigm of quantitative research. This suggests that, perhaps, a greater focus on qualitative and mixed methods can be of great service. Such methods would enable researchers to explore in greater detail students' experiences using Facebook and other social media, and their roles in the complexities of the social, communicative, and psychological domains of their lives.

Furthermore, the permanent (or at least lasting) nature of digital records may enable researchers to analyze digital records of users' activities on SNSs as artifacts. These present a potential treasure trove as they can be analyzed both quantitatively and qualitatively, and can usually show activities over periods of time. Furthermore, many commercial organizations and educational institutions develop Facebook and other mobile apps for students to use on a daily basis. These can offer educators and researchers access to students' accounts, contact lists, and records of SNS and ICT activities in near real-time. All of this digital data is already used commercially, and can offer great benefits for researchers and educators over using traditional self-report

methods, which can be unreliable and are time bound. In fact, they can bring us as close as possible to online real time observation.

However, to take advantage of such opportunities inherent in digital technology researchers will have to resolve a number of methodological, technical, and perhaps most importantly, ethical issues. These can range from getting access to data and keeping it secure, to securing informed consent and ensuring privacy. Depending on the design, each such project and study will likely be pioneering and require a unique approach to resolving many of these issues, and will necessitate cooperation with professionals and stakeholders across a wide range of organizations and disciplines.

In addition to the uniqueness of the specific institutional and local community contexts as forming the subjective experiences of the students, it is also worth to keep in mind that the majority of previous alienation studies are also removed by time. In fact, the most recent of the quantitative alienation studies were undertaken in the mid-late 1990s (Gordon, 1998; Tomlinson-Clarke & Clark, 1996). This suggests that its participants were recruited from among students representing a different generation that lived in a range of different technological, social, economic, and political contexts compared to the current students. Today's Millennial students' subjective experiences are likely to be quite different as their world has been shaped by very different historical, technological, and even child rearing and educational experiences (Howe & Strauss, 2000).

Furthermore, research should be carried out to further explore the relationship of cultural diversity, institutional differences, as well as other relevant contextual factors that can affect students' feelings of alienation in this increasingly technological world populated by digital natives and digital immigrants. Moreover, the demographic and age

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diversity of student user base and representativeness of the samples should be further considered when designing Facebook or other SNS use studies. Having systematically assessed diversity in alienation and in SNS use in among current students can produce high quality research that would uncover differences and / or relationships among behaviors on social networks and alienation, as well as other constructs.

Further research should also continue to examine the role of gender diversity in college students' experience of alienation especially as campuses become more racially and ethnically diverse. In addition, future research should expand the focus of examining differences in feelings of alienation among LGBTQ students.

Research should also focus on the aspects and behaviors of student users on Facebook or other SNSs that are likely to be relevant to social learning that goes on the site. Selwyn (2009) and Yu, et al. (2010) suggested that Facebook is now an element of students' social learning environment in college. Moreover, Yu, et al. (2010) showed a number of positive outcomes of such learning for students. Further examination of the concepts of social learning on SNSs and ICTs in general should serve as a possible focus of research and a theoretical framework that can help researchers understand these processes better.

Furthermore, research should focus on confirming the validity and usefulness of the concept of Facebook relationship maintenance behaviors, as conceptualized by the FRMB scale. It has shown acceptable reliability, and can be used to continue exploring whether the concept is relevant to other online SNSs. Although engaging in relationship maintenance behaviors on Facebook showed no association with alienation, this study did not focus on how receiving attention in the form of these behaviors (or lack of such attention) from Facebook friends would affect students' sense of alienation, in particular,

and wellbeing in general. Relationship maintenance behaviors should also be explored not only from the perspective of the person engaging in them, i.e. the sender of birthday wishes, but also as a receiver of such, and even as an observer witnessing other users engaging in these behaviors.

Moreover, researchers should test and refine other instruments, as well as develop new ones, to keep up with the evolving nature of online SNSs. In addition, it would be worthwhile to explore adapting existing instruments designed for one SNS for exploring relevant aspects and behaviors on others. As the FRMB has shown acceptable reliability, it can be used to continue exploring whether the concept is relevant to studying other online SNSs, but also for the Facebook SNS itself as Facebook features and users' behaviors evolve.

Indeed, the direction, amount, and quality of interactions deserve further and more detailed examination. Directed communications were associated with greater social capital and wellbeing outcomes on Facebook (Burke, Marlow, & Lento, 2010). The significant correlation between social estrangement and the extent students reported interacting with their Facebook university friends and non-university friends ($r = -.305$, P $= .005$) warrants further exploration. Research should focus on whether the notion of pervasiveness of interactions with a specific group of friends transcends the contents of these interaction, or whether certain kinds of interactions (e.g. Facebook relationship maintenance behaviors compared to requests for information) would be associated with any alienation related or other psychosocial outcomes.

In addition, earlier research has shown that users' behaviors on Facebook can be classified as social interaction, relationship maintenance, and social surveillance (Joinson, 2008). This study has focused on one aspect of what this classification would deem as

relationship maintenance. It found that relationship maintenance behaviors, as explored by FRMB were unrelated to the feeling of students' sense of belonging or alienation from their institution. Further explorations of strategies and behaviors of relationship maintenance, with a greater focus on the kinds of targets of such behaviors can produce a fuller picture. Moreover, further research of the strategies and behaviors that would be classified as social interaction and social surveillance (Joinson, 2008), would begin revealing relationships among a wider and more representative range of Facebook and SNS behaviors and students' social and psychological well-being, including their sense of belonging/alienation.

Conclusion

This study makes an important contribution to addressing the gaps in the research about students' uses of Facebook, their behaviors on the site, and their sense of belonging. At this time it is the only study that examines the relationship of SNS use and Facebook behaviors, and alienation among students. It has also contributed to a better understanding of alienation among current students. Its findings offer insights into the ways the new generation of digital natives experience college, online and off-line.

For college students, ICTs and SNSs like Facebook have become an integral part of the college environment, and arguably, of their life experience as digital natives. Some argue that Facebook is now a platform for learning the norms of the college student community (Yu et al., 2010) and making sense of college (Selwyn, 2009).

This study examined relationships between Facebook use and students' feelings of alienation. Other factors, namely gender, year in school, and focus of Facebook interactions, were also examined. The results showed that while engaging in relationship maintenance behaviors on Facebook was not associated with alienation, the prevalence of

Facebook interactions with university peers was associated with a greater sense of social belonging (or lower level of social estrangement, to use the alienation term from Burbach, 1972). Furthermore, its findings suggest that as digital-natives, college students use Facebook and other SNSs in complex ways.

The findings of the study have important implications for higher education institutions in an era dominated by technology. Universities can strive to increase Facebook and other SNS interconnections among students in an attempt to foster interactions among them to increase their involvement and engagement, which are associated with a lower sense of social estrangement. The findings suggest ways in which technology can be used effectively to counteract the impact of diminishing financial resources by a wide range of educators, from student affairs professionals to faculty, from institutional administrators to Information Technology leaders, departments, and staff. As the only study currently to examine Facebook use and behaviors, and students' sense of alienation from their institution, its findings have the potential to assist educators in finding new technology assisted means to facilitate students' development in college and realizing their full potential.

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APPENDIX A. TABLES

Table 1

A-priori Power Analysis G*Power: Exact - Correlation: Bivariate Normal Model

Options:	exact distribution
Analysis:	A priori: Compute required sample size
Input:	
Tail(s)	= Two
Correlation ρ H1	= 0.3
α err prob	= 0.016
Power (1-β err prob)	= 0.8
Correlation ρ H0	= 0
Output:	
Lower critical r	= -0.2261816
Upper critical r	= 0.2261816
Total sample size	= 113
Actual power	= 0.8018255

Table 2

A-priori Power Analysis G*Power: F tests - ANOVA: Fixed Effects, Special, Main Effects and Interactions

Analysis:	A priori: Compute required sample size		
Input:	Effect size f	=	.3
	α err prob	=	0.0125
	Power (1-β err prob)	=	0.80
	Numerator df	=	2
	Number of groups	=	6
Output:	Noncentrality parameter λ	=	13.7700000
	Critical F	=	4.5152887
	Denominator df	=	147
	Total sample size	=	153
	Actual power	=	0.8021734

Table 3

FRMB Scale Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Item 1	12.18	12.205	.653	.480	.689
Item 2	12.73	12.645	.580	.449	.715
Item 3	12.93	12.700	.607	.421	.707
Item 4	11.88	14.683	.321	.127	.801
Item 5	12.40	12.587	.568	.385	.719

Table 4

FRMB Scale Score Descriptives

			Statistic	Std. Error
FRMB Scale Score.	Mean		15.5286	.36992
	95% Confidence	Lower Bound	14.7972	
	Interval for Mean	Upper Bound	16.2600	
	5% Trimmed Mean		15.5794	
	Median		16.0000	
	Variance		19.157	
	Std. Deviation		4.37692	
	Minimum		5.00	
	Maximum		25.00	
	Range		20.00	
	Interquartile Range		5.00	
	Skewness		-.269	.205
	Kurtosis		-.023	.407

Table 5

FRMB Extreme Values

			Case Number	Value
FRMB Scale Score.	Highest	1	16	25.00
		2	61	25.00
		3	115	25.00
		4	133	25.00
		5	41	24.00
	Lowest	1	67	5.00
		2	62	5.00
		3	51	5.00
		4	34	5.00
		5	143	7.00[a]

a. Only a partial list of cases with the value 7.00 are shown in the

table of lower extremes.

Table 6

FRMB Descriptives with Outliers Removed

			Statistic	Std. Error
FRMB Scale Score.	Mean		15.8382	.34666
	95% Confidence Interval for Mean	Lower Bound	15.1526	
		Upper Bound	16.5238	
	5% Trimmed Mean		15.8252	
	Median		16.0000	
	Variance		16.344	
	Std. Deviation		4.04277	
	Minimum		7.00	
	Maximum		25.00	
	Range		18.00	
	Interquartile Range		5.00	
	Skewness		-.054	.208
	Kurtosis		-.203	.413

Table 7

UAS Descriptive Statistics

		Meaninglessness Alienation Score	Powerlessness Alienation Score	Social Estrangement Alienation Score	University Alienation Scale Total Score
N	Valid	147	147	147	147
	Missing	4	4	4	4
Mean		17.59	22.37	18.38	58.34
Median		18	22	18	58
Mode		20	21	17	64[a]
Std. Deviation		5.86	6.08	4.35	13.73
Minimum		8	10	8	32
Maximum		38	42	28	95

[a] Multiple modes exist. The smallest value is shown

Table 8

Meaninglessness and Powerlessness Alienation Score Descriptives

			Statistic	Std. Error
Meaninglessness Alienation Score.	Mean		17.5850	.48314
	95% Confidence Interval for Mean	Lower Bound	16.6302	
		Upper Bound	18.5399	
	5% Trimmed Mean		17.4104	
	Median		18.0000	
	Variance		34.313	
	Std. Deviation		5.85772	
	Minimum		8.00	
	Maximum		38.00	
	Range		30.00	
	Interquartile Range		9.00	
	Skewness		.360	.200
	Kurtosis		-.141	.397
Powerlessness Alienation Score.	Mean		22.3741	.50144
	95% Confidence Interval for Mean	Lower Bound	21.3831	
		Upper Bound	23.3652	
	5% Trimmed Mean		22.3073	
	Median		22.0000	
	Variance		36.962	
	Std. Deviation		6.07962	
	Minimum		10.00	
	Maximum		42.00	
	Range		32.00	
	Interquartile Range		9.00	
	Skewness		.159	.200
	Kurtosis		-.349	.397

Table 9

Social Estrangement and UAS Total Score and Descriptives

Social Estrangement Alienation Score.	Mean		18.3810	.35917
	95% Confidence Interval for Mean	Lower Bound	17.6711	
		Upper Bound	19.0908	
	5% Trimmed Mean		18.3375	
	Median		18.0000	
	Variance		18.963	
	Std. Deviation		4.35471	
	Minimum		8.00	
	Maximum		28.00	
	Range		20.00	
	Interquartile Range		7.00	
	Skewness		.075	.200
	Kurtosis		-.324	.397
University Alienation Scale Total Score.	Mean		58.3401	1.13268
	95% Confidence Interval for Mean	Lower Bound	56.1016	
		Upper Bound	60.5787	
	5% Trimmed Mean		58.2343	
	Median		58.0000	
	Variance		188.596	
	Std. Deviation		13.73302	
	Minimum		32.00	
	Maximum		95.00	
	Range		63.00	
	Interquartile Range		21.00	
	Skewness		.058	.200
	Kurtosis		-.699	.397

Table 10

Meaninglessness Alienation score Descriptives with Outlier Removed

			Statistic	Std. Error
Meaninglessness Alienation Score.	Mean		17.4452	.46564
	95% Confidence Interval for Mean	Lower Bound	16.5249	
		Upper Bound	18.3655	
	5% Trimmed Mean		17.3379	
	Median		17.5000	
	Variance		31.656	
	Std. Deviation		5.62633	
	Minimum		8.00	
	Maximum		30.00	
	Range		22.00	
	Interquartile Range		9.25	
	Skewness		.151	.201
	Kurtosis		-.841	.399

Table 11

Powerlessness Alienation Score Descriptives with the Outlier Removed

			Statistic	Std. Error
Powerlessness Alienation Score.	Mean		22.2397	.48641
	95% Confidence Interval for Mean	Lower Bound	21.2784	
		Upper Bound	23.2011	
	5% Trimmed Mean		22.2336	
	Median		22.0000	
	Variance		34.542	
	Std. Deviation		5.87726	
	Minimum		10.00	
	Maximum		36.00	
	Range		26.00	
	Interquartile Range		9.00	
	Skewness		-.013	.201
	Kurtosis		-.832	.399

Table 12

Model Summary[b] of Linear Regression of Meaninglessness

Alienation on FRMB Scale Score

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.076[a]	.006	-.002	5.53747

a. Predictors: (Constant), FRMB Scale Score.

b. Dependent Variable: Meaninglessness Alienation Score.

Table 13

ANOVA[a] for Linear Regression of Meaninglessness Alienation on FRMB Scale

Score

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.761	1	22.761	.742	.391[b]
	Residual	3924.932	128	30.664		
	Total	3947.692	129			

a. Dependent Variable: Meaninglessness Alienation Score.

b. Predictors: (Constant), FRMB Scale Score.

Table 14

Model Summary[b] of Linear Regression of Powerlessness

Alienation on FRMB Scale Score

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.071[a]	.005	-.003	5.80650

a. Predictors: (Constant), FRMB Scale Score.

b. Dependent Variable: Powerlessness Alienation Score.

Table 15

ANOVA[a] for Linear Regression of Powerlessness Alienation on FRMB Scale Score

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.990	1	21.990	.652	.421[b]
	Residual	4315.579	128	33.715		
	Total	4337.569	129			

a. Dependent Variable: Powerlessness Alienation Score.

b. Predictors: (Constant), FRMB Scale Score.

Table 16

Model Summary[b] of Linear Regression of Social

Estrangement Alienation on FRMB Scale Score

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.003[a]	.000	-.008	4.26247

a. Predictors: (Constant), FRMB Scale Score.

b. Dependent Variable: Social Estrangement Alienation

Score.

Table 17

ANOVA[a] for Linear Regression of Social Estrangement Alienation on FRMB Scale Score

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.020	1	.020	.001	.974[b]
	Residual	2325.588	128	18.169		
	Total	2325.608	129			

a. Dependent Variable: Social Estrangement Alienation Score.

b. Predictors: (Constant), FRMB Scale Score.

Table 18

Factorial ANOVA Tests of Between-Subjects Effects: FRMB Score by Gender and Year in

School

Dependent Variable: FRMB Scale Score.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	238.463[a]	7	34.066	2.219	.037
Intercept	21965.824	1	21965.824	1430.843	.000
Gender	88.465	1	88.465	5.763	.018
Year in school	51.010	3	17.003	1.108	.349
Gender * Year in school	56.255	3	18.752	1.221	.305
Error	1857.552	121	15.352		
Total	34610.000	129			
Corrected Total	2096.016	128			

a. R Squared = .114 (Adjusted R Squared = .063)

Table 19

Factorial ANOVA Tests of Between-Subjects Effects: Meaninglessness by Gender and

Year in School

Dependent Variable: Meaninglessness Alienation Score.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	282.415[a]	7	40.345	1.348	.234
Intercept	30745.246	1	30745.246	1027.632	.000
Gender	148.396	1	148.396	4.960	.028
Year in school	74.380	3	24.793	.829	.481
Gender * Year in school	116.968	3	38.989	1.303	.277
Error	3620.143	121	29.919		
Total	44519.000	129			
Corrected Total	3902.558	128			

a. R Squared = .072 (Adjusted R Squared = .019)

Table 20

Factorial ANOVA Tests of Between-Subjects Effects: Powerlessness by Gender and

Year in School

Dependent Variable: Powerlessness Alienation Score.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	560.010[a]	7	80.001	2.571	.017
Intercept	48579.048	1	48579.048	1560.906	.000
Gender	102.036	1	102.036	3.279	.073
Year in school	133.650	3	44.550	1.431	.237
Gender * Year in school	208.393	3	69.464	2.232	.088
Error	3765.804	121	31.122		
Total	69295.000	129			
Corrected Total	4325.814	128			

a. R Squared = .129 (Adjusted R Squared = .079)

Table 21

Factorial ANOVA Tests of Between-Subjects Effects: Social Estrangement by Gender and Year in School

Dependent Variable: Social Estrangement Alienation Score.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	85.302[a]	7	12.186	.672	.695
Intercept	32418.633	1	32418.633	1787.711	.000
gender	11.485	1	11.485	.633	.428
Year in School	73.858	3	24.619	1.358	.259
Gender * Year in School	38.906	3	12.969	.715	.545
Error	2194.233	121	18.134		
Total	47941.000	129			
Corrected Total	2279.535	128			

a. R Squared = .037 (Adjusted R Squared = -.018)
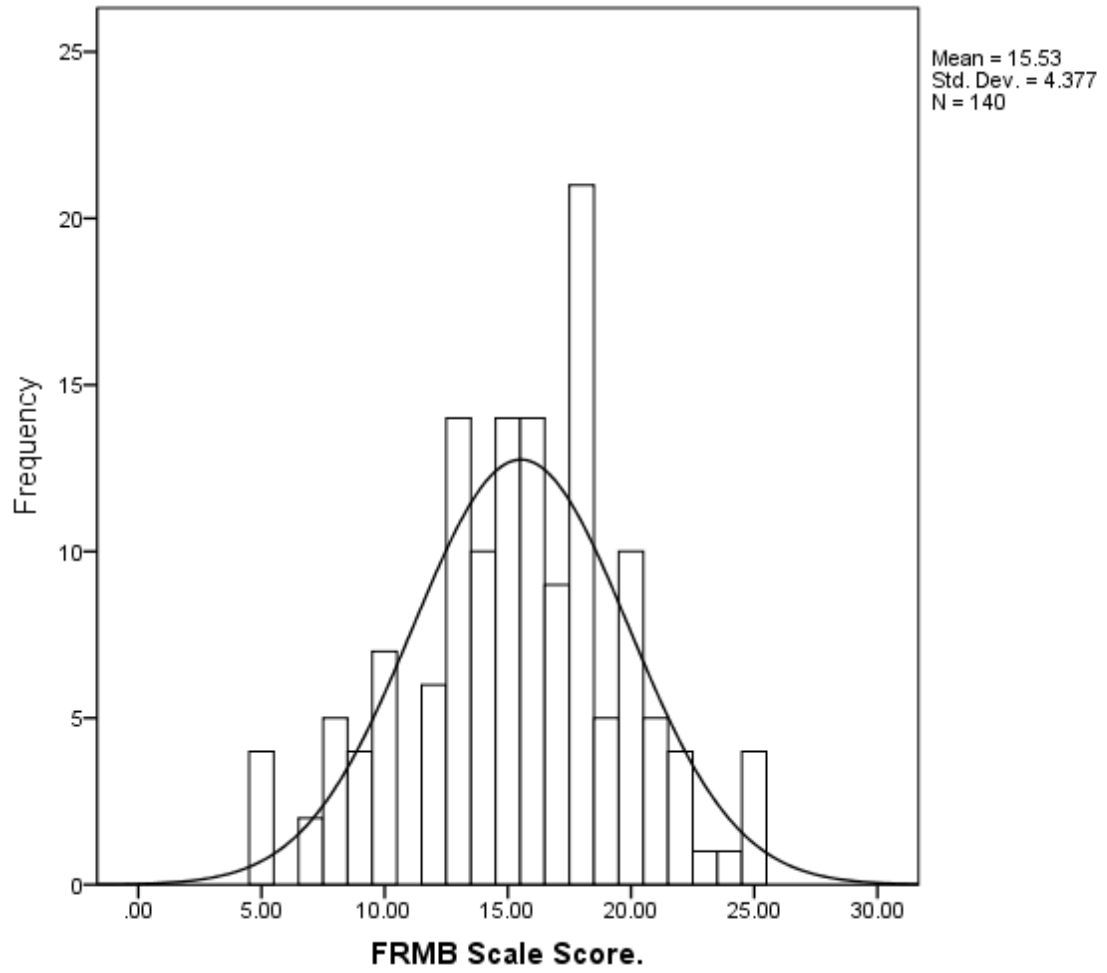
Figure 1: FRMB scale score histogram with the normal curve overlay.
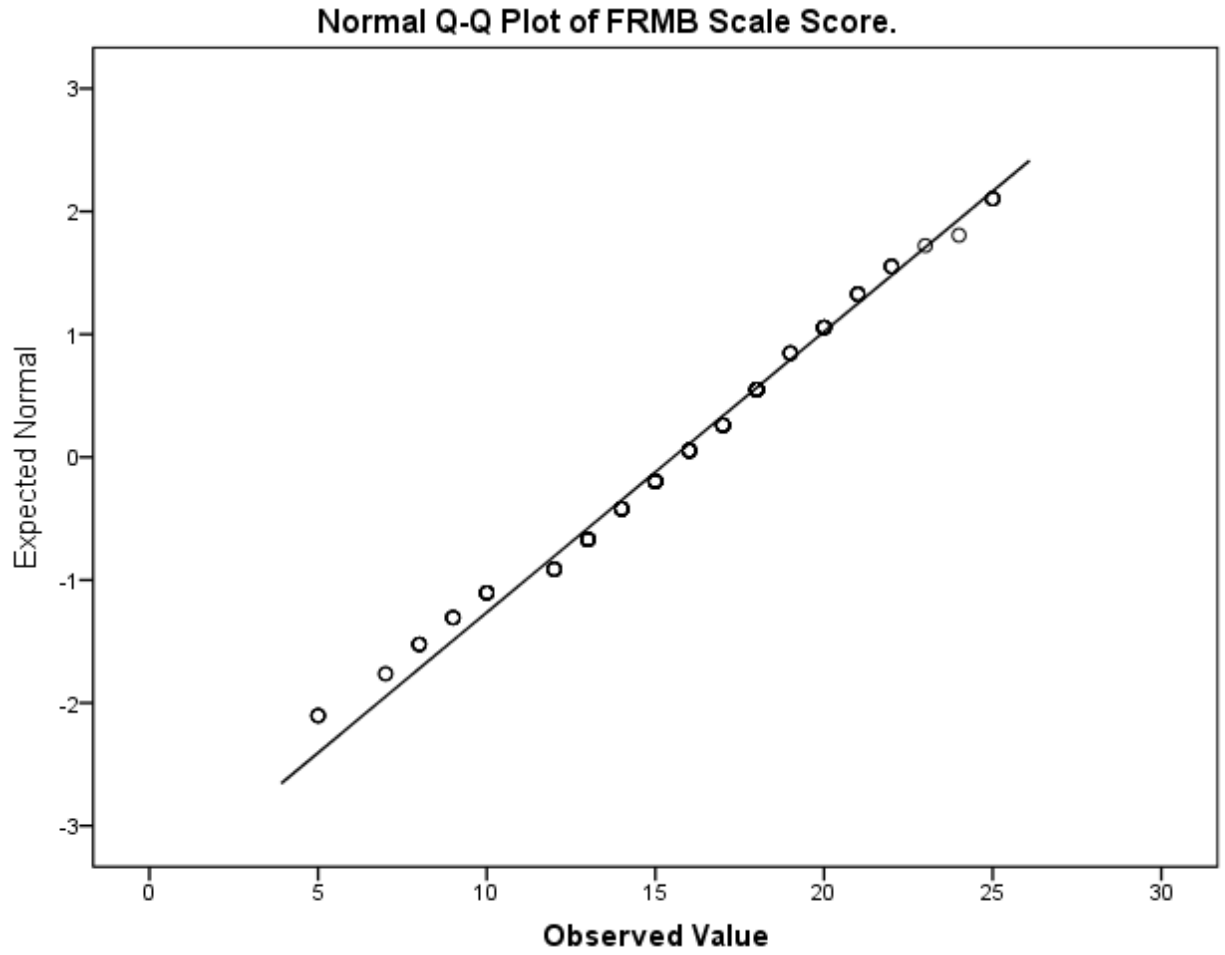
Figure 2: FRMB scale expected normal probability plot.
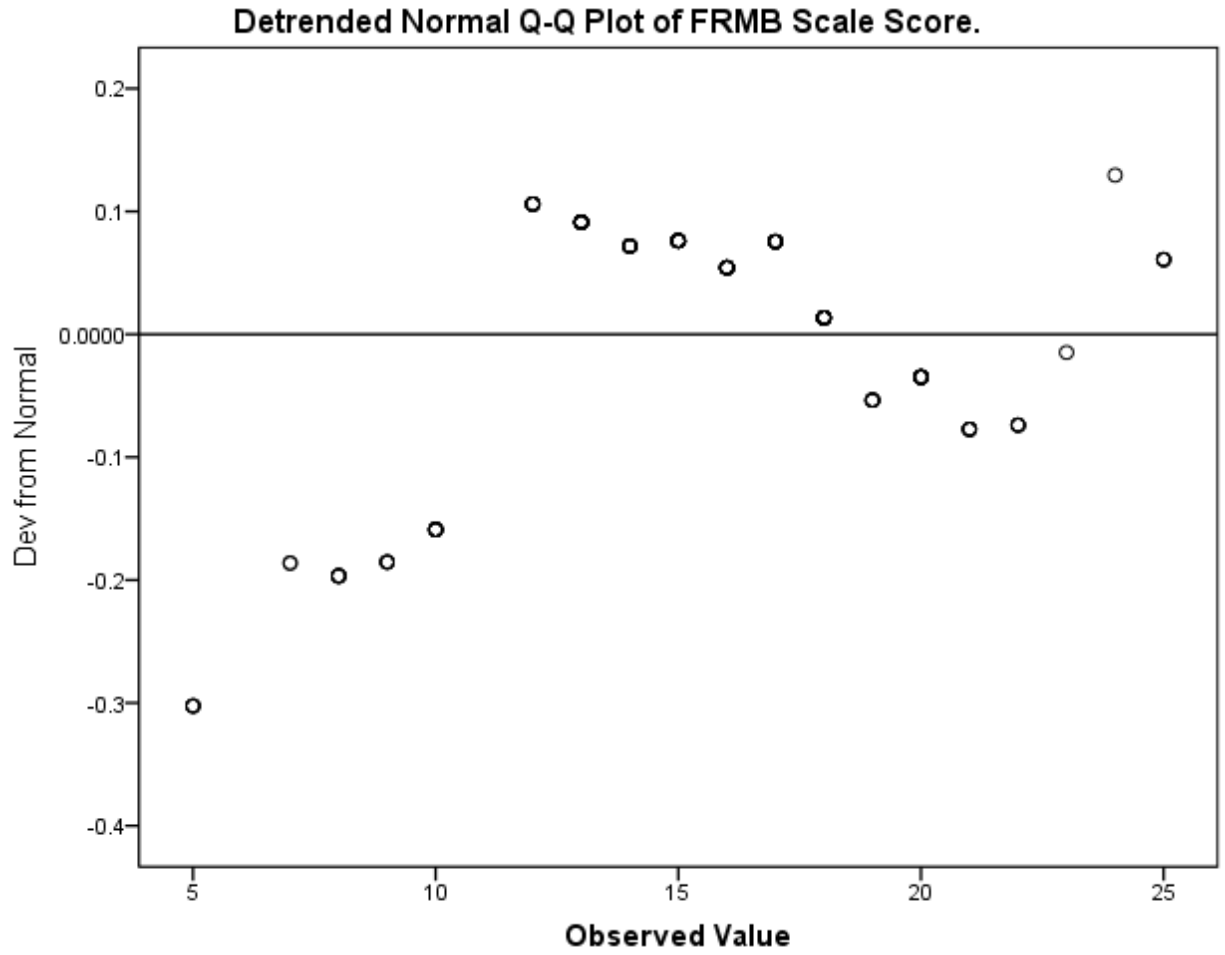
Figure 3: FRMB scale detrended expected normal probability plot.

```
FRMB Scale Score. Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

     4.00 Extremes    (=<5.0)
     2.00         7 .  00
     5.00         8 .  00000
     4.00         9 .  0000
     7.00        10 .  0000000
      .00        11 .
     6.00        12 .  000000
    14.00        13 .  00000000000000
    10.00        14 .  0000000000
    14.00        15 .  00000000000000
    14.00        16 .  00000000000000
     9.00        17 .  000000000
    21.00        18 .  000000000000000000000
     5.00        19 .  00000
    10.00        20 .  0000000000
     5.00        21 .  00000
     4.00        22 .  0000
     1.00        23 .  0
     1.00        24 .  0
     4.00        25 .  0000

 Stem width:      1.00
 Each leaf:        1 case(s)
```

Figure 4: FRMB scale score stem-and-leaf plot.
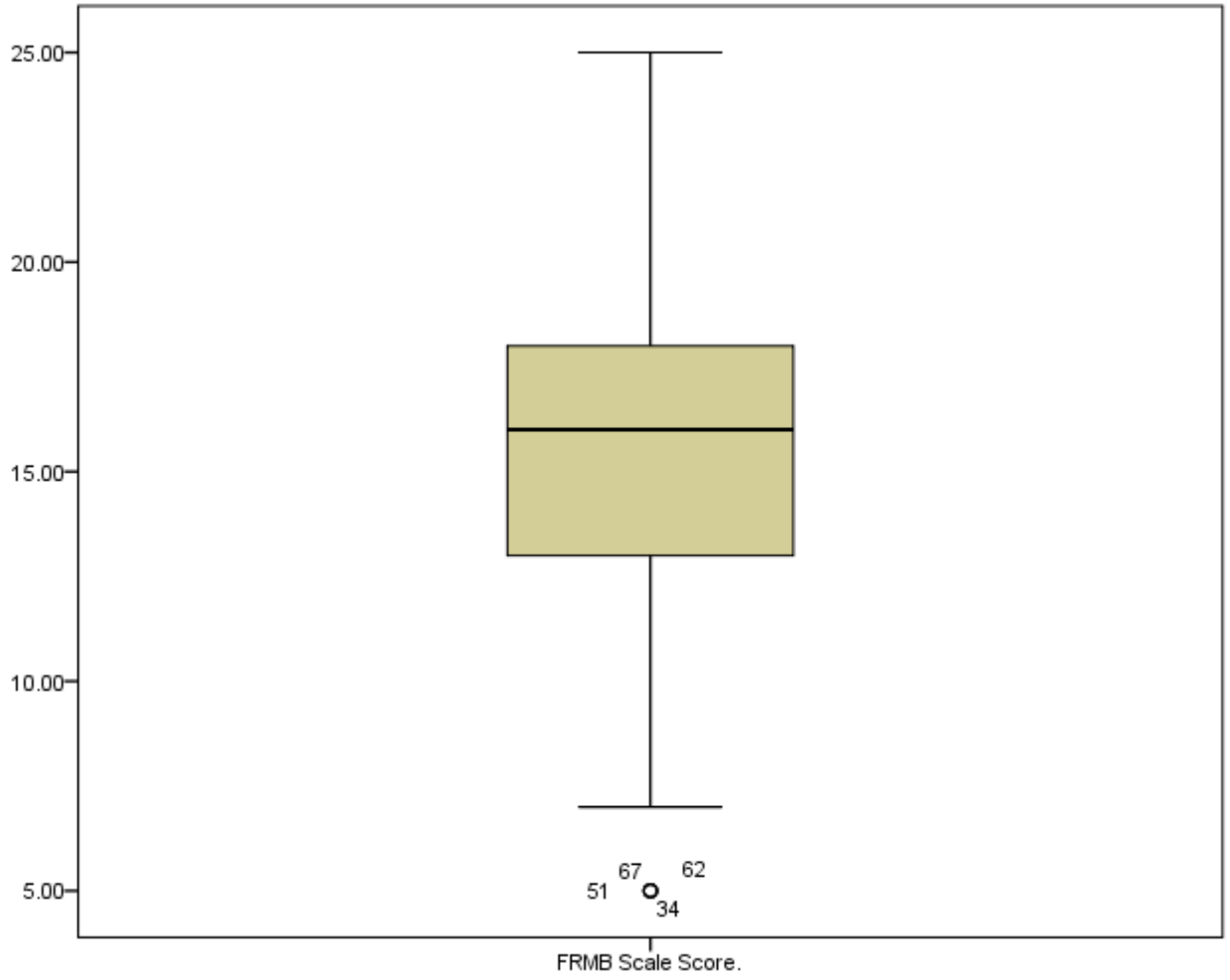
Figure 5: FRMB scale score box plot.
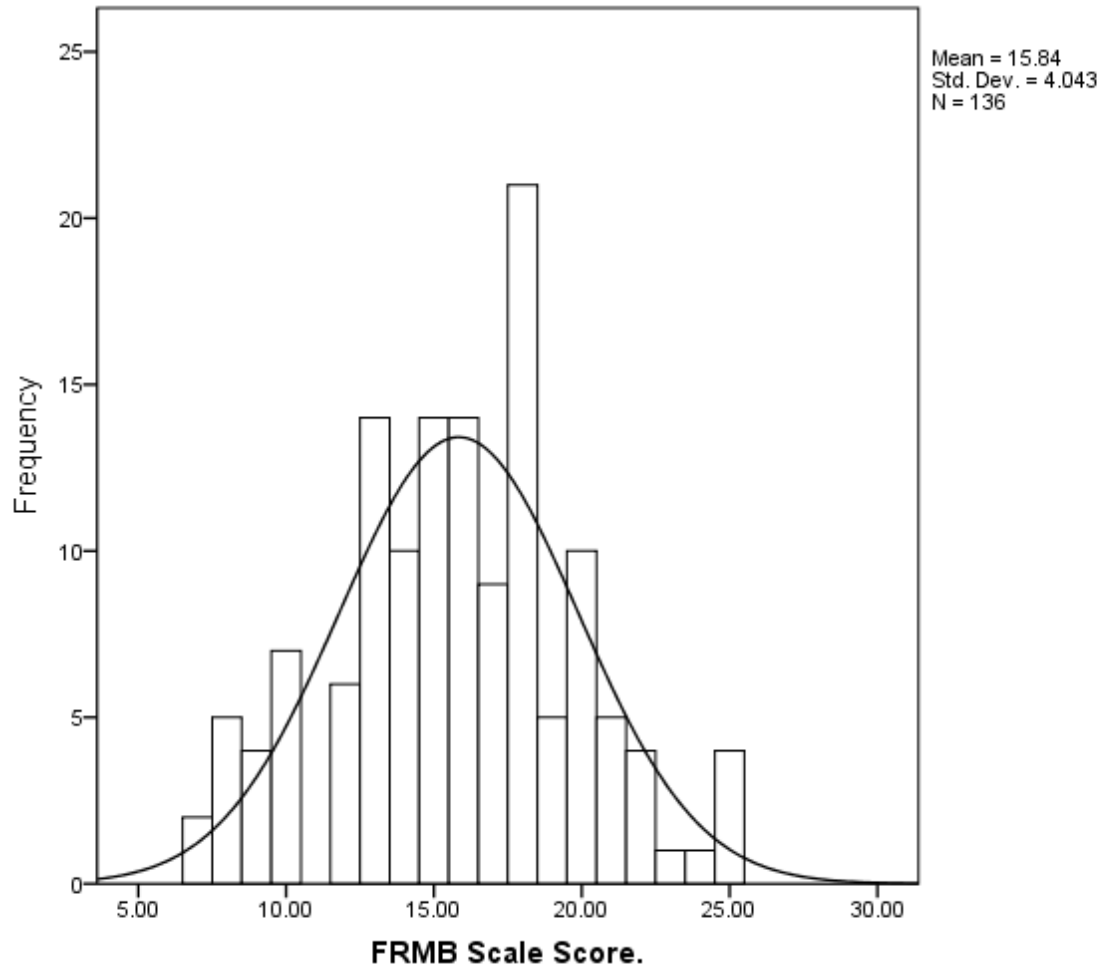
Figure 6: FRMB scale score histogram with the normal curve overlay with outlier cases removed.
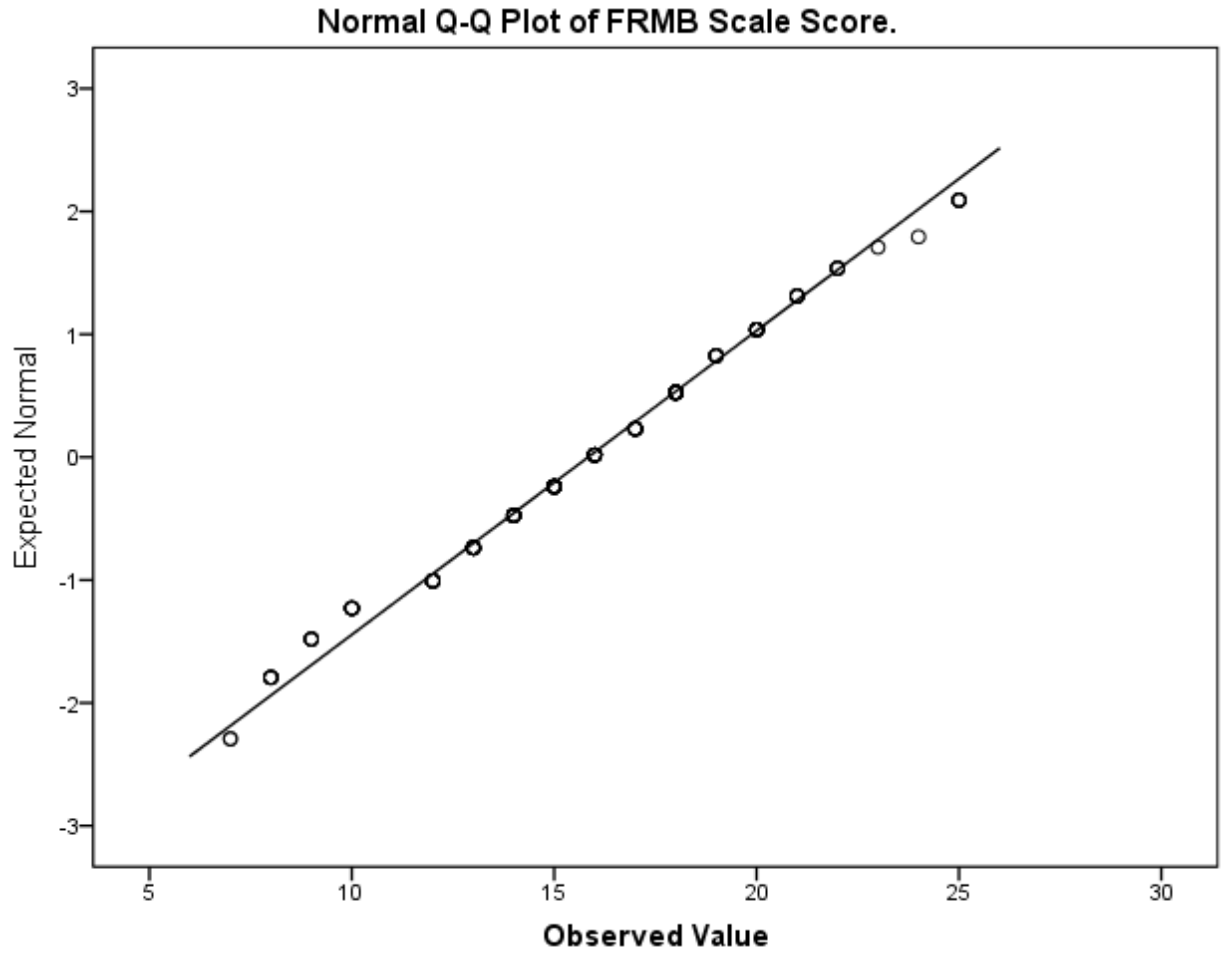
Figure 7: FRMB scale expected normal probability plot with outliers removed.
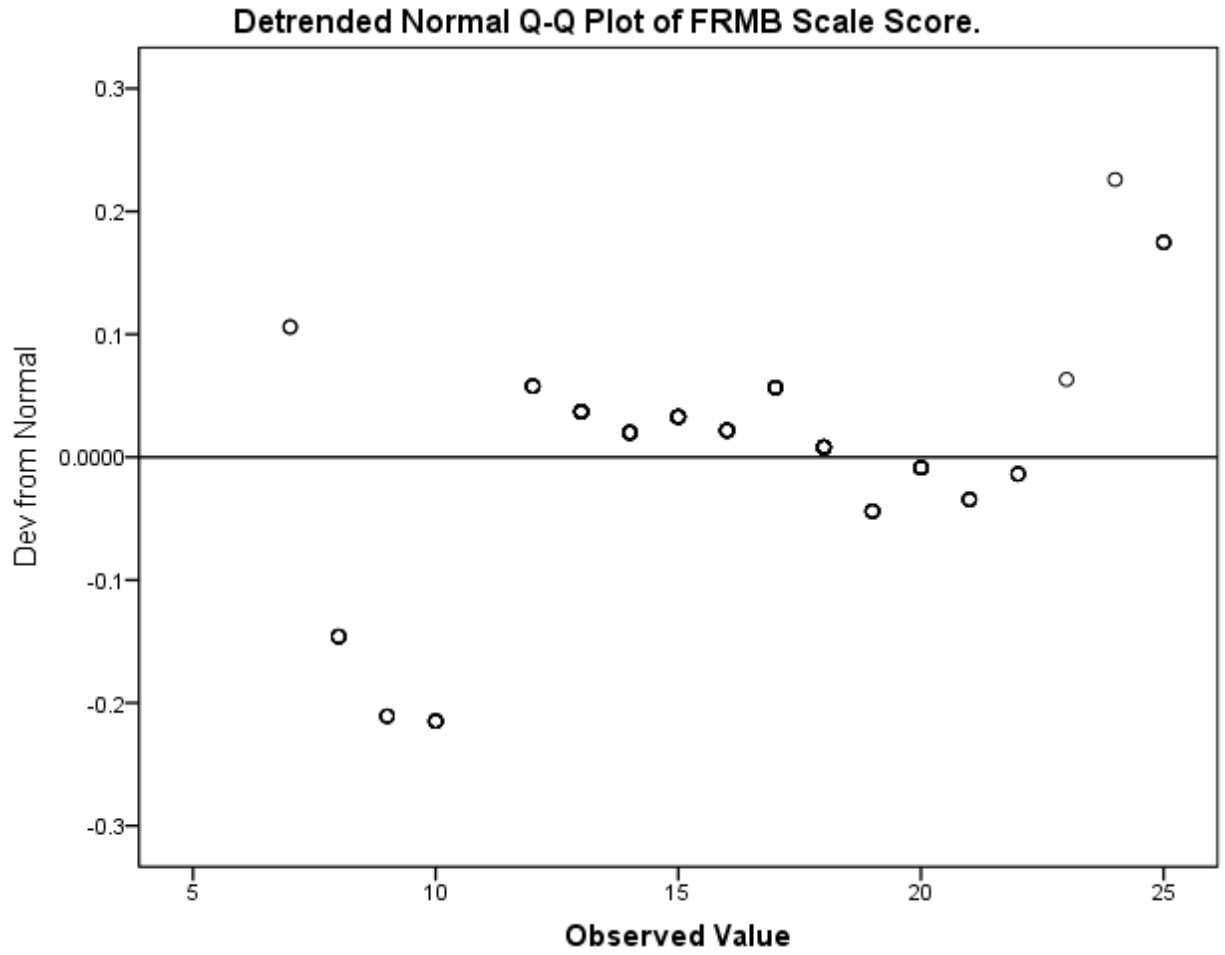
Figure 8: FRMB scale detrended expected normal probability plot with outliers removed.

```
FRMB Scale Score. Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

     2.00        7 .  00
     5.00        8 .  00000
     4.00        9 .  0000
     7.00       10 .  0000000
      .00       11 .
     6.00       12 .  000000
    14.00       13 .  00000000000000
    10.00       14 .  0000000000
    14.00       15 .  00000000000000
    14.00       16 .  00000000000000
     9.00       17 .  000000000
    21.00       18 .  000000000000000000000
     5.00       19 .  00000
    10.00       20 .  0000000000
     5.00       21 .  00000
     4.00       22 .  0000
     1.00       23 .  0
     1.00       24 .  0
     4.00       25 .  0000

 Stem width:      1.00
 Each leaf:        1 case(s)
```

Figure 9: FRMB scale score stem-and-leaf plot with outliers removed.
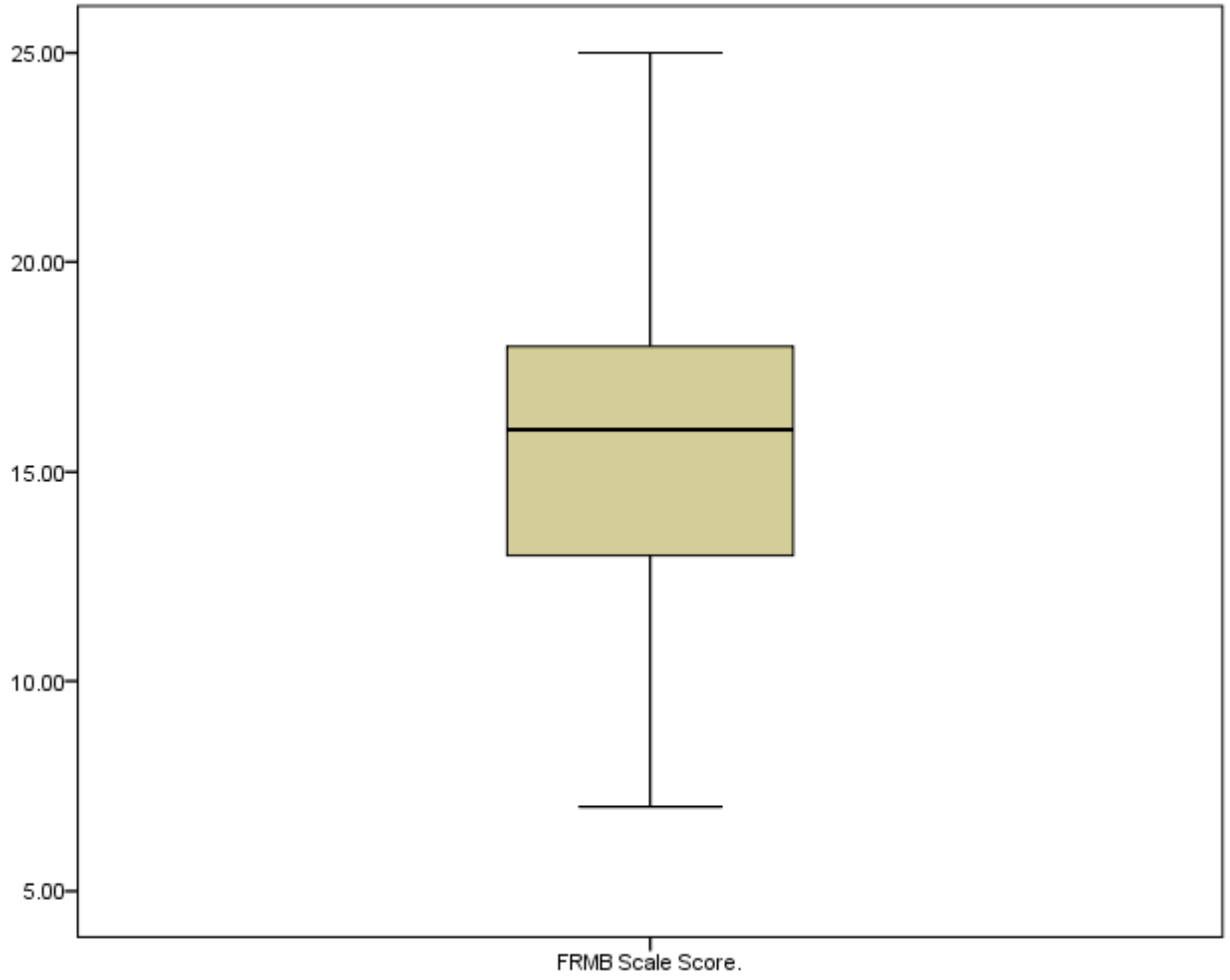
Figure 10: FRMB scale score box plot with outliers removed.
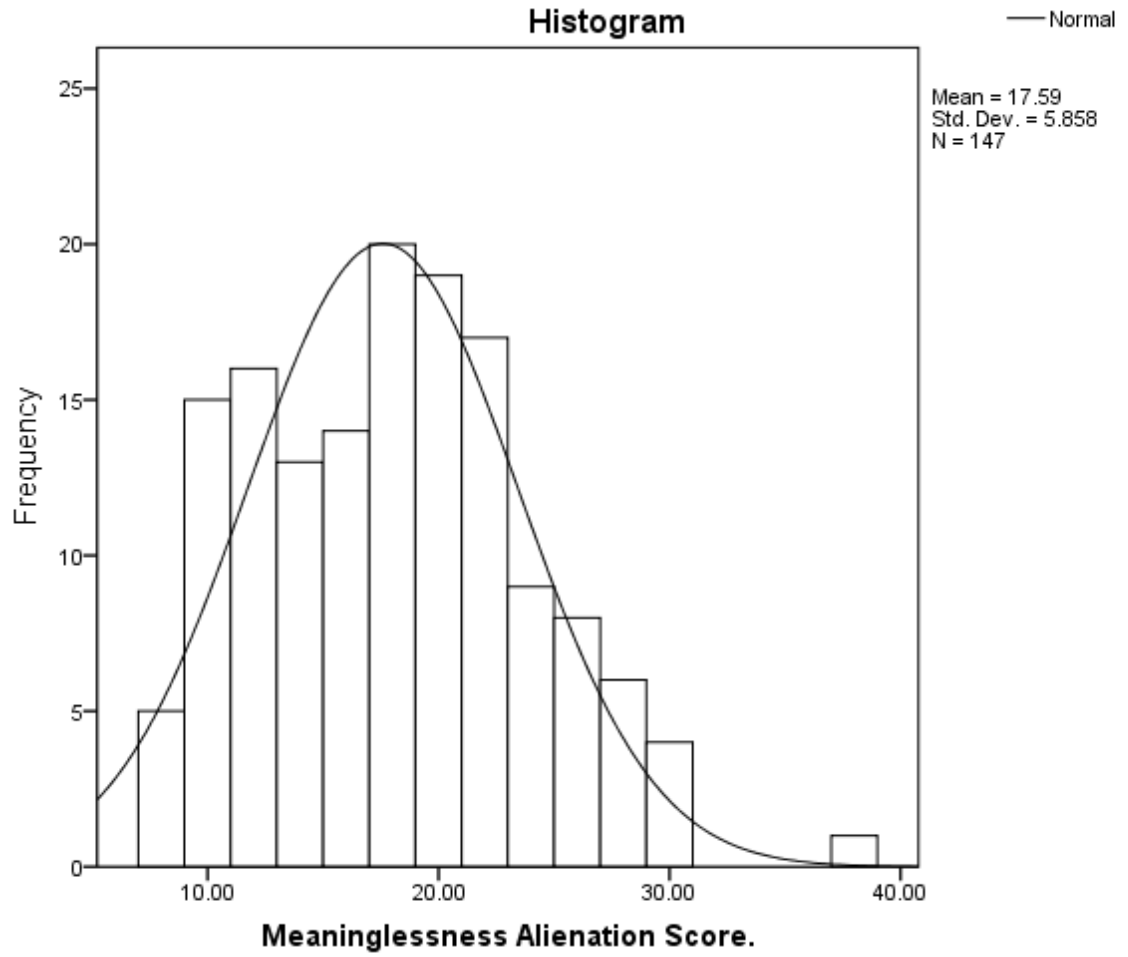
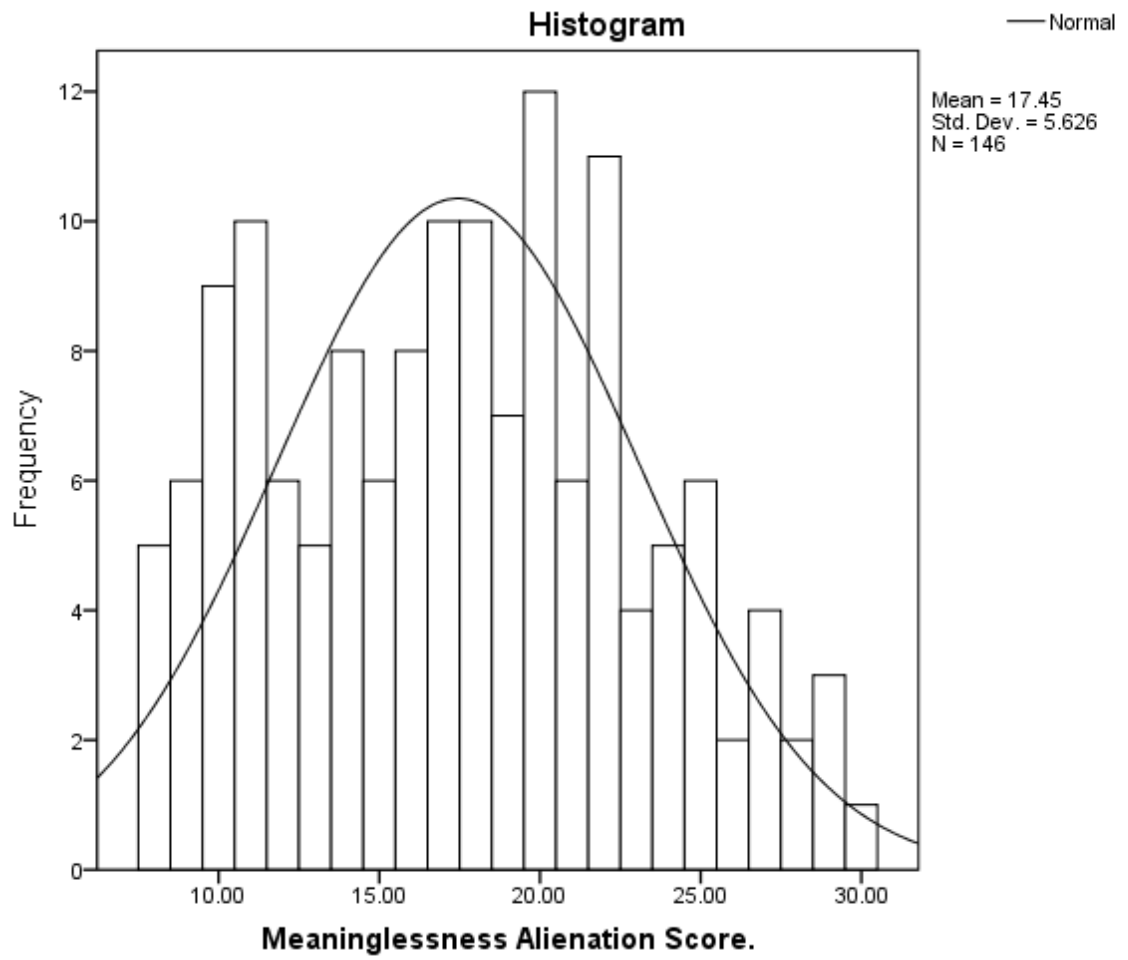Figure 11: Meaninglessness alienation score histogram.
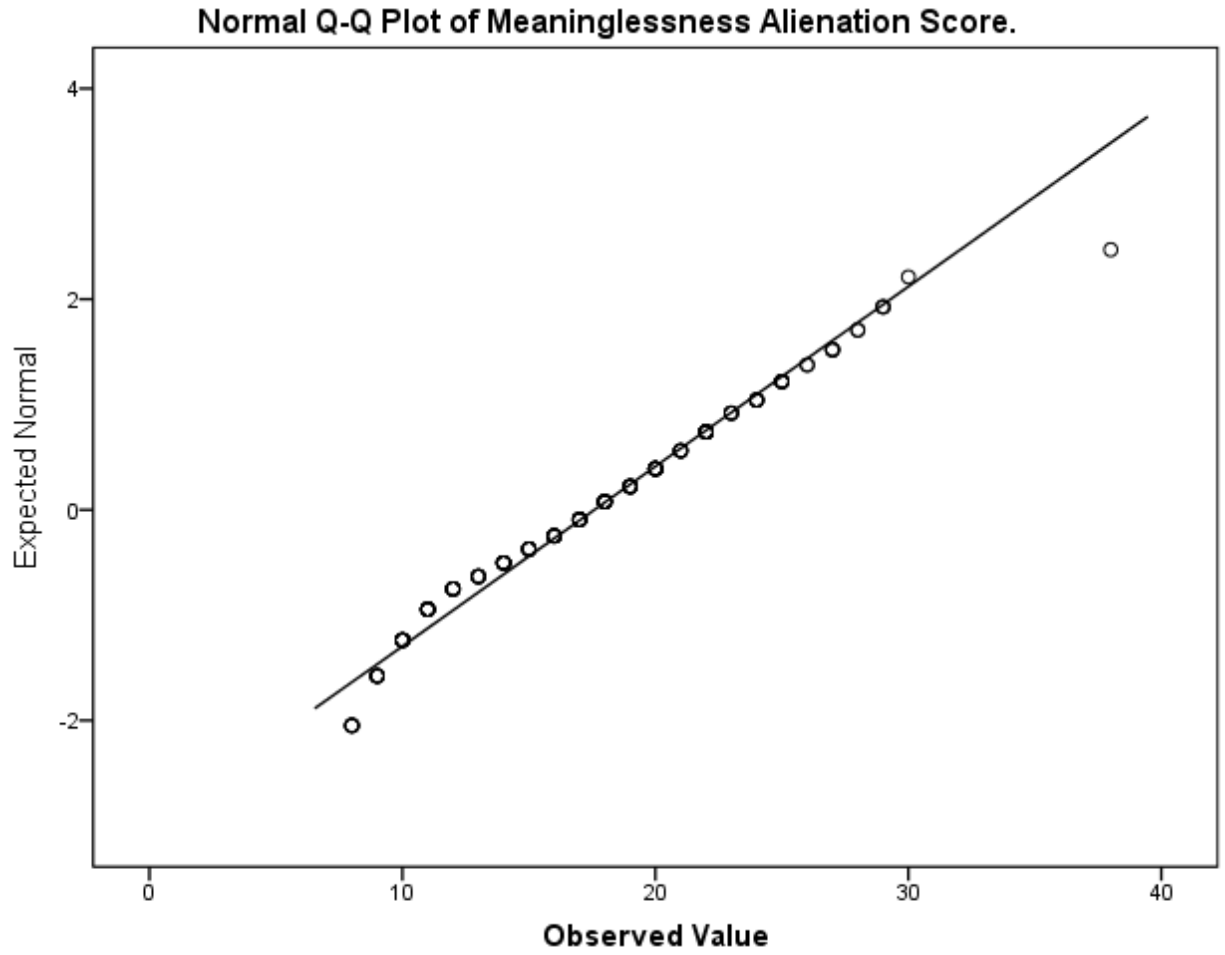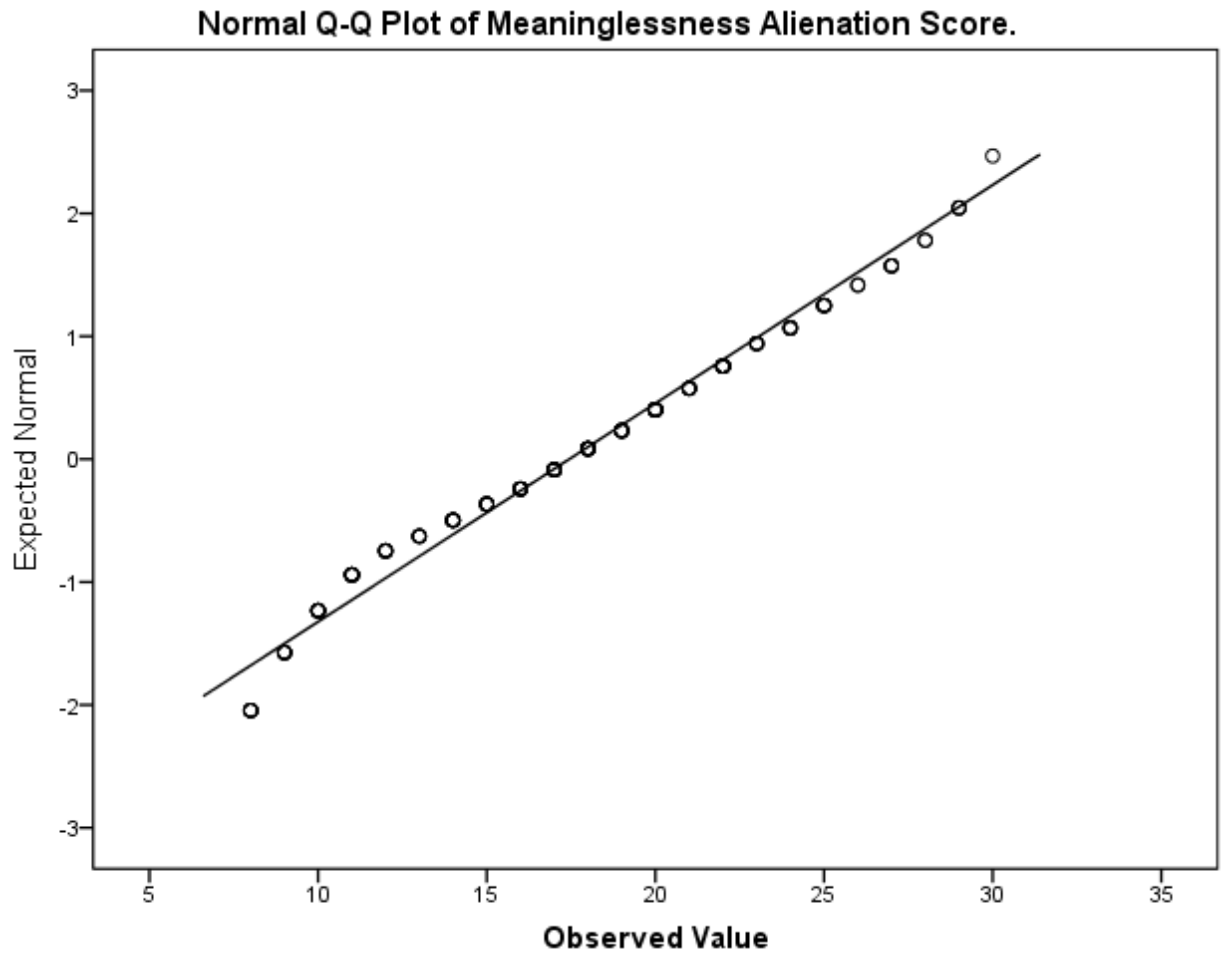
Figure 12: Meaninglessness alienation score expected normal probability plot.
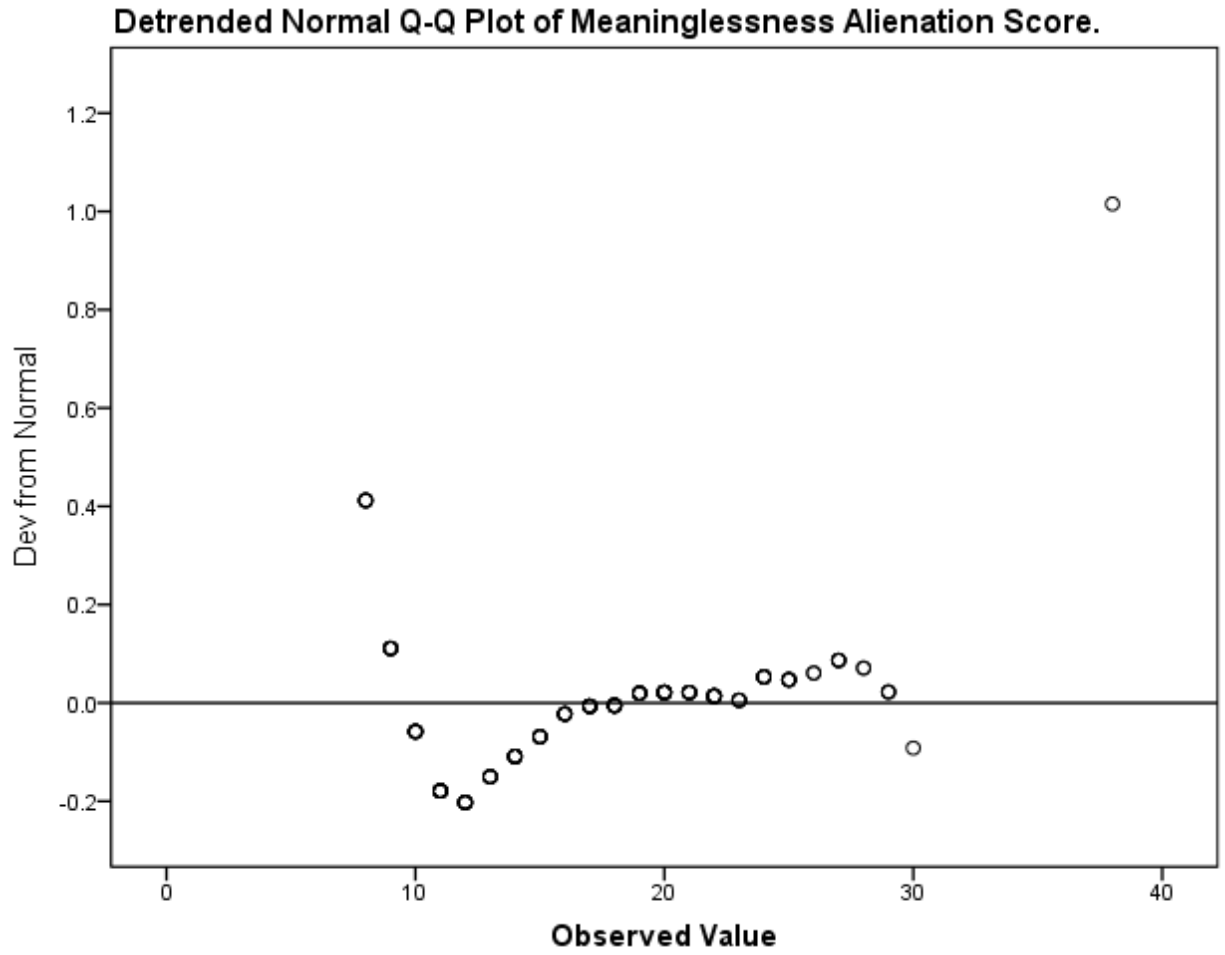
Figure 13: Meaninglessness alienation score detrended expected normal probability plot.
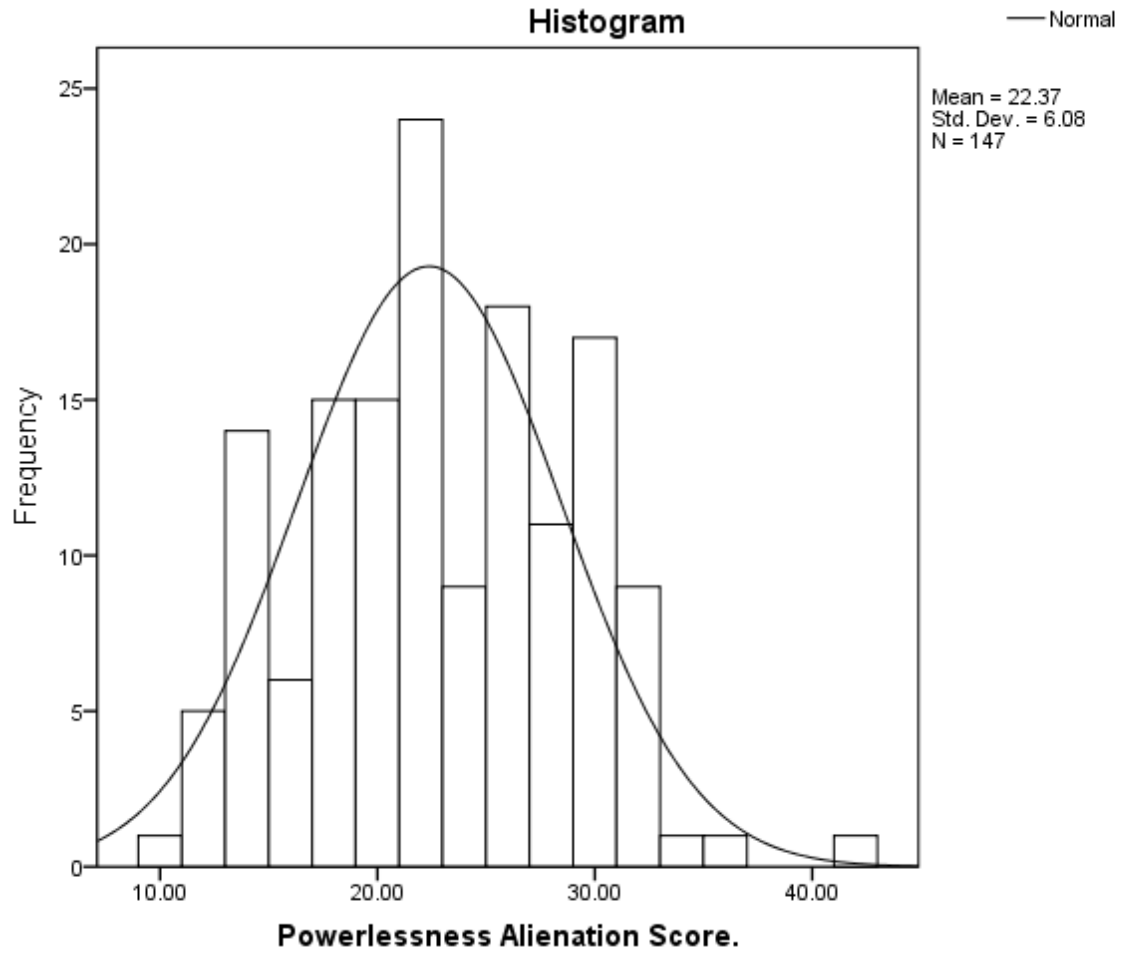
Figure 14: Powerlessness alienation score histogram.
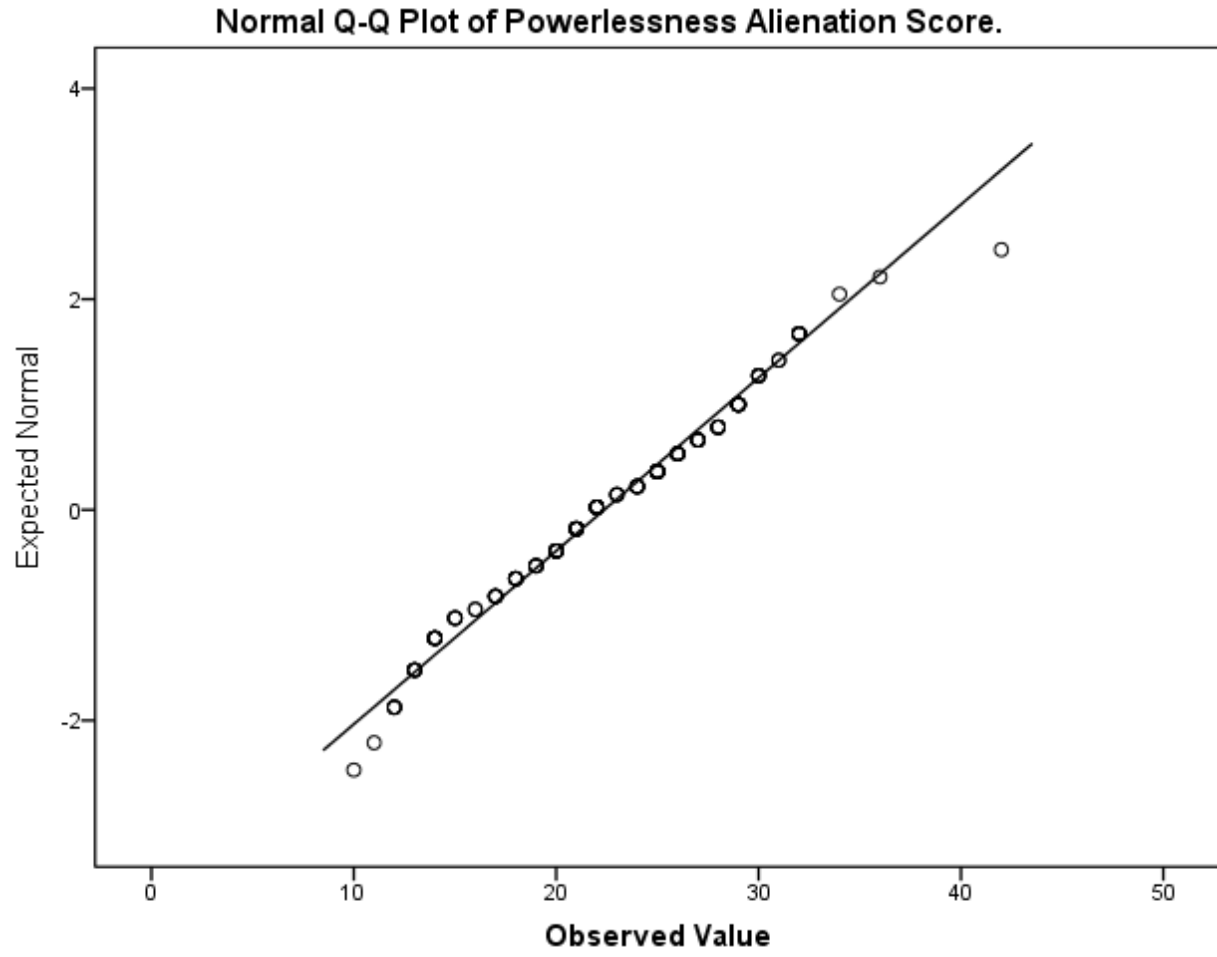
Figure 15: Powerlessness alienation score expected normal probability plot.
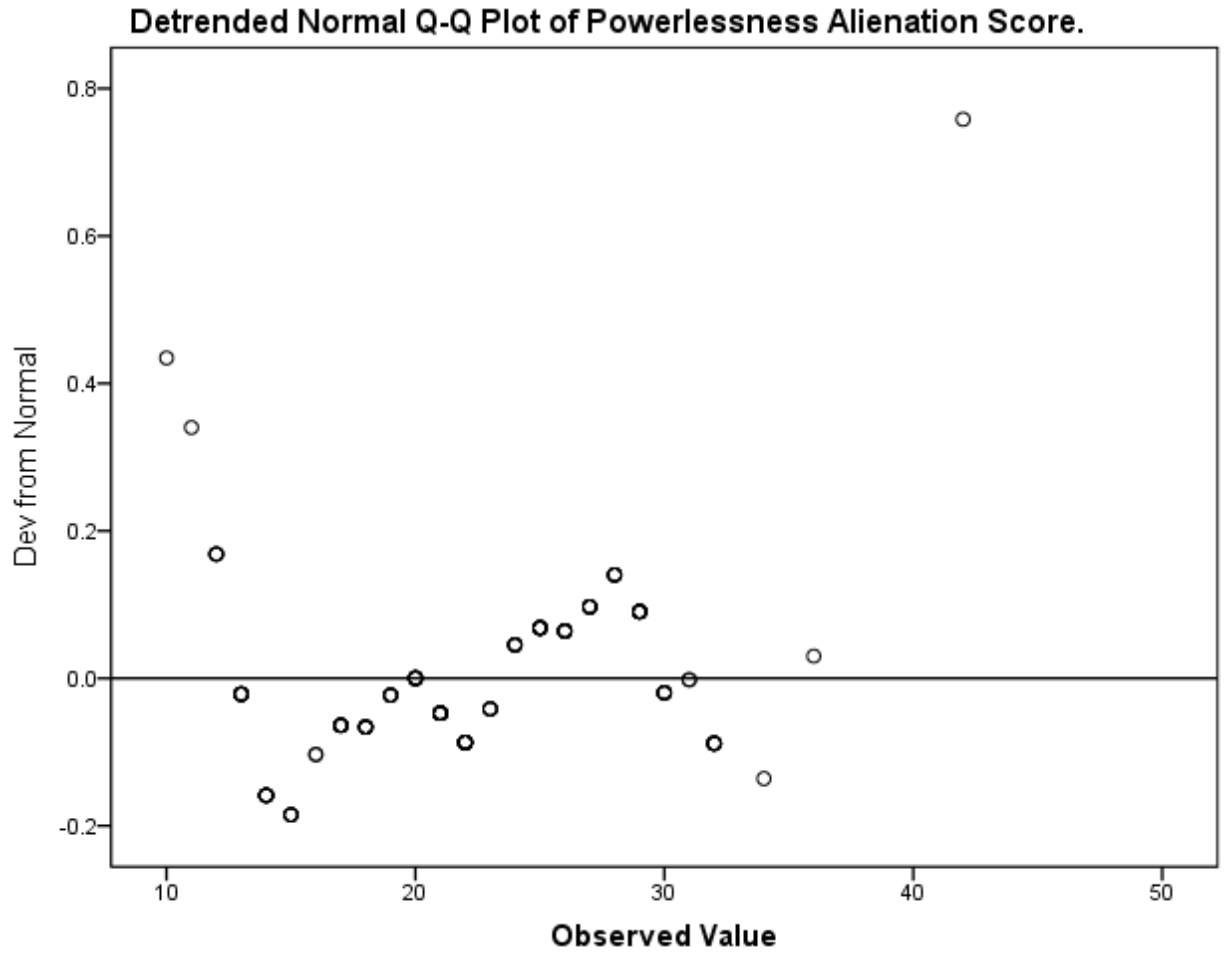
Figure 16: Powerlessness alienation score detrended expected normal probability.
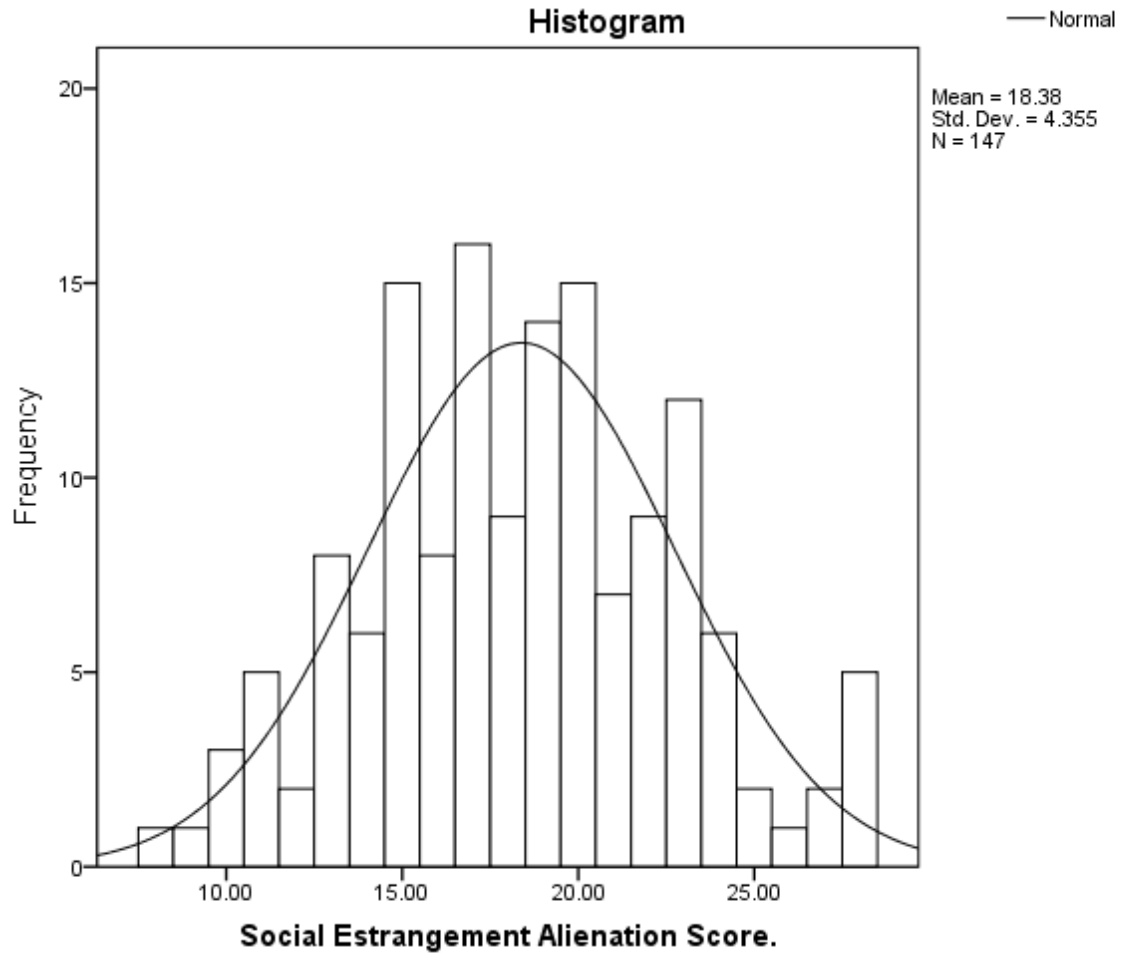
Figure 17: Social estrangement alienation score histogram.
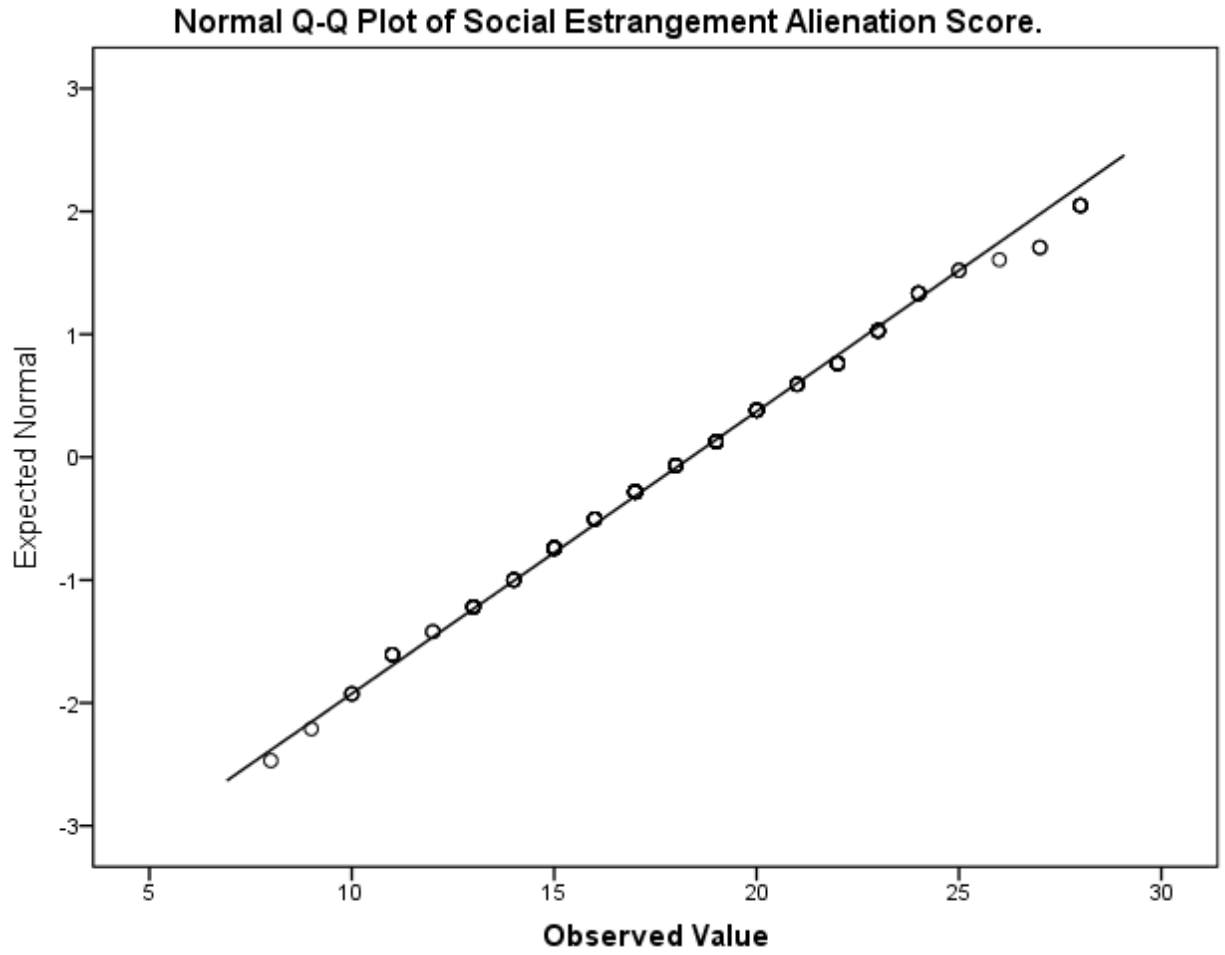
Figure 18: Social estrangement alienation score expected normal probability plot.
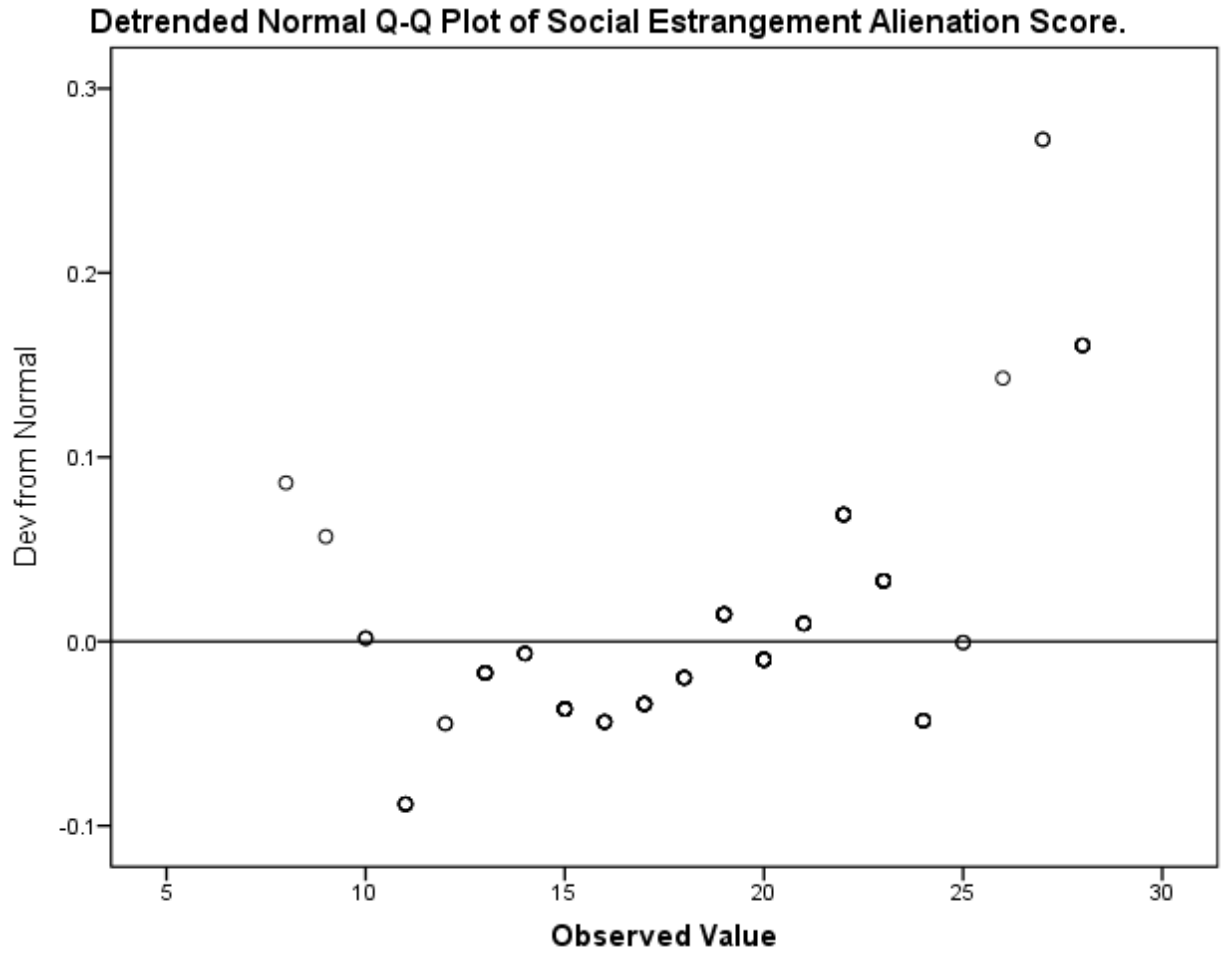
Figure 19: Social estrangement alienation score detrended expected normal probability
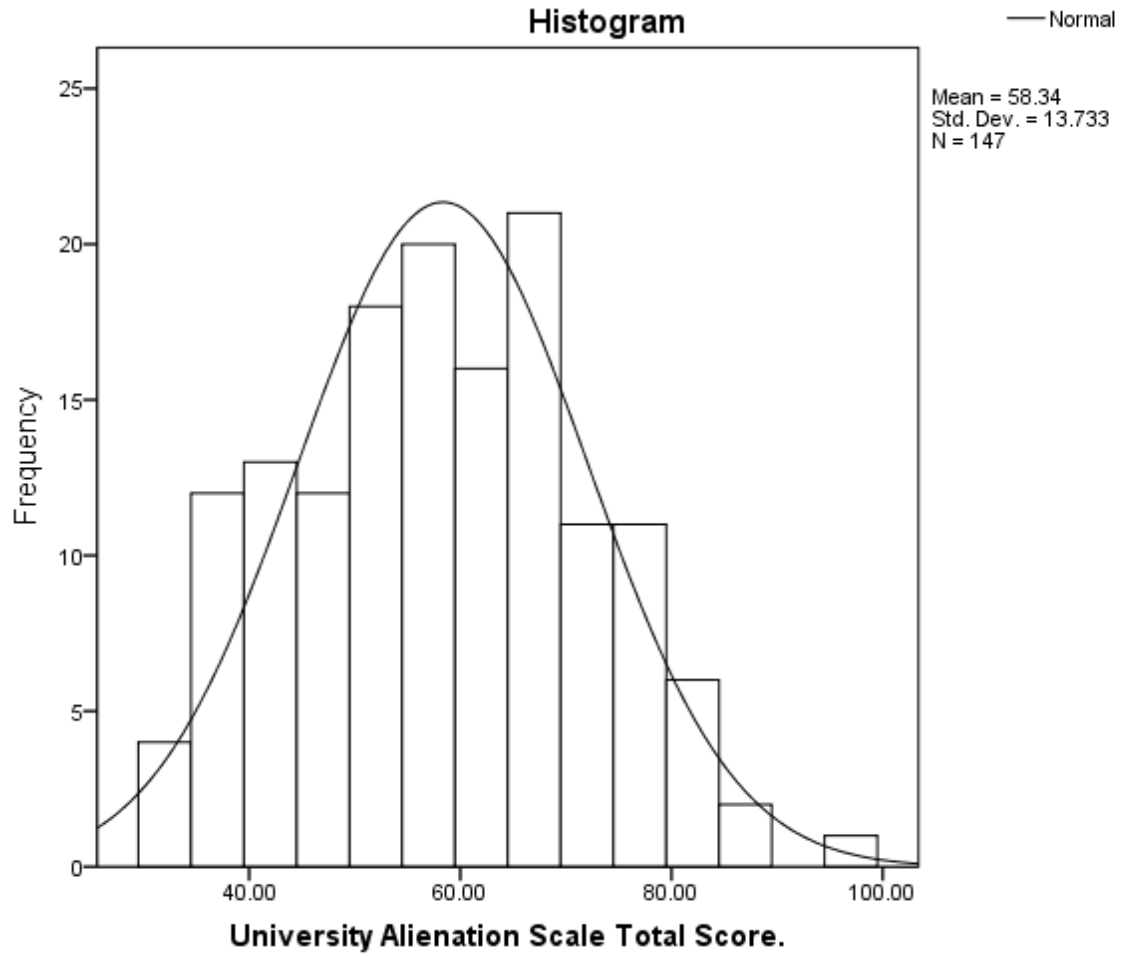
 plot.

Figure 20: University alienation scale total score histogram.
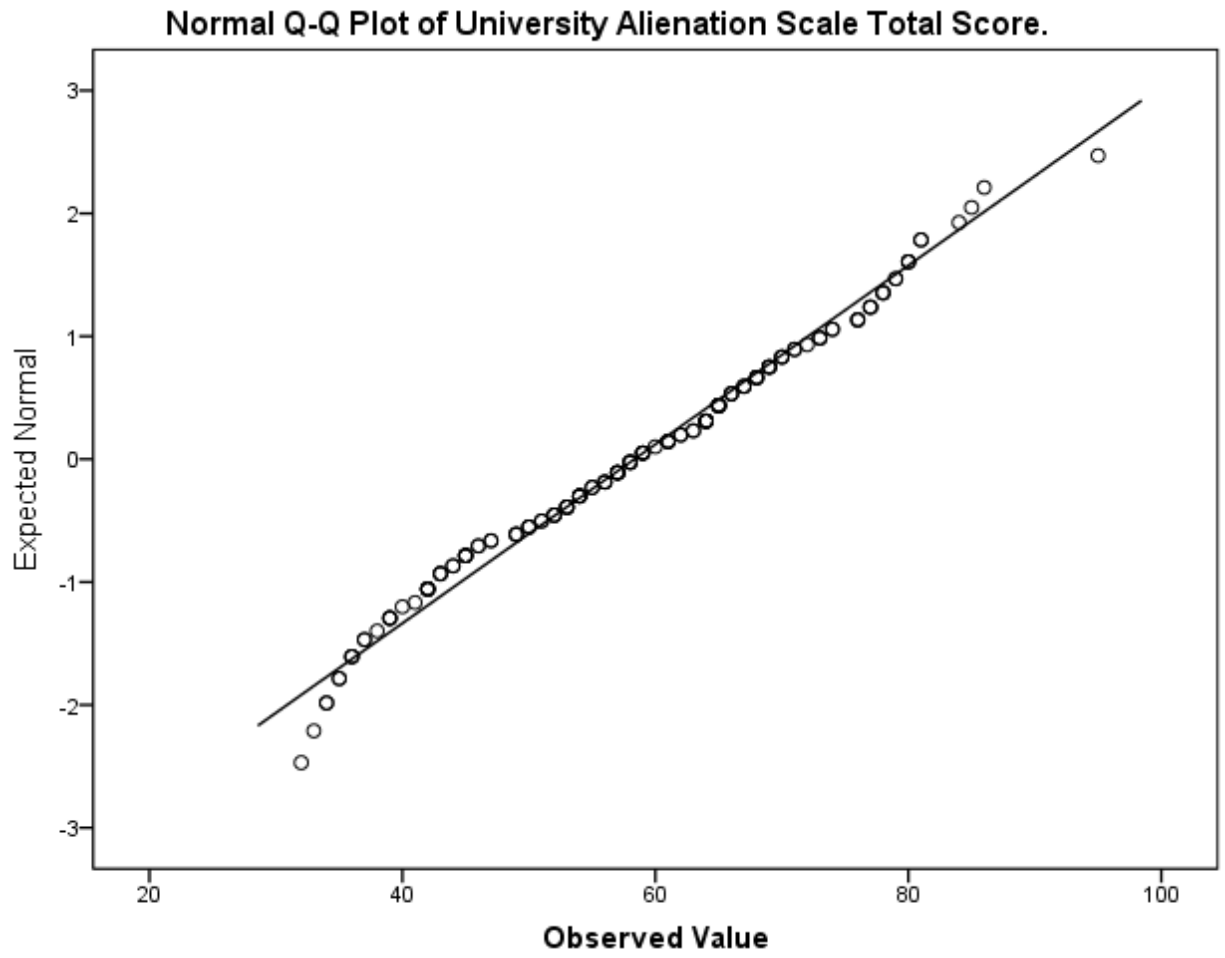
Figure 21: University alienation scale total score expected normal probability plot.
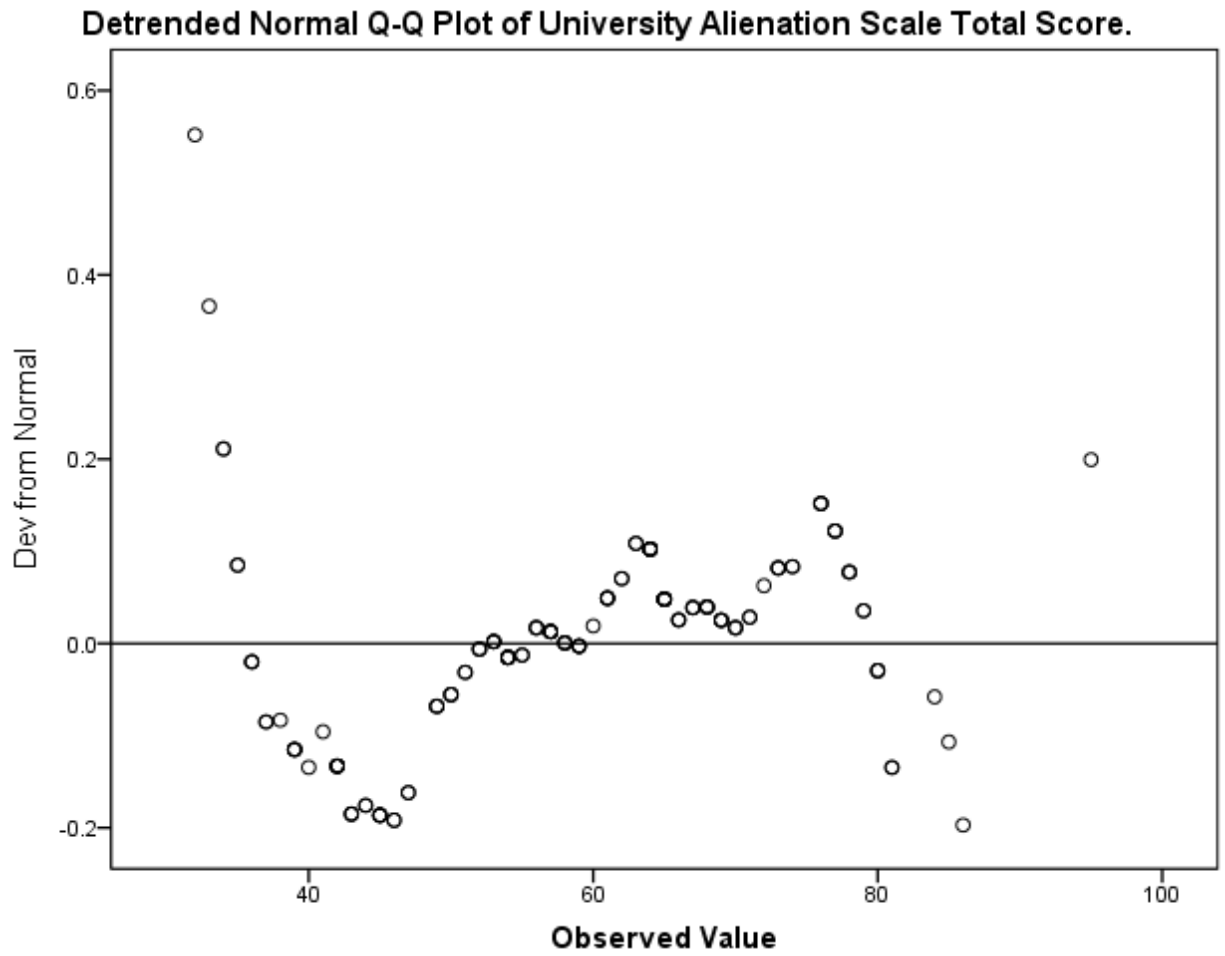
Figure 22: University alienation scale total score detrended expected normal probability

plot.

```
Meaninglessness Alienation Score. Stem-and-Leaf Plot

 Frequency      Stem &  Leaf

      .00          0 .
    11.00          0 .  88888999999
    19.00          1 .  0000000001111111111
    11.00          1 .  22222233333
    14.00          1 .  44444444555555
    18.00          1 .  666666667777777777
    17.00          1 .  88888888889999999
    18.00          2 .  000000000000111111
    15.00          2 .  222222222223333
    11.00          2 .  44444555555
     6.00          2 .  667777
     5.00          2 .  88999
     1.00          3 .  0
     1.00 Extremes     (>=38)

 Stem width:      10.00
 Each leaf:        1 case(s)
```

Figure 23: Meaninglessness alienation score stem-and-leaf plot.
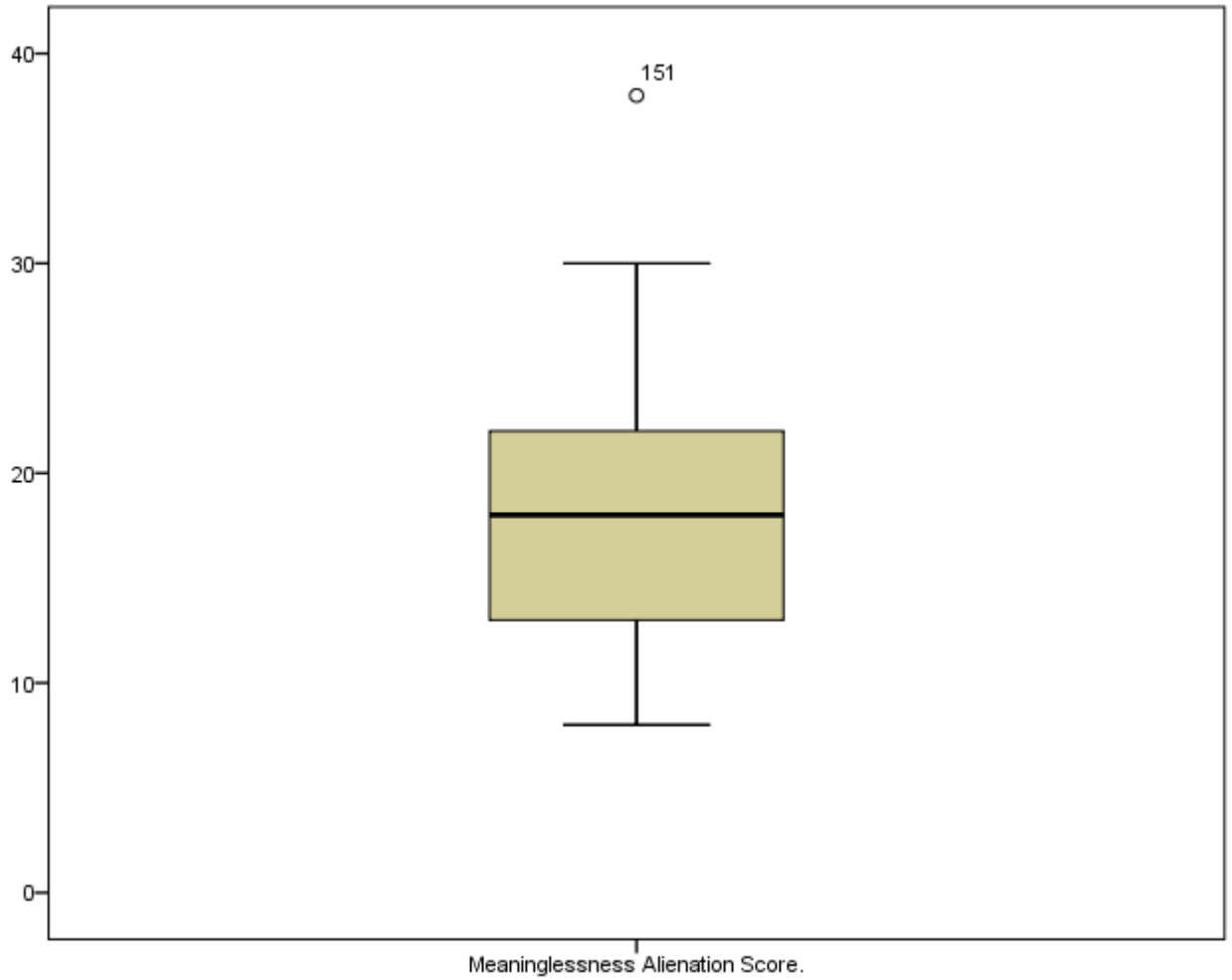
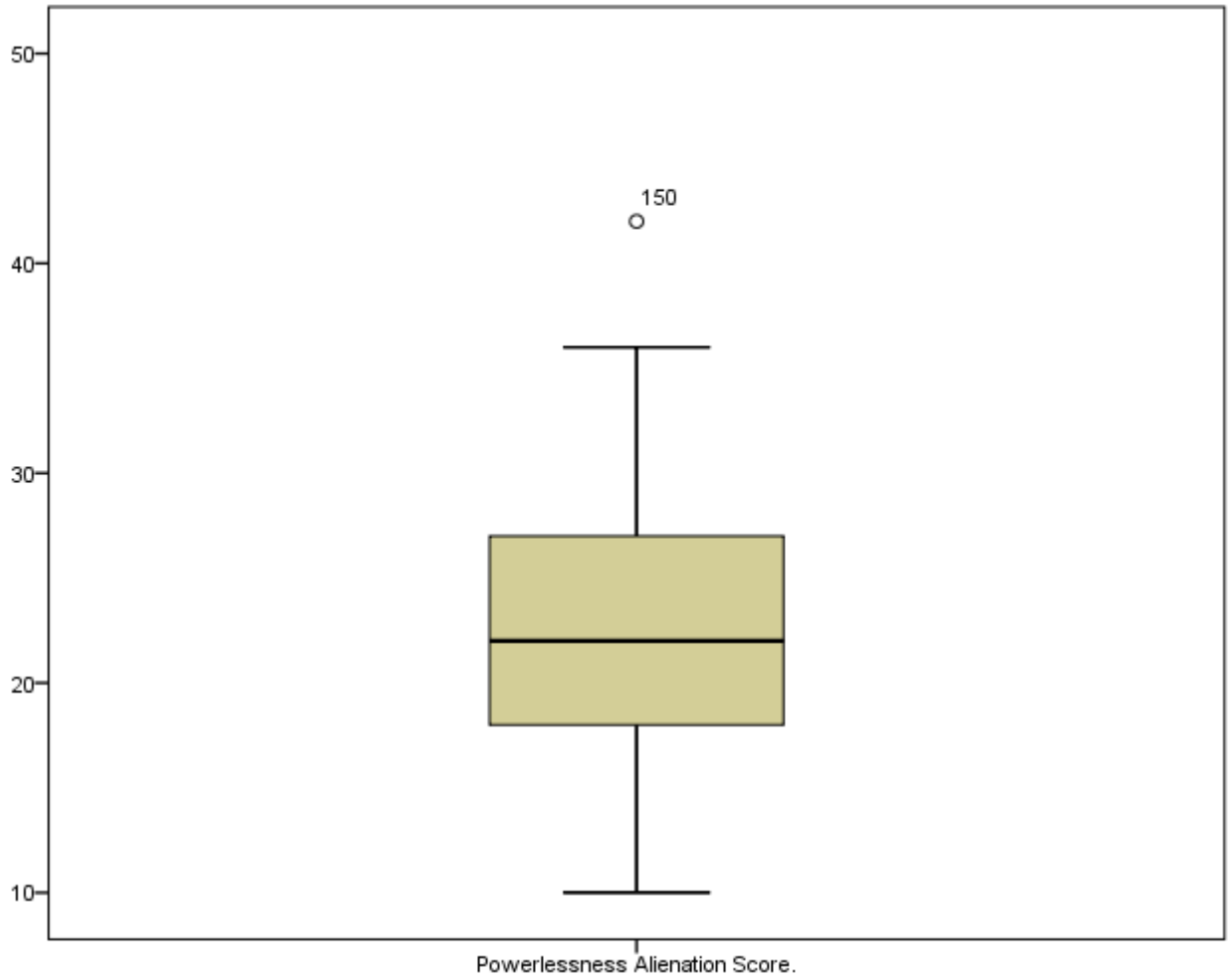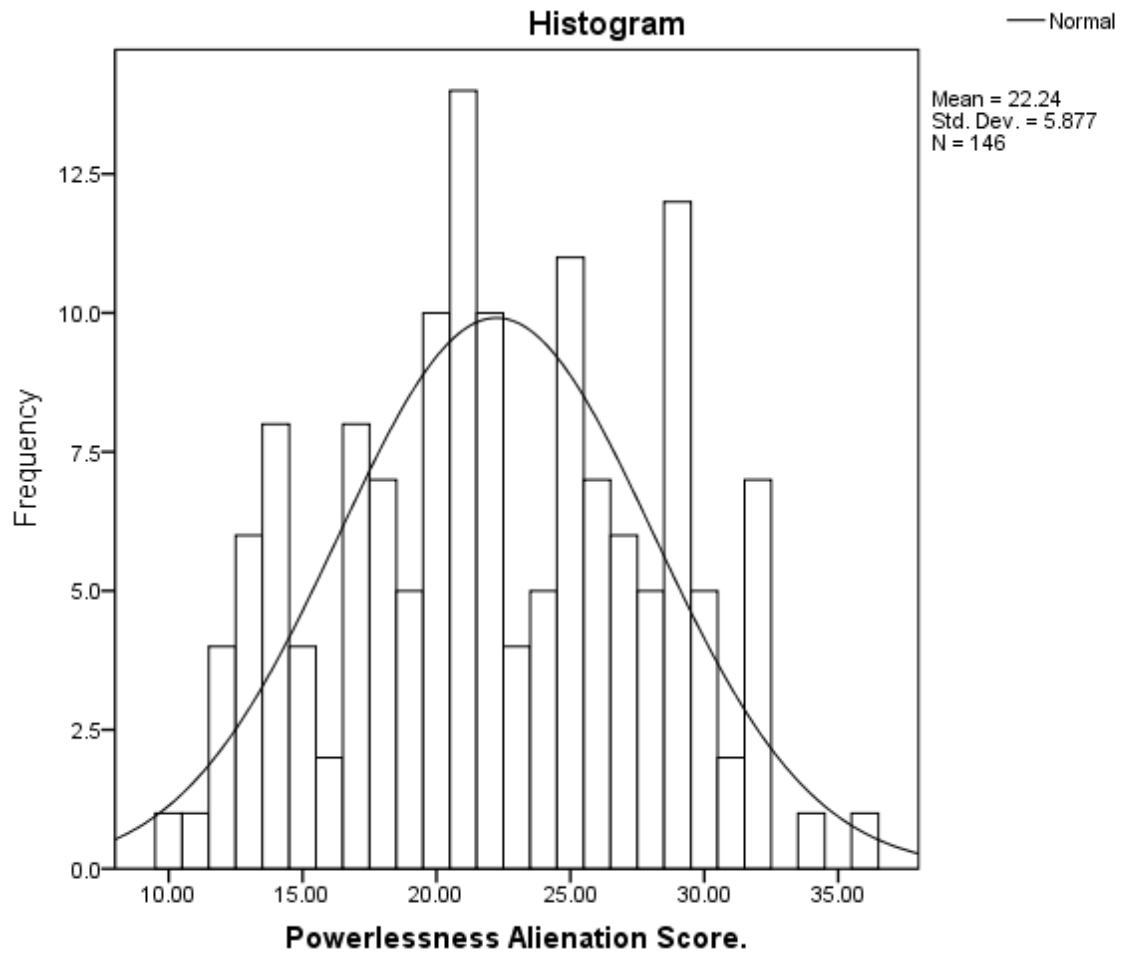Figure 24: Meaninglessness alienation score box plot.

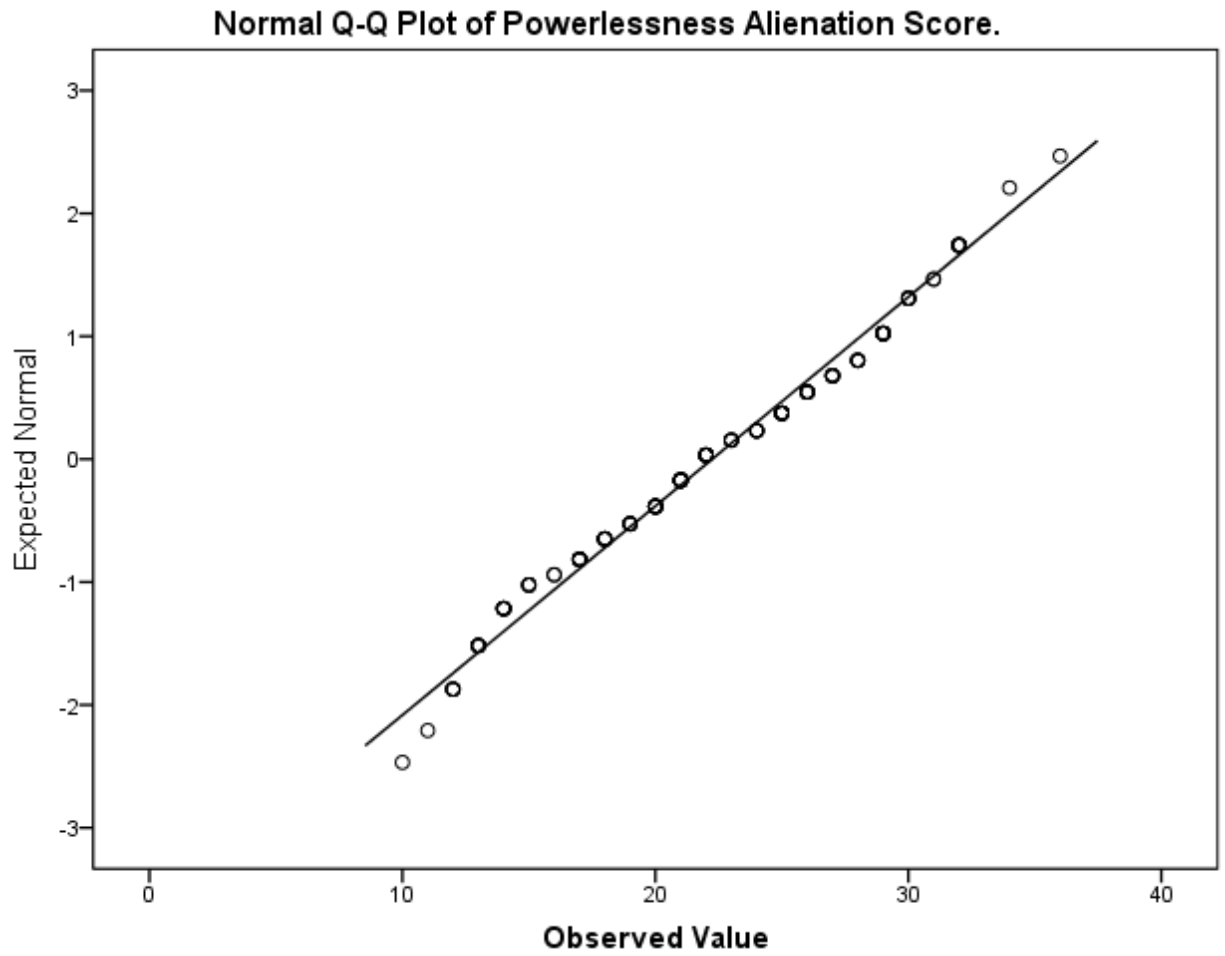Figure 25: Meaninglessness alienation score histogram with the outlier removed.

Figure 26: Meaninglessness alienation score expected normal probability plot with the
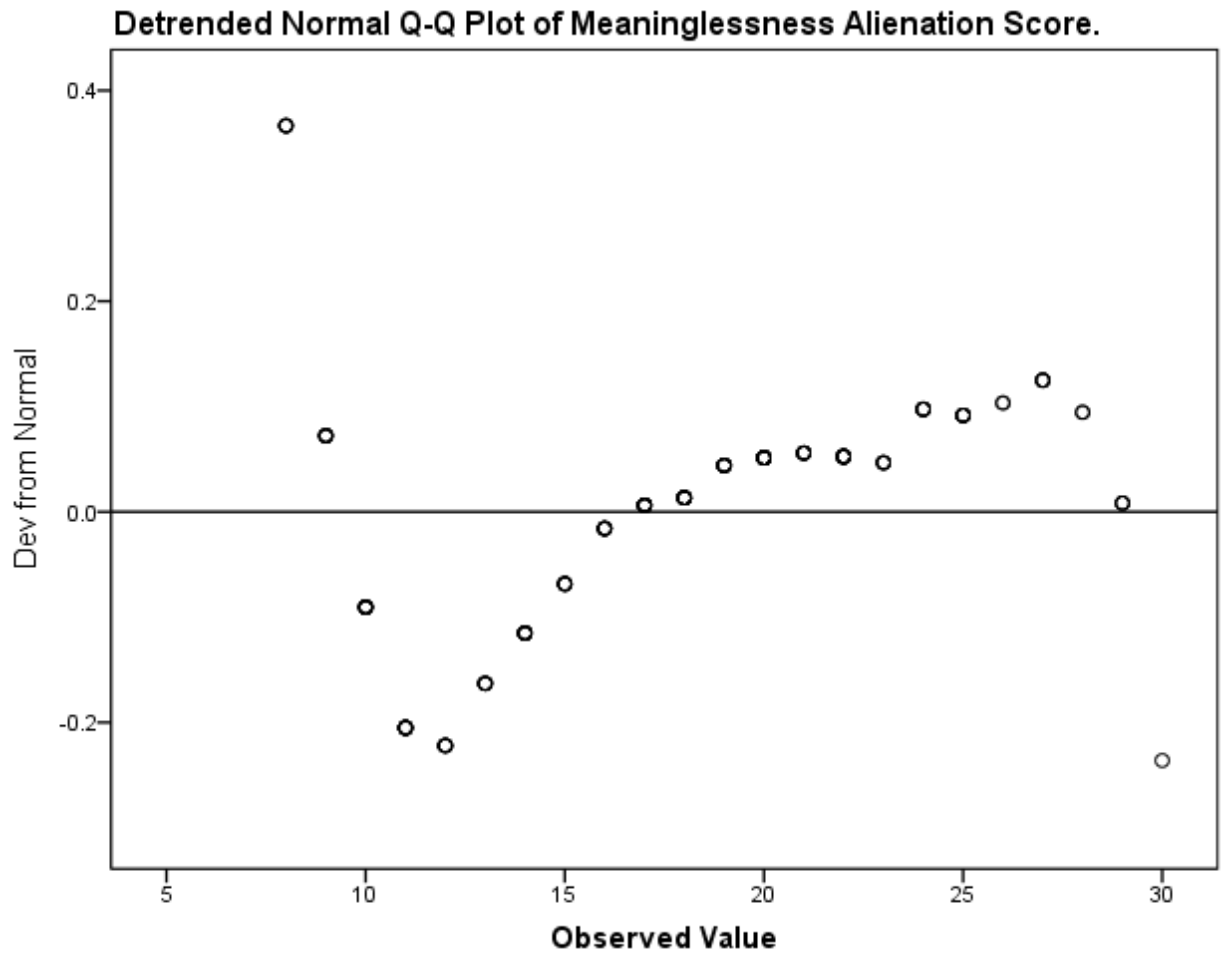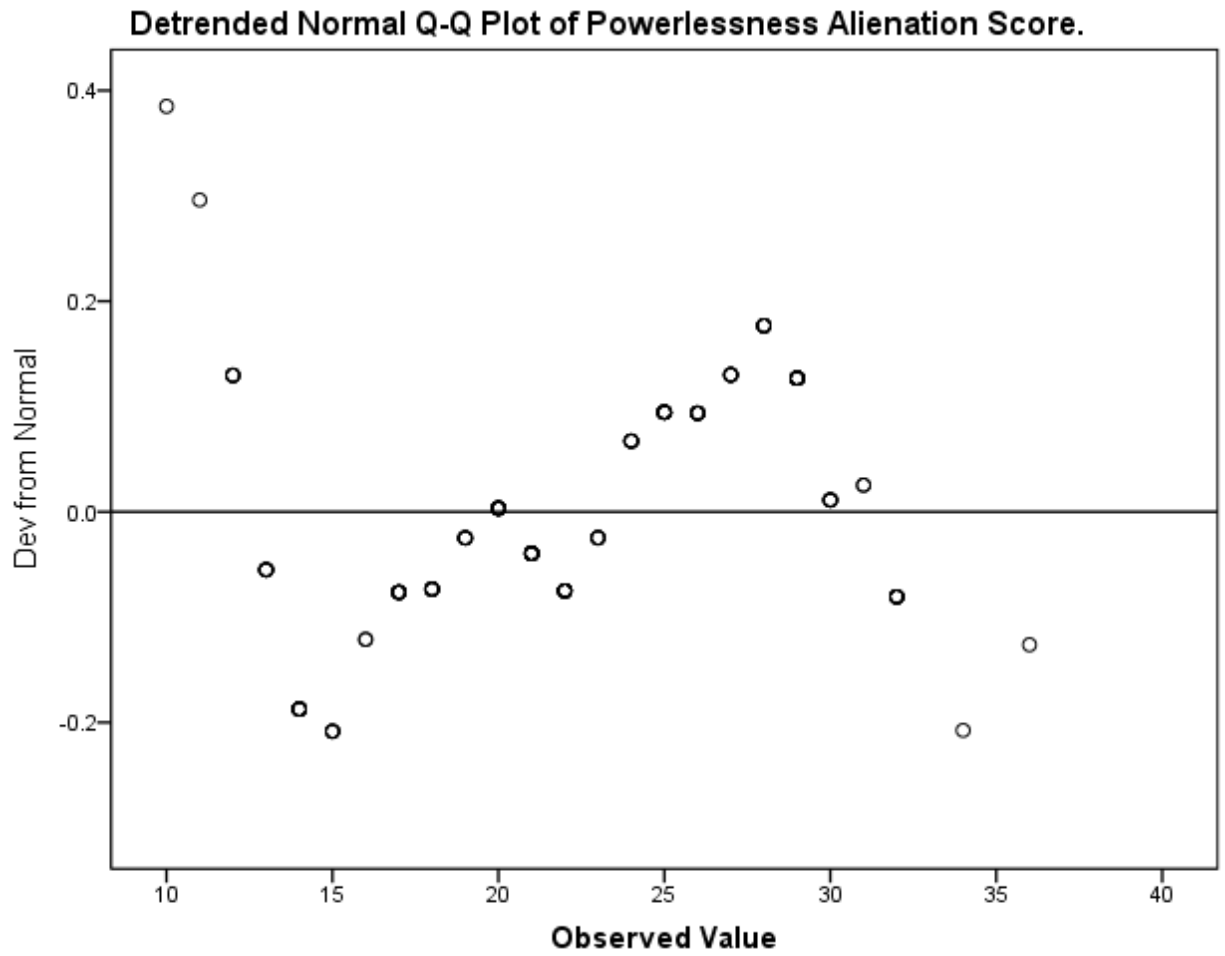
outlier removed.

Figure 27: Meaninglessness alienation score detrended expected normal probability plot

with the outlier removed.

```
Meaninglessness Alienation Score. Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

      .00        0 .
    11.00        0 .  88888999999
    19.00        1 .  0000000001111111111
    11.00        1 .  22222233333
    14.00        1 .  44444444555555
    18.00        1 .  666666667777777777
    17.00        1 .  88888888899999999
    18.00        2 .  000000000000111111
    15.00        2 .  222222222223333
    11.00        2 .  44444555555
     6.00        2 .  667777
     5.00        2 .  88999
     1.00        3 .  0

 Stem width:     10.00
 Each leaf:       1 case(s)
```

Figure 28: Meaninglessness alienation score stem and leaf plot with the outlier removed.
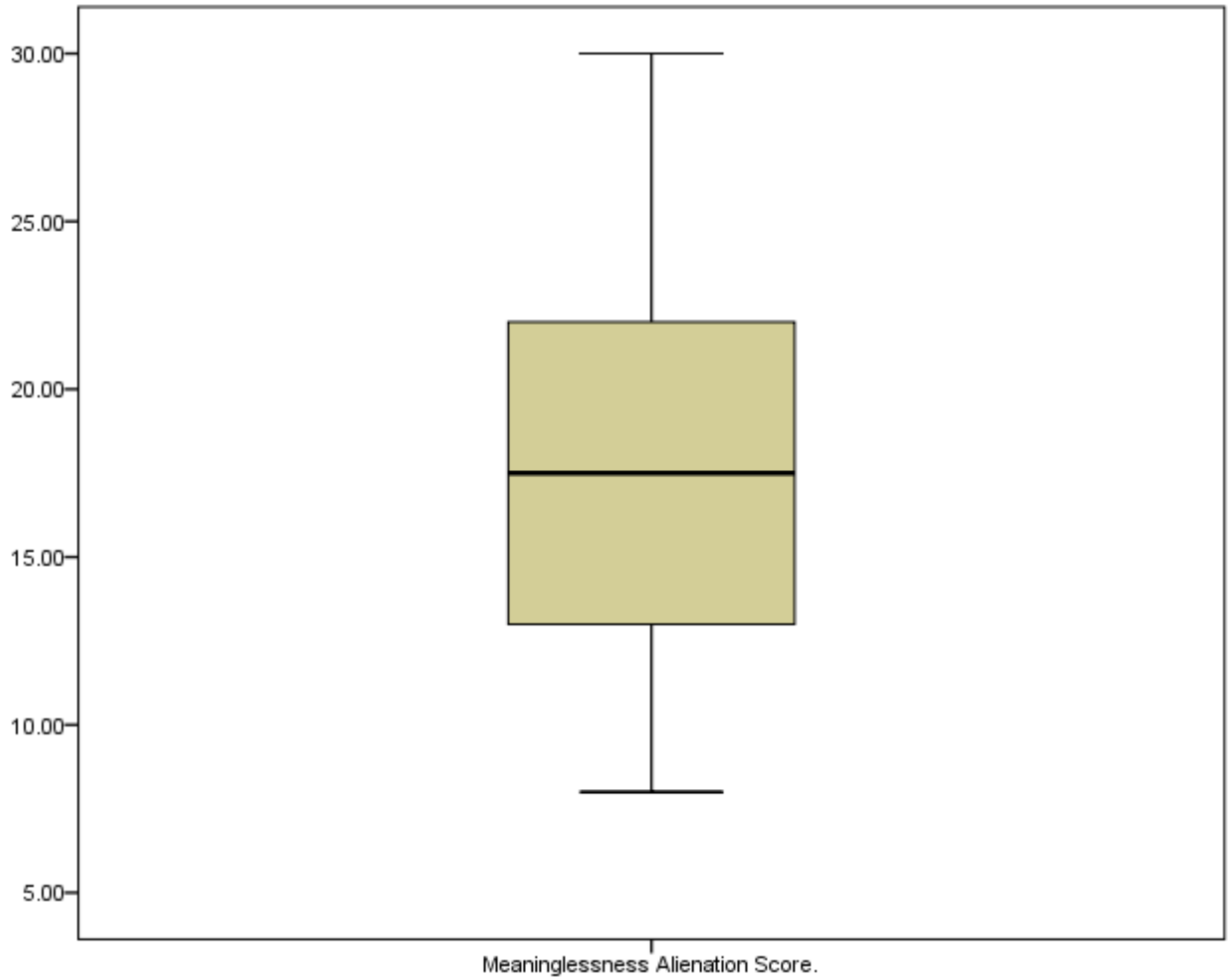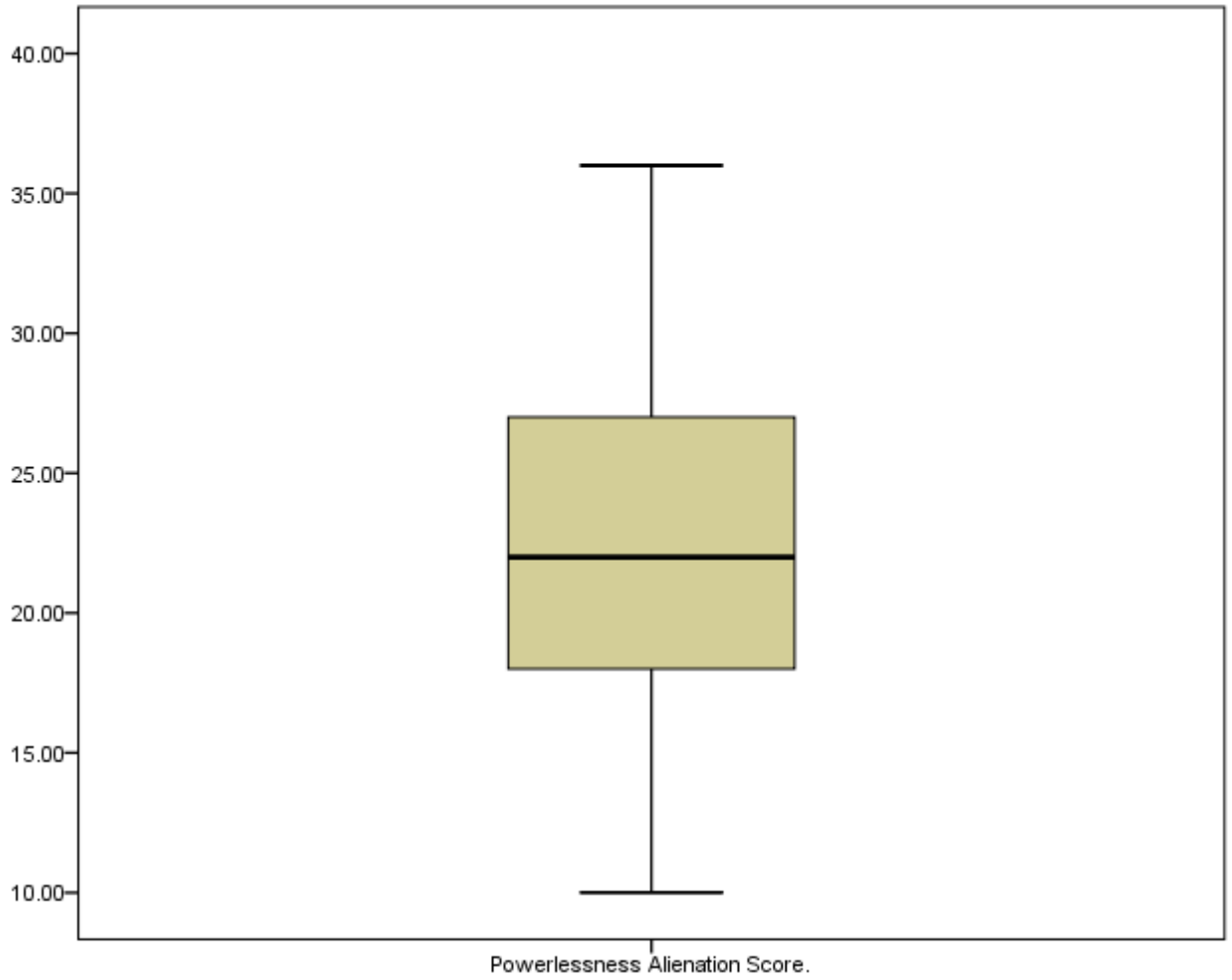
Figure 29: Meaninglessness alienation score box plot with the outlier removed.

```
Powerlessness Alienation Score. Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

     2.00         1 .  01
    10.00         1 .  2222333333
    12.00         1 .  444444445555
    10.00         1 .  6677777777
    12.00         1 .  888888899999
    24.00         2 .  000000000011111111111111
    14.00         2 .  22222222223333
    16.00         2 .  4444455555555555
    13.00         2 .  6666666777777
    17.00         2 .  88888999999999999
     7.00         3 .  0000011
     7.00         3 .  2222222
     1.00         3 .  4
     1.00         3 .  6
     1.00 Extremes    (>=42)

 Stem width:     10.00
 Each leaf:        1 case(s)
```

Figure 30: Powerlessness alienation score stem and leaf plot.

Figure 31: Powerlessness alienation score box plot.

Figure 32: Powerlessness alienation score histogram with the outlier removed.

Figure 33:   Powerlessness alienation score expected normal probability plot with the

outlier removed.

Detrended Normal Q-Q Plot of Powerlessness Alienation Score.

Figure 34: Powerlessness alienation score detrended expected normal probability plot

with the outlier removed.

```
Powerlessness Alienation Score. Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

     2.00        1 .  01
    10.00        1 .  2222333333
    12.00        1 .  444444445555
    10.00        1 .  6677777777
    12.00        1 .  888888899999
    24.00        2 .  000000000011111111111111
    14.00        2 .  22222222223333
    16.00        2 .  4444455555555555
    13.00        2 .  6666666777777
    17.00        2 .  88888999999999999
     7.00        3 .  0000011
     7.00        3 .  2222222
     1.00        3 .  4
     1.00        3 .  6

 Stem width:     10.00
 Each leaf:       1 case(s)
```

Figure 35: Powerlessness alienation score stem and leaf plot with the outlier removed.

Figure 36: Powerlessness alienation score box plot with the outlier removed.

```
Social Estrangement Alienation Score. Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

     .00        0 .
    2.00        0 .  89
    8.00        1 .  00011111
   10.00        1 .  2233333333
   21.00        1 .  444444555555555555555
   24.00        1 .  666666667777777777777777
   23.00        1 .  88888888899999999999999
   22.00        2 .  0000000000000001111111
   21.00        2 .  222222222333333333333
    8.00        2 .  44444455
    3.00        2 .  677
    5.00        2 .  88888

 Stem width:    10.00
 Each leaf:      1 case(s)
```

Figure 37: Social estrangement alienation score stem and leaf plot.
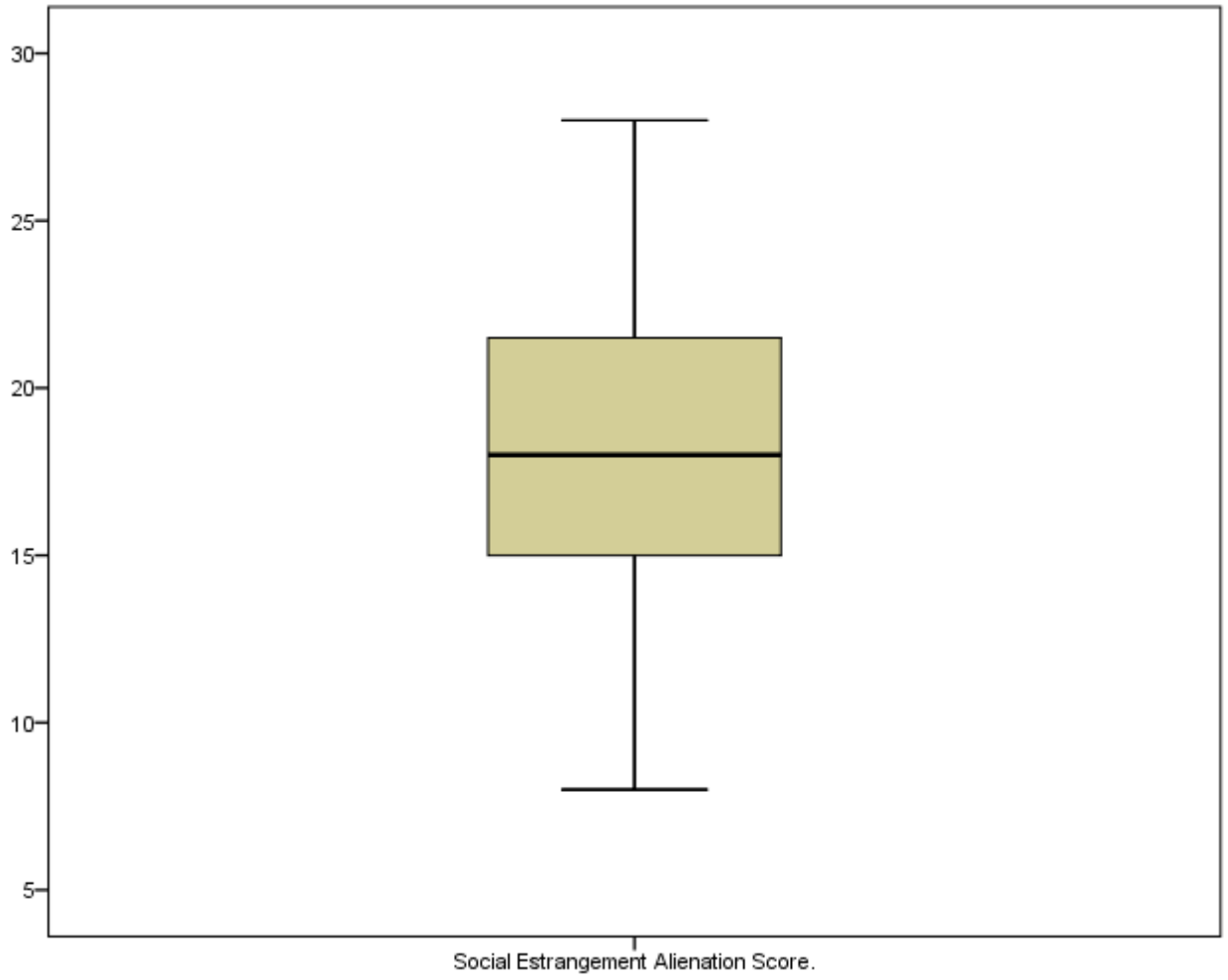
Figure 38: Social estrangement alienation score box plot.

```
University Alienation Scale Total Score. Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

     4.00        3 .  2344
    12.00        3 .  556667789999
    13.00        4 .  0122222233344
    12.00        4 .  555556677999
    18.00        5 .  000112223333444444
    20.00        5 .  55666777777888899999
    16.00        6 .  0111122334444444
    21.00        6 .  555555566677788889999
    11.00        7 .  00011233344
    11.00        7 .  66677788899
     6.00        8 .  000114
     2.00        8 .  56
      .00        9 .
     1.00        9 .  5

 Stem width:     10.00
 Each leaf:       1 case(s)
```

Figure 39: University alienation scale total score stem and leaf plot.
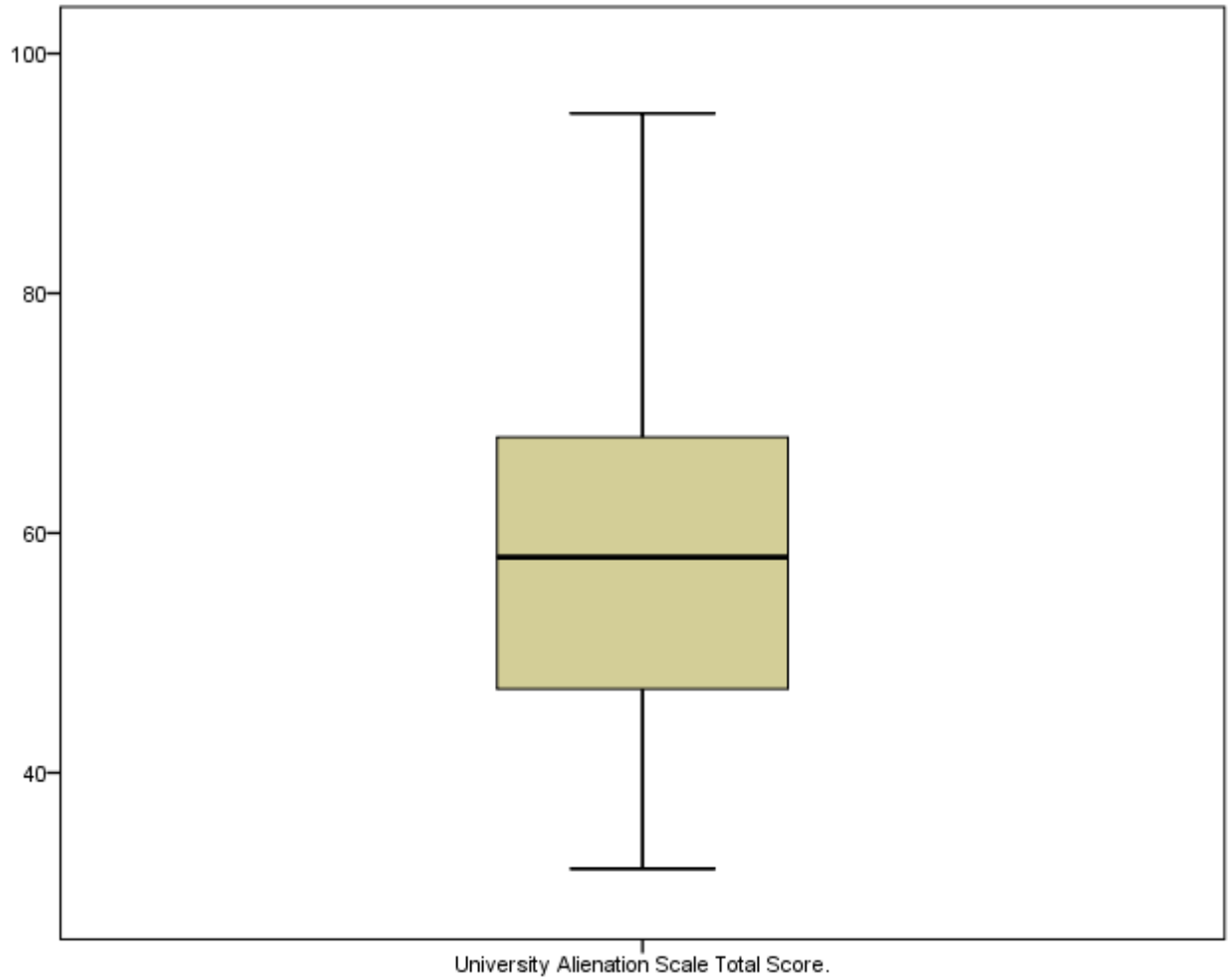
Figure 40: University alienation scale total score box plot.
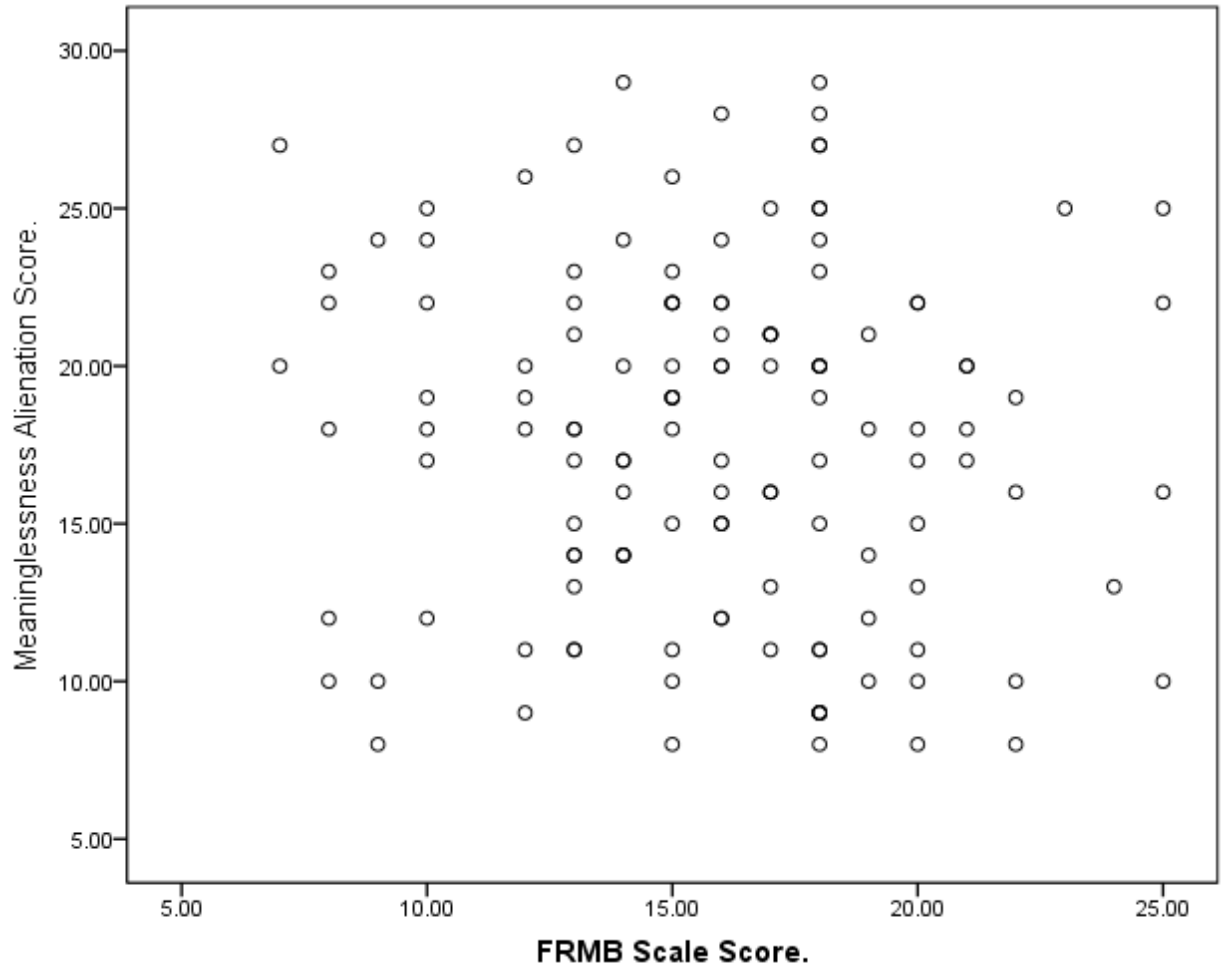
Figure 41: Scatterplot of FRMB score and meaninglessness alienation score.
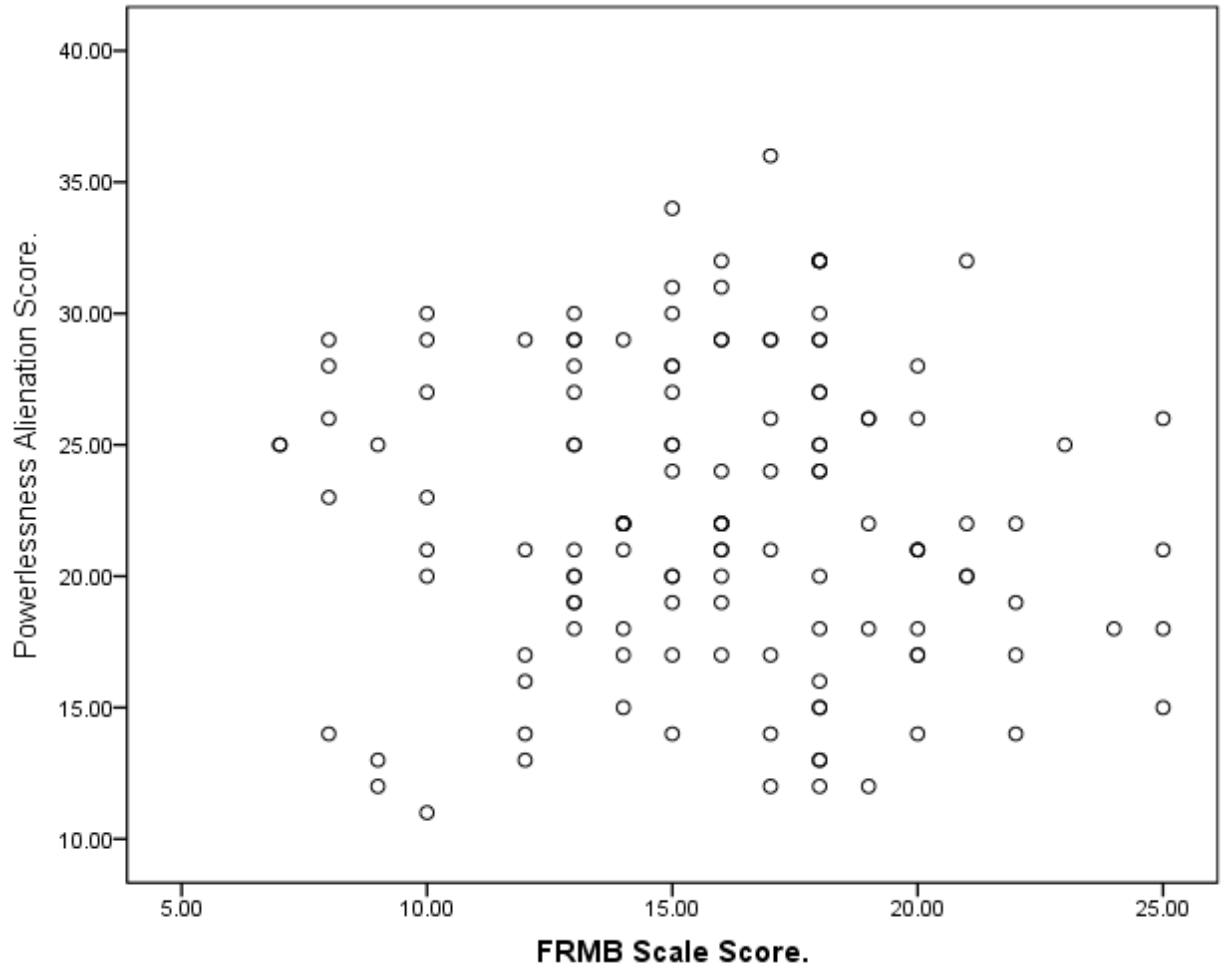
Figure 42: Scatterplot of FRMB score and powerlessness alienation score.
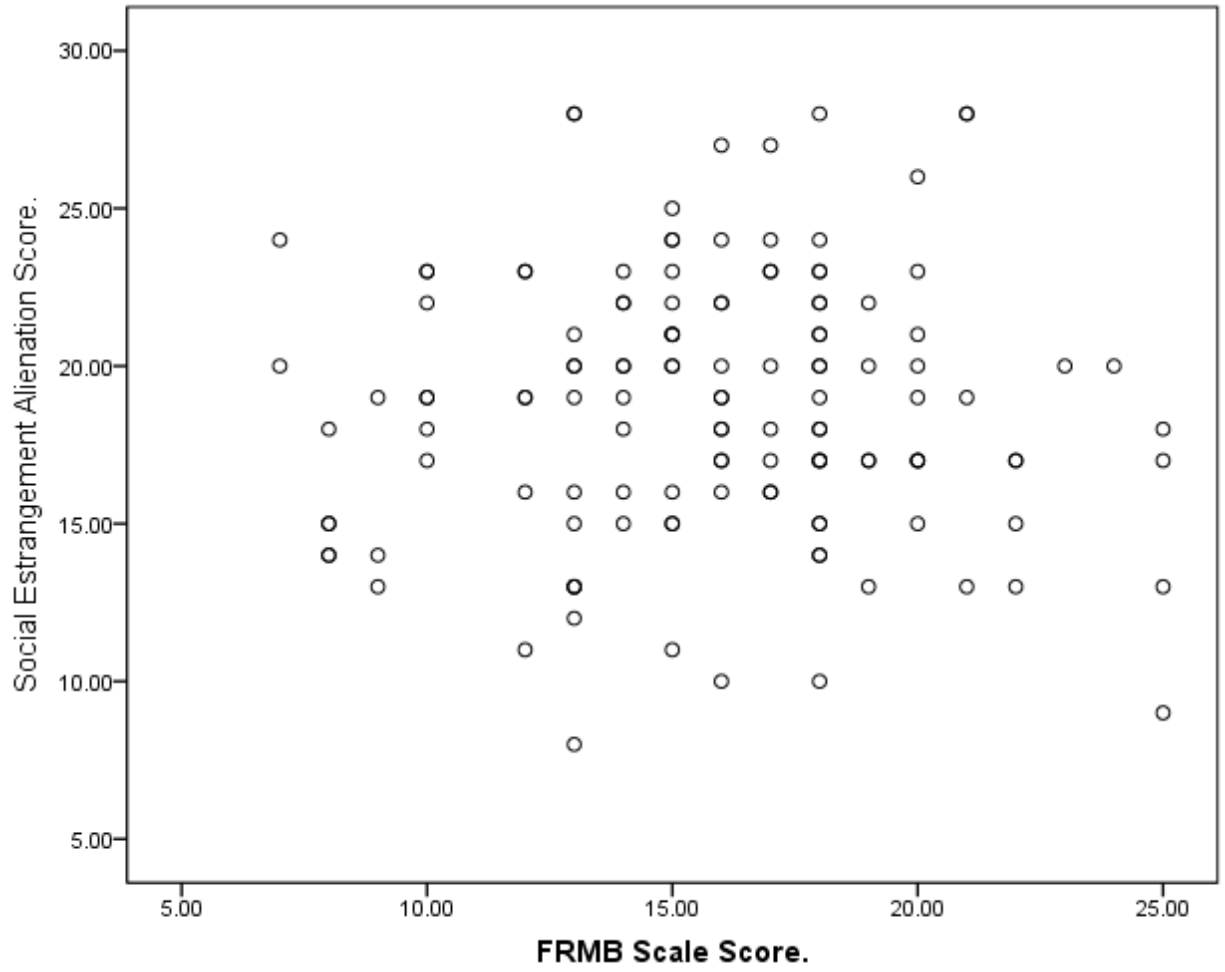
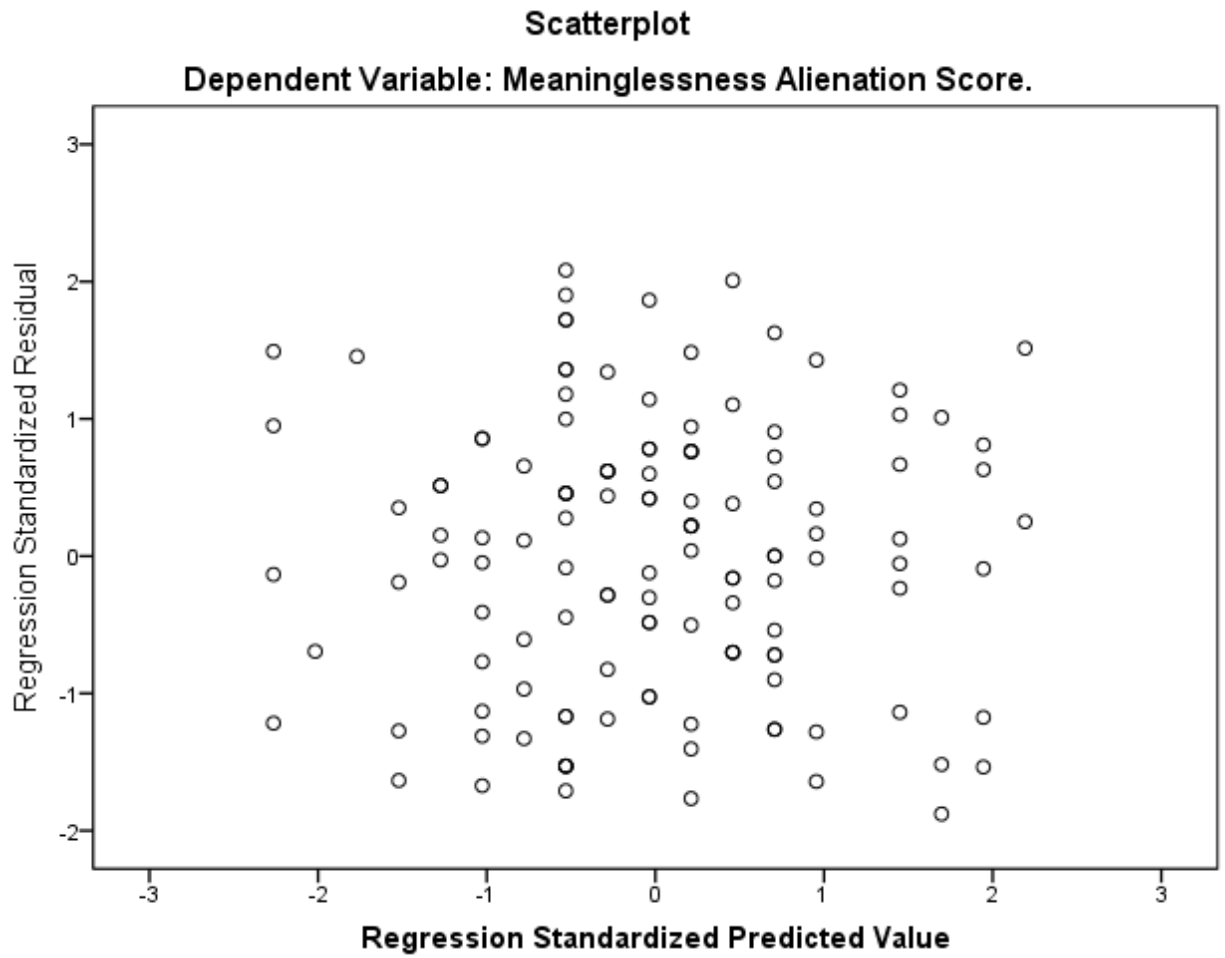Figure 43: Scatterplot of FRMB score and social estrangement alienation score.

Figure 44: Scatterplot of regressions standardized residuals and predicted values for

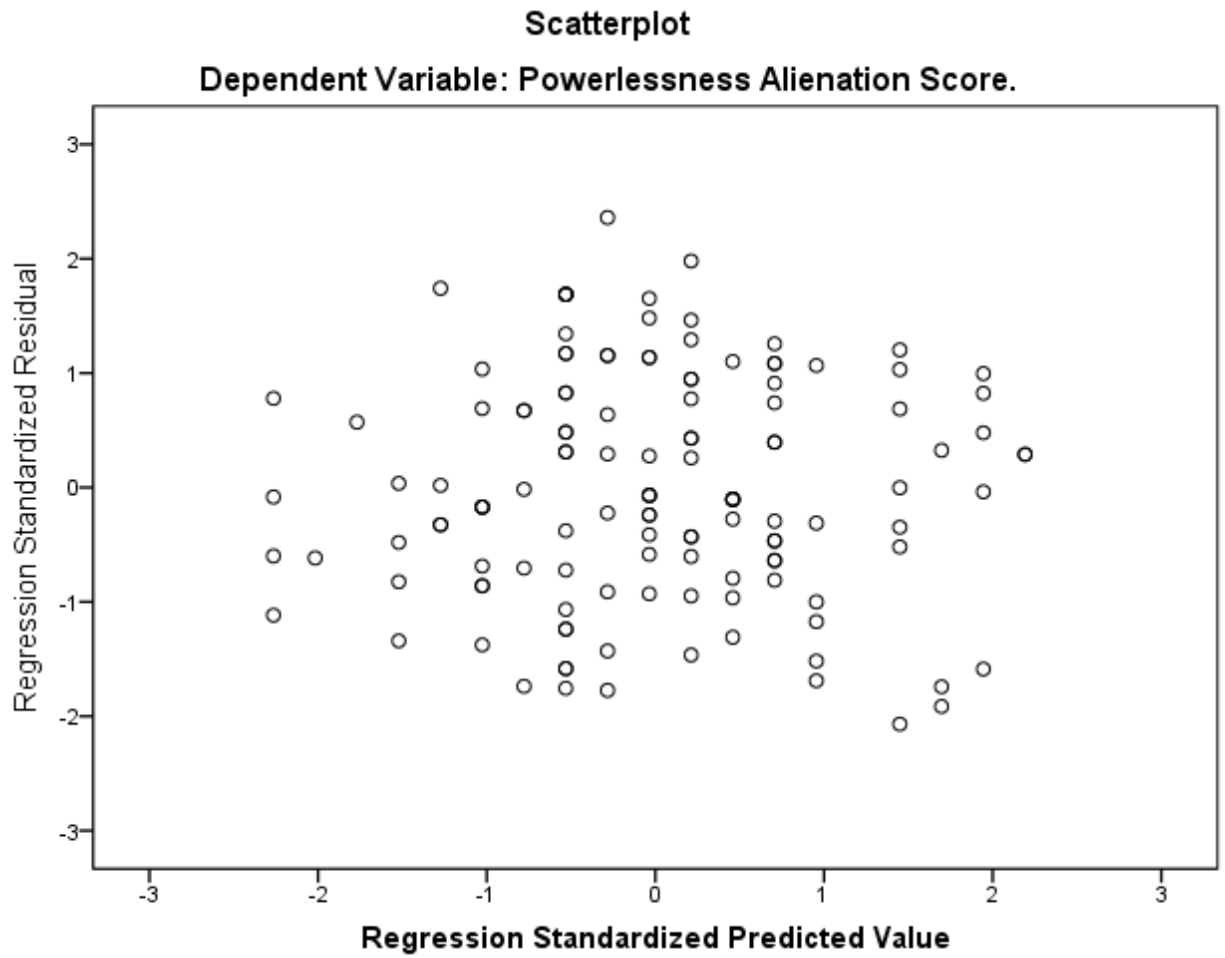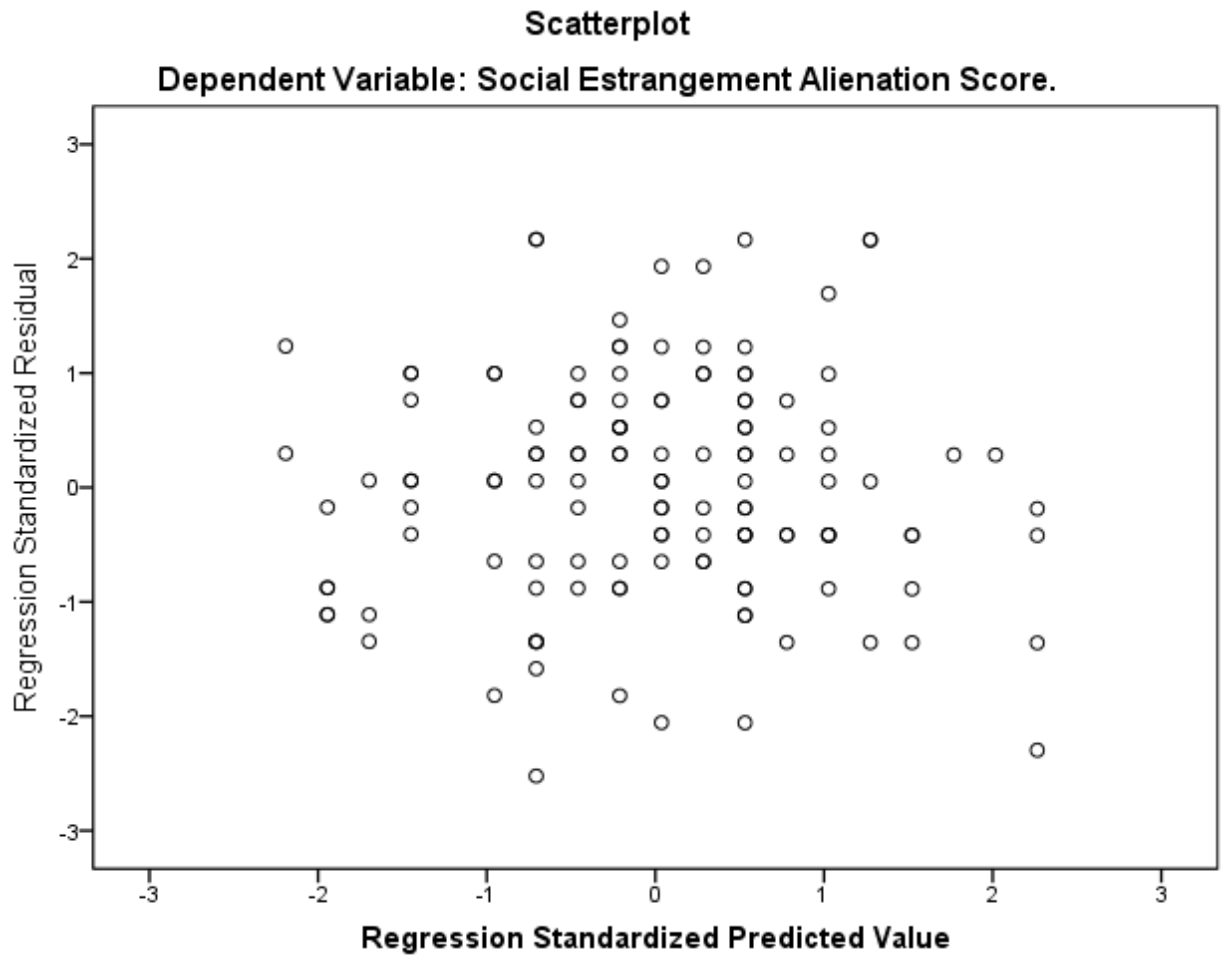meaninglessness alienation scores

Figure 45:   Scatterplot of regressions standardized residuals and predicted values for

powerlessness alienation scores.

Figure 46: Scatterplot of regressions standardized residuals and predicted values for

social estrangement alienation scores.

APPENDIX C. PARTICIPANT CONSENT FORM

The Relationship between Facebook Use and Alienation
Survey Consent Form

We invite you to participate in this research study (IRB#786927) involving a survey of Facebook use and your feelings of alienation. If you agree to participate you will be asked questions about the ways you interact with others on Facebook. In addition, you will be asked about your feelings of alienation. It can take 30 minutes to complete the questionnaire.

If you wish to participate in this study conducted by Dr. Jacqueline Lewis and Oleksandr Komarenko, doctoral student at Minnesota State University, Mankato, it is necessary that you read and complete this consent form, and the attached demographic sheet. Thank you for your cooperation in this project.

This research project is being directed by Dr. Jacqueline Lewis. You can contact Dr. Lewis at 507-389-2324 or Jacqueline.Lewis@mnsu.edu for a copy of your consent form or about any concerns you have about this project. You also may contact the Minnesota State University, Mankato Institutional Review Board Administrator, Dr. Barry Ries, at 389-2321 or barry.ries@mnsu.edu with any questions about research with human participants at Minnesota State University, Mankato.

Participation in this study is strictly voluntary and you have the right to stop at any time. Your participation (or lack of it) will in no way hinder your grade in this course, affect your relationship with Minnesota State University, Mankato, or otherwise reflect on you in any way. While there are no direct benefits to you as a result of participation in this research, the primary benefit of this study is for educators to determine the role of Facebook in students' feeling of alienation.

None of your answers will be released and no names will be recorded other than on this form, which will be kept separate from your survey responses. The data will be kept in a locked filing cabinet in the Principal Investigator's office for three years, after which it will be destroyed. Project personnel agree to maintain strict confidentiality about characteristics and other information of any person participating in this research project so as not to conflict with State and Federal laws and regulations. The risks of participating in this study are about the same as are encountered in daily life.

If you are at least 18 years old and agree to participate in this research, please sign below, and return the signed copy in one of the self-addressed envelope and your survey in the other. Please keep the other copy for your records.

Your Name (printed) _____

Your Signature _____ Date _____

MSU IRBNet ID# 786927

Date of MSU IRB approval: 02/03/2016

APPENDIX D. INSTRUMENT: DEMOGRAPHIC INFORMATION SHEET

Demographic Information:

1. Gender: ___Female ___Male ___Other

2. Age: ___

3. Ethnicity: ___African American ___Asian ___Caucasian ___Latina/o

   Other: _____

4. Year in school: ___Freshman ___Sophomore ___Junior ___Senior

General Information about Your Use of Online Social Networking Sites:

5. Do you use Facebook? ___ Yes ___ No

   (If you answered "No," please skip Sections III and IV, and proceed to Section V)

6. In addition to Facebook, please write any other online social networking sites you use

   regularly:

   _____

7. Do you use Facebook more than other online social networking sites? ___ Yes ___ No

8. If Facebook is not your "primary" online social network site, please write the name of the

   online social networking site you use the most: _____

9. About how many total Facebook friends do you have at MSU or elsewhere? _____

10. Approximately how many of your TOTAL Facebook friends do you consider actual

    friends? _____

    Please indicate the extent to which you agree with each of the following statements.

	Strongly disagree	Some-what agree	Neither agree nor disagree	Some-what agree	Strongly agree
11. Most of my friends with whom I regularly interact on Facebook are MSU students.	1	2	3	4	5

UNIVERSITY ALIENATION SCALE

Please indicate the extent to which you agree with each of the following statements by circling the appropriate number.

	Strongly disagree	Some-what disagree	Neither agree nor disagree	Some-what agree	Strongly agree
1. The size and complexity of this university make it very difficult for a student to know where to turn.	1	2	3	4	5
2. It is only wishful thinking to believe that one can really influence what happens at this is university.	1	2	3	4	5
3. Classes at this university are so regimented that there is little room for the personal needs and interests of the student.	1	2	3	4	5
4. The faculty has too much control over the lives of students at this university.	1	2	3	4	5
5. The bureaucracy of this university has me confused and bewildered.	1	2	3	4	5
6. I feel that I am an integral part of this university community.	1	2	3	4	5
7. Things have become so complicated at this university that I really don't understand just what is going on	1	2	3	4	5
8. I seldom feel "lost" or "alone" at this university.	1	2	3	4	5
9. Students are just so many cogs in the machinery of this university	1	2	3	4	5
10. I don't have as many friends as I would like at this university.	1	2	3	4	5

	Strongly disagree	Some-what disagree	Neither agree nor disagree	Some-what agree	Strongly agree
11. Most of the time I feel that I have an effective voice in the decisions regarding my destiny at this university.	1	2	3	4	5
12. Life at this university is so chaotic that the student really doesn't know where to turn.	1	2	3	4	5
13. Many students at this university are lonely and unrelated to their fellow human beings.	1	2	3	4	5
14. More and more, I feel helpless in the face of what's happening at this university today.	1	2	3	4	5
15. There are forces affecting me at this university that are so complex and confusing that I find it difficult to effectively make decisions.	1	2	3	4	5
16. I can't seem to make much sense out of my university experience.	1	2	3	4	5
17. My experience at this university has been devoid of any meaningful relationships.	1	2	3	4	5
18. The administration has too much control over my life at this university.	1	2	3	4	5
19. This university is run by a few people in power and there is not much the student can do about it.	1	2	3	4	5
20. The student has little chance of protecting his personal interests when they conflict with those of this university.	1	2	3	4	5

	Strongly disagree	Some-what disagree	Neither agree nor disagree	Some-what agree	Strongly agree
21. In spite of the fast pace of this university, it is easy to make many close friends that you can really count on.	1	2	3	4	5
22. My life is so confusing at this university that I hardly know what to expect from day-to-day.	1	2	3	4	5
23. In this fast-changing university, with so much conflicting information available, it is difficult to think clearly about many issues.	1	2	3	4	5
24. This university is just too big and impersonal to provide for the individual student.	1	2	3	4	5

APPENDIX F. INSTRUMENT:

FACEBOOK RELATIONSHIP MAINTENANCE BEHAVIORS SCALE

Please indicate the extent to which you agree with each of the following statements.

	Strongly disagree	Some-what disagree	Neither agree nor disagree	Some-what agree	Strongly agree
1. When I see a friend or acquaintance sharing good news on Facebook, I try to respond.	1	2	3	4	5
2. When I see a friend or acquaintance sharing bad news on Facebook, I try to respond.	1	2	3	4	5
3. When I see someone asking for advice on Facebook, I try to respond.	1	2	3	4	5
4. When a Facebook friend has a birthday, I try to post something on their wall.	1	2	3	4	5
5. When I see someone asking a question on Facebook that I know the answer to, I try to respond.	1	2	3	4	5

APPENDIX G. PERMISSION TO USE:

UNIVERSITY ALIENATION SCALE

Burbach, Harold J. (hb3c) hb3c@eser   Nov 26 (3 days ago)
to Oleksandr

HI,
Yes, you may use the UAS. Best wishes in your work.

Sincerely,
Hal

From: Oleksandr Komarenko <oleksandr.komarenko@mnsu.edu>
Date: Monday, November 21
To: "burbach@virginia.edu" <burbach@virginia.edu>
Subject: Permission request to use the University Alienation Scale in dissertation research

...

Dear Dr. Burbach,

My name is Oleksandr Komarenko and I am a doctoral student at Minnesota State University Mankato. I am writing to you to request permission to use the University Alienation Scale instrument in my dissertation research titled "The Relationship between College Students' Use of Facebook and their Feelings of Alienation from their Institution."
My study will explore whether any relationships exist between students' relationship maintenance behaviors on Facebook and their feelings of meaninglessness, powerlessness, and social estrangement measured by the UAS.
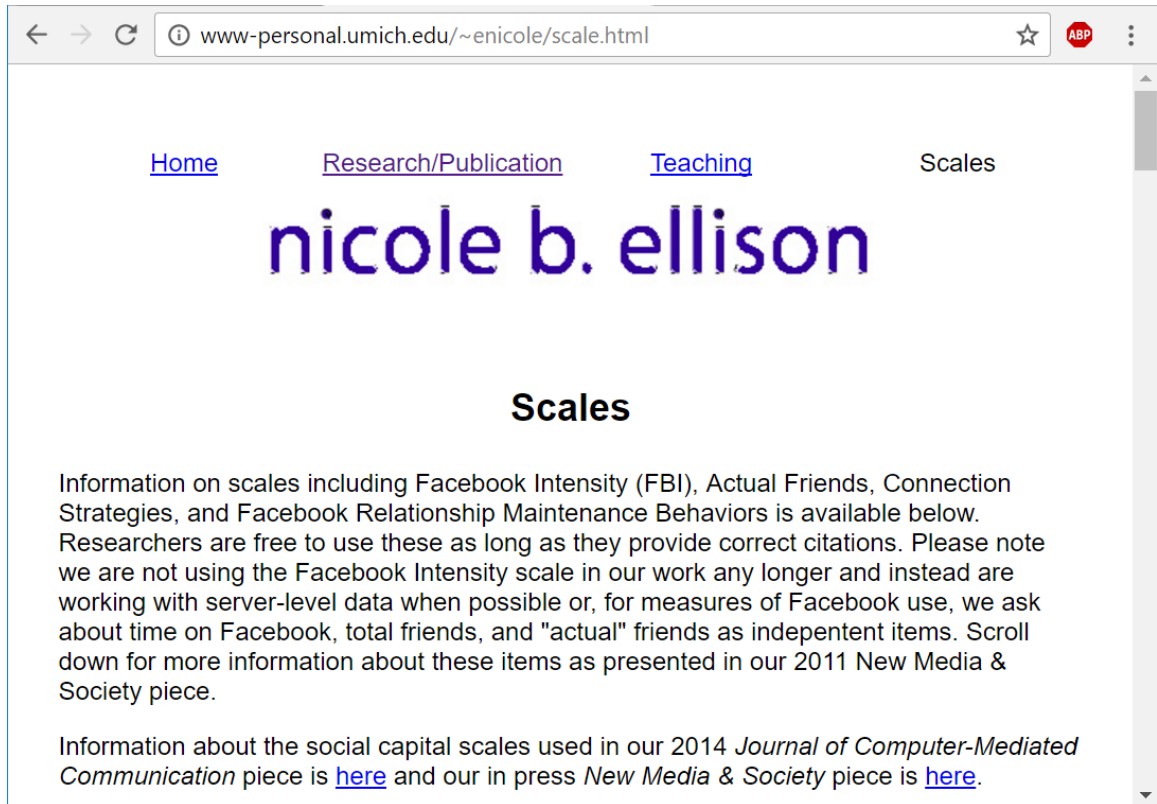
I look forward to hearing from you. Thank you in advance!

Best regards,

Oleksandr Komarenko
Doctoral student in Counselor Education and Supervision

FACEBOOK RELATIONSHIP MAINTENANCE BEHAVIORS SCALE

← → C ⓘ www-personal.umich.edu/~enicole/scale.html ☆ ⦿ᴬᴮᴾ ⋮

| Home | Research/Publication | Teaching | Scales |

nicole b. ellison

Scales

Information on scales including Facebook Intensity (FBI), Actual Friends, Connection Strategies, and Facebook Relationship Maintenance Behaviors is available below. Researchers are free to use these as long as they provide correct citations. Please note we are not using the Facebook Intensity scale in our work any longer and instead are working with server-level data when possible or, for measures of Facebook use, we ask about time on Facebook, total friends, and "actual" friends as indepentent items. Scroll down for more information about these items as presented in our 2011 New Media & Society piece.

Information about the social capital scales used in our 2014 *Journal of Computer-Mediated Communication* piece is here and our in press *New Media & Society* piece is here.