AN EXAMINATION OF SELF-DETERMINATION, STUDENT PARTICIPATION IN EXTRACURRICULAR ACTIVITIES AND PSYCHOLOGICAL WELL-BEING AMONG JUNIORS IN ONE MASSACHUSETTS (U.S.) PUBLIC HIGH SCHOOL

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Kimberly Ann Chorosiewski

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Northeastern University
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Abstract

This quantitative research project examined self-determination and student participation in extracurricular activities (ECAs) as predictors of psychological well-being. The intent of the project is to provide educators and policymakers information on the value of providing opportunities for students to participate in ECAs in support of student well-being. The sample was 149 juniors attending one suburban public high school in Massachusetts. A single confidential questionnaire comprised of four sections was employed: (a) demographic questions (age, race), (b) ECA participation questions (what activity, time devoted), (c) Self-determination Scale (SDS) (Sheldon & Deci, 1996), and (d) Ryff Scale of Psychological Well-Being (Ryff & Singer, 2006). The study utilized descriptive statistics and inferential statistics utilizing the General Linear Model (GLM) including the t-test for differences between groups, t-tests for independent samples, correlation analyses, regression analysis and Levene’s Test for Equality of Variances. Findings suggest that statistically significant relationships exist between self-determination and well-being and between self-determination, ECA participation and well-being. Findings also revealed that the relationships between ECA participation and well-being and between self-determination and ECA participation were positive but not statistically significant. The study considered level of participation in ECAs serving as a dichotomous variable for which the subgroups were participants and nonparticipants. ECAs included in the study were school-based. Two study recommendations are that researchers extend the definition of level of participation and that outcomes derived from activities outside of schools be considered and studied together to consider positive or negative outcomes including well-being.

Key words: Self-determination, well-being, extracurricular activities
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CHAPTER 1: INTRODUCTION

Overview

Student engagement and participation in extracurricular activities and sports as a key to well-being is a fertile area for research. The high school years present unique opportunities for young adults to shape their social needs through school-based experiences, which have been shown to trigger developmental turning points (Fredricks, 2012; Langenkamp, 2009, p. 245). School-based opportunities are often encountered outside of the academic classroom through structured extracurricular and athletic activities (Deci, 1980; Fredricks, 2012). These opportunities and students’ willingness to choose to engage in, and be committed to, one or more extracurricular and athletic activities (ECAs), can play a significant role in the process of defining their high school experiences and are important developmental considerations. The financial constraints initiated during the 2008-2009 economic downturn have had an impact on both the availability and quality of ECAs (Singer, 2012).

Research Problem Statement

The problem is that educators and policy makers are being forced to make choices in programming and these choices have an impact on extracurricular activities and athletics (ECAs). We do not know what the impact will be on students and student well-being. Additionally, there is limited research on goal-directed behavior, motivation, or innate psychological needs that might be met by engaging in ECAs relative to opportunities for engagement. This study extends current research on extracurricular engagement by students by recognizing: (a) the role of self-determined behavior in engaged students; (b) the personal growth value of engagement in an activity, and (c) those factors which most correlate to psychological well-being (PWB) in engaged students.
Justification for the Research Problem

Research posits that student engagement in extracurricular activities and sports (ECAs) may support their development academically, socially, and behaviorally (Fredricks, 2012; Langenkamp, 2009; Shulruf, Tumen, & Tolley, 2008). Findings from the National Research Council (U.S.) (2004) and other studies concur that participation promotes positive academic, social and physical developmental outcomes, which affirms the importance of student engagement in ECAs during this period of life (Mahoney, Cairns, & Farmer, 2003; Plagens, 2011; Shulruf, Tumen, et al., 2008; Wilson & Bengoechea, 2010; Zaff, Moore, Papillo, & Williams, 2003).

However, positive academic achievement, social engagement in ECAs, and the ability to develop positive behavioral characteristics are dependent upon ECA availability and the desire of students to participate and to fully engage in these activities. The current economic reality of reduced educational funding and decisions by policy makers to conserve funds has begun to reduce the opportunities and resources needed to ensure ECA sustainability. Resources impacted include, but are not limited to, adult supervision, facilities, and necessary supplies. School districts across the US have been forced either to find alternate sources of funding to support ECAs, including charging additional fees, or to eliminate programs (McNichol & Law, 2008; Williams, Leachman, & Johnson, 2011; Zhao, 2012).

Deficiencies in the Evidence

Prior research by Bundick (2011), Darling, Caldwell and Smith (2005), Guest and McRee (2009), Fredericks and Eccles (2006), Stearns and Glennie (2010) and others, has studied the impact of ECA participation on high school students’ academic, social, behavioral, and physical outcomes. However, there is limited research on goal-directed behavior, motivation, or innate
psychological needs that might be met by engaging in ECAs relative to opportunities for engagement. We do not know the long term or immediate impact on students developmentally, socially, behaviorally or with regard to psychological well-being if ECAs are eliminated or reduced.

The absence of ECA opportunities may have a significant impact on the contextual elements of education relative to social relationships with adults and peers, as well as physical and academic settings within education and beyond the secondary school experience. The amount of participation and frequency relative to psychological well-being has not been studied.

This indicates an inherent need for schools and educational leaders to consider what role participation in ECAs plays in high school and the well-being of high school students, as well as what impacts financial and policy decisions might have on existing or future programs. Such research might better inform policy makers and educators of the impact of their decisions on students’ well-being.

Researchers Edward Deci and Richard Ryan at the University of Rochester (NY) have studied motivation and self-determination since the 1980s and have created one of the testing instruments utilized in this research. They have written extensively on self-determination and well-being. In consultation with Deci and Ryan (E. Deci and R. Ryan, personal communication, July 10, 2012) it was confirmed that no current research exists which looks at the relationship between engagement and the subsequent psychological needs factors that measure well-being in high school students engaged in ECAs. Ryan further suggested that a correlational study would add to existing research by considering high school as a context in examining student well-being in adolescence while engaged in ECAs. Self-determination research has yet to include students in high school choosing behaviors and actions (ECAs) that can lead to a higher level of well-being.
Purpose of Study

The purpose of this research was to quantitatively examine self-determination and student participation in ECAs as predictors of psychological well-being in high school students in one school in Massachusetts.

Research Hypotheses

1. Students with a higher level of participation in ECAs will exhibit a higher level of well-being.
2. Students with a higher level of self-determined behavior will exhibit a higher level of well-being.
3. Students with a higher level of self-determination will exhibit a higher level of ECA participation.
4. Students with a higher level of self-determination and ECA participation will exhibit a higher level of well-being.

Hypothesis model is found below in Figure 1.1.
Theoretical Framework

Self-determination Theory (SDT), a motivation theory, (Deci, 1980; Deci & Ryan, 1985) is the key theoretical framework for this study. Specifically, behaviors in relation to motivation and psychological well-being (PWB) are analyzed in relation to feelings of competence, autonomy, and relatedness. These are aligned with Ryff’s (1989) six factors of psychological
well-being (PWB) which include: (a) autonomy, (b) environmental mastery, (c) personal growth, (d) positive relations with others, (e) purpose in life, and (f) self-acceptance (Ryff & Singer, 1996; Ryff, 1989). The theoretical framework is presented in Figure 1.2.

![Theoretical Framework Diagram]

**Figure 1.2** Theoretical Framework Diagram

The first section will define and discuss Motivation Theory and Self-determination Theory (SDT) (Deci, 1980; Deci & Ryan, 1985). The next section will include the role of student participation and ECA opportunities. The final section will discuss well-being as hedonic and eudaimonic, followed by psychological well-being (PWB) and Ryff’s (1989) six factors of psychological well-being. The research used eudaimonic well-being as the primary heuristic, and three of Ryff's six factors are concerned with eudaimonic well-being.

**Motivation Theory**

Motivation theories are constructed upon basic assumptions about the nature of humans and what provides the “impetus to action” (Deci & Ryan, 1985, p. 3). The earliest research-based motivation theories centered on the concept that motives are a basic component of human
functioning and thus are actualized very differently in people based on affective outcomes and personalized experiences (Dweck, 2000).

The study of motivation can be defined as “the exploration of the energization and direction of behavior” (Deci & Ryan, 1985, p. 3). It is essential that people recognize a relationship that exists between their actions or behaviors, and the desired outcome (Deci & Flaste, 1995). Two general classes of motivated behaviors have historically been identified as those behaviors that are chosen, or self-determined, and those that are not chosen (Deci, 1980). Further, Ryan and Deci (2000b) report that comparisons between people that report authentic motivation (internal) and those whose behaviors are controlled (external) show that the authentically motivated people report a higher level of self-esteem and well-being, among other characteristics.

The role of motivation is essential to both choice and expected outcomes. The orientation of the motivation, or why the action was undertaken, directly relates to “the underlying attitudes and goals that give rise to the outcomes” (Ryan & Deci, 2000a, p. 54), while the level of motivation involves how much or how little motivation exists.

There are a myriad of motivation theories and multiple approaches to studying motivation. The theory for motivation utilized in the theoretical framework of this study is Self-determination Theory (SDT) as it has proven to be robust in other researchers' testing and data collection, including Sheldon, Ryan and Reis (1996), and Elliot and McGregor (2001), and provided the best fit for the cohort considered for this study.

**Self-determination Theory (SDT)**

Self-determination Theory (SDT) (Deci, 1980; Deci & Ryan, 1985), as an overarching motivation theory, is an organismic dialectical approach that incorporates both the notions of
self-determination and intentionality by humans as prerequisites for individual well-being. The theory represents a general psychological construct which purports that basic human needs must be fulfilled for optimal functioning and well-being, which include feelings of *autonomy, competency, and relatedness* (Deci, 1980; Deci & Ryan, 1985).

Perlman and Goc Karp (2010) suggest that by meeting each need through engagement, and looking at each as an individual construct, direct interplay between and among autonomy, competence and relatedness can and will influence motivation. The result of the engagement, and the level of fulfillment or effectiveness reached, can directly correlate to an individual’s level of psychological well-being.

Self-determination Theory suggests there are different reasons for action (Deci & Ryan, 1985). For example, students may choose to engage in an activity or sport (ECA) because they feel the inherent value of engagement as useful or interesting. This is an example of intrinsic motivation. Students may also choose to engage in ECAs in an attempt to procure approval from a parent, teacher or coach or to avoid sanctions. These are considered contingencies and are examples of extrinsic motivation. SDT also describes how the motivational environment and consequential behavior must align with an individuals’ innate or inherent need for *autonomy by providing choice without constraints*. The social and environmental factors, according to SDT, facilitate intrinsic motivation (Ryan & Deci, 2000b). This theory of human motivation emanates from social cognitive theory (Bandura, 1986).

Self-determination Theory (SDT) is based on the foundational principle that the three psychological needs of feelings of autonomy, competency and relatedness must be satisfied in an ongoing manner for individuals to develop and function in healthy or optimal ways (Deci & Ryan, 2000). According to SDT, when these needs are satisfied within a social context, in this
case high school, people report feeling more vitality and more engagement, being more self-motivated and experiencing well-being (Ryan, 2009).

Students as well as adults can, and do, engage in self-determined behavior when they make choices. Choice and engagement satisfy the basic psychological needs of autonomy, relatedness and competency and continue as a developmental pathway to well-being as these needs are actualized and reinforced. (Nota, Soresi, Ferrari, & Wehmeyer, 2010). The self-determined behavior of a student to engage in ECAs, free from extrinsic contingencies such as outcome or reward expectations, support Deci and Ryan’s (1985) suggestion that the energy of the student is focused toward meeting psychological needs, which can lead to a feeling of positive well-being.

**Participation**

Many transformations take place for students in the context of high school and often through ECA participation. Extant research has established that students who engage in ECAs have displayed positive outcomes that can often lead to a healthier sense of self (Chirkov, 2009; Darling, 2005; Darling, Caldwell, & Smith, 2005; Deci & Ryan, 2008a). By choosing to become involved with one or more ECAs, students may continue to engage in more or different activities or become more deeply involved with a chosen activity. These social interactions help students developmentally shape their behaviors and values, which reflect on their feelings of self, self-esteem, and well-being (Fredricks & Eccles, 2005).

The context of high school also provides students with opportunities to relate to others and to access social capital through ECA engagement. As students integrate into and participate in groups, their innate need to feel autonomous or independent in decision-making and engagement begins to be satisfied. Student integration is an indication of a healthy student and,
according to Deci and Ryan (2008a), is an indicator of what they call “well-being”. Well-being is defined as happiness and being vital and fully functioning (Deci, 1980; Ryan, Huta, & Deci, 2008).

Students choose to engage in a variety of ECAs outside the tightly controlled academic setting (Darling, 2005) for a variety of reasons that can be intrinsically or extrinsically motivated (Amorose & Anderson-Butcher, 2007). The high school setting provides an appropriate context, “because schools are discrete entities that are prominent hubs for structured activities” (Guest & McRee, 2009, p. 53). It is within this setting that ECAs provide opportunities for choice, action and behavior with others while seeking to meet their psychological needs.

The ability to choose to participate in ECAs must first be met with opportunities to make choices about what activities are available for student engagement.

**Opportunities**

Schools give students the opportunities to participate by providing school sponsored and school sanctioned activities (ECAs). Research indicates that high school students, on average, participate in two or three ECAs each year. This supports student demand for opportunities for engagement and choice (Fredricks, 2012).

Stearns and Glennie noted that there is a “significant and positive relationship” (2010, p. 303) between the size of the school and opportunities provided for student participation in ECAs. Further, their study showed that participation rates were significantly related to ECA availability at each school studied regardless of ECA category (sports, media, arts, service) or whether the school was noted as urban or suburban. Their summation indicated that more participation occurs when more opportunities are present. Also schools with more ECAs have participation from a greater number of students (Stearns & Glennie, 2010).
Participants in both studies reported a greater sense of “belonging” to their respective schools, and data support the positive academic, developmental and behavior outcomes associated with ECA engagement (Fredricks, 2012; Guest & McRee, 2009; Knifsend & Graham, 2012). The ability to make choices to participate relies initially on the ability of schools to provide opportunities to students as part of the education process.

**Well-being**

Well-being is a complex and multi-dimensional phenomenon which considers two general positions or perspectives, eudaimonic and hedonic (Deci & Ryan, 2001; Ryan et al., 2008; Ryff, 1989). Aristotle in *Nicomachean Ethics* (Rowe & Broadie, 2002; Ryan et al., 2008) distinguished the difference between hedonia and eudaimonia in his writings about happiness as, (a) experiencing pleasure (hedonia) and, (b) “engaging one’s human capacities by actively pursuing virtues and excellences” as a way of living (eudaimonia). This was done through simple life examples while acknowledging cultural realities within the context of his writings (Ryan et al., 2008, p. 143). While the differences in the two perspectives appear simple, the factors that are considered in each are often interrelated and are carefully considered as an important component to empirical research and design (Ryan et al., 2008).

**Hedonic and eudaimonic.** Early research on subjective well-being (SWB) was designed to “monitor social change and improve social policy” (Keyes, Shmotkin, & Ryff, 2002, p. 1007) measuring happiness and life satisfaction. The *hedonic* approach to defining happiness and well-being supports the idea that SWB is related to subjective experiences of pleasure of the mind or body, satisfaction or happy feelings (Deci & Ryan, 2001; Waterman, 1990). Defining well-being or happiness in strictly hedonic terms was considered acknowledging or measuring “the presence of positive affect and the absence of negative affect” (Ryan & Deci, 2011, p. 47). This strict
definition forced researchers to consider a fuller or inclusive conception of well-being (or wellness) more closely aligned with eudaimonism.

*Eudaimonic* well-being highlights human engagement within the highest human capacity in pursuing “virtues and excellences” (Ryan et al., 2008, p. 143) which Deci and Ryan (2008b) note must be intrinsically worthy. Waterman (1990), in keeping with Aristotle’s tenet of eudaimonia defines it as “activity in accordance with one’s daimon” (p. 42) or an ideal of excellence of being or “true self” (p. 42). To realize this potential is self-realization (eudaimonism) (Ryan et al., 2008; Waterman, 1993) and is considered by Waterman and Deci and Ryan (2001) as a component of *optimal psychological functioning and experiencing*; this is the definition of well-being (Deci & Ryan, 2008b). Deci and Ryan (2008a) also believe that full functioning in eudaimonia is concerned with actualizing one’s human potential or living well on the way to realizing one’s “true self” (p. 2).

Hedonic and eudaimonic well-being are not mutually exclusive. Throughout the literature on happiness and well-being, it is clear that subjective components of the hedonic tradition exist within the ethical objective of eudaimonism. Waterman suggests (1993) that individuals may reflect upon their experiences by reporting their experiences through subjective factors such as talent development or aptitude as positively impacting their own perception of purposing and experiencing in life (eudaimonism) (Deci & Ryan, 2008b; Waterman, 1990). While SWB is more aligned within the hedonic position, and PWB is aligned with the eudaimonic position, SWB can also serve to measure components of well-being within the eudaimonic perspective as recognized by evolving research. Distinctions between SWB and PWB have been theoretically and empirically distilled in studies on well-being and happiness and continue to evolve in professional journals and other scholarly literature.
The expansion of the definition of happiness or subjective well-being began to consider the role of human potential and became significant to the research (Waterman, 1990). By definition and study, subjective well-being (SWB) needed expansion to address areas more firmly rooted in eudaimonia and toward psychological well-being (PWB). This research continues to inform theoretical components addressing the convergent factors impacting well-being, which include the role of context, developmental stages, behaviors, and motivation.

Psychological well-being began to merge the fields of positive psychology, human functioning, and subjective well-being toward a better understanding of human fulfillment.

**Psychological well-being (PWB).** Ryff and Singer’s (1996) research and theoretical application to empirical studies identified *six key dimensions to well-being* that served to address positive human functioning as (a) *self-acceptance*, (b) *positive relations with others*, (c) *autonomy*, (d) *environmental mastery*, (e) *purpose in life*, and (f) *personal growth*. The model considers factors and meanings of what is considered human fulfillment (Ryff, 1989) as studied and related to research by seminal theorists, shown in figure 1.3 (Ryff, 2014).
Ryff’s (1989) Six Key Dimensions to Psychological Well-being (Ryff, 2014)

Ryff’s model begins with *self-acceptance* as a key part of well-being addressing the positive opinion a person has of himself or herself in a non-narcissistic manner. This means considering the constructed self-regard that one has, both positive and negative. Self-acceptance means that a fully individuated person can accept his or her own failures and successes in an honest manner (Ryff & Singer, 1996). *Positive relationships with others* emphasizes the importance to PWB of close relationships (intimacy) as well as the guidance and care of others (generativity) (Bandura, 1997; Ryff & Singer, 1996). *Autonomy* refers to the ability of a person to pursue personal convictions and beliefs and to evaluate himself or herself according to personal standards or values (Ryff & Singer, 1996). *Environmental mastery* speaks to a person’s need to manage and control the complex surroundings in order to move forward in life, and requires mental and physical skill-sets or competencies (Bandura, 1997; Ryff & Singer, 1996). *Personal growth* refers to the ability to recognize or realize one’s own potential and talent and one’s ability to experience new challenges or tasks as one grows. Finally, *purpose in life* refers to
a person’s ability to determine and find meaning and direction in his or her own experiences and to propose or project goals in life (Bandura, 1997; Ryff & Singer, 1996).

Of the six dimensions of PWB, three are more closely aligned with eudaimonic well-being including (a) autonomy, (b) environmental mastery, and (c) positive relations to others (Ryff & Singer, 2006). These dimensions also closely resemble the basic needs of autonomy, competency and relatedness found in SDT. Ryff’s model expands the meaning of well-being beyond just happiness to include the ability to successfully manage experiences, challenges and opportunities in a richer context.

Psychological well-being began to merge the fields of positive psychology, human functioning, and subjective well-being toward a better understanding of human fulfillment. Ryff and Singer’s (1996) review of theoretical literature follows the evolution of psychological well-being (PWB) including the work of Maslow (1968), Rogers (1961), Jung (1953), Dell and Baynes (2001), Allport (1969), Frankl (1988) and Jahoda (1958) which considered the concept of maturity as emanating from developmental life-span perspectives supported by Erikson (1980), Bühler (1935) and Neugarten (1973). Ryff (1989) also engaged in a more thorough evaluation and interpretation of Aristotle’s writing which initially introduced hedonic and eudaimonic well-being. The research further supported the ideal that broader contexts should be included when considering PWB.

In summary, psychological growth and well-being are operationalized through active and vital engagement in an individual’s social environment. Students who choose to engage in ECAs within the social learning context of high school are often in search of fulfilling innate needs and willingly aspire to be well, emotionally and physically (Nota et al., 2010; Ryan & Deci, 2000b; Shulruf, Tumen, et al., 2008; Ushioda, 2011). Students who engage in ECAs have also displayed
positive outcomes that can often lead to a healthier sense of self (Chirkov, 2009; Darling, 2005; Darling et al., 2005; Deci & Ryan, 2008a).

Students want to integrate into their surroundings, explore learning opportunities and gain a “general mastery and management of people’s physical and social environment” (Deci & Ryan, 2000, p. 230) while continuing to make choices about which ECAs to engage in routinely. The provision of opportunities, the choice to engage, the behaviors and actions taken toward engagement, combined with the positive feelings or outcomes derived from these opportunities, are important considerations in determining if students might achieve well-being through ECA participation.

**Significance of Research Problem**

Historically, high school students have been provided opportunities to choose ECAs and also determine to what extent they will engage in them. The amount of engagement, as determined by ECA choice(s) and frequency of engagement, are both important considerations in determining what factors most correlate to individual development, and include both psychological needs and an individual’s sense of well-being (Lloyd & Little, 2010; Mahoney et al., 2003; Sheldon & Niemiec, 2006). For student choice to occur, opportunities for engagement must be available. Despite the growth in student sports participation and strong ECA engagement, the economic downturn over the past five years has put opportunities for student ECA involvement at great risk across the U.S. (Fredricks, 2012; Howard, 2011, 2012).

If fiscal decisions continue to negatively impact organized ECAs by elimination or reduction of funding, opportunity, or both, then there is a need to better understand what role engagement in ECAs plays in student well-being. Well-being in this context has not been studied. Understanding these relationships could better inform policy makers and educators
about the impact of their decisions on student well-being, and the physical development of young adults.

**Positionality Statement**

As a quantitative researcher with post-positivist beliefs (Creswell, 2009), this researcher has chosen a primary instrument of the study which is objectively derived from past research practices and studies. Correlational research is about collecting numerical data, generated by purposeful questioning in an effort to explain a phenomenon (Muijs, 2011). This researcher has chosen to study a specific cohort relative to my background as an educator and athletic administrator at the collegiate and interscholastic level. The researcher is a product of her gender, race, class, educational status and life experiences. The perspective as a researcher, beliefs about research, and the methodologies chosen, are built on prior knowledge, experience, and existing testing instruments.

The purpose of the research and the role as a researcher from Northeastern University working on a doctoral research project has been shared with the participants as well as their parents/guardians.

**Summary**

Engagement in ECAs during high school provides opportunities for students to continue to grow developmentally, socially and behaviorally. The role of motivation, behavior, and action in individuals was explored to include well-being as a desired outcome. In the decision-making process of students, the elements of opportunity, choice and engagement can be seen as interrelated factors that help students align their interest, values and goals with decisions in an effort to fulfill psychological needs toward experiencing a sense of well-being. Research shows that aggregate or total need satisfaction resulting from feelings of autonomy, competency, and
relatedness can predict differences in health and wellness (Bauer & McAdams, 2000; McNeal Jr., 1999; McNeely, Nonnemaker, & Blum, 2002; Zaff et al., 2003).
CHAPTER 2: REVIEW OF THE LITERATURE

Overview

The purpose of this research was to quantitatively examine self-determination and student participation in extracurricular activities (ECAs) as predictors of psychological well-being in high school students in one school in Massachusetts.

Hypotheses

The hypotheses for this research propose that students with a higher level of ECA participation will exhibit a higher level of well-being. Students experiencing a higher level of self-determination or self-determined behavior will also exhibit a higher level of participation in ECAs. Finally, students with a higher level of self-determination and participation in extracurricular activities will exhibit a higher level of well-being.

In order to better understand the role of student motivation and self-determination, behavior, well-being, and the role of extracurricular activities (ECAs) in high school, this chapter reviews and synthesizes the extant literature which guided the current research. The purpose of this chapter is to demonstrate that the research is grounded in the literature and contributes to this body of knowledge. The literature review examined five bodies of literature: motivation, self-determination, extracurricular opportunities, student engagement, and well-being. Topics for review included social, behavioral and developmental interaction in high school, student choice, and school-sponsored and school-sanctioned ECA opportunities in high school (outside the classroom). The discussion is intended to logically and sequentially address the developmental and behavioral factors that can affect outcomes related to well-being. Limitations found in the literature will be identified.
This section poses a number of questions that were investigated while considering a thorough review and distillation of the literature. The areas of interest to this researcher address high school students’ level of motivation and self-determination, participation in high school extracurricular activities and sports hereafter referred to as ECAs, and student psychological well-being (PWB) as shown in figure 2.1.

![Figure 2.1 Research Areas of Interest](image)

Psychological well-being (PWB) is defined as optimal psychological functioning and experience (Deci & Ryan, 2008a). Extracurricular activities (ECAs) and students’ willingness to choose to engage in and be committed to one or more ECAs can play a significant role in the process of defining their high school experiences and are important contributors to psychological well-being (PWB).

The following questions guided the literature review:
What is motivation?

How are students motivated to become involved with extracurricular activities (ECAs)?

What role does self-determination play in decision-making?

What is well-being?

How does participation in ECAs impact students?

What influences can impact student choice and behaviors?

Literature for this review was acquired by utilizing Northeastern University online research tools such as American Educational Research Association (AERA), WorldCat, EBSCO, Elsevier Science Direct, Academic OneFile, Jstor, Illiad, Emerald, Springer Link, and Google Scholar. Subject searches for textbooks, books and eBooks were completed utilizing online resources and the Library of Congress database while additional resources were acquired by researching references and citations noted in articles, textbooks and online sources. Statistics were researched through the National Center for Education Statistics.

Key search words used include: motivation, well-being, eudaimonic, hedonic, happiness, subjective well-being, psychological well-being, adolescents, high school extracurricular activities (ECAs), needs satisfaction, extracurricular activities participation, interscholastic athletics participation, social development, psychological needs, autonomy, relatedness, competency, adult-led activities, social settings, educational expectations, self-determination, youth outcomes, engagement, social context, social capital, goal-setting, and determinism.

Extracurricular Activities (ECAs) and Student Outcomes

Research posits that student engagement in extracurricular activities and sports (ECAs) may support their development academically, socially, and behaviorally (Fredricks, 2012; Langenkamp, 2009; Shulruf, Tumen, et al., 2008). ECAs, for the purpose of this study, must be
supported and sanctioned by the high school and are inherently adult-led. Findings from the National Research Council (U.S.) (2004) and other studies concur that participation promotes positive academic, social and physical developmental outcomes, which affirms the importance of student engagement in ECAs during this period of life (Mahoney et al., 2003; Plagens, 2011; Shulruf, Tumen, et al., 2008; Wilson & Bengoechea, 2010; Zaff et al., 2003). These academic, social and behavioral outcomes are elaborated below.

First, positive academic achievement has been linked to engagement outside the classroom in structured activities or activities with adult-leaders that involve regular meetings and skill-building activities (Persson, Kerr, & Stattin, 2007). Structure is reinforced through practice, repetition, and feedback (Darling, 2005; Eccles, Barber, Stone, & Hunt, 2003) while skill-building activities add complexity and challenge to the environment in a logical format. In fact, research links student participation in ECAs to higher levels of school engagement, better grades, enhanced levels of future educational attainment, and reduced dropout rates (Denault & Poulin, 2009; Fredricks, 2012; Fredricks & Eccles, 2006). Academic achievement, skill acquisition, and structure may also be tied to the social support provided during ECAs (Farb & Matjasko, 2012; McNeal Jr., 2010).

Second, social engagement in ECAs has been shown to help students develop pro-social peer groups, reduce anti-social behaviors, improve interpersonal skills (McNeal Jr., 1999), and suggests an improved level of social capital (Stearns & Glennie, 2010). Students can feel an association to the group or activity and find that the social environment is desirable (or not). Social capital refers to “networks, norms and relationships” from social relations and social structure (Plagens, 2011, p. 48). Schools provide an opportunity structure that can directly affect student integration within the social context allowing students the opportunity “to access the
benefits of human, social, and cultural capital” (McNeal Jr., 1999, p. 293). It is these relationships and networks that can impact normative behavior or provide influencing factors during engagement (Plagens, 2011).

Third, the ability to develop positive behavioral characteristics heading into adulthood is also linked to ECAs (Zaff et al., 2003). Behaviorally, students are exposed to an increased level of developmental and leadership opportunities. Scheduled, rule-based, and directed engagement by adult facilitators provides opportunities to develop initiative and diversification in activities (Darling, 2005; Darling et al., 2005; Denault & Poulin, 2009). Guest and McRee (2008) found in their research that social and academic student outcomes can be positively influenced by others, and that students experiencing positive outcomes can and do evoke similarly influencing behaviors and properties on other high school students. Research by Fredricks and Eccles (2010), Fredricks (2012) and Zaff et al., (2003), among others, suggests that the interrelatedness of social practices and educational outcomes can be a byproduct of ECA engagement. Zaff et al, (2003) also note that consistent participation in extracurricular activities throughout high school can predict “academic achievement and prosocial behaviors in young adulthood” (p. 599). Their study also suggests that a higher level of academic achievement leads to a high possibility of college attendance “potentially securing a higher income and economic stability” (p. 623).

Positive academic achievement, social engagement in ECAs, and the ability to develop positive behavioral characteristics are dependent upon ECA availability and the desire of students to participate and to fully engage in these activities.

In adolescence students are faced with changes that are developmental, social, cognitive as well as emotional. As they transition toward young adulthood, processes start to come into play leading to individuation and separation from adult parents or guardians. Students begin to
move from being dependent to a greater level of independence (Farb & Matjasko, 2012; McNeal Jr., 1999, 2010; Nota et al., 2010). Ryan and Deci (2000b) argue that most young adults experience the need to belong to a group or find associations that allow them to explore behaviors, relationships and new opportunities. Students also have emerging desires to make their own choices in these settings, choices that may result in positive experiences, including the acquisition of new skills, understandings or competencies. ECAs provide students opportunities for important growth developmentally, socially and academically and schools are charged with helping them continue to learn in academic structures and through ECAs (Zaff et al., 2003).

**Theoretical Approach**

This section discusses motivation and how it integrates with behaviors and student choice. This is followed by the role of motivation as it relates to context and outcomes, which will introduce the topic of Self-determination Theory (SDT). Finally, well-being will be examined.

Bandura (1977) notes that one’s self-directedness or self-motivation can be cognitively based (Bandura & Schunk, 1981). Bandura’s Social Cognitive (Learning) Theory (1977) addresses human motivation and human agency and informs the theoretical framework for this research, as shown in figure 2.2.
Figure 2.2   Social Cognitive (Learning) Theory (1977) in Theoretical Framework

Motivation

Motivation is “primarily concerned with how behavior is activated and maintained” (Bandura, 1977, p. 160) or to be moved to do something (Ryan & Deci, 2000a). Motivation is about activation and intention and can be categorized at a basic level as either intrinsic or extrinsic (Ryan & Deci, 2000b). Intrinsic motivation is described as pursuing an activity because of its “inherent interests and enjoyability” (Ryan et al., 2008, p. 146) or engaging in an activity
without an apparent or obvious external reward (Bandura, 1986). Extrinsic motivation is doing something that leads to a specific, or “separable outcome” (Deci & Ryan, 2000, p. 55) such as receiving a tangible reward following an action. Examples may include receiving money, awards, approval or even specific adulation. Self-determined behavior and motivation theory, discussed in more detail further on, simply expressed is (a) when the goal is extrinsic, the person completes the behavior and gets the reward at the end; and (b) when the goal is intrinsic, the goal is just to complete the behavior. In either case, the motive is satisfied at the end and the behavior is discontinued (Deci, 1980). Behaviors that are in response to extrinsic rewards, according to Deci (1980), involve causal factors since it is expected that the behavior will directly lead to the reward.

According to Deci and Ryan (2000) behavior can be further characterized as either autonomous, “acting with a full sense of volition and choice because the activity is interesting or personally important” or controlled, meaning that actions are taken because of a feeling of coercion, pressure or a “seductive offer” (p. 55). Individual self-determination, discussed below, plays an essential role in the motivation of students and their subsequent behavior (Deci & Flaste, 1995; Deci & Ryan, 1985). The behavior is posited to be one that is directed toward autonomy and freedom from control. This further highlights the need to consider the role of intrinsic motivation in self-determination.

Ryan and Deci (2000b) align intrinsic motivation with human development acknowledging that humans are naturally active, inquisitive and curious. They suggest, “This natural motivational tendency is a critical element in cognitive, social, and physical development because it’s through acting on one’s inherent interests that one grows in knowledge and skills” (p. 56).
The motivational model (Skinner & Edge, 2002) shown in figure 2.3 provides a framework for describing the characteristics and role of social contexts, in this case high school, and identifies “psychological sources of energized and directed action” (p. 299). Each opportunity may provide differing chances to have one’s innate psychological needs met through engagement.

The model shows that “social contexts within different enterprises differentially provide people with opportunities to fulfill their fundamental psychological needs” (Skinner & Edge, 2002, p. 299). The model represents active and ongoing engagement toward psychological needs satisfaction. The action of individuals is ongoing and represents “active, goal-directed, flexible, constructive, persistent, focused interaction with the social and physical environments” (pp. 299-300). For example, an environment or context in which warmth was reported and in an ongoing manner fulfills the psychological need for relatedness. The fulfillment of this need engenders the action of engagement, a behavior that leads to positive development outcomes.
The contexts of warmth, structure and autonomy support are examples of positive outcomes experienced by students. These decisions and actions are ongoing and address the psychological needs of autonomy, relatedness and competency. These are seen as intrinsically worthy and directed toward positive actions that lead to positive outcomes, noted as Social Development, Cognitive Development, and Personality Development. The contexts of hostility, chaos and coercion are examples of negative environments experienced by students who then do not seek to fulfill their psychological needs. Chaos refers to lack of structure or lack of control in an environment. These are considered extrinsic motivational choices as they are influenced by the actions or thoughts, opinions or demands of others.

In the model, student engagement continues to be a choice that leads to actions producing outcomes. Engaging, integrating and coping are behaviors (actions) that are self-determined. Thus, an intrinsically motivated individual whose interests, values, and beliefs are aligned with a
decision, and who takes action, is seeking to fulfill one or more psychological needs including experiencing levels of autonomy, competency or relatedness (Deci & Ryan, 1985).

Self-determination Theory (SDT)

Self-determination Theory (SDT) (Deci, 1980; Deci & Ryan, 1985) is a theory of human motivation which also considers development and wellness, emanating from social cognitive theory (Bandura, 1986; Deci & Ryan, 2008c), as illustrated in Figure 2.2. Self-determination Theory (SDT) is an organismic dialectical approach theory that assumes that people are active organisms who evolve and grow while experiencing events and endeavoring to learn and integrate their learning into a belief system (Deci & Ryan, 1985, 2008c, 2002).

Self-determination theory (SDT) (Deci & Ryan, 1985, 2000) provides an empirically supported account of human motivation and self-regulation. The theory rests on a critical distinction between doing an activity and one’s experience of doing the activity. Specifically, people who appear to be equally motivated to engage in an activity can actually differ in how they experience the performance of this activity. (Gurland & Glowacky, 2011, p. 2)

In other words, equal motivation may not result in equal outcomes of development.

Positive experiences produce positive outcomes that contribute to a sense of psychological well-being, which Deci and Ryan (2000) suggest can be measured by focusing on three constructs of self-determination theory (SDT) shown in figure 2.4. These include feelings of autonomy, competency and relatedness. This foreshadows the discussion of well-being, later in this chapter, as these needs are related to Ryff’s (1989) scale of Psychological Well-being.
Deci and Ryan (1985) define each of the three basic psychological needs of autonomy, competence and relatedness. First, the psychological need for autonomy, according to Deci and Ryan, directly relates to students’ feelings about their choice and/or level of control and behavior in a specific setting using available information. Autonomy can also be defined as regulation by self while the experience is owned and endorsed by the person (Sheldon & Niemiec, 2006; Weinstein, Przybylski, & Ryan, 2012) or “experiencing behavior as self determined” (Lamb, 2007 cited in Ushioda, 2011, p. 223). Autonomous behavior has been associated with enhanced creative learning and greater energy and vitality (Weinstein et al., 2012).

Second, competence as a basic psychological need is often described as some level of mastery and the individual capability to interact with the environment in order to exist and (continue) to grow. Deci (1980) wrote, “Humans must learn skills for effective interacting, and this learning is what is meant by competence development” (p. 133). This also translates to a sense of confidence (Lloyd & Little, 2010). Intrinsic motivation is based in a student’s need to be competent and self-determining (Deci & Ryan, 1985).
The third element is relatedness. Deci and Ryan (1985) define relatedness as establishing and sustaining meaningful connections with others within a context or “one’s social milieu such that a person feels socially connected with, and accepted by, important others” (Wilson & Bengoechea, 2010, p. 62). For example, this can occur in a structured, adult-led environment, where students interact and socialize in a manner that helps achieve a particular outcome or result.

These psychological needs, also referred to by Deci and Ryan as basic nutriments, are important to healthy personal development and functioning. Perlman and Goc Karp (2010) supported this notion and added, “each need is an independent construct, yet the interplay and synergy between all three needs can and will influence individual motivation” (p. 80). The result of the engagement, and the level of fulfillment or effectiveness reached, can directly correlate to the level of psychological well-being experienced by a student. Contexts which support these needs may also enhance the well-being of the individual (Deci & Ryan, 1985).

The need for competency refers to being effective and efficient within a context or environment while the need for relatedness reflects the need to be understood and appreciated by others while also feeling connected (Sheldon & Niemiec, 2006). Students who autonomously engage in activities, and receive positive feedback while engaged socially and behaviorally, will have a higher feeling of competence (Deci, 2012; Deci & Ryan, 1985; Gagné & Deci, 2005). This is important since high school is the environment for engagement and ECAs provide the context for students to decide and behave accordingly to address their interests and fulfill their needs.

Thus, according to these researchers, an intrinsically motivated individual whose interests, values and beliefs are aligned with a personal decision, and who takes action, is seeking
to fulfill one or more psychological needs including experiencing some level of autonomy, competency and/or relatedness (Deci & Ryan, 1985). According to Deci and Ryan (2000), choices that are intrinsically made lead to reports of higher levels of interest, excitement, and confidence, feelings which have been shown “to enhance performance, persistence and creativity” (p. 69).

Sheldon and Niemiec (2006) reported on four studies using multiple measures of needs to determine that people who experienced balanced need satisfaction also reported higher well-being as compared to those with the same sum scores but with higher variability in scores. The limitations to the studies include the use of homogeneous groups of college students in the US and the absence of a clear description of the factors that could have mediated the balancing effect experienced in the studies.

In a study of 203 adults by Milyavskaya and Koestner (2011), respondents rated over 800 domains or environments such as relationships, sports, work or leisure. The study measured the strengths of the relationship of need satisfaction, motivation and well-being across domains. The research showed that need satisfaction strongly related to both autonomous motivation and well-being and further supports the concept that basic needs are self-concordant and universal and need reinforcing in all contexts, cultures and domains (Deci & Ryan, 2002; Milyavskaya & Koestner, 2011; Nota et al., 2010).

Student engagement in high school ECAs relative to motivation and well-being is a new area of research and the role of motivation and behavior will be discussed below.

**Motivation and self-determination.** Motivation means to be moved to action leading to a behavior. One broad category of motivation includes identifying a behavior as voluntary or chosen; in this case the behavior is considered self-determined. Cognitively, this means that
motivation that leads to a behavior includes a psychological value, which will lead to a desirable outcome. This refers directly to student choice and student behavior towards specific outcomes.

Self-determination is a person’s ability to (a) recognize available options, (b) choose one or more options, (c) consider to what extent engagement will occur, and (d) take action to engage (Singh, Mohan, & Anasseri, 2012). More succinctly, a self-determined individual is one who acts of his or her own volition and with intention; actions are self-initiated toward experiencing more positive psychological functioning, including self-understanding and self-mastery (Bauer, McAdams, & Pals, 2008; Deci & Ryan, 2008c, 2012; Nota et al., 2010).

Deci (1980) believes that people have a high capacity to choose behaviors that attempt to meet their “inner desires and perceptions” (p. 5). Individual self-determination plays an essential role in the motivation of students and the behaviors that follow. The ability for a student to choose to engage in any activity requires that the student is motivated to behave or take action. The behavior is posited to be one that is directed toward autonomy and freedom from control (Deci & Ryan, 1985).

Deci (1980) stated that self-determination has motivating properties that, when self-determination is denied, there is also a loss of organismic well-being or various other negative consequences. According to Deci (1980), self-determining behaviors are the result of people processing information and deciding how to behave in order to attempt to meet their expectations about “how to achieve satisfaction of their needs” (p. 49).

Self-determination is not the same as control. Control is a broader term, defined as achieving a particular outcome, while self-determination is the ability to decide what behaviors and what actions are undertaken to fulfill one’s (internal) needs (Deci, 1980). However, self-determination can exist within the realm of control as part of the process for achieving a
particular outcome. The distinction made by Deci (1980) is one whereby controlling a situation traditionally reflects actively controlling what gets done while the role of self-determination is about conscious choice or perhaps inner control about behaviors and actions in accordance with values and internal needs. The concept of self-determination is generalized in that many people have different beliefs on how they view the relationship between behaviors and outcomes or results (Bandura, 1977; Bandura & Schunk, 1981) as well as social conditions (Ryan & Deci, 2000b).

**Education and self-determination.** Reeve’s (2000) assessment of self-determination and education research indicates that two primary conclusions emerged from the empirical data. The first states that students report that their success is related to their motivation. Students reported both their level of self-determination as well as their level of success. The findings indicated that the students that were autonomously supported by the teacher or leader, rather than controlled by the leader, reported a higher level of success, enjoyed school more, “preferred optimal challenges, and generate creative products” (Cloninger, 2004, p. 183). The second conclusion was that student motivation was partly but directly related to the quality of the student-teacher relationship. The research methods used in this study included quantitative and experimental methods as well as self-report questionnaires as testing tools.

The concept of well-being through the lens of SDT makes clear that humans are active and have “inherent and deeply evolved tendencies toward psychological growth and development” (Ryan, 2009, p. 1). Students report well-being as a feeling of vitality, or of being fully functioning and engaged (Deci, 1980; Deci & Ryan, 2008c; Wichmann, 2011). The next section addresses well-being more comprehensively.
Well-being

Well-being is a complex and multi-dimensional phenomenon which considers two general positions or categories, eudaimonic and hedonic (Deci & Ryan, 2001; Ryan et al., 2008; Ryff, 1989), as well as two primary domains of what it means to be well, including subjective well-being (SWB) and psychological well-being (PWB). Subjective well-being emerged as a concept in the 1950s (Keyes et al., 2002), followed by psychological well-being which continues to emerge especially in the field of positive psychology. Subjective well-being can be viewed as hedonic while psychological well-being can be viewed as or eudaimonic or hedonic (Deci & Ryan, 2008b; Kee & Carey, 2013; Ryff, 1989). Deci and Ryan (2001) further identify happiness as hedonic well-being and eudaimonic well-being as dealing with human potential, expanding Waterman’s (1993) work (Keyes et al., 2002). Hedonic and eudaimonic well-being are closely related to SWB and PWB; sections below focus specifically on each pair.

Research on well-being includes perspectives gleaned from cognitive, behavioral, (human) developmental, life-span and positive psychology branches and research from these areas. Throughout the course of the 1980s, research on well-being largely measured reported life satisfaction, happiness and positive affect (and the absence of negative affect) without considering the emerging considerations geared to positive human functioning (Ryan et al., 2008; Ryff, 1989, 2014).

From an historic perspective, the positions of eudaimonic and hedonic were identified by Aristotle in *Nicomachean Ethics*, written in 350 BC (Rowe & Broadie, 2002; Ryan et al., 2008) which was intended as an ethical doctrine providing guidance on how to live (Ryff, 1989) and address happiness. The ethical system of eudaimonism predates Aristotle, however (Waterman, 1990). Aristotle distinguished the difference between hedonia and eudaimonia in his writings.
about happiness as, (a) experiencing pleasure (hedonia) and, (b) “engaging one’s human capacities by actively pursuing virtues and excellences” as a way of living (eudaimonia) (Ryan et al., 2008). Aristotle believed this was done through simple life examples while acknowledging cultural realities as noted within the context of his writings (Ryan et al., 2008, p. 143). Aristotle suggested that the highest level of human goodness was not happiness but instead understanding the self, virtues and the need to become fully engaged (Ryff, 2014). While the differences in the two perspectives appear simple, factors that are considered in each are often interrelated and are carefully considered as an important component to empirical research and design (Ryan et al., 2008).

The *hedonic* approach to defining happiness and well-being supports the idea that subjective well-being (SWB) is related to subjective experiences of pleasure of the mind or body, satisfaction or happy feelings (Deci & Ryan, 2001; Waterman, 1990). The approach is considered individualistic and empirical studies are based on how good one feels (Bauer et al., 2008). Early research on SWB was designed to “monitor social change and improve social policy” (Keyes et al., 2002, p. 1007) measuring happiness and life satisfaction. Defining well-being or happiness in strictly hedonic terms is to measure positive affect and the absence of negative affect in one’s life (Bauer et al., 2008; Ryan & Deci, 2011). This strict definition forced researchers to consider a fuller or more inclusive conception of well-being (or wellness) more closely aligned with eudaimonism.

The *eudaimonic* tradition highlights human engagement within the highest human capacity in pursuing “virtues and excellences” (Ryan et al., 2008, p. 143) which Deci and Ryan (2008b) note must be intrinsically worthy, and is central to the present research. Waterman (1990), in keeping with Aristotle’s tenet of eudaimonia, defines it as “activity in accordance with
one’s daimon” (p. 42) or an ideal of excellence of being of “true self” (p. 42). This psychosocial integration is self-realization (eudaimonism) (Bauer et al., 2008; Ryan et al., 2008; Waterman, 1993). Waterman and Deci and Ryan (2001) consider this as a component of optimal psychological functioning and experiencing; this is the definition of psychological well-being (PWB) (Deci & Ryan, 2008b). Deci and Ryan (2008a) also believe that full functioning in eudaimonia is concerned with actualizing one’s human potential or living well on the way to realizing one’s true self. This mirrors Aristotle’s belief that life must be lived in accordance with basic reason and with moderation.

Ryff’s (2014) review of research on eudaimonia and psychological well-being thematically identified six areas or core categories as factors contributing to or mediating well-being including, (a) development and aging; (b) personality correlates; (c) family experiences; (d) work and other life engagements; (e) health and biological research, and (f) clinical and intervention. This adds to the emerging research on the eudaimonic perspective in that “well-being reflects traits concerned with personal growth, self-acceptance, purpose in life and autonomy and is a predictor of life events, including health” (Lewis, Kanai, Rees, & Bates, 2014, p. 1), while focusing on the content of one’s own life as well as the processes associated within (Ryan et al., 2008). This supported the perspective of the ancient Greeks from the eudaimonic perspective, suggesting that one should “know thyself”, and “become what you truly are” (Ryff, 2014, p. 11).

Throughout the literature on happiness and well-being, it is clear that subjective components of the hedonic tradition exist within the ethical objective of eudaimonism. Waterman (1990, 1993) suggests that individuals may reflect upon their positive experiences and purpose by reporting them through subjective factors such as talent development or aptitude
However, distinctions between SWB and PWB have been theoretically and empirically pared down in studies on well-being and happiness and continue to evolve in professional journals and other scholarly literature.

Ryff (1989), a life-span developmental psychologist, observed in her research that experiences of hedonia and eudaimonia are associated in some subjective conditions. As the expansion of the definition of happiness and well-being began to consider the role of human potential, the distinction became significant to the research (Waterman, 1990). As the seminal works of the eudaimonic tradition (Deci & Ryan, 2008b; Ryan et al., 2008), Aristotle’s writing continues to be the foundation of well-being and happiness in research and adds to empirical tools and findings developed in these areas. The interpretations that have evolved out of Aristotle’s work continue to inform theoretical components that address the convergent factors impacting well-being as well as informing the role of context, developmental stages, behaviors and motivation. By definition and study, subjective well-being needed expansion to address areas more firmly rooted in eudaimonia and toward psychological well-being (Gallagher, Lopez, & Preacher, 2009; Singh et al., 2012).

**Subjective well-being (SWB) and psychological well-being (PWB).** Subjective well-being, or “happiness” has been studied for over a quarter of a century and is considered an important goal for people (Akin, 2008). Diener (1984) proposed three distinct components of SWB; they are: (a) *life satisfaction* as measured by experiencing either higher or lower levels of (b) *positive affects* and (c) *negative affects* (Schimmack, 2008). Diener (1984) and Deci and Ryan (2001) agree that subjective well-being consists of the cognitive (life satisfaction) and affective components (positive and negative affect) as a “composite measure of global well-
being” (Akin, 2008, p. 96). This is a hedonic view in that it measures the degree to which someone is satisfied with their own life (Deci & Ryan, 2008b).

However, Ryff (1989) contended that SWB did not include any indicator of mental health and this view overlooked some of the psychological factors of well-being. She sought to bridge the gap and integrated the theoretical components of subjective well-being with psychological constructs (Akin, 2008). In her research she determined that important aspects of well-being were not being measured in an interrelated manner.

Ryff and Singer’s (1996) review of theoretical literature followed the evolution of psychological well-being (PWB) including the work of Maslow (1968), Rogers (1961), Jung (1953), Jung et al., (2001), Allport (1969), Frankl (1988) and Jahoda (1958), further noting the concept of maturity as emanating from developmental life-span perspectives supported by Erikson (1980), Buhler (2011) and Neugarten (1996). Ryff (1989) also engaged in a more thorough evaluation and interpretation of Nicomachean Ethics. The review further supported the ideal that the broader contexts should be included when considering PWB. These contexts are considered as emanating from theoretical foundations such as human growth and development, and humanistic psychology toward finding meaning and purpose in life as the ultimate goal and not just a subjective feeling of happiness.

Ryff and Singer’s (1996) research and theoretical application to empirical studies identified six key dimensions to well-being, expanding the domain of psychological well-being and acknowledging that PWB “comes from life-span developmental perspectives, which emphasize the differing challenges” (Ryff & Singer, 1996, p. 15). The dimensions are identified as self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth that further address the factors and meanings of what is considered
human fulfillment (Ryff, 1989). The Ryff Model of Psychological Well-being (2014), shown in figure 1.3, focuses on the interpersonal realm of well-being (Gallagher et al., 2009).

Ryff’s (1989) model begins with self-acceptance as a key part of well-being addressing the positive opinion a person has of himself or herself in a non-narcissistic manner. This means considering the constructed self-regard that one has both in the positive and negative manner. Self-acceptance means that a fully individuated person can accept his or her own failures and successes in an honest manner (Ryff & Singer, 1996).

Positive relationships with others emphasizes the importance to PWB of close relationships (intimacy) as well as the guidance and care of others (generativity) (Ryff & Singer, 1996; Singh et al., 2012). Autonomy refers to the ability of a person to pursue personal convictions and beliefs and to evaluate himself or herself according to personal standards or values (Ryff & Singer, 1996). Environmental mastery speaks to a person’s need to manage and control the complex surroundings in order to move forward in life and requires mental and physical skill-sets or competencies (Ryff & Singer, 1996; Singh et al., 2012). Personal growth refers to the ability from someone to recognize or realize their own potential and talent and their ability to experience new challenges or task as they grow. Finally, purpose in life refers to a person’s ability to determine and find meaning and direction in his or her own experiences and to propose or project goals in life (Ryff & Singer, 1996; Singh et al., 2012). These dimensions expand the meaning of well-being beyond just happiness to include the ability to successfully manage experiences, challenges and opportunities in a richer context.

Ryan et al. (2008) proposed four motivational concepts (characterizing the eudaimonic perspective) that support the developmental and behavior characteristics, which support chosen behaviors. The four concepts are: (a) pursuing intrinsic goals and values for their own sake,
including personal growth, relationships, community, and health, rather than extrinsic goals and values, such as wealth, fame, image, and power; (b) behaving in autonomous, volitional, or consensual ways, rather than controlled ways; (c) being mindful and acting with a sense of awareness; and (d) behaving in ways that satisfy the basic psychological needs for competence, relatedness, and autonomy (p. 139). In support of these concepts, research notes that intrinsic motivation is based on the basic need for both competence and self-determination (Deci, 1980).

Well-being is influenced by behaviors and participation (Akin, 2008; Darling et al., 2005; Guest & Schneider, 2003; Perlman & Goc Karp, 2010). An operational definition and measurement of well-being provide a key component to considering what role ECAs play in the lives of high school students. The contribution of ECA participation to student well-being is a key element of the current research.

**ECA Participation and Opportunities**

Guest and McRee (2009) report that, “in the US, participation in extracurricular activities is a dominant feature of adolescence” (p. 51). In American public secondary school education, school-based extracurricular activities (ECAs) are typically available to students and are not generally a requirement for graduation (Mahoney et al., 2003). Data show that increasing numbers of students choose to actively engage in clubs, sports and groups that are sponsored by schools and that the numbers have steadily increased over the past three decades (Farb & Matjasko, 2012; Howard, 2012; Koebler, 2011). For example, high school sports participation has increased for the twenty-second straight year to more than 7.6 million students, according to the High School Athletics Participation Survey (2011) released by the National Federation of State High School Associations (Howard, 2011). In 1972, total participation in interscholastic athletics was 3.9 million students. A decade later the number rose to 5.2 million and participation
continued to show steady increases through the decades mostly from increased sports participation by girls through increased opportunities enabled by Title IX legislation.

Features or characteristics of school-based activities include structure, adult leadership, and voluntary participation, and contain some degree of challenge. School-sponsored ECAs are considered educationally related, are often intentionally designed, and have been intensely researched linking participation in adolescence to specific positive and negative outcomes for participants over non-participants (Eccles et al., 2003). All of these factors can contribute to a student’s level of interpersonal competence and support the developmental and psychological needs of students (Csikszentmihalyi, 1997; Mahoney et al., 2003).

The context of the high school setting is also a feature that supports student well-being. Guest and Schneider (2003) emphasize the importance of understanding social context to better consider factors that might mediate how developmental outcomes might be impacted. These social interactions help students developmentally shape their behaviors and values, which reflect on their feelings of self, self-esteem, and well-being (Fredricks & Eccles, 2005).

Stearns and Glennie (2010) suggest that “extracurricular activities are seen both to supplement existing curricula and to allow students the opportunity to build non-academic, civic, and political skills such as teamwork” (p. 296). Students utilize their will to select or create environmental supports in order to reach desired outcomes and to contribute to the direction of their lives beyond high school (Bandura, 1997). It is through interactive practices and collective activity that human behavior is practiced and honed throughout the course of life.

For example, students can be committed to activities that are structured, and can challenge or inform other students while creating a context for developing initiative and
interpersonal confidence and gain an enhanced sense of competence within and among peers in many environments or contexts (Mahoney et al., 2003). Perlman and Goc Karp (2010) note,

Competence is understood as a perception of being able to demonstrate success or effectiveness within a given context (Deci, 1975; Harter, 1983). In essence, a student who perceives the social context as supporting his/her ability to be successful will be more motivated within such settings (p. 402).

This supports previous research that acknowledged a “clear empirical link between psychological need satisfaction (or lack thereof) and well-being at both general and daily levels” (cited in Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2011, p. 1460). This means that ongoing behaviors and engagement to meet psychological needs can be experienced as an overall concept and through daily integration and interaction.

This current study (a) includes the domain or environment of ECA participation in relation to student well-being, (b) within the social setting of high school. This adds to the current research by considering the role of self-determination (motivation) in predicting well-being in high school students. The demographic of high school students has yet to be studied in this area considering the variable of ECAs. Similarly, ECA opportunities and student choice in predicting well-being has not been a part of past research.

The examination of ECA participation is hypothesized to increase the level of well-being, further adding to research that suggests students who feel a greater level of connectedness in school report a higher level of well-being (McNeely et al., 2002). It becomes important to consider what opportunities are available in the high school setting in order to support student well-being.
**Extracurricular Opportunities.** The availability of ECA opportunities in schools is impacted by budget decisions, education policy, and societal demands to keep students focused on academic progress (Stearns & Glennie, 2010). Within these parameters, schools give students the opportunities to participate by providing school sponsored and school sanctioned activities (ECAs). Research by Stearns and Glennie (2010) indicates that public high school students, on average, participate in two or three ECAs each year. This suggests there is student demand for opportunities for engagement and choice (Fredricks, 2012).

Stearns and Glennie (2010) reported in two studies that there is a “significant and positive relationship” (p. 303) between the size of the school and opportunities provided for student participation in ECAs. Further, their longitudinal study showed that participation rates were significantly related to ECA availability at each school studied regardless of ECA category (sports, media, arts, service) or whether the school was noted as urban or suburban. Their summation indicated that more participation occurs when more opportunities are present. Also schools with more ECAs have participation from a greater percentage of students (Stearns & Glennie, 2010).

Participants in both studies reported a greater sense of “belonging” to their respective schools, and data support the positive academic, developmental and behavior outcomes associated with ECA engagement (Fredricks, 2012; Guest & McRee, 2009; Knifsend & Graham, 2012). The ability to make choices to participate relies initially on the ability of schools to provide opportunities to students as part of the education process.

There is very limited research on student ECA opportunities in the high school setting beyond outcomes associated with student ECA participation. This study intends to extend the
existing research by considering (a) student motivation, (b) ECA opportunities offered, and (c) participation by student percentage together in researching (d) student well-being.

**Recession and ECAs.** The fluctuating economy and subsequent educational policy have and will continue to impact the future of ECAs. As student engagement in ECAs remains steady or increases, educational systems across the U.S. are faced with budget concerns that are threatening the existence of these programs. Budgetary restraints in the U.S. education system have an impact on schools, students, and communities through additional proposed tax increases, reduction of services and providers, and managing or reducing teaching staff numbers and workload. In 2008, the Center on Budget and Policy Priorities reported that “…at least 41 states faced or are facing shortfalls in their budget” (McNichol & Law, 2008, p. 1), gravely impacting multiple state agencies. Since the majority of state spending in the United States is dedicated to education and health care, high school students might be directly affected during the critical years leading up to post-secondary education or other adult responsibilities.

According to the National Center for Education Statistics 2011 (Digest, 2012), local, state and federal government agencies in the United States, plagued by the economic downturn and recession, have been forced to consider cutting educational spending while attempting to meet educational mandates. Reduced funding and unfunded mandates appear to have burdened the educational system with high expectations for student output while operating with reduced or restricted resources (Zhao, 2012).

The current economic reality of reduced or uncertain educational funding and decisions by policy makers to re-allocate funds has reduced the opportunities and resources needed to ensure ECA sustainability. Resources impacted include but are not limited to adult supervision, facilities, and necessary supplies. It is also important to consider how ECAs might be impacted
by an economy that is experiencing a recovery, in terms of utilization of existing or new resources as well as managing re-allocation.

School districts across the US have been forced to find alternate sources of funding to support ECAs, including charging additional fees or eliminating programs (McNichol & Law, 2008; Williams et al., 2011; Zhao, 2012). Williams, et al. (2011) report that:

The cumulative effect of four consecutive years of lagging revenues has led to budget-cutting of historic proportions. An analysis of newly enacted state budgets shows that budget cuts will hit education, health care, and other state-funded services harder in the 2012 fiscal year – which started July 1, 2011 – than in any year since the recession began (p. 1).

As state and local budgets recover, uncertainties remain as to when, how, and how many ECAs will be re-introduced or added to schools with reduced or eliminated ECA programs.

Elimination or Reduction of ECAs. As noted by Stearns and Glennie (2010), the reduction or elimination of ECAs and sports due to lack of funding in education budgets or policy decisions impacts opportunities for both choice and engagement.

Despite the U.S. government’s assertion that it “supports efforts to increase the amount of time children spend being physically active, including within the school context” (Calbom, 2012, p. 5), the reality exists that a decrease in funding for educational programs or the elimination of ECAs and sports are likely to impact a student’s psychological well-being.

For a student to choose to engage in an activity is initially an attempt to meet basic needs, and remaining engaged may continue to satisfy those needs. To the extent that choice and engagement have not been measured relative to well-being, the present research posits that continuous commitment and engagement in known or new and emerging activities may serve
basic needs in a manner that can enhance the feeling of well-being in participants. Students may report varying levels of feelings of autonomy, competency and relatedness. Also, students may find that less time engaged in ECAs equates to a lower level of overall well-being.

Chapter Summary

The present research investigates the extent to which student engagement in ECAs contributes to their well-being through providing opportunity for academic, social and behavioral development. The theoretical lenses, which provided a framework for the investigation, include theories of motivation, self-determination, and well-being. This study extends existing research by considering well-being in a high school setting, in terms of (a) student motivation, (b) ECA opportunities offered, and (c) participation by student percentage.

Research has found that students who feel a greater level of connectedness in school report a higher level of (emotional) well-being (McNeely et al., 2002). Autonomous reasons for engaging in particular behaviors or activities are associated with beneficial psychological outcomes and psychological well-being (Deci & Ryan, 2010). Motivation serves to guide the behaviors of students to meet psychological needs towards specific outcomes. However, equal motivation may not result in equal outcomes of well-being.

Self-determination Theory (SDT) allows researchers to consider to what extent students are aware of their feelings and their sense of self (awareness), and feel a sense of choice with respect to their behavior (autonomy). This includes the choice to engage (or not) in ECAs within the context or environment of high school.

Measuring student well-being, utilizing the eudaimonic position includes (a) measuring the level of self-determination while students experience ECA participation and (b) assessing individual differences in the extent to which people tend to function in a self-determined way, by
measuring the basic psychological needs of competency, autonomy, and relatedness. These psychological needs are three of six components associated with the Ryff Scale of Psychological Well-being (1989). Self-determination (motivation) has not been studied in the context of high school while considering ECAs as a variable for well-being.

ECAs have long played an important role within the US educational system. However, the immediate or long term developmental impact on students, if opportunities are reduced or eliminated, was unknown. Conceivably, absence of such opportunities might greatly impact the development of young adults, including social relationships with adults and peers, choices to participate in challenging activities, as well as physical, behavioral and academic outcomes within education and beyond. The next chapter outlines how the research was designed and implemented to address these questions.
CHAPTER 3: METHODS

The purpose of this research was to quantitatively examine self-determination and student participation in extracurricular activities (ECAs) as predictors of psychological well-being in high school students in one school in Massachusetts. According to Creswell (2009), a correlational research design should be used when the research goal is to determine the tendency for two variables to vary consistently. If the variables of interest vary consistently, the variables can be said to correlate. If they do not vary consistently, they cannot be said to correlate.

Variables for the study included self-determination, ECAs and well-being. The correlational study provided a quantitative empirical description of existing relationships. The quantitative research format followed guidelines by Creswell (2009) and Muijs (2011).

Hypotheses Statements

H0a: Students do not experience a higher level of well-being when participating in a higher level of ECAs.

H0b: Students do not experience a higher level of well-being when they exhibit a higher level of self-determined behavior.

H0c: Students who experience a higher level of self-determination will not exhibit a higher level of ECA participation.

H0d: Students with a higher level of self-determination and ECA participation will not exhibit a higher level of well-being.

H1: Students with a higher level of participation in ECAs will exhibit a higher level of well-being.

H2: Students with a higher level of self-determined behavior will exhibit a higher level of
well-being.

\( H_3 \): Students with a higher level of self-determination will exhibit a higher level of ECA participation.

\( H_4 \): Students with a higher level of self-determination and ECA participation will exhibit a higher level of well-being.

**Research Problem Statement**

The problem is that educators and policy makers are being forced to make choices in programming and it is impacting extracurricular activities and athletics (ECAs). If ECA involvement leads to a higher level of well-being in students, we do not know what the developmental or well-being outcome(s) would be for students if ECAs are limited or reduced. Additionally, only a limited amount of extant research on goal-directed behavior, motivation, or innate psychological needs that might be met by engaging in ECAs relative to opportunities for engagement was identified. This study extends current research on extracurricular engagement by students in order to recognize: (a) the role of self-determined behavior in engaged students; (b) the personal growth value of engagement in an activity, and (c) those factors which most correlate to psychological well-being (PWB) in engaged students.

The following sections discuss the research design, rationale and justification for the design as well as some of the advantages and disadvantages of the design.

**Research Design**

The design was an explanatory correlational study utilizing questionnaires administered to students by teachers with the researcher present in the school building. Nonprobability or convenience sampling was used by utilizing members of the junior class in one public high school in Massachusetts. The sample size included 149 students \( (N=149) \) out of a population of
The questionnaires were administered during a homeroom period at the start of an academic day. All questionnaires were completed in spring, 2015.

The purpose of the study was to generalize from the sample what level of self-determination is experienced by high school students in their junior year and what factors most relate to well-being while students are involved with ECAs. This was done by measuring (1) factors associated with self-determination, (2) ECA participation and (3) psychological well-being (PWB).

A correlational study was selected as it utilizes confirmatory scientific methods, collecting quantitative data, to test hypotheses. This study aimed to statistically measure whether, and to what extent, a relationship exists between level of self-determination and well-being while participating in extracurricular activities. Further, the researcher considered whether this relationship could predict well-being utilizing existing testing instruments. The correlational study provided a quantitative empirical description of existing relationships and was the choice of the researcher since the relationship could not be experimentally isolated.

The variables of interest included (a) level of self-determination in students, (b) number of extracurricular activities offered at each school, (c) percentage of students engaging in ECAs at each school, (d) average number of ECA activities per student (e) amount of participation hours in ECAs, and (f) level of well-being experienced by students. Data was collected and statistically analyzed to test the hypotheses of the researcher.

The role of human development, motivation, age and behaviors (in adolescence), in conjunction with the current theoretical framework, suggest maturity can be a factor in meeting basic psychological needs (Darling, 2005; Deci & Ryan, 2000; Eccles et al., 2003). Utilizing an upper-class grade level relates directly to student choice, the progressive nature of needs
satisfaction relative to developmental, physical and emotional maturation, experience, and exposure opportunities. Maturation has been shown to be a factor that correlates to level of well-being (Deci & Ryan, 2008a, 2010; Milyavskaya & Koestner, 2011; Shulruf, Hattie, & Tumen, 2008). Thus, potential feelings of enhanced well-being are worthy of closer examination in this cohort addressing a specific context (ECAs) in high school (environment).

The decision to use surveys allowed the researcher to observe and measure information statistically without bias or subjectivity. Survey use assumes the following: (a) surveys do not allow the researcher to control the environment; (b) it may be more difficult to derive more subjective findings as surveys can limit “deeper understanding of processes and, contextual differences” (Muijs, 2011, p. 39); and (c) the data, as reported by self-report methods such as a survey, may not always be reliable. This study was a single subject design and used existing testing instruments that are deemed valid and reliable by multiple researchers, have been tested over time, and are discussed further in the instruments section.

The selection of a medium to medium/large high school was intended to assure that students have equitable opportunities to participate in extracurricular activities. Schools with more activities tend to have higher participation rates (Stearns & Glennie, 2010), leading this researcher to consider a school that offered reasonable opportunities for engagement as well as attempt to account for the over-manning effect (Lindsay, 1984; Schoggen & Schoggen, 1988) in which students participate at a lower level in larger schools (McNeal Jr., 1999, p. 294). The school utilized for this study offered 57 opportunities for ECA participation to juniors. Of the 57 ECAs, 21 were non-athletic activities and 36 were athletically related activities.
A weakness to utilizing correlational research is that we are unable to determine causality; rather, we may be able to predict an outcome based on analyses, as noted in the purpose. In this case, we only considered a specific cohort (juniors) in an educational setting. This will be only generalizable to the population sampled, but may infer similar results could be expected with similar cohorts given the roles of development and maturation. The sample did not include any private or parochial institutions, different states nor did it include any additional grade levels in the sample.

The following sections review the research procedures including population and sampling, statistical power, data collection and instruments utilized by the researcher.

**Research Procedures**

**Population and Sampling**

The population was juniors attending one suburban public high school in Massachusetts. Sampling included one high school in which the junior class size was a population of 245. Students in attendance during the testing date and time included 188 eligible juniors. The final sample for the study was 149 students ($N=149$). The selection of students in their junior year was to assure internal-consistency and reliability as a cohort.

Numbers under one thousand allowed for single sampling research (survey) while groups under 100 would not be statistically significant for correlation and regression analysis (Gall, Gall, & Borg, 2010). Also, the number of ECAs available to students in that school was noted as part of the sampling strategy to determine actual number of ECA opportunities provided at the school as well as percentage of students engaging in ECAs at the school.

Demographic information for the school was gathered two ways. First, the researcher used the Massachusetts Department of Education online database to obtain school profiles,
enrollment data and socioeconomic status (SES) information for each school. District profiles included sorting student groups by grade, gender, and race. Second, basic demographic information was collected as part of the questionnaire required for completion of the sample. The demographic questions in the questionnaire included only age (birth month and year), and race.

The sampling strategy chosen was a convenience sample, to limit educational disruption for students, while considering testing opportunities that required students to be together as a group during one specific period of time (date and time). Questionnaires and writing implements were distributed to students at the designated period and collected at the conclusion of that period. The period consisted of approximately 40 minutes. Students were unable to depart the facility until the period ended. Students were given as much time as needed to complete the questionnaire.

**Statistical power.** With a student sample of 149, we calculated for statistical power. As this was a study considering multiple hypotheses, the *significance criterion* would be measured to avoid a Type I error, which is: $\alpha \approx .01$ per hypothesis. A required sample size for a correlation with an acceptable significance level ($\alpha$) of .01 and acceptable absolute error (precision) ($\alpha$) of .05 is 29 participants or $n = 29$. For a mean differential with a Power = .80 and $\alpha \approx .05$ would suggest a large group $n = 393$, medium group $n = 64$ and the smallest acceptable group of $n = 26$ (Cohen, 1992). The sample size for this study fell within the acceptable power range.

**Ethical Considerations**

While the study did not collect information or data that would place anyone at risk, it did involve minors. Therefore, the Institutional Review Board (IRB) protocol of both Northeastern University and the public school district was followed to ensure that participants were protected. No remuneration was offered for participants of this study.
Consent Process. The high school managed consent as opt-out consent. The process at the school included both an electronic email request through their Educational Portal System for consent and a hard copy was mailed to the student address on file for return reply via US Postal Service. This was done since there were families in the school district that did not have computers and/or reliable Internet access. The email request through the Educational Portal System and US Postal Service mail included a description of research and a standard unsigned consent form provided by the researcher and approved by the Northeastern University Institutional Review Board.

Following distribution of opt-out consent requests, the school matched all replies to opt-out and provided all participating faculty members used for administration of the testing instrument with a roster of approved subjects in order to maintain confidentiality.

In advance of the testing date, the faculty was given instructions and an administration script, package of surveys, envelopes for collection, and pencils for use by the students. The researcher was at the testing site only on the testing date and was available to answer questions and collect sealed envelopes at the conclusion of the testing period.

Data Collection

This section consists of two major components, Instruments and Procedures. Details below provide (a) content associated with the questionnaire, and (b) procedure(s) utilized to administer the questionnaire and collect data.

Instruments

A single questionnaire contained four total sections, with two sections containing two existing and distinct testing instruments. The four sections included (a) demographic questions (age, race), (b) ECA participation questions (what activity, time devoted), (c) Self-determination
Scale (SDS) (Sheldon & Deci, 1996), and (d) Ryff Scale of Psychological Well-Being (Ryff & Singer, 1996). The SDS was scored on a 5-point Likert scale and the Ryff scale was a 6-point Likert scale. The data collected generated statistics to test the hypotheses through correlational methods, statistical regression methods as well as factor analysis.

The demographic questions contained at the end of the questionnaire included common educational system demographics such as race (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, Hispanic, Mixed, White, and Other) and age (month/date of birth). Students checked all that applied for race.

An extracurricular activity (ECA) inventory included two broad categories, which included, (a) activities, and (b) athletics. The activities category utilized designations adopted from Stearns and Glennie’s 2010 study. The athletics categories included interscholastic sports and other school-sponsored sports. Categories utilized for activities included, (a) academic activities, (b) media activities, (c) electronic media activities, (d) service activities, (e) vocational activities, and (f) arts and music. The athletics categories included interscholastic sports and other school-sponsored sports. The ECA portion of the questionnaire is an extension of the idea and work of Stearns and Glennie (2010).

Students identified participation based on time of year (fall, winter, spring) and selected all that applied. Students also identified average hours of participation per week/per season. The categories included, (a) 0-5 hours/week, (b) 6-10 hours/week, (c) 10-15 hours/week, and (d) 16+ hours/week.

Testing instruments utilized for this study were made available through requests by the researcher and have been used in past research studies.

Testing instruments included:
- Self Determination Scale (SDS) (Sheldon & Deci, 1996). Two sub-scales of five items; 10 items total.

- Ryff Scale of Psychological Well-Being (Ryff & Singer, 1996) (medium version, 42-item) is a theoretically grounded instrument that specifically focuses on measuring multiple facets of psychological well-being. The researcher used three of six factors that most represent eudaimonic well-being, which are, (a) autonomy (AU), (b) environmental mastery (EM) and, (c) positive relations to others (PR). Each factor for measurement contains 7 items; 21 total items.

**The Self-Determination Scale (SDS)** (Sheldon & Deci, 1996). The scale was designed to assess individual differences in the extent to which people tend to function in a self-determined way. It is thus considered a relatively enduring aspect of people’s personalities, which reflects (1) being more aware of their feelings and their sense of self, and (2) feeling a sense of choice with respect to their behavior.

The SDS included two five-item sub-scales. The first scale assessed the degree to which people feel like themselves and that their emotions are noted as being integral to them, and the second assessed the degree to which they feel a sense of control on their lives. The subscales are (a) Awareness of Self; and (b) Perceived choice.

The Ryff Scales of Psychological Well-Being (Ryff & Singer, 1996) (medium version, 42-item) is a theoretically grounded instrument that specifically focuses on measuring multiple facets of psychological well-being. These facets include:

- *Autonomy (AU)*

- *Environmental mastery (EM)*

- Personal growth (PG)
- Positive relations to others (PR)
- Purpose in life (PL)
- Self-acceptance (SA)

The researcher used *three of six factors* that most represent *eudaimonic well-being* which are, (a) autonomy (AU), (b) environmental mastery (EM) and, (c) positive relations to others (PR) (Ryff & Singer, 2006).

The researcher accessed and received permission to utilize the SDS by the University of Rochester (New York, USA) with the agreement that all data and study details would be shared with the university and the faculty who specifically focus on Self-determination Theory. Permission to use the Ryff Scale and the acquisition of the testing instruments and scoring outlines was obtained through a secure portal authorizing and granting their use in exchange for sharing information with Dr. Carol Ryff at the University of Wisconsin, Madison.

Each testing instrument was researched in its use in other studies and verification by researcher of reliability, validity and generalizability.

Burns and Machin (2008) conclude, while there are some discrepancies in research . . . we recognise the link between PWB in its current form and a number of health outcomes, and would conclude that Ryff’s PWB scales are an appropriate tool for assessing distinct aspects of PWB at a general level, though the extent to which this can be replicated across populations will be influenced by sampling characteristics. (p. 11)

Additionally, it was noted by Singh, Mohan and Anasseri (2012) and Ryff and Keyes (1995) that the results of a confirmatory analysis including a representative sample of over 1100 adults (over the age of 25) supported the multi-dimensional model. Ryff and Keyes also found in their
research that factors of self-acceptance (SA) and environmental mastery (EM) were highly correlated. Akin’s (2008) research also concludes that Ryff Scale of Psychological Well-being is a valid and reliable instrument with test and re-test reliability coefficients between .78 and .97 for six sub-categories while internal consistencies varied between .87 and .96.

The Self-determination Scale (SDS) has been utilized and replicated in studies by Sheldon (1995), who correlated four scales, included SDS. Research in this study and studies by Thrash and Elliot (2002) and Elliot and McGregor (2001) indicate a strong relationship with this 10-item instrument and other indices relative to self-determination (Sheldon, 1995).

Finally, a factor analysis of the data was used to further investigate (a) self-determination and (b) well-being.

The procedure for the study, use of questionnaires, data collection and analysis is reviewed in the information that follows.

**Procedures**

The researcher contacted a candidate school for permission following doctoral research project proposal approval and Institutional Review Board (IRB) approval. The school received a description of the study including purpose, design, student involvement information, questionnaire, time line for completion, projected dates for questionnaire administration, and a description of use for statistical data upon completion of the study. Also, the researcher confirmed with the school following administration/school approval, amount and type(s) of extracurricular activities (ECAS) offered at the school. The *Data Collection and Analysis Plan* follows in figure 3.1.

The school was sent a copy of the final statistics and final dissertation document following candidate doctoral defense.
Data Collection and Analysis Plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Acquire school permission and testing dates</td>
<td>Following IRB April</td>
</tr>
<tr>
<td>2 On-site testing</td>
<td>May-June</td>
</tr>
<tr>
<td>3 Data analysis and summarized findings</td>
<td>June-August</td>
</tr>
</tbody>
</table>

*Figure 3.1 Data Collection and Analysis Plan*

**Data Analysis**

Inferential statistical analysis was used to determine relationships and consider predictability of variables while testing the hypotheses of the researcher. The statistical analysis included (a) correlation, (b) regression analysis, and (c) a factor analysis.

The first analysis of the data was a simple correlation. Correlation revealed how one section related to another section in the study in investigating the hypotheses of the researcher. According to Creswell (2009), if the variables of interest vary consistently, the variables can be said to correlate. If they do not vary consistently, they cannot be said to correlate. Each is described in further detail below. In testing hypotheses 1-4, correlation was used to determine how the value of one variable changes when the value of another changes. A correlation can range in value from -1 to +1. The *Pearson correlation* \(r\) was utilized in the statistical analysis since the variables are not fixed and we wanted to determine the relationship between two or more variables. *Correlation coefficients* (or bivariate) were also used for hypotheses 1-3 to measure the amount of variability that is shared between two variables and what they had in common. Further, we determined the squared correlation coefficient by calculating the
percentage of variance in one variable that was accounted for by the variance in the other variable.

In Hypotheses 1-3, we tested for a direct or positive correlation. For Hypothesis 1, variables were ECA participation and well-being. The absolute value of the coefficient determined the strength of the correlation. Also, t-test for independent samples was used. In Hypothesis 2, the variables were self-determination and well-being. Correlation was used for Hypothesis 2. In Hypothesis 3, the variables were self-determination and ECA participation. Correlation, t-test for equality of means and significance testing was used for Hypothesis 3. In Hypothesis 4, the variables were self-determination, ECA opportunities, and well-being.

Scattergrams were used to demonstrate correlations for Hypothesis 2. Frequency counts were also utilized to determine cutoff points in determining groups for total participation in activities values and total self-determination values.

Regression analyses were used for prediction purposes for all hypotheses (1-4). Regression analysis was used to predict to what degree or power a relationship exists. Regression was used for all hypotheses.

Finally, additional analyses were used in an exploratory capacity in order to show additional relationships between variables and what factors are emerging. This statistical data will inform further research by giving more details and allow for a more robust replication of the study. Factor analysis was used to inform the results, help eliminate redundancies between items, as well as look for associations.

All statistical data was used to prove or disprove the hypotheses and add to existing research on student self-determination, ECA participation and well-being. It was the goal of the researcher to determine generalizability in the findings as well and confirm validity and
reliability. An alpha (\(\alpha\)) level of .05 was used for all statistical tests to determine statistical significance.

**Validity, Reliability, Generalizability**

In order to manage matters of validity, reliability and generalizability, the researcher considered the role of due diligence and best practices prior to, during and following the testing and data collection sequences by following established guidelines in all areas. The sequence of events noted in the procedures section was followed exactly at the test site and during data sample collection to ensure validity and reliability.

The existing testing instruments used in this study have been deemed reliable and valid by other researchers as noted above in this document. This includes construct validity and content validity. The validity of each test demands that it measures what it says it measures. In this case, the tests measured variables that tested researcher hypotheses 1-4 and the null hypotheses.

The sample size of this population will lead to limited generalizability. However, the strength of the relationship was central to the study and the sample size met the power benchmark. Subsequent studies can then determine if, and to what extent, the noted relationship(s) in the current study might apply to other, broader populations (Light, Singer, & Willett, 1990). Specific attention to procedures in all phases of the research helped assure a greater level of reliability and validity in order to ensure replicability.

**Protection of Human Subjects**

The study qualified for Human Subjects Research Exemptions (45 CFR 46.101) (U.S. Department of Health & Human Services, 2010), since the research, testing, and questions were commonly accepted in educational settings and involving normal educational practices. Human
subjects were not identified, interviewed, or observed for experimental reasons. Before, during and after the collection of the data, the researcher was unable to record or identify subjects linked to the study. The Institutional Review Board (IRB) at Northeastern University and the participating high school agencies approved the study.

The researcher had no contact with participants before or after the collection of data. There were no potential physical, psychological, financial, legal or other risks to students or faculty as there was no intervention or identification of test subjects. Parents/guardians were given the opportunity to be granted opt-out status per school policy.

**Chapter Summary**

The design was a correlational study utilizing questionnaires administered to students with the researcher on site. Nonprobability or convenience sampling was used by utilizing members of the junior class in one public high school in Massachusetts. The research tested four hypotheses through correlation methods and considered predictability through regression analysis. Factor analysis was used to help eliminate redundancy, help inform the final data, and add robustness to future research opportunities.

The variables of the study included, (a) self-determination, (b) ECAs provided, (c) student participation in ECAs, and (d) well-being. The amount of ECAs offered by the school was factored into analysis of the data to determine (a) percentage of students in the junior class involved with ECAs, (b) number of activities/per student in the junior class/school offered, and (c) number of students participating in activities/student.

The researcher identified a school as a candidate for the study, prepared the IRB application for submission to Northeastern University following the doctoral research proposal approval and defense, and prepared questionnaires for use at the site.
CHAPTER 4: FINDINGS

The purpose of this research was to quantitatively examine self-determination and student participation in ECAs as predictors of psychological well-being in high school students in one school in Massachusetts. Specifically, the purpose of the study was to investigate what level of self-determination is experienced by high school students in their junior year, and what factors most relate to well-being when students are involved with extra-curricular activities (ECAs). This was done by measuring (1) factors associated with self-determination, (2) ECA participation, and (3) psychological well-being (PWB). This section describes the descriptive and inferential statistics conducted in order to test the study’s hypotheses.

The first section uses descriptive statistics to describe characteristics of the research sample, summarize the data, and describe measures of central tendency and spread for the major variables of interest in the study. The second section uses inferential statistics utilizing the General Linear Model (GLM) including the t-test for differences between groups, t-tests for independent samples, correlation analyses, regression analysis and Levene’s Test for Equality of Variances.

Descriptive Statistics

The researcher started by conducting a descriptive analysis to look at the data and multiple variables before analyzing the relationships that might exist between variables. The analysis began with a review of the demographic description of the sample and subsets of the sample. Next, measures of central tendency were calculated for each of the major variables of the study: self-determination, ECAs, and well-being. An alpha (α) level of .05 was used for all statistical tests to determine statistical significance.

Sample Overview and Demographics
The population for this study consisted of 245 juniors in one Massachusetts public high school. Of the population, 51 students were absent from or tardy to school on the testing date and six students were on the opt-out list. The remaining eligible sample consisted of 188 students. Once questionnaires were completed, they were collected by faculty members, placed in envelopes and returned to the central office for collection by the researcher. The questionnaires were coded, entered into an Excel spreadsheet, and converted to an ASCII file for statistical analysis. The Excel CORREL function was utilized to calculate correlation coefficients. The researcher, utilizing secured cloud-based storage, has retained copies of the data and statistics. Student confidentiality was assured by the absence of identifying information on the questionnaires or related documents.

During coding, 39 questionnaires were excluded from analysis because of partial or unrecognizable responses. The final sample was 149 (N=149) with sample size response rate of 79%. The response rate obtained allows for a 3.7% margin for error with a confidence level of 95%. There were no exclusions due to outliers.

**Race, Age, and Subset Groups**

The participants in this study included only juniors in high school (N=149). The average age of participants was 16.8 years (SD = .52). Students were asked to identify all race categories that applied. Race categories included Asian, Black or African American, Native Hawaiian or Other Pacific Islander, Hispanic, Mixed, White, and Other. There were no entries for Other. The race of the participants is within +/- 2% in all categories to the overall population of the school with the exception of White (77%; sample school, 68%) and African American (5%; sample school, 3%). Study results are below in Table 4.1.
Table 4.1

Race Demographic (N=149)

<table>
<thead>
<tr>
<th>Race</th>
<th>M</th>
<th>SD</th>
<th>SEM</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>.07</td>
<td>.26</td>
<td>.02</td>
<td>3.29</td>
<td>8.96</td>
</tr>
<tr>
<td>Black or African American</td>
<td>.05</td>
<td>.21</td>
<td>.02</td>
<td>4.33</td>
<td>16.94</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>.02</td>
<td>.14</td>
<td>.01</td>
<td>6.90</td>
<td>46.27</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.08</td>
<td>.27</td>
<td>.02</td>
<td>3.11</td>
<td>7.80</td>
</tr>
<tr>
<td>Mixed</td>
<td>.01</td>
<td>.11</td>
<td>.01</td>
<td>8.54</td>
<td>71.95</td>
</tr>
<tr>
<td>White</td>
<td>.77</td>
<td>.42</td>
<td>.04</td>
<td>-1.26</td>
<td>-.41</td>
</tr>
</tbody>
</table>

Since ECAs serve as a dichotomous variable (participants/nonparticipants), the sample was also divided into subset groups as nonparticipants in ECAs and participants in ECAs, extending the research format for subgroups of Stearns and Glennie (2010) and Darling et al. (2005). Of the sample (N = 149), 21 students (14%) did not participate in ECAs at the school. The average number of activities participated in by the total sample was 3.1 (SD = 2.75) and the average number of categories (of 10 possible choices) participated in by the sample was 2.23 (SD = 1.81). The average number of activities participated in by participants, excluding nonparticipants was 3.24 (of 10 possible choices). Frequency testing for Participants/Number of Total Activities can be found in Appendix C and Percentage of Participants/Number of Activities can be found in Appendix D.

Extracurricular activities (ECAs) categories and descriptors are adapted from Stearns' and Glennie’s study (2010) and can be found below in Table 4.2.
Table 4.2

*Extracurricular Activities (ECAs) Categories and Descriptors*

<table>
<thead>
<tr>
<th>CAT</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT1</td>
<td>Category--Academic Activities</td>
</tr>
<tr>
<td>CAT2</td>
<td>Category--Media Activities</td>
</tr>
<tr>
<td>CAT3</td>
<td>Category--Electronic Media Activities</td>
</tr>
<tr>
<td>CAT4</td>
<td>Category--Service Activities</td>
</tr>
<tr>
<td>CAT5</td>
<td>Category--Vocational Activities</td>
</tr>
<tr>
<td>CAT6</td>
<td>Category--Arts/Music Activities</td>
</tr>
<tr>
<td>CAT7</td>
<td>Category--Varsity Interscholastic Sport</td>
</tr>
<tr>
<td>CAT8</td>
<td>Category--JV Interscholastic Sport</td>
</tr>
<tr>
<td>CAT9</td>
<td>Category--Other Interscholastic Sport</td>
</tr>
<tr>
<td>CAT10</td>
<td>Category--Other School-sponsored Sport</td>
</tr>
</tbody>
</table>

**Descriptive Analyses and Inferential Statistics for (ECAs), Self-determination and Well-being**

The descriptive statistics for total categories and subcategories are adapted from Stearns and Glennie (2010) and are shown in Table 4.3. The results displayed include measures of central tendency, *SEM*, skewness, and kurtosis. The skewness of data is determined by utilizing the measures of central tendency to measure symmetry. Kurtosis is a measure of whether the data are peaked or flat relative to a normal distribution. The normal distribution is a symmetric distribution with skewness near zero and Kurtosis near 3.

Table 4.3

*Descriptive Statistics for Extracurricular Activities (ECAs) Comparing Nonparticipants and Participants*

<table>
<thead>
<tr>
<th>Variable/Descriptor</th>
<th>M</th>
<th>SD</th>
<th>SEM</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTACT/</td>
<td>3.19</td>
<td>2.75</td>
<td>.23</td>
<td>1.24</td>
<td>1.65</td>
</tr>
<tr>
<td>Total Number of Activities Participating In</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTSEA/</td>
<td>8.20</td>
<td>7.02</td>
<td>.58</td>
<td>1.06</td>
<td>.92</td>
</tr>
<tr>
<td>Total Number of Activity/Seasons Part. In</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ACTSEA was calculated by multiplying total numbers of activities with seasons participated in as reported on the questionnaire. Only three seasons were indicated on the testing instrument (fall, winter, spring). Students were able to report multiple activities each season.

The TOTACT (Median = 2.0) variable is a non-symmetrical distribution, which is positively skewed and the kurtosis is leptokurtic, indicative of a decay or drop on the side of the tail. Despite not being symmetrical the distribution is not considered abnormal since the mean number can be considered as a typical value for the variable. A non-symmetrical distribution is also present in ACTSEA, which is also positively skewed. The kurtosis is near +1, indicative of a distribution with a peak that drops or decays quickly toward the tail. The symmetry is acceptable given that the mean value can also be considered as a typical value for the variables of activities per season. Given the descriptive statistics and non-symmetrical shape of TOTACT, the skewness and kurtosis are within acceptable range.

Table 4.4 below displays the self-determination and well-being variables comparing nonparticipants and participants. As part of the descriptive analysis, the mean and standard deviation for each of the total variables was computed.
Table 4.4

Descriptive Statistics for Total Self-determination (TOTSDS) and Well-being (TOTRYF) Correlations Comparing Nonparticipants and Participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptors</th>
<th>M</th>
<th>SD</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTSDS</td>
<td>Total of Perceived Choice and Awareness of Self (SDS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonparticipants (n = 21)</td>
<td>7.46</td>
<td>1.69</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>Participants (n = 128)</td>
<td>7.67</td>
<td>1.65</td>
<td>.15</td>
</tr>
<tr>
<td>TOTRYF</td>
<td>Total of Autonomy, Environmental Mastery and Positive Relations (Ryff)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonparticipants (n = 21)</td>
<td>170.29</td>
<td>20.93</td>
<td>4.57</td>
</tr>
<tr>
<td></td>
<td>Participants (n = 128)</td>
<td>175.80</td>
<td>30.52</td>
<td>2.70</td>
</tr>
</tbody>
</table>

The TOTSDS included two five-item sub-scales, (a) Awareness of Self, and (b) Perceived Choice. The first scale assessed the degree to which people feel like themselves and that their emotions are noted as being integral to them, and the second assessed the degree to which they feel a sense of control on their lives. Scores could range from 0 to 10.

The Ryff Scale of Psychological Well-Being (Ryff & Singer, 1996) (medium version, 42-item) is a theoretically grounded instrument that specifically focuses on measuring multiple facets of psychological well-being. Respondents rate statements on a scale of 1 to 6, with 1 indicating strong disagreement and 6 indicating strong agreement. The researcher used three of six factors that most represent eudaimonic well-being which are (a) autonomy (RYFAUT), (b) environmental mastery (RYFENV) and, (c) positive relations to others (RYFPOS) (Ryff & Singer, 2006). Total well-being is designated as TOTRYF.

The two testing instruments, the Ryff Scale of Psychological Well-Being and the Self-determination Scale, were each researched in its use in other studies and verified by researchers in terms of reliability, validity and generalizability as indicated in Chapter 3.
Inferential Statistics

The structure and framework for this research were guided by the hypotheses. The hypotheses for this research state that students with a higher level of ECA participation will exhibit a higher level of well-being. Second, students experiencing a higher level of self-determination or self-determined behavior will also exhibit a higher level of well-being. Third, students experiencing a higher level of self-determination or self-determined behavior will also exhibit a higher level of participation in ECAs. Finally, students with a higher level of self-determination and participation in extracurricular activities will exhibit a higher level of well-being.

Inferential statistics were used to determine whether or not to reject the null hypotheses and to help assess strength of the relationship between variables. An alpha (α) level of .05 was used for all statistical tests to determine statistical significance.

The null hypothesis can only be rejected when the probability of a Type 1 Error is less than .05. Similarly, if the p-value is greater than .05, we might also reject the null hypotheses.

In Hypotheses 1, 2, and 3, we tested for a direct or positive correlation. For Hypothesis 1, variables were ECA participation and well-being. The absolute value of the coefficient determined the strength of the correlation. T-tests for independent samples were also used. In Hypothesis 2, the variables were self-determination and well-being. Correlation was used for Hypothesis 2. In Hypothesis 3, the variables were self-determination and ECA participation. Correlation, t-test for equality of means and significance testing were used for Hypothesis 3. In Hypothesis 4, the variables were self-determination, ECA participation, and well-being.

Scattergrams were used to demonstrate the relationship for Hypothesis 2 and Hypothesis 4. Frequency counts were also utilized to determine cutoff points for total participation in
activities values and total self-determination values. Regression analysis was used to predict the strength of a relationship, and was used for all hypotheses.

Statistical analyses revealed that for H₁ and H₃, the null hypotheses were accepted, indicating that the analyses did not detect a significant association between the measured variables. For H₂ and H₄ the null hypothesis was rejected in each case, as the data demonstrated strong relationships.

**Hypothesis 1.** The first hypothesis concerns the relationship between ECA participation and well-being, stating:

H₁: Students with a higher level of participation in ECAs will exhibit a higher level of well-being.

H₀a: Students do not experience a higher level of well-being when participating in a higher level of ECAs.

The total well-being scores (TOTRYF) of the participant/nonparticipant groups were higher for students participating in one or more ECA (M = 175.80, SD = 30.52) than for nonparticipants (M = 170.28, SD = 20.93), t(147) = 1.04, p = .30. The degrees of freedom (N-2) were adjusted from 149 to 147. The mean scores indicate a positive direction for ECA participants; however the level of significance is just .70. Therefore, the null hypothesis is accepted: H₀a: Students do not experience a higher level of well-being when participating in a higher level of ECAs.

**Hypothesis 2.** The second hypothesis concerned the relationship between self-determined behavior and well-being, stating:

H₂: Students with a higher level of self-determined behavior will exhibit a higher level of well-being.
H0b. Students do not experience a higher level of well-being when they exhibit a higher level of self-determined behavior.

Analysis of self-determination (TOTSDS) and well-being (TOTRYF) based on the total sample indicate that there was a 99% correlation with a strong positive relationship between self-determination and well-being, \( r (149) = .674, p < .001 \). A scatterplot of the linear relationship, or line of fit which is a straight line that best represents the data on a scatter plot, is shown in Figure 4.1. Frequencies were used to plot the relationship with the 10-question SDS scale (scores can range from 0-10) and the 42-question Ryff Scale (scores can range from 41-252).

![Figure 4.1 Self-determination and Well-being Linear Relationship](image)

Additionally, a test of significance (t-test) was conducted between two groups utilizing scoring breaks with combined SDS scores and TOTRYF. The sample was also divided into two
groups. The first group had a combined total self-determination (TOTSDS) multiplied by the total number of activities (TOTACT) and total well-being (TOTRYF) with a value less than 15.3 ($M = 165.98, SD = 27.32$). The second group had a value of 15.3 or higher and TOTRYF ($M = 180.57, SD = 29.18$). The breaks reflect an almost even number of respondents in each group, shown below in Table 4.5.

Table 4.5

<table>
<thead>
<tr>
<th>SDS</th>
<th>Respondents</th>
<th>TOTRYF</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6 TO 6.2</td>
<td>29</td>
<td>147.06</td>
</tr>
<tr>
<td>6.3 TO 7.4</td>
<td>32</td>
<td>164.16</td>
</tr>
<tr>
<td>7.5 TO 8.2</td>
<td>29</td>
<td>171.21</td>
</tr>
<tr>
<td>8.3 TO 9.0</td>
<td>26</td>
<td>190.27</td>
</tr>
<tr>
<td>9.1 TO 10.0</td>
<td>33</td>
<td>200.46</td>
</tr>
</tbody>
</table>

The significance test for TOTDS and TOTRYF follows in Table 4.6. The values for TOTSDS also align with a natural break in the data listed above in Figure 4.1.

Table 4.6

<table>
<thead>
<tr>
<th>Descriptors</th>
<th>$M$</th>
<th>$SD$</th>
<th>$SEM$</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTSDS 6.2 &amp; under</td>
<td>147.07</td>
<td>22.92</td>
<td>4.26</td>
</tr>
<tr>
<td>TOTSDS 6.3-10</td>
<td>181.50</td>
<td>26.61</td>
<td>2.43</td>
</tr>
</tbody>
</table>

There is a strong significant difference between the two groups $t(147) = -6.41, p = .003$, supporting the hypothesis that a higher SDS score (self-determination) would reflect a higher TOTRYFF (well-being) score. The degrees of freedom ($N-2$) were adjusted from 149 to 147. With a $p$-value of .003, there is significant evidence against the null hypothesis. Therefore, the null hypothesis is rejected.
It is also important to note that the linear regression chart (Figure 4.1) shows homoscedastic variability particularly with the subgroup TOTSDS 6.2 & under. This means errors for the subpopulation are normally distributed and have equal or near equal variances. This is important to support the underlying assumptions of linear regression.

**Hypothesis 3.** The third hypothesis concerned the relationship between self-determination and ECA participation, stating:

\[ H_3: \text{Students with a higher level of self-determination will exhibit a higher level of ECA participation.} \]

\[ H_{0c}: \text{Students who experience a higher level of self-determination will not exhibit a higher level of ECA participation.} \]

As indicated in Table 4.7 below, Total Self-determination scores (TOTSDS) on the participant subsets were higher for students participating in one or more ECAs \((n = 128)\) than for nonparticipants \((n = 21)\).

Table 4.7

<table>
<thead>
<tr>
<th>Descriptors</th>
<th>(M)</th>
<th>(SD)</th>
<th>(SEM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonparticipants</td>
<td>7.45</td>
<td>1.69</td>
<td>.37</td>
</tr>
<tr>
<td>Participants</td>
<td>7.67</td>
<td>1.65</td>
<td>.15</td>
</tr>
</tbody>
</table>

Levene’s Test for Equality Variances was not significant and reported as equal, \(t(147) = -0.54, p = .59\). The degrees of freedom \((N-2)\) were adjusted from 149 to 147. The mean scores indicate a positive direction for ECA participants who reported a higher level of self-determination. However, the level of significance (two-tailed) is only .41. Therefore, the null
hypothesis is accepted: \( H_0c \): Students who experience a higher level of self-determination will not exhibit a higher level of ECA participation.

**Hypothesis 4.** The fourth hypothesis concerned the relationship between self-determination, ECA participation and well-being, stating:

\[ H_4: \text{Students with a higher level of self-determination and ECA participation will exhibit a higher level of well-being.} \]

\[ H_{0d}: \text{Students with a higher level of self-determination and ECA participation will not exhibit a higher level of well-being.} \]

For hypothesis 4, a test of significance (t-test) between two groups was conducted. In order to establish groups, frequency counts were run to show intervals in the data (frequency charts are below in Figure 4.2 and Figure 4.3).

![Figure 4.2](image.png)

*Figure 4.2*  Frequency and Values for TOTRYF – Well-being
Figure 4.3   Frequency and Values for SDS – Self-determination

The sample was divided into two groups by measuring combined total self-determination (TOTSDS) multiplied by the number of activities (TOTACT) and total well-being (TOTRYF). The two groups reflect an almost equal number of respondents in each group as indicated in Table 4.8 below.

Table 4.8

<table>
<thead>
<tr>
<th>SDS x ACT</th>
<th>FREQ</th>
<th>TOTRYF</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>21</td>
<td>170</td>
</tr>
<tr>
<td>0.1 to 7.6</td>
<td>10</td>
<td>160.9</td>
</tr>
<tr>
<td>7.7 to 15.2</td>
<td>28</td>
<td>164.7</td>
</tr>
<tr>
<td>15.3 to 23.2</td>
<td>30</td>
<td>179.8</td>
</tr>
<tr>
<td>23.3 to 37.6</td>
<td>30</td>
<td>174.8</td>
</tr>
<tr>
<td>37.7 to 119.6</td>
<td>30</td>
<td>187.1</td>
</tr>
</tbody>
</table>
The first group had a combined total self-determination (TOTSDS) multiplied by the total number of activities (TOTACT) and total well-being (TOTRYF) with a value less than 15.3 ($M = 165.98, SD = 27.32$). The second group had a value of 15.3 or higher and TOTRYF ($M = 180.57, SD = 29.18$).

A t-test for independent samples was conducted. The correlations are significant $t(147) = -3.06, p = .003$, supporting the hypothesis that students having a combined higher TOTSDS and TOTACT would have a higher TOTRYFF score. The linear relationship for TOTSD and TOTACT 15.3 and above is below in Figure 4.4. The linear relationship for TOTSD and TOTACT less than 15.3 is below in Figure 4.5. The change in mean scores between both samples reinforces the fit as displayed in the models below. With a p-value of .003, there is significant evidence against the null hypothesis. Therefore, the null hypothesis is rejected.

![Figure 4.4 TOTSDS/TOTACT 15.3 and above Linear Relationship](image-url)

\begin{equation}
y = 1.5212x - 19.659 \\
R^2 = 0.99525
\end{equation}
The linear regression chart (Figure 4.5) shows homoscedastic variability with the subgroup $\text{TOTSDS/TOTACT} < 15.3$. This means errors for the subpopulation are normally distributed and have equal or near equal variances. This is important to support the underlying assumptions for linear regression.

**Post-Hoc Data Analysis**

During the course of research and analysis, additional questions can emerge from current findings. Additionally, an abundance of data collected can also provide an opportunity to generate further discussions and additional questions outside the scope of the research hypotheses and questions. This study posed such an opportunity to further explore data already collected during the course of the research. Additional questions arose regarding the
relationships that exist between the variables, as reported, as well as the potential relationships that exist with ECAs, as modeled in the study by Stearns and Glennie (2010).

In the section that follows, significant data collected is displayed through correlation matrices with results that are considered significant ($p < .05$). The information aligns with the questions that emerged from the research including:

(a) Is the relationship between total self-determination and total well-being as strong as reported when the sub-categories for self determination (awareness of self and perceived choice) and well-being (autonomy, environmental mastery, and positive relations to others) for each questionnaire are analyzed more closely for relationship and significance?

(b) Would the correlation and significance be different for subset groups (participants in one or more ECA, nonparticipants) when measuring self-determination independently with the two categories (awareness of self and perceived choice) for self-determination (SDS)?

(c) Would the correlation and significance be different for subset groups (ECA participants versus nonparticipants) when measuring well-being independently with the three dimensions utilized for the Ryff scale (well-being)?

(d) What significant relationships exist among the 10 categories of ECAs and participation?

The first question considered by the researcher explored the relationship between self-determined behavior and well-being and the level of correlation and significance reported in Hypothesis 2, $r (149) = .674$, $p < .001$. This level of significance warranted a closer review of the additional data generated by the statistical analysis specifically by the two sub-categories (perceived choice and awareness of self) of SDS (self-determination) and the three dimensions of
the Ryff Well-Being Scale (autonomy, environmental mastery, and positive relations to others) used in the study.

Self-determination and well-being were factored by question type based on the design of the instruments, using frequency testing. The descriptive statistics are located in Appendix E. Correlations were used to consider the level of significance within each question as well as with questions of the other scale. First, the three dimensions of the Ryff Scale (well-being) were measured to see how each item correlates. The dimensions are autonomy (RYFAUT), environmental mastery (RYFENV) and positive relations to others (RYFPOS). Table 4.7 shows the correlation matrix.

Table 4.7

<table>
<thead>
<tr>
<th></th>
<th>RYFENV</th>
<th>RYFPOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RYFAUT</td>
<td>$r(149) = .56, p &lt; .01$</td>
<td>$r(149) = .37, p &lt; .01$.</td>
</tr>
<tr>
<td>RYFPOS</td>
<td>$r(149) = .63, p &lt; .01$</td>
<td></td>
</tr>
</tbody>
</table>

The dimension of autonomy (RYFAUT) showed a strong positive relationship with the dimension of environmental mastery (RYFENV), and a moderate positive relationship with the dimension of positive relations to others. There was a strong positive relationship with the dimension of environmental mastery (RYFENV) and the dimension of positive relations to others (RYFPOS).

Correlations were also tested utilizing the two categories of the Self-determination Scale (perceived choice, labeled SDSPER, and awareness of self, labeled SDSSLF) and the three dimensions of the Ryff Scale used above. The correlation matrix for components of well-being and self-determination is below in Table 4.8.
A strong positive relationship existed between SDSPER and RYFAUT, and SDSPER and RYFENV. A moderate positive relationship existed between SDSPER and RYFPOS. The SDSSLF (awareness of self) showed a strong positive relationship with all three well-being variables.

The correlations from the sample for self-determination and well-being, divided into constituent parts and assessed more closely reveal the exact nature of the correlation, supporting the level and significance of the values reported for total scores, \( r(149) = .674, p < .001 \).

Question (b) looked more closely at the results of Hypothesis 3, which concerned the relationship between total self-determination and ECA participation. From the data collected for the current study, analyses were conducted comparing two subset groups of the population as nonparticipants in ECAs (\( n = 21 \)) and participants in ECAs (\( n = 128 \)) with TOTSDS. The mean scores indicated a positive direction for ECA participants (\( M = 7.67, SD = 1.65 \)) than for nonparticipants (\( M = 7.45, SD = 1.69 \)) but the level of significance (two-tailed) was only .42.

For the post hoc analysis the results from the subset groups measured using the two categories of the SDS scale (SDSPER - perceived choice, SDSSLF – awareness of self) was reviewed for relationship or significance changes. These findings were not significant and can be found in Appendix F.
Question (c) looks more closely at well-being within the participant/nonparticipant groups. The groups were measured using the total dimension of Ryff Scale (well-being) (TOTTRYF). The mean score for participants in ECAs \((n = 128)\) \((M = 175.80, SD = 30.52)\) was higher than for nonparticipants \((n = 21)\) \((M = 170.28, SD = 20.93)\). Numbers were right directional indicating that participants in ECAs reported a moderately higher level of total well-being than for nonparticipants. However, the significance level (two-tailed) is only .69.

Further statistical review was completed comparing the two groups with the three dimensions utilized for the Ryff scale (well-being) utilizing t-tests for independent samples. Participants in ECAs reported a significantly higher level of *positive relations with others* (RYFPOS) than nonparticipants in ECAs. The findings are reported below in Table 4.9. Levene’s Test for Equality of Variances indicated unequal variance \((F = 3.70, p < .05)\) supporting the relationship correlation.

**Table 4.9**

<table>
<thead>
<tr>
<th>Descriptors</th>
<th>(M)</th>
<th>(SD)</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonparticipants ((n = 21))</td>
<td>53.57</td>
<td>9.52</td>
<td>2.08</td>
</tr>
<tr>
<td>Participants ((n = 128))</td>
<td>61.30</td>
<td>12.38</td>
<td>1.09</td>
</tr>
</tbody>
</table>

The dimensions of *autonomy* (RYFAUT) \((M = 62.19, SD=10.94)\) and *environmental mastery* (RYFENV) \((M = 54.52, SD = 9.55)\) in relation to participants and nonparticipants indicated no significant relationship with each group. The results of the significance testing for these two dimensions can be found in Appendix G.

As an extension of Stearns' and Glennie's research idea (2010) that schools provide different opportunities and those opportunities to participate are related to positive outcomes, a
review of the relationship and significance among ECAs and participation was reviewed more closely.

**Activities Category (ACTCAT) and Athletics Category (ATHCAT)**

Variables were tested and findings examined for correlations by separating activities and athletics as sub-categories within the ECAs. ECA categories utilized for activities included (a) academic activities (CAT1), (b) media activities (CAT2), (c) electronic media activities (CAT3), (d) service activities (CAT4), (e) vocational activities (CAT5), and (f) arts and music (CAT6). The athletics categories included (a) interscholastic sports (CAT7, CAT8,) (all levels) and other school-sponsored sports (CAT9, CAT10). While the sub-categories were individually tested with all available variables including category totals, only categories showing significance are reported. These variables include, (a) total ECA categories (TOTCAT), (b) total activities (TOTACT), (c) activities per season (ACTSEA), (d) activity hours (ACTHRS), the correlation matrix follows in Table 4.10. All of the relationships noted in the table indicate strong relationships with the exception of athletic category (ATHCAT), which displays only a moderate relationship to total activities and seasons (ACTSEA).

Table 4.10

**Activities Category, Athletics Category, ECA Participation Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>TOTCAT</th>
<th>TOTACT</th>
<th>ACTSEA</th>
<th>ACTHRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTCAT</td>
<td>[r(149) = .60, p &lt; .01]</td>
<td>[r(149) = .57, p &lt; .01]</td>
<td>[r(149) = .60, p &lt; .01]</td>
<td>[r(149) = .50, p &lt; .01]</td>
</tr>
<tr>
<td>ATHCAT</td>
<td>[r(149) = .47, p &lt; .01]</td>
<td>[r(149) = .40, p &lt; .01]</td>
<td>[r(149) = .36, p &lt; .01]</td>
<td>[r(149) = .45, p &lt; .01]</td>
</tr>
</tbody>
</table>

Correlations for individual categories of ECAs (CAT1-CAT10) and total categories are listed in the correlation matrix in Table 4.11 below. Only correlations with a strong relationship, \(r(149), p = .40\) or higher, are shown in the correlation matrix.
Table 4.11

Activities, Categories, Seasons and Hours Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>ACTCAT</th>
<th>ATHCAT</th>
<th>TOTCAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT1</td>
<td>r(149) = .42, p &lt; .01</td>
<td></td>
<td>r(149) = .64, p &lt; .01</td>
</tr>
<tr>
<td>CAT2</td>
<td></td>
<td></td>
<td>r(149) = .52, p &lt; .01</td>
</tr>
<tr>
<td>CAT3</td>
<td></td>
<td></td>
<td>r(149) = .52, p &lt; .01</td>
</tr>
<tr>
<td>CAT4</td>
<td>r(149) = .51, p &lt; .01</td>
<td></td>
<td>r(149) = .55, p &lt; .01</td>
</tr>
<tr>
<td>CAT6</td>
<td>r(149) = .50, p &lt; .01</td>
<td></td>
<td>r(149) = .40, p &lt; .01</td>
</tr>
<tr>
<td>CAT7</td>
<td></td>
<td>r(149) = .80, p &lt; .01</td>
<td>r(149) = .43, p &lt; .01</td>
</tr>
<tr>
<td>CAT9</td>
<td></td>
<td></td>
<td>r(149) = .51, p &lt; .01</td>
</tr>
<tr>
<td>CAT10</td>
<td></td>
<td></td>
<td>r(149) = .43, p &lt; .01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>TOTACT</th>
<th>ACTSEA</th>
<th>ACTHRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT1</td>
<td>r(149) = .65, p &lt; .01</td>
<td>r(149) = .66, p &lt; .01</td>
<td>r(149) = .52, p &lt; .01</td>
</tr>
<tr>
<td>CAT2</td>
<td>r(149) = .41, p &lt; .01</td>
<td>r(149) = .41, p &lt; .01</td>
<td>r(149) = .60, p &lt; .01</td>
</tr>
<tr>
<td>CAT3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAT4</td>
<td>r(149) = .58, p &lt; .01</td>
<td>r(149) = .60, p &lt; .01</td>
<td>r(149) = .42, p &lt; .01</td>
</tr>
<tr>
<td>CAT6</td>
<td>r(149) = .41, p &lt; .01</td>
<td>r(149) = .42, p &lt; .01</td>
<td></td>
</tr>
<tr>
<td>CAT7</td>
<td>r(149) = .40, p &lt; .01</td>
<td></td>
<td>r(149) = .44, p &lt; .01</td>
</tr>
<tr>
<td>CAT9</td>
<td>r(149) = .43, p &lt; .01</td>
<td>r(149) = .40, p &lt; .01</td>
<td>r(149) = .45, p &lt; .01</td>
</tr>
<tr>
<td>CAT10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Finally, in reviewing the frequency charts and correlations and categories, it should be noted that students participated in an average of 3.2 activities. Of these students, 60% participated in 1, 2, 3, 4, or 5 activities. In considering the categories preferred by the students in this study, 77% of students participated in categories 1, 2, 3, and 4 singularly or in combination. These preferences are shown in the frequency chart located in Appendix C.

**Demographic variables.** The instrument asked respondents to self-identify on two demographic areas, age (month/year) and race. The data were used only for reporting descriptive statistics and as indicators that the study composed a representative sample. No other data analysis was completed.
Summary

First, the chapter detailed the descriptive statistics used in the study including measures of central tendency and spread for the variables of interest including (a) self-determination (b) extracurricular activities (ECAs) and, (c) well-being. Inferential statistics were used to reject two of four null hypotheses. Specifically, for H2 and H4, Pearson’s r and t-test (two-tailed) for significance were used to reject the null hypotheses. For hypothesis 4, a test of significance (t-test) between two groups was conducted to determine if students having a combined higher TOTSDS and TOTACT would have a higher TOTRYFF score.

For Hypothesis 2, based on the total sample, there was a strong positive relationship between self-determination and well-being, $r (149) = .674, p < .001$. This was the strongest relationship in the study. Hypothesis 4 showed correlations to be strongly significant $t(147) = -3.06, p = .003$, supporting the hypothesis that students having a combined higher total level of self-determination and total ECA (activity) participation would have a higher well being score.

Statistical analyses reveal that for H1 and H3, the null hypothesis was accepted indicating that the analyses did not detect a significant association between the measured variables. For Hypothesis 1, the mean scores for participants ($M = 175.80, SD = 30.52$) and nonparticipants in ECAs ($M = 170.28, SD = 20.93$) indicate a positive direction for ECA participants. However the level of significance is $.70; t(147) = 1.04, p = .30$. Therefore, the null hypothesis is accepted: (H0a) Students do not experience a higher level of well-being when participating in a higher level of ECAs. Similarly, for Hypothesis 3, the mean scores indicate a positive direction for ECA participants who reported a higher level of self-determination. However, the level of significance (two-tailed) is only $.41; t(147) = -.54, p = .59$. Therefore, the null hypothesis is accepted: (H0c)
Students who experience a higher level of self-determination will not exhibit a higher level of ECA participation.

The next chapter provides a more detailed discussion of these findings examining the results in relation to the literature and theoretical frameworks being used in this study.
CHAPTER 5: DISCUSSION

The purpose of this research was to examine quantitatively self-determination and student participation in extracurricular activities (ECAs) as predictors of psychological well-being in high school students in one school in Massachusetts. This study extends current research on extracurricular engagement by students by recognizing: (a) the role of self-determined behavior in engaged students; (b) the personal growth value of engagement in an activity, and (c) those factors which most correlate to psychological well-being (PWB) in engaged students. The literature and extant research suggest that ECA opportunities and students’ willingness to participate can play a significant role in the process of defining their high school experiences and are important developmental considerations (Fredricks, 2012; Fredricks & Eccles, 2005; Shulruf, Tumen, et al., 2008; Zaff et al., 2003).

The study examined theoretical constructs, student motivation, and ECA participation as predictors of well-being. Distinct gaps in the literature led to the following hypotheses.

H1: Students with a higher level of participation in ECAs will exhibit a higher level of well-being.

H2: Students with a higher level of self-determined behavior will exhibit a higher level of well-being.

H3: Students with a higher level of self-determination will exhibit a higher level of ECA participation.

H4: Students with a higher level of self-determination and ECA participation will exhibit a higher level of well-being.

Additionally, corresponding null hypotheses were proposed:
H₀a: Students do not experience a higher level of well-being when participating in a higher level of ECAs.

H₀b: Students do not experience a higher level of well-being when they exhibit a higher level of self-determined behavior.

H₀c: Students who experience a higher level of self-determination will not exhibit a higher level of ECA participation.

H₀d: Students with a higher level of self-determination and ECA participation will not exhibit a higher level of well-being.

Chapter one outlined the purpose of this study. Chapter two provided a review of the literature using self-determination (Deci, 1980; Deci & Ryan, 1985), ECA participation and well-being (Deci, 1980; Ryan, 2009; Ryff & Keyes, 1995) as the theoretical frameworks guiding the research.

Chapter three detailed the methodology of the study. To address the hypotheses and null hypotheses, the researcher administered confidential questionnaires to a junior class in one suburban Massachusetts public high school (N = 149). Students were asked to identify if and to what extent they participated in school-based ECAs. The study was a single-subject design. The researcher used a single questionnaire, which contained four total sections; with two sections containing two existing and distinct testing instruments (see Appendix B). The four sections included (a) demographic questions (age, race), (b) ECA participation questions (what activity, time devoted), (c) Self-determination Scale (SDS) (Sheldon & Deci, 1996), and (d) Ryff Scale of Psychological Well-Being (Ryff & Singer, 1996). Extracurricular activity (ECA) participation was measured based on student reports of activity participation during the current school year. The school utilized for this study offered 57 opportunities for ECA participation to juniors. Of
the 57 ECAs, 21 were non-athletic activities and 36 were athletically related activities. The SDS contained 10 questions scored on a 5-point Likert scale and the Ryff Scale contained 21 questions, scored on a 6-point Likert scale. The data collected generated statistics to test the hypotheses through correlational methods, statistical regression methods as well as factor analysis. Demographic questions were used only for descriptive statistics and as indicators that the study composed a representative sample for age and ethnicity. The average age of participants was 16.8 years (SD = .52).

The questionnaires were coded, entered into an Excel spreadsheet, and converted to an ASCII file for statistical analysis. The Excel CORREL function was utilized to calculate correlation coefficients. For statistical significance we used an alpha (α) level of .05 for all statistical tests. Chapter four presented the full analysis of the data as well as post-hoc analysis.

**Brief Summary of Findings**

**Hypothesis 1.** The first hypothesis and its corresponding null hypothesis concerned the relationship between ECA participation and well-being, stating:

H₁: Students with a higher level of participation in ECAs will exhibit a higher level of well-being.

H₀₁: Students do not experience a higher level of well-being when participating in a higher level of ECAs.

The results indicated the well-being scores (TOTRYF) on the participant subset groups were higher for students participating in one or more extra-curricular (n = 128) activity than for nonparticipants (n = 21). The mean scores indicated a positive direction for ECA participants; however the level of significance is 70%. Therefore, the null hypothesis is accepted.
**Hypothesis 2.** The second hypothesis concerned the relationship between self-determined behavior and well-being, stating:

H$_2$: Students with a higher level of self-determined behavior will exhibit a higher level of well-being.

H$_{0b}$: Students do not experience a higher level of well-being when they exhibit a higher level of self-determined behavior.

For Hypothesis 2, based on the total sample, there was a strong positive relationship between self-determination and well-being, $r$ (149) = .67, $p < .001$. This was the most significant relationship in the study. The sample was also divided into two groups. The first group had a combined total self-determination (TOTSDS) multiplied by the total number of activities (TOTACT) and total well-being (TOTRYF) with a value less than 15.3 ($M = 165.98$, $SD = 27.32$). The second group had a value of 15.3 or higher and TOTRYF ($M = 180.57$, $SD = 29.18$). There was a strong significant difference between the two groups, $t$ (147) = -6.41, $p < .05$, supporting the hypothesis that a higher SDS score (self-determination) would reflect a higher TOTRYFF (well-being) score. Therefore, the null hypothesis is rejected.

**Hypothesis 3.** The third hypothesis concerned the relationship between self-determination and ECA participation, stating:

H$_3$: Students with a higher level of self-determination will exhibit a higher level of ECA participation.

H$_{0c}$: Students who experience a higher level of self-determination will not exhibit a higher level of ECA participation.
The mean scores for reported level of self-determination were higher for participants in ECAs than nonparticipants, indicating a positive direction for ECA participants. However, the level of significance (two-tailed) is only 41%. Therefore, the null hypothesis is accepted.

**Hypothesis 4.** The fourth hypothesis concerned the relationship between self-determination, ECA participation and well-being, stating:

H₄: Students with a higher level of self-determination and ECA participation will exhibit a higher level of well-being.

H₀₄: Students with a higher level of self-determination and ECA participation will not exhibit a higher level of well-being.

Hypothesis 4 showed that correlations are strongly significant, \( t(147) = -3.06, p = .003 \), supporting the hypothesis that students having a combined higher total level of self-determination and total ECA (activity) participation would have a higher well-being score.

**Discussion**

**Hypothesis 1.** The findings of the first hypothesis indicated that students who participated in one or more school-sponsored ECA \((n = 128)\) reported a level of well-being only slightly higher than students who reported no participation in school-sponsored ECAs \((n = 21)\). The numbers indicate an upward trend but the significance level was only 70%. During data analysis, students were divided into subset groups (participants vs. nonparticipants) since ECAs is a dichotomous variable. The findings are relative to the context of high school and school sponsored ECAs.

One possible explanation for the closeness of mean scores between subset groups may be that the relationship among ECAs and psychological well-being may be moderated by a third factor. This is important as we consider the value of ECAs within the high school setting and the
potential impact of activities outside the context of high school as a potential moderating variable.

For example, the study limited reporting ECAs to those that are school-based, which is only a small part of what is considered leisure based activities in adolescents (Darling, 2005). Bundick (2011) reported that the meaning of participation, or the extent to what psychological benefits are derived from being involved with an activity, could be experienced and reported differently by students. This would reinforce the Self-determination Theory (SDT) perspective that people can develop different models of living (engaging in activities) that satisfy their basic needs. The level of satisfaction experienced in a different manner can still equate with the same overall level of well-being (Sheldon & Schuler, 2011). Activities that are not school-based and are outside of the context of high school might have an impact on the study.

Similarly, recent research also suggests that well-being can also be linked with “‘individual difference’ variables such as personality traits” (Ryff, 2014, p. 14). Personality trait assessment and assessment of extracurricular activities outside the context of school was not included in the present study.

Although the findings of this research were not shown to be as strong, other research indicates that ECA participation supports positive outcomes in students including positive life satisfaction and positive self-esteem (Bundick, 2011; Stearns & Glennie, 2010). Similar research also suggest activities within the context of high school or outside can, and do, positively impact goal-oriented behavior, student outcomes and student well-being (Bundick, 2011; Darling, 2005; Denault & Poulin, 2009; Eccles et al., 2003).

A reduction of ECA activities in any model of living could negatively impact well-being by reducing opportunities for students to experience basic needs satisfaction. Students should be
encouraged and positively supported in an effort to become involved and stay engaged in ECAs whether within the context of schools or beyond the school setting.

Therefore, I recommend that research continue to examine the role of school-sponsored ECAs and compare them more closely to leisure activities in considering to what extent they impact student choice and student well-being.

**Hypothesis 2.** The findings for the second hypothesis, which included the entire sample (N = 149), affirm the significance of the relationship with reported levels of self-determination and well-being. The results, the most significant in the study, indicate that it is possible to predict level of well-being by considering the level of self-determined behavior reported in similar students (cohort).

The research findings support the heuristic nature of self-determination, as being closely aligned with intrinsic motivation, and how convincingly Self-determination Theory aligns with psychological well-being. A higher level of self-determination in people “reflects (1) being more aware of their feelings and their sense of self, and (2) feeling a sense of choice with respect to their behavior” (Sheldon & Deci, 1996, p. 1).

Self-determination is a person’s ability to (a) recognize available options, (b) choose one or more options, (c) consider to what extent engagement will occur, and (d) take action to engage (Singh et al., 2012). Students engage in self-determined behavior when they make choices. According to Deci and Ryan (1985) in order “to be intrinsically motivated, a person must feel free from pressures, such as rewards or contingencies” and experienced in an autonomous manner (p. 29).

Students who recorded a lower score on the SDS (Sheldon & Deci, 1996) may have experienced lower levels of needs satisfaction and were less inclined to fully recognize options.
Additionally, these students could have been less likely to operationalize their level of self-determination, perhaps reducing their feeling of well-being.

The SDS (Sheldon & Deci, 1996) was designed to assess individual differences in how people tend to function in a self-determined manner. The SDS utilizes five questions to assess awareness of oneself and five questions to determine the level of perceived choice in one’s actions. According to SDT, when these needs are satisfied within a social context, in this case high school, people report feeling more vitality and more engagement, being more self-motivated and experiencing well-being (Ryan, 2009).

Well-being is influenced by behaviors and participation (Akin, 2008; Darling et al., 2005; Guest & Schneider, 2003; Perlman & Goc Karp, 2010). Feelings of a higher well-being takes into consideration independence and autonomy, competency, context, meeting needs to meet ones’ personal values, relationships as well as other perspectives. It is important to consider what is attributed to a high scorer and a low scorer on the well-being scale. Ryff provides some the definitions in Table 5.1 below.
Table 5.1

*Ryff’s definitions of theory guided dimensions of well-being (Ryff, 2014, p. 69)*

<table>
<thead>
<tr>
<th>Autonomy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High scorer</strong></td>
<td>Is self-determined and independent; able to resist social pressures to think and act in certain ways; regulates behavior from within; evaluates self by personal standards</td>
</tr>
<tr>
<td><strong>Low scorer</strong></td>
<td>Is concerned about expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental mastery</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High scorer</strong></td>
<td>Has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values</td>
</tr>
<tr>
<td><strong>Low scorer</strong></td>
<td>Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Positive relations with others</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High scorer</strong></td>
<td>Has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection and intimacy; understands give and take human relationships</td>
</tr>
<tr>
<td><strong>Low scorer</strong></td>
<td>Has few close, trusting relationships with others; finds it difficult to be warm, open, concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others</td>
</tr>
</tbody>
</table>

This finding underscores and illuminates the need for students to exercise their ability to make choices free from contingencies and have choices that are available in an attempt to meet their inherent needs. By choosing to become involved with one or more ECAs, students might continue to engage in more or different activities or become more deeply involved with a chosen activity. These social interactions help students developmentally shape their behaviors and values, which reflect on their feelings of self, self-esteem, and well-being (Fredricks & Eccles, 2005).
**Hypothesis 3.** The findings supported the null hypothesis that stated: Students who experience a higher level of self-determination will not exhibit a higher level of ECA participation. Total Self-determination scores (TOTSDS) on the participant subsets were only somewhat higher for student participants \( (n = 128) \) than for nonparticipants \( (n = 21) \). The mean scores indicated a positive direction for ECA participation but the significance level (two-tailed) was only 41%. No further analysis was indicated.

One possible explanation for the closeness of mean scores between participant/nonparticipant groups may be that the relationship among self-determination and level of ECA participation may be moderated by a third factor. As was noted in Hypothesis 1 the only ECAs considered for the questionnaire inventory were those activities that were considered school-sponsored. Students in the study may also be involved with additional activities outside the school that inherently could impact the TOTSDS scores but are not accounted for in ECAs. Students may have utilized their decisions and behaviors on other activities not related to school sponsored ECAs.

Another consideration involves the nature of motivation in self-determined behavior. According to Deci (1980), self-determining behaviors are the result of people processing information and deciding how to behave in order to attempt to meet their expectations about “how to achieve satisfaction of their needs” (p. 49). It is plausible that ECAs in the context of high school did not satisfy the needs of students, or were not found to be intrinsically worthy, thus reducing ECA involvement.

While still considering the nature of motivation in self-determination and how this might align with the findings, we know that students who reported lower levels of self-determination were not and could not be precluded from participating in ECAs. Therefore we can posit that
students reporting lower scores could also be participants in one or more ECAs. This could impact the scoring and the findings since a lower score on the SDS suggests a motivational shift from intrinsic to extrinsic characteristics and behaviors. This is an important consideration when identifying the role of intrinsic and extrinsic motivation and behavioral choices and outcomes.

In the context of Self-determination Theory (SDT), “motivation is conceptualized as a continuum ranging from a motivation that is autonomous, within the self, to one which is controlled and stems from outside pressure (Deci & Ryan, 2008)” (Milyavskaya & Koestner, 2011, p. 388). Behaviors that are in response to extrinsic rewards, according to Deci (1980), involve causal factors since it is expected that the behavior will directly lead to the reward. Extrinsic motivation is doing something that leads to a specific, or “separable outcome” (Deci & Ryan, 2000, p. 55) such as receiving a tangible reward following an action. Examples may include receiving money, awards such as scholarships, approval or even specific adulation. Students might subjectively report these as positive experiences; they are more likely to score lower on the SDS. While Deci and Ryan (2000) suggest that positive experiences produce positive outcomes that contribute to a sense of psychological well-being, this tenet only relates to fulfilling basic needs which more closely aligns with intrinsic motivation.

These findings support the need for additional research. In considering Hypothesis 3, the researcher also felt it important to create Hypothesis 4 in an effort to test the constructs of the study as well as create a model for predictability.

**Hypothesis 4.** The findings supported the hypothesis that students having a combined higher total self-determination score (TOTSDS) and total activities (TOTACT) would have a higher well-being (TOTRYFF) score. The correlations are strongly significant, \( t(147) = -3.06, p = .003 \).
Despite the independent and dependent variables in Hypothesis 1 and Hypothesis 3, and the results to accept the null hypothesis in each case, the result of Hypothesis 4 support the research on self-determination and well-being in that objective and subjective factors of each, combined with the variable of ECAs, are interrelated and can also be considered interdependent in choice, behavior and response (Nota et al., 2010; Ryan & Deci, 2000b; Shulruf, Tumen, et al., 2008; Ushioda, 2011; Zaff et al., 2003). This further supports and adds to the extant research stating that students who engage in ECAs have displayed positive outcomes that can often lead to a healthier sense of self (Chirkov, 2009; Darling, 2005; Darling et al., 2005; Deci & Ryan, 2008a).

The outcome is a direct result of behavior, action, and, as supported by Hypothesis 4, the ability to choose to participate and engage in school-sponsored ECAs. Supporting research indicate that high school students, on average, participate in two or three ECAs each year. The average number of activities participated in by students was 3.1 ($SD = 2.75$) and the average number of categories participated in by students was 2.23 ($SD = 1.81$). Student participation is steadfastly in line with research and continues to support student demand for opportunities for engagement and choice (Fredricks, 2012). Students continue to participate in ECAs and continue to embrace choice and diversity in activities.

The final hypotheses model based on current findings can be found in figure 5.1 below. The direction of each hypothesis is supported in the findings even though the significance level for Hypothesis 1 and Hypothesis 3 was not $p < .05$. This underscores the role of motivation in determining student behaviors that are values or needs based. In order to become engaged, choices must be available to foster decisions. In the case of this study students made conscious choices about ECA participation and what behaviors are involved with the choice. The
importance of ECA choice to a students’ sense of well-being are clearly in alignment. The triangulation of self-determination, ECA participation and well-being underscores the importance of interrelatedness and interdependence of the variables toward the outcome of (psychological) well-being in students.

Figure 5.1 Final Hypotheses Model

Post-Hoc Data Analysis

During the course of research and analysis, additional questions can emerge from current findings. Additionally, an abundance of data collected can also provide an opportunity to generate further discussions and additional questions outside the scope of the research hypotheses and questions. This study posed such an opportunity to further explore data already collected during the course of the research. Additional questions arose regarding the
relationships that exist between the variables, as reported, as well as the potential relationships that exist with ECAs, as modeled in the study by Stearns and Glennie (2010). Four questions emerged:

(a) Is the relationship between total self-determination and total well-being as strong as reported when the sub-categories for self determination (awareness of self and perceived choice) and well-being (autonomy, environmental mastery, and positive relations to others) for each questionnaire are analyzed more closely for relationship and significance?

(b) Would the correlation and significance be different for subset groups (participants in one or more ECA, nonparticipants) when measuring self-determination independently with the two categories (awareness of self and perceived choice) for self-determination (SDS)?

(c) Would the correlation and significance be different for subset groups (participants in one or more ECA, nonparticipants) when measuring well-being independently with the three dimensions utilized for the Ryff scale (well-being)?

(d) What significant relationships exist among the 10 categories of ECAs and participation?

A closer examination of the data provided by the study confirmed the hypotheses as reported by examining more closely the components of self-determination and well-being as measured by the testing instrument. Additionally, analysis of two groups in relation with self-determination supported the finding in Hypothesis 2. The first group had a combined total self-determination (TOTSDS) multiplied by the total number of activities (TOTACT) and total well-being (TOTRYF) with a value less than 15.3 ($M = 165.98$, $SD = 27.32$). The second group had a value
of 15.3 or higher and TOTRYF ($M = 180.57$, $SD = 29.18$). The mean scores indicated a positive direction for ECA participants ($M = 7.67$, $SD = 1.65$) compared with nonparticipants ($M = 7.45$, $SD = 1.69$) but the level of significance (two-tailed) was only 42%.

Further participant/nonparticipant group analysis as related to the components of well-being is reinforced by the post hoc analysis. The mean score for participants in ECAs ($n = 128$) ($M = 175.80$, $SD = 30.52$) was higher than for nonparticipants ($n = 21$) ($M = 170.28$, $SD = 20.93$). Numbers were right directional indicating that participants in ECAs reported a moderately higher level of total well-being than for nonparticipants. However, the significance level (two-tailed) is only 69.5%.

The last well-being review involved comparing the participant/nonparticipant groups with the three dimensions utilized for the Ryff scale (well-being). The dimensions of autonomy (RYFAUT) ($M = 62.19$, $SD = 10.94$) and environmental mastery (RYFENV) ($M = 54.52$, $SD = 9.55$) in relation to participants in ECAs and nonparticipants indicated no significant relationship with either group.

Finally, an assessment of ECA participation as an extension of, and in support of the work and idea generated by Stearns and Glennie (2010), was completed. The correlation matrix in chapter 4 indicates the relevant relationships and levels of significance.

**Implications and Recommendations**

**Importance of self-determination.** The data supports the assertion that students who experience a higher level of self-determination will experience a higher level of well-being (Huppert, Baylis, & Keverne, 2005; Milyavskaya & Koestner, 2011; Perlman & Goc Karp, 2010; Reeve, 2000). The current findings measuring participation in ECAs supports and extends the research by Stearns and Glennie (2010), by reporting that students participated in an average of
3.2 activities. In order to actualize the sequence toward participation and well-being, students must make decisions requiring motivation.

Self-determination is by nature self-concordant and students will pursue activities which meet their goals and values (Gurland & Glowacky, 2011). The role of self-determination is essential in this process as it determines to what extent and why decisions and behaviors might be made toward fulfilling a level of well-being (Gagné & Deci, 2005; Ryan & Deci, 2000b; Ryan et al., 2008; Ryff, 2014). The self-determined behavior of a student to engage in ECAs, free from extrinsic contingencies such as outcome or reward expectations, support Deci and Ryan’s (1985) suggestion that the energy of the student is focused toward meeting psychological needs, leading to a feeling of positive well-being. The results also support the assertion that level of need satisfaction experienced within specific domains such as school is linked to general well-being (Milyavskaya, Philippe, & Koestner, 2013). With this in mind, it is recommended that a variety of ECA opportunities continue to exist in American high schools so that students can consider pursuing activities that meet their basic needs, and match their personal values, free from contingencies.

**Importance of ECA participation.** Participation in school-based ECAs provides students with opportunities for positive development (Bundick, 2011; Eccles et al., 2003; Fredricks & Eccles, 2006). Additionally, positive life satisfaction has been reported by adolescents who were highly engaged in ECAs (Gilman, 2001) and support the importance of student participation (Shulruf, Tumen, et al., 2008). In research conducted by Darling, Caldwell and Smith (2005), it was noted that leisure ECAs are designed to “provide youth with skills that will last a lifetime” and, when students engage in ECAs voluntarily, school-sponsored programs “can provide similar advantages” (p. 52).
Based on extant research and outcomes from the current study, it is suggested that students are strongly encouraged to participate in ECAs. School sponsored ECAs, by definition, provide adult-led, school sponsored activities, which occur outside the regular curriculum (Mahoney et al., 2003; Shulruf, Tumen, et al., 2008; Zaff et al., 2003) and are “stimulating (mentally or physically) to the individual and contains some kind of intentional design or structural parameters” (Bundick, 2011, p. 57). Leisure ECAs, outside the context of school-sponsored activities, are more difficult to define or identify and thus, are less predictable with regard to report outcomes for students (Lindsay, 1984; McNeal Jr., 1999; Persson et al., 2007; Shulruf, Tumen, et al., 2008; Stearns & Glennie, 2010; Zaff et al., 2003). Based on the data from the study and additional research regarding ECAs, it is recommended that students be encouraged to participate in adult-led, school-sponsored, structured activities that meet their needs and values. This also supports the need to diversify ECA offerings and support funding to keep current ECAs viable in schools.

ECAs and Well-being. The data from the study indicated a higher level of well-being for students participating in one or more extra-curricular activity than for nonparticipants. While the significance did not exceed $p < .05$, there are additional factors worthy of future research that might clarify this relationship. It is reported that students report a higher level of well-being when participating in ECAs. This is in line with extant research specifically aligned with subjective well-being (Bundick, 2011; Darling, 2005; Diener, 2009a). Since psychological well-being is related to both subjective (hedonic) and eudaimonic well-being, it is suggested that the interrelatedness of the two perspectives would yield results that enforce a higher level of well-being for ECA participants (Darling et al., 2005; Deci & Ryan, 2008b; Diener, 2009b; Kee & Carey, 2013; Ryff, 2014). It is thus suggested that participation in school-sponsored ECAs
should be encouraged in support of psychological well-being for student participants. This requires schools and policy makers to support the resources that are responsible for adult-led, structured ECAs in schools. While psychological (eudaimonic) well-being is more closely aligned with self-determination (intrinsic motivation), commitment to ECA participation and sponsorship is essential to the structure of the high school experience for young adults since school-based experiences have been shown to trigger developmental turning points (Fredricks, 2012; Langenkamp, 2009, p. 245). ECAs might enhance the experience of students.

**Recommendations for Policy Makers and Educators.** The data support existing research on the positive outcomes experienced by students that participate in extracurricular activities in school (Darling, 2005; Denault & Poulin, 2009; Eccles et al., 2003; Farb & Matjasko, 2012; Feldman & Matjasko, 2005; Fredricks, 2012; Fredricks & Eccles, 2010; Guest & Schneider, 2003; Kort-Butler & Hagewen, 2011). The need to consider the role of student well-being in conjunction with school-sponsored ECAs becomes more important in a time when education policy and funding are being altered or reduced in response to budget deficits and reduced federal funding.

It is recommended that school officials, policy makers and government officials consider how ECAs enhance the current academic environment in schools and supports and fosters developmental growth and well-being in students before choosing these activities for reduction or elimination from school funding. The context of schools and the nature of structured, adult-led ECAs enhance the role of current academic curricula in American schools and deserve to be preserved to meet the diverse needs, wants and values of a diverse student population.

Findings from the National Research Council (US) (2004) and other studies concur that participation promotes positive academic, social and physical developmental outcomes, which
affirms the importance of student engagement in ECAs during this period of life (Mahoney et al., 2003; Plagens, 2011; Shulruf, Tumen, et al., 2008; Wilson & Bengoechea, 2010; Zaff et al., 2003). Clearly, it is essential to be able to consider student well-being during the high school years as well as the extensive research that support the positive outcomes of ECA participation beyond the high school years. Also, educators are valuable resources both in support of the structures of ECAs and in considering the academic curricula and the impact of extending the traditional material into the ECAs environment. Students who are more self-determined in a manner that is self-concordant will inevitably be positively impacted by the availability and diversity of quality ECAs. The relationship between the traditional education structure and ECAs should be supported financially at all levels of government and education.

Students deserve every opportunity to exercise choice in an effort to meet their own needs in alignment with their goals and values. Parents and educators should demand support across the board in an effort to support the future successes of students. After all, they will eventually become the leaders of our nation and the world.

**Limitations and Future Research**

A number of limitations must be noted in this study regarding the scope of the research. Recommendations for future research are therefore presented. First, the study was limited to a single cohort in one school. Future research in alignment with the structure of this study as well as the work of Stearns and Glennie (2010) might follow a cohort beginning in freshman year through to senior year. Additionally, an identical study done at an independent (non-public/private) school where ECA participation is mandatory might add to existing research or provide addition perspectives to self-determined behavior and well-being.
Second, the study considered level of participation in line with ECAs serving as a dichotomous variable; the subgroups were participants and nonparticipants. Future research could consider expanding the definition of level of participation by including participation hours and number of ECAs in determining varying levels of ECAs as indicators of well-being. Denault and Poulin (2009) report in their work that assessment of number of activities participated in by students has yielded mixed results regarding developmental outcomes and other positive results, suggesting more research opportunities in these areas.

This research might help develop a threshold for ECA participation in relation to positive or negative outcomes or results of well-being experienced by students in schools. The ability to further define level of participation might add to findings in future research in an effort to consider the value of the mean scores for TOTSD relative to additionally defined levels of participation. For example, level of participation in ECAs within the context of high school could be defined as any single variable related to time or frequency of ECA participation as well as looking more closely at combined variables in creating a total score. Similar studies and recommended research opportunities should also be considered nationally in an effort to consider any variable that might impact ECAs and well-being not addressed in this or other studies.

Also, in the context of high school ECAs, this research did not study the level of participation to well-being in order to find a threshold for positive outcomes. This study provided skewness and kurtosis in an effort to support values of central tendency as norms for ECA participation. The study did not evaluate outliers past the mean nor consider if there was a saturation point for ECAs and well-being. Extending the definition for level of participation and testing these variables would add to existing research.
Because the study examined school-based ECAs, the outcomes derived from activities outside of schools should also be considered and perhaps studied together to consider positive or negative outcomes including well-being. Many students choose to engage in scouting activities, religious activities or have jobs that can also be considered when researching the relationship of self-determination and well-being in high school students.

An additional question to consider, which was posed by Darling et al. (2005) would also be an extension of existing research: Is participation in sports associated with the same benefits as participation in non-sports activities? This question acknowledges that “adolescents are more likely to participate in sports than in any other type of school-based ECA” (p. 57). Understanding the existing values of ECA categories might further help educators and policy makers in an effort to support student well-being and additional positive outcomes for our future leaders.

Finally, this analysis did not include a division of students with higher and lower SDS scores nor was there the capacity to align those scores with specific ECA choices or categories. If the data were analyzed to produce this information, it is reasonable to project that correlations might reveal a higher level of exactness in considering the relationship between self-determination and well-being when reporting scores for subgroups, adding to existing research.

Post hoc analysis revealed that the findings as reported are supported by the data for the two null hypotheses that were rejected as well as the two that were accepted. The findings also support the need to consider the impact of ECA categories in relation to self-determination and well-being more closely in an effort to determine predictability or identify significant relationships that should be supported. Furthermore, additional quantitative and qualitative research should be considered and conducted to add unique perspectives to the research as well as enhance the research narrative and the scholarly conversation.
Conclusion

Despite the above limitations and areas where future research is needed, this study holds practical implications for understanding the value of ECA participation as more than an after school add-on meant to keep students “out of trouble” or occupied during the period of time between classes and responsibilities or obligations at home. It is in our national interest to assure that our students experience a higher level of well-being while managing the educational experience mandated by our Constitution. ECAs serve to develop leadership skills, social and technical competencies, foster interests not otherwise experienced in the classroom, as well as create additional social opportunities and social capital while being engaged. Given the rigors and curricular mandates in the classroom, many of these qualities cannot be experienced as part of the traditional curriculum due to time constraints or necessary academic competencies that must be reached by students in schools.

Clearly, the financial demands and the current economic state in the US require that policy makers and government officials consider how best to maximize budgets while attempting to maintain academic standards and a safe environment for students. ECAs as an important and necessary extension of the educational experience cannot and should not be sacrificed in order to streamline academic functions! Instead, all activities that are considered to enhance student well-being and support positive student outcomes should be off the table when it comes to budget or resource reduction or elimination. The research may also hold broader implications for educational policy and high school ECA programming and ECA involvement outside the context of high school.
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Appendix A – Definition of Key Terms

For the purpose of this study, the following operational definitions are included to clarify terminology:

1. Autonomy: “self-endorsed functioning, or the extent to which one behaves upon personally valued interests, preferences, and needs” (Van Petegem, Beyers, Vansteenkiste, & Soenens, 2012, p. 77).


3. Extracurricular activity: an adult-led, school sponsored activity, which occurs outside the regular curriculum (Mahoney et al., 2003; Shulruf, Tumen, et al., 2008; Zaff et al., 2003) and is “stimulating (mentally or physically) to the individual and contains some kind of intentional design or structural parameters” (Bundick, 2011, p. 57).

4. Extrinsic motivation: is doing something that leads to a specific, or “separable outcome” (Deci & Ryan, 2000, p. 55) and can be derived by others’ beliefs or outside sources or entities (Allport, 1969).

5. Interscholastic sport: formal organized sport sponsored by the high school and recognized by the school through interscholastic competition.

6. Intrinsic motivation: “refers to doing something because it is inherently interesting and enjoyable” (Deci & Ryan, 2000, p. 55).

7. Motivation: is “primarily concerned with how behavior is activated and maintained” (Bandura, 1977, p. 160) or to be moved to do something (Ryan & Deci, 2000a).

8. Needs: “universal necessities, as the nutriments that are essential for optimal human development and integrity” (Bandura, 1977, p. 160).
9. Relatedness: “the desire to be connected to others- to love and care and to be loved and cared for” by other people (Gagné & Deci, 2005, p. 337).

10. Self-determined: under the control of the will of the person (Johnston & Finney, 2010; Plaut & Markus, 2005, p. 458).

11. Self-determination: refers to a person’s “flexibility and capacity both to choose among (the) behavioral options and to accommodate to the situation in which only one option is available” (Deci & Ryan cited in Bauer & McAdams, 2000, p. 277).

12. Self-determination Theory (SDT): a motivation theory which represents a general psychological construct which purports that “basic human needs must be fulfilled for optimal functioning and subjective well-being” (Deci, 1980, p. 6), which include feelings of autonomy, competency, and relatedness.

13. Sport activity: organized sport activity that is not affiliated with interscholastic sports competition.

14. Well-being: being vital and full functioning or “of using one’s capacities in an open, interested, and committed way, with a full sense of endorsement and concurrence” (Deci, 1980).
Appendix B – Confidential Questionnaire

Extracurricular Activities

Please select all that apply:

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<tr>
<th>Varsity Interscholastic Sport (Including Cheerleading and Competitive Dance Squad)</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
<th>0-5</th>
<th>6-10</th>
<th>10-15</th>
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<td>(Including Cheerleading and Competitive Dance Squad)</td>
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<th>Fall</th>
<th>Winter</th>
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</tbody>
</table>
Questions:
1.  
A. I always feel like I choose the things I do.
B. I sometimes feel that it’s not really me choosing the things I do.

Only A feels true 1 2 3 4 5 Only B feels true

2.  
A. My emotions sometimes seem alien to me.
B. My emotions always seem to belong to me.

Only A feels true 1 2 3 4 5 Only B feels true

3.  
A. I choose to do what I have to do.
B. I do what I have to, but I don’t feel like it is really my choice.

Only A feels true 1 2 3 4 5 Only B feels true

4.  
A. I feel that I am rarely myself.
B. I feel like I am always completely myself.

Only A feels true 1 2 3 4 5 Only B feels true

5.  
A. I do what I do because it interests me.
B. I do what I do because I have to.
6. When I accomplish something, I often feel it wasn't really me who did it.
A. When I accomplish something, I often feel it wasn't really me who did it.
B. When I accomplish something, I always feel it's me who did it.

Only A feels true  1  2  3  4  5  Only B feels true

7. I am free to do whatever I decide to do.
A. I am free to do whatever I decide to do.
B. What I do is often not what I'd choose to do.

Only A feels true  1  2  3  4  5  Only B feels true

8. My body sometimes feels like a stranger to me.
A. My body sometimes feels like a stranger to me.
B. My body always feels like me.

Only A feels true  1  2  3  4  5  Only B feels true

9. I feel pretty free to do whatever I choose to.
A. I feel pretty free to do whatever I choose to.
B. I often do things that I don't choose to do.

Only A feels true  1  2  3  4  5  Only B feels true

10. Sometimes I look into the mirror and see a stranger.
A. Sometimes I look into the mirror and see a stranger.
B. When I look into the mirror I see myself.

Only A feels true  1  2  3  4  5  Only B feels true
The following set of questions deals with how you feel about yourself and your life. Please remember that there are no right or wrong answers.

<table>
<thead>
<tr>
<th>Circle the number that best describes your present agreement or disagreement with each statement.</th>
<th>Strongly Disagree</th>
<th>Disagree Somewhat</th>
<th>Disagree Slightly</th>
<th>Agree Slightly</th>
<th>Agree Somewhat</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sometimes I change the way I act or think to be more like those around me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. My decisions are not usually influenced by what everyone else is doing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>4. I tend to worry about what other people think of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. Being happy with myself is more important to me than having others approve of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. I tend to be influenced by people with strong opinions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>6</td>
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<tr>
<td>7. People rarely talk me into doing things I don't want to do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. It is more important to me to &quot;fit in&quot; with others than to stand alone on my principles.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>6</td>
</tr>
<tr>
<td>9. I have confidence in my opinions, even if they are contrary to the general consensus.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>6</td>
</tr>
<tr>
<td>10 It's difficult for me to voice my own opinions on controversial matters.</td>
<td>1</td>
<td>2</td>
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<td>6</td>
</tr>
<tr>
<td>11. I often change my mind about decisions if my friends or family disagree.</td>
<td>1</td>
<td>2</td>
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<td>6</td>
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<tr>
<td>12. I am not the kind of person who gives in to social pressures to think or act in certain ways.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13 I am concerned about how other people evaluate the choices I have made in my life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>14. I judge myself by what I think is important, not by the values of what others think is important.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td></td>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree Somewhat</td>
<td>Disagree Slightly</td>
<td>Agree Slightly</td>
<td>Agree Somewhat</td>
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<tr>
<td>15</td>
<td>In general, I feel I am in charge of the situation in which I live.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td>The demands of everyday life often get me down.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17</td>
<td>I do not fit very well with the people and the community around me.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18</td>
<td>I am quite good at managing the many responsibilities of my daily life.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19</td>
<td>I often feel overwhelmed by my responsibilities.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20</td>
<td>If I were unhappy with my living situation, I would take effective steps to change it.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21</td>
<td>I generally do a good job of taking care of my personal finances and affairs.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22</td>
<td>I find it stressful that I can't keep up with all of the things I have to do each day.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23</td>
<td>I am good at juggling my time so that I can fit everything in that needs to get done.</td>
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<td>2</td>
<td>3</td>
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<td>5</td>
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<tr>
<td>24</td>
<td>My daily life is busy, but I derive a sense of satisfaction from keeping up with everything.</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25</td>
<td>I get frustrated when trying to plan my daily activities because I never accomplish the things I set out to do.</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>26</td>
<td>My efforts to find the kinds of activities and relationships that I need have been quite successful.</td>
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<td>2</td>
<td>3</td>
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<td>5</td>
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<tr>
<td>27</td>
<td>I have difficulty arranging my life in a way that is satisfying to me.</td>
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<td>3</td>
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<td>5</td>
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<tr>
<td>28</td>
<td>I have been able to build a home and a lifestyle for myself that is much to my liking.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29</td>
<td>Most people see me as loving and affectionate.</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30</td>
<td>Maintaining close relationships has been difficult and frustrating for me</td>
<td></td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>31</td>
<td>I often feel lonely because I have few close friends with whom to share my concerns.</td>
<td></td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>Circle the number that best describes your present agreement or disagreement with each statement.</td>
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<td>Agree Slightly</td>
<td>Agree Somewhat</td>
<td>Strongly Agree</td>
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<td>32. I enjoy personal and mutual conversations with family members or friends.</td>
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<td>6</td>
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<tr>
<td>33. It is important to me to be a good listener when close friends talk to me about their problems.</td>
<td>1</td>
<td>2</td>
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<td>6</td>
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<tr>
<td>34. I don't have many people who want to listen when I need to talk.</td>
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<tr>
<td>35. I feel like I get a lot out of my friendships.</td>
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<td>2</td>
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<tr>
<td>36. It seems to me that most other people have more friends than I do.</td>
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<td>37. People would describe me as a giving person, willing to share my time with others.</td>
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<tr>
<td>38. I have not experienced many warm and trusting relationships with others.</td>
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<tr>
<td>39. I often feel like I'm on the outside looking in when it comes to friendships.</td>
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<tr>
<td>40. I know that I can trust my friends, and they know they can trust me.</td>
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<td>41. I find it difficult to really open up when I talk with others.</td>
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<tr>
<td>42. My friends and I sympathize with each other’s problems.</td>
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<tr>
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<td>Month</td>
<td>Year of Birth</td>
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<tr>
<td>Asian</td>
<td>☐</td>
<td>☐ January</td>
<td>☐ 1994</td>
<td></td>
<td></td>
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<tr>
<td>Black or African American</td>
<td>☐</td>
<td>☐ February</td>
<td>☐ 1995</td>
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<td>Native Hawaiian or Other</td>
<td>☐</td>
<td>☐ March</td>
<td>☐ 1996</td>
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<td>Pacific Islander</td>
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<td>☐ 1997</td>
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<td>☐</td>
<td>☐ May</td>
<td>☐ 1998</td>
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<td>Mixed</td>
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<td>White</td>
<td>☐</td>
<td>☐ July</td>
<td>☐ 2000</td>
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<tr>
<td>Other</td>
<td>☐</td>
<td>☐ August</td>
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<td>☐ September</td>
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<td>☐ November</td>
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<td>☐ December</td>
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</table>
Appendix C – Frequency Testing – Participants/Number of Total Activities

<table>
<thead>
<tr>
<th>Activity Number</th>
<th>Participants</th>
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<tbody>
<tr>
<td>0</td>
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<td>9</td>
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<td>10</td>
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</tbody>
</table>

Frequency - Participants/Number of Total Activities

![Frequency Chart]

- Activity Number: 0 1 2 3 4 5 6 7 8 9 10 11
- Participants: 21 36 39 24 17 3 4 3 0 1 1
Appendix D – Percentage of Participants/Number of Activities

<table>
<thead>
<tr>
<th>Percentage of Participants/ Number of Activities</th>
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</thead>
<tbody>
<tr>
<td>Percentage of Participants</td>
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<td>--------------------------------</td>
</tr>
<tr>
<td>% of Participants</td>
</tr>
<tr>
<td>14.1</td>
</tr>
<tr>
<td>16.1</td>
</tr>
<tr>
<td>20.8</td>
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<tr>
<td>11.4</td>
</tr>
<tr>
<td>12.1</td>
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<tr>
<td>8.1</td>
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<td>6</td>
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<td>3.4</td>
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<td>2</td>
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<tr>
<td>0.7</td>
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<td>1.3</td>
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</tbody>
</table>

![Graph showing the percentage of participants and number of activities](image)
Appendix E – Frequency Testing for Self-determination and Well-being

Self – determination (SDSPER) SDS-Perceived Choice (average), \((N = 149)\)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Error</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3.757</td>
<td>.075</td>
<td>3.800</td>
<td>5.000</td>
<td>.920</td>
<td>.846</td>
<td>-.427</td>
<td>-.659</td>
</tr>
<tr>
<td>kurtosis</td>
<td>-6.59</td>
<td>SE Kurt</td>
<td>.395</td>
<td>Skewness</td>
<td>-.807</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S E Skew</td>
<td>.199</td>
<td>Range</td>
<td>3.400</td>
<td>Minimum</td>
<td>1.600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>5.000</td>
<td>Sum</td>
<td>559.800</td>
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Self – determination (SDSSLF) SDS-Awareness of Self (average), \((N = 149)\)

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<thead>
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<th>Standard Error</th>
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<th>Mode</th>
<th>Standard Deviation</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3.883</td>
<td>.081</td>
<td>4.200</td>
<td>5.000</td>
<td>.984</td>
<td>.968</td>
<td>-.807</td>
<td>.003</td>
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<tr>
<td>kurtosis</td>
<td>.993</td>
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<td>.395</td>
<td>Skewness</td>
<td>-.071</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S E Skew</td>
<td>.199</td>
<td>Range</td>
<td>3.800</td>
<td>Minimum</td>
<td>1.200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>5.000</td>
<td>Sum</td>
<td>578.600</td>
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<td></td>
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Well-being (RYFAUT) Ryff-Autonomy (Sum), \((N = 149)\)

<table>
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<tr>
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<th>Standard Error</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>59.295</td>
<td>1.956</td>
<td>60.000</td>
<td>55.000</td>
<td>11.667</td>
<td>136.115</td>
<td>-.071</td>
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</tr>
<tr>
<td>S E Skew</td>
<td>.199</td>
<td>Range</td>
<td>54.000</td>
<td>Minimum</td>
<td>28.000</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Maximum</td>
<td>82.000</td>
<td>Sum</td>
<td>8835.000</td>
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Well-being (RYFENV) Ryff-Environmental Mastery (Sum), \((N = 149)\)

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<tr>
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<th>Mean</th>
<th>Standard Error</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>55.517</td>
<td>.949</td>
<td>55.000</td>
<td>52.000</td>
<td>11.587</td>
<td>134.251</td>
<td>.010</td>
<td>-.027</td>
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<tr>
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<td>SE Kurt</td>
<td>.395</td>
<td>Skewness</td>
<td>.19</td>
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<td>S E Skew</td>
<td>.199</td>
<td>Range</td>
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<td>Minimum</td>
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<td>Maximum</td>
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Well-being (RYFPOS) Ryff-Positive Relations with Others (Sum), \((N = 149)\)

<table>
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<th>Standard Error</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
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<tbody>
<tr>
<td>M</td>
<td>60.215</td>
<td>1.007</td>
<td>61.000</td>
<td>49.000</td>
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<td>151.048</td>
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<td>Range</td>
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<td>Minimum</td>
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<tr>
<td>Maximum</td>
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<td>Sum</td>
<td>8972.000</td>
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Appendix F – Significance Testing for Participants, Non-Participants with SDSPER and SDSSLF

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
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<th>SD</th>
<th>SEM</th>
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<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>(SDSPER) SDS-Perceived Choice</td>
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<td></td>
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<tr>
<td>(average)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Non-part.</td>
<td>21</td>
<td>3.667</td>
<td>1.085</td>
<td>.237</td>
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<tr>
<td>Part.</td>
<td>128</td>
<td>3.772</td>
<td>.894</td>
<td>.079</td>
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<td>Mean Difference = -.1052</td>
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<tr>
<td>Levene's Test for Equality of Variances: $F = .916$  $p = .340$</td>
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<tr>
<td>t-test for Equality of Means</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Variances</td>
<td>t-value df</td>
<td>2-Tail Sig</td>
<td>SE of Diff</td>
<td>CI for Diff</td>
</tr>
<tr>
<td>Equal</td>
<td>-.48 147</td>
<td>.629</td>
<td>.217</td>
<td>(-.534, .324)</td>
</tr>
<tr>
<td>Unequal</td>
<td>-.42 24.65</td>
<td>.677</td>
<td>.250</td>
<td>(-.619, .409)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>M</th>
<th>SD</th>
<th>SEM</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<tr>
<td>(SDSSLF) SDS-Awareness of Self</td>
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<tr>
<td>(average)</td>
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<td>.193</td>
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<tr>
<td>t-test for Equality of Means</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Variances</td>
<td>t-value df</td>
<td>2-Tail Sig</td>
<td>SE of Diff</td>
<td>CI for Diff</td>
</tr>
<tr>
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<td>.643</td>
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<tr>
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<td>.213</td>
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Appendix G – Significance Testing for Participants, Non-Participants with RYFAUT and RYFENV

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>M</th>
<th>SD</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>(RYFAUT) Ryff-Autonomy (Sum)</td>
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Mean Difference = 3.3702

Levene's Test for Equality of Variances: $F = 1.384$ $p = .241$

<table>
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<tr>
<th>t-test for Equality of Means</th>
<th>95%</th>
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<tbody>
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<td>Variances t-value df 2-Tail Sig SE of Diff CI for Diff</td>
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</tr>
<tr>
<td>Equal</td>
<td>1.23 147 .221 2.742 (-2.050, 8.790)</td>
</tr>
<tr>
<td>Unequal</td>
<td>1.29 28.14 .206 2.603 (-1.964, 8.704)</td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th>Variable</th>
<th>Number of Cases</th>
<th>M</th>
<th>SD</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
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<td>(RYFENV) Ryff-Environmental Mastery (Sum)</td>
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<td>11.898</td>
<td>1.052</td>
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</table>

Mean Difference = -1.1559

Levene's Test for Equality of Variances: $F = 1.945$ $p = .165$

<table>
<thead>
<tr>
<th>t-test for Equality of Means</th>
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</thead>
<tbody>
<tr>
<td>Variances t-value df 2-Tail Sig SE of Diff CI for Diff</td>
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</tr>
<tr>
<td>Equal</td>
<td>- .42 147 .673 2.736 (-6.563, 4.251)</td>
</tr>
<tr>
<td>Unequal</td>
<td>- .49 30.89 .627 2.356 (-5.963, 3.651)</td>
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</tbody>
</table>