

Paths to Active Citizenship: The Development Of and Connection Between Civic Engagement Involvement and Attitudes in College Students

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BOSTON COLLEGE

Lynch School of Education

Department of
Educational Research, Measurement, and Evaluation

**PATHS TO ACTIVE CITIZENSHIP:
THE DEVELOPMENT OF AND CONNECTION BETWEEN CIVIC
ENGAGEMENT INVOLVEMENT AND ATTITUDES IN COLLEGE
STUDENTS**

Dissertation
by

LISA O. SHULER

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of the requirements for the degree of
Doctor of Philosophy

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Paths to Active Citizenship: The Development of and Connection between Civic Engagement Involvement and Attitudes in College Students

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Higher education has renewed its focus on civic engagement due to a growing recognition of the distinctive opportunities for students to internalize civic values during college. This unique role has become increasingly important in context of the shifting trend in American youth away from traditional political participation towards increasing involvement in civic life. Past research in higher education and youth civic engagement has suggested connections between participation in and attitudes supportive of civic engagement across both civic and political realms. To further investigate this relationship, this dissertation looked at how students' civic engagement involvement and attitudes develop over time, tracking how participation levels in civic, political, and expressive activities impact the acquisition of a comprehensive set of civic attitudes during students' undergraduate tenure. The specific attitudes of interest in this study were students' self-efficacy through community service, politics, and civic involvement, commitment to civic accountability, and tolerance of diversity.

This dissertation utilized data from two cohorts (N=137) of a multi-year study at a single institution as its main data source, with data from a nationally-representative sample of college students used for scale development and anchoring. A mixed-method three-factor within subjects design was used to explore the development within and

between students' civic engagement involvement and attitudes across their four years at college by gender and minority status. Through the Rasch rating scale model, repeated measures analyses of variance, and repeated measures analyses of covariance, students' longitudinal commitment to civic engagement was shown to be much more complex than expected. Canonical correlation analysis was then used to address the connection between students' involvement and attitudes within their freshman, sophomore, junior, and senior years. While the results of this study were typically non-significant with regard to students' development of civic engagement involvement and attitudes, these findings provided valuable insights into the relationship between participation in specific types of activities at certain stages of students' college experiences and the acquisition of particular civic engagement attitudes.

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Chapter 1: Introduction

Introduction

In the past decade, promoting and preparing students for lives of active citizenship, and civic education in general, has returned to prominence as an essential function of American higher education. This interest in the importance of civic engagement and social responsibility as an outcome of higher education surfaced in direct response to a growing recognition by many higher education educators, administrators, and policymakers that students had stopped internalizing the civic values that permeate the strategic missions of many institutions (Boyer, 1996; Checkoway, 2001; Harkavy, 2006; Kellogg Commission, 1999). Additionally, this troubling trend of declining civic engagement among college students coincided with heightened concerns regarding students' detachment from and distrust of the American political system and its processes (Longo & Meyer, 2006; Pascarella & Terenzini, 2005). Creighton and Harwood (1993) supported this declining interest in conventional politics among college students with findings from their higher education focus groups that indicated that students avoided participation in traditional political activities (voting, petitioning, and social activism) as they were seen as irrelevant to social change. Knox, Lindsay, and Kolb (1993) reiterated these findings, concluding that civic involvement was more prevalent among college students than political engagement, even when traditional forms of political participation (such as voting) were taken into consideration.

The displacement of college students from the political process has been linked to the increasing detachment of American youth from politics that has been witnessed throughout the past three decades (Dalton, 2008; Wattenberg, 2007; Zukin, Keeter, Andolina, Jenkins, & Delli Carpini, 2006). Additionally, the disillusionment among college students with both political and civic life has been linked to a larger crisis of civic disengagement in the general public that has been occurring during the past four decades (Brisbin & Hunter, 2003; Putnam, 1995, 2000; Zukin et al., 2006). Social critics, such as Putnam (1995), attribute this disconnection to a decline in social capital, in which an older, more engaged generation has been replaced with younger, more apathetic generations. As a result of this perceived decreasing social capital, a general sense has emerged that Americans' social, political, and civic participation is diminishing due to a growing apathy towards joining and contributing to civic, service, and recreational associations (Putnam, 1995). This has led some to conclude that the "foundations of citizenship and democracy are crumbling" (Dalton, 2008, p. 2).

However, an alternative perspective has recently emerged that fundamental changes in American society have shifted, not decreased, the level of civic engagement among Americans (in general) and college students (in particular) (Youniss & Yates, 1997). Indeed, changing demographics, gender roles, and family compositions, increased diversity, tolerance, and educational levels, key historical events, technological and communications advances, and weakening traditional political parties have resulted in new forms of civic and political action and interaction (Dalton, 2008; Zukin et al., 2006). For example, globalization and international interconnections have exposed the American

public to “issues of social justice throughout the globe”, while also providing the “tools to tackle them politically” (Zukin et al., 2006, p. 46). According to Dalton (2008), “the modernization of American society has transformed the norms of citizenship¹, and this is affecting the political values and actions of the American public” (p. 16). He continues on to describe that in recent decades, American society has been characterized by a decreasing focus on duty-based citizenship (the formal obligations, responsibilities and rights of citizenship, such as voting and paying taxes) and increasing focus on engaged citizenship (assertive elements of citizenship, like social concerns and the welfare of others). As a result, American youth are increasingly becoming involved in non-electoral political activities, as the switch from duty-based citizenship to engaged citizenship means that:

Instead of seeing political participation primarily as a duty to vote, engaged citizenship prompts individuals to be involved in a wider repertoire of activities that give them a direct voice in the decisions that affect their lives (Dalton, 2008, p. 29)

Zukin et al. (2006) describes this “foundational, generational shift” (p. 50) as a “remix of the civic and political patterns of their elders” (p. 11), in which younger citizens have become committed to civic engagement (volunteering and community activism) in place of traditional political engagement (voting). This shifting of cultural norms helps explain why decades of declining political participation (most notably through voter turnout) have coincided with an increase in volunteering and involvement

¹ Norms of citizenship are defined as how society thinks it should get involved with the political system and the expectations of government and its political processes (Dalton, 2008, p. 5).

in the community in young citizens (Dalton, 2008; Longo & Meyer, 2006; Sherrod, Flanagan, & Youniss, 2002; Zukin et al., 2006). As such, concerns over the detachment of American youth from politics should be tempered by the possibility for positive implications of the trend, as it remains to be seen if college students are rejecting involvement in political action entirely, or are merely redefining their roles in political processes. Due to the increased focus on social concerns, this potentially new form of civic politics may “hold potential for strengthening and broadening the democratic processes” (Dalton, 2008, p. 19) and “be effective in translating the public will into the public good” (p. 87). According to Flanagan, Cumsille, Gill, and Galloway (2007), however, it is critical to explore this changing atmosphere, as understanding adolescents’ beliefs in the political system and sense of obligation to serve the polity has implications for the stability of democratic governance in the future.

It is within this atmosphere that higher education has renewed its focus on the importance of civic education and has increasingly recognized the unique role that it can play in addressing these issues. Past research has pointed towards parental attitudes, levels of engagement, and educational attainment as the top predictors in the development of civic and political engagement and attitudes in college students (Jennings & Niemi, 1981; Youniss et al., 2002; Zukin et al., 2006). It is through the promotion of certain values and role modeling within the home that parents can significantly influence adolescents’ development of civic engagement (Flanagan & Faison, 2001; Flanagan & Galloway, 1995; Obradović & Masten, 2007; Youniss et al., 2002). However, while studies have highlighted low-to-moderate inter-generational similarity in the political values of

students and their parents, only a small minority of students have been shown to uphold views corresponding to their parents (Niemi, Ross, & Alexander, 1978, p. 517).

Therefore, the importance of higher education in supporting these values cannot be overlooked, as a great deal of socialization towards civic and political engagement occurs within schools and communities (Flanagan, Cumsille, Gill, & Gallay, 2007; Jennings & Niemi, 1981; Youniss et al., 2002). According to Zukin et al. (2006), high schools and colleges “can provide training grounds for civic involvement, offer opportunities for open discussions and create avenues for service work – all of which lead to higher levels of youth involvement” (p. 142).

Distinctive opportunities arise at colleges and universities in particular through which students can transfer community and political experiences into the sophisticated knowledge, skills, and awareness necessary to become active citizens. Higher education, particularly when focused on developing verbal and civic capabilities, has been described as capable of promoting: the political and civic skills necessary to function effectively in society, a deeper understanding of social problems and their causes, and a stronger commitment to becoming involved in community and civic issues (Hillygus, 2005; Pew Partnership for Civic Change, 2004). Findings such as these led Pascarella, Ethington, and Smart (1988) to conclude that higher education is the “fundamental social/cultural institution” in the United States that “prepares students for concerned/involved citizenship in a democracy” (p. 412).

That being said, many interested stakeholders feel that higher education "must play a greater role in preparing students for citizenship and strengthening local

communities,” especially given its long-standing role in shaping students’ attitudes, values, and beliefs (Ferraiolo, 2004, p. 89). Mallory and Thomas (2003) echoed this sentiment by contending:

If collegiate institutions are to retain their privileged positions within society, benefiting from public support and tax-exempt status, more attention must be given to documenting the reasons the public should then invest in institutions that are responsible not just for teaching and job preparation, but also for research and service to society (p. 11)

In response to this need for higher education to legitimize its unique contribution to society, in conjunction with growing concerns about students’ involvement in and connections to civic life and politics, a “consensus emerged about the need to increase civic participation and strengthen democracy, with universities called upon to play a leading role” (Ostrander, 2004, p.77). Along with this came increasing pressure for higher education institutions to validate their role in supporting the development of active citizenship in students and how curricular and extra-curricular experiences can be leveraged to foster the ability of students to lead lives of civic responsibility (Longo & Meyer, 2006; Mallory & Thomas, 2003; Pew Partnership for Civic Change, 2004).

Statement of problem

As a reaction to the mounting pressure, literature has begun to emerge that explores both the effectiveness of higher education institutions at endorsing civic engagement values and useful assessment strategies to gauge institutions’ success at these

initiatives (Ferraiolo, 2004; Ostrander, 2004). Investigations into the connections between higher education and students' attitudes have been prevalent for decades. Research on higher education's effect on students' dispositions has typically been divided into eight categories, including: sociopolitical dispositions, civic and community involvement, racial-ethnic attitudes, gender roles, attitudes towards homosexuality, religious attitudes and values, and educational and occupational values (Pascarella & Terenzini, 2005). While each of these research topics has received attention over the past few decades, several recent inquiries have centered on higher education's effect on students' community, civic, and political involvement. Indeed, through research relying heavily on the use of large national datasets (the Cooperative Institutional Research Program (CIRP) out of the Higher Education Research Institute at the University of California at Los Angeles, among others) in addition to single-institution studies, investigators have begun to estimate the extent to which students' pre-college characteristics and college experiences influence their development with regard to pro-civic engagement attitudes, beliefs, and values (Astin & Sax, 1998; Pascarella et al., 1988).

More specifically, several higher education attitudinal studies in the 1990's and early 21st century focused on higher education's impact on civic engagement attitudes following students' experiences with community service or service learning classes (Astin, 1992, Astin & Sax, 1998; Giles & Eyler, 1994). These studies typically explored the combined effect of community service and civic involvement, often within the specific framework of defined service learning experiences (Eyler, Giles, & Braxton,

1997; Giles & Eyler, 1994; Hunter & Brisbin, 2000; Markus, Howard, & King, 1993; Myers-Lipton, 1998). Additionally, other studies have continued on to investigate the impact that this participation has on students' attitudes, particularly with regard to students' commitment to involvement in the community, civic responsibility, and social activism (Knox et al., 1993; Kuh, 1993; Pascarella et al., 1998; Sax, 2000; Sax & Astin, 1997). These past studies have consistently shown students' involvement in programs, activities, and classes focused on community service and civic engagement as directly related to their development of pro-civic engagement attitudes and values (Astin & Sax, 1998; Colby, Ehrlich, Beaumont, & Stephens, 2004; Pascarella, et al., 1988). A few studies, however, have continued on to explore the differential impact of these college experiences on different students (Pascarella, et al., 1988, Pascarella & Terenzini, 2005, Sax, 2000) and found that the development of students' civic engagement attitudes as a result of involvement varies by students' race and gender, as well as the particular types of activities in which they participate.

A rich literature on youth civic engagement also exists from developmental theorists, which has repeatedly shown that developmental environments, such as schools, have a "long-term influence on values and behaviors that are critical to democratic society, including tolerance and engagement in civic affairs" (Flanagan & Tucker, 1999, p. 1198). Additionally, past studies have shown that community service involvement during adolescence strongly impacts the likelihood of civic involvement in the future (Flanagan, Gallay, Gill, Gallay, & Nti, 2005), as well as positive attitudes towards service in young people (Walker, 2002). These studies therefore support past research in higher

education, such as Sax and Astin (1997), which found community service in high school to be a strong predictor in students' volunteerism in college. Across past research on participation in activities and adolescent development, involvement in extra-curricular activities "correlates with higher self-esteem, feelings of control over one's life, and improved race relations" (Holland & Andre, 1987, as cited in Obradović & Masten, 2007, p. 4). Importantly though, this past research was limited by its scope and definition, as few of these developmental studies have usefully delineated between community service and political involvement and/or civic and political engagement (Walker, 2002). Likewise, few have taken into the account the specific activities in which adolescents became involved, an important distinction as Metz, McLellan, and Youniss (2003) found that the "benefits of service were not limited solely to those adolescents who were predisposed toward volunteering but that the type of service was critical to development" (p. 201).

This research is an extension of these previous studies (Pascarella et al., 1988, in particular) that called for future research to investigate how different types of involvement affect students' civic engagement outcomes in college. Specifically, these researchers cited a need for studies to explore which types of participation in higher education best foster pro-civic engagement attitudes and how opportunities for this involvement can be increased (Pascarella et al., 1988). Therefore, this research will address the connection between specific experiences in higher education and the development of pro-civic engagement attitudes over time to investigate how students develop into engaged public citizens during college. More specifically, this research will

focus on three of the eight traditional categories of student attitude research: political attitudes, civic and community involvement, and attitudes towards individuals of varying racial/ethnic backgrounds. Additionally, it will explore any differential growth that may occur in civic engagement involvement or affect in these areas between students of varying racial/ethnic backgrounds and genders.

This study will be structured as a college impact model of student change, using Astin's Input-Environment-Outcome Model and Theory of Involvement (Astin's I-E-O Model) as its theoretical framework for the investigation into how students' participation in activities affects their attitudes towards civic engagement. Astin's I-E-O Model is based on the theory that "students learn by becoming involved" (Astin, 1985, p.133). It attempts to describe the effects of environmental factors over which college faculty and administrators have control (i.e., curricular, co-curricular, or extra-curricular programs) on student development (Pascarella & Terenzini, 2005). This theory will be utilized in this research to explore the extent to which involvement in various activities during students' undergraduate tenure leads to the internalization and development of attitudes supportive of civic engagement. The application of this framework to this research is supported by a recent study by Jones and Hill (2003) in which the researchers found that students who are more consistently involved in community service activities (in both high school and college) develop more internal motivations for participating in community service, and are therefore more likely to form a deeper commitment to service and a better understanding of the importance of civic engagement.

Placement in the field

This research is innovative both in the focus of its content and in its research design. It will expand upon past research conducted both on youth civic engagement and development, and studies specific to higher education. Many past attitudinal studies in higher education have described the direct effects of particular college experiences on the acquisition of specific knowledge, skills, and values (Astin, 1992, 1993; Kuh, 1993; Kuh et al. 2001; Kuh & Vesper, 1997; Pascarella & Terenzini, 2005). The past decade has signaled a proliferation of studies investigating higher education's impact on students' civic and political attitudes, given the recent movement in higher education to realign itself with its historical mission of promoting civic engagement in students. While a few studies have shifted the focus to identifying motivational factors (within and between college students) that explain students' participation in civic engagement activities in college overall (Cruce & Moore, 2006; Dee, 2003; Griffith & Thomas, 2006; Umbach & Kuh, 2006), far more have looked at the impact of such involvement on students' civic engagement attitudes (Astin, 1992, Astin & Sax, 1998; Giles & Eyler, 1994). The majority of these recent inquiries have centered on the particular impact of specific service learning experiences on students' involvement in and attitudes towards civic engagement (Battistoni, 1997; Eyler & Giles, 1999; Eyler, Giles, & Braxton, 1997; Giles & Eyler, 1994; Hunter & Brisbin, 2000; Markus et al., 1993; Myers-Lipton, 1998). This research seeks to push beyond investigating students' acquisition of civic engagement attitudes through general experiences (higher education attendance) and specific

interventions (service learning classes) to see how participation in a variety of activities (including civic, political, and expressive) develops and changes over time in college.

Additionally, this research will simultaneously explore students' development of a multitude of civic engagement attitudes (self-efficacy through service, politics, and civic involvement, civic accountability, and tolerance) instead of limiting its focus to one particular civic engagement outcome. The attitudes of interest in recent investigations have typically been related to civic involvement, including altruism, civic responsibility, and social activism (Knox et al., 1993; Kuh, 1993; Pascarella et al., 1998; Sax & Astin, 1997). Far fewer examples exist when participation was linked to changes in political engagement (Sax, 2000; Vogelgesang, 2000) and/or appreciations for diversity (Kuh & Vesper, 1997; Milem, 1999). These constructs, though shown to be related in the past, have traditionally been investigated as disparate constructs (Pascarella & Terenzini, 2005). Furthermore, students' interest, participation in, and political attitudes have largely gone unexplored. As noted by Colby, Ehrlich, Beaumont, and Stephens (2004), there are currently no higher education institutions giving "campus-wide attention to that subset of civic engagement that involves politics" (p. 56). Therefore, this research will answer the call put forth by Longo and Meyer (2006) that research needs to be conducted that provides "deeper insights into the connections – and lack of connections – between involvement in community service and political engagement" (p. 3). Indeed, this study will investigate the extent to which a relationship exists between political and civic involvement and pro-civic engagement attitudes (Longo & Meyer, 2006).

This research will concurrently investigate students' affect towards the importance of several aspects of civic engagement (civic, political, and tolerance of diversity) while tracking any development that occurs in their civic engagement involvement and attitudes over their undergraduate years. Of particular interest will be students' gains in self-efficacy, or their feelings of empowerment or ability to invoke change within a community through civic and political engagement. Past studies on students' development of self-efficacy as a result of participation in civic engagement activities have focused on "citizenship confidence", or the ability of students to make an impact in a community through service (Eyler, 1997; Myers-Lipton, 1998). This research signals an expansion of this construct to include students' confidence in affecting change in others' lives through political and civic involvement, along with in communities.

As described, this study will look at the process through which students' civic engagement attitudes develop over time, tracking how participation in a wide variety of higher education activities affects the acquisition of a comprehensive set of civic attitudes during students' undergraduate tenure. This research will therefore seek to eliminate the "black-box" of influence of activities that currently characterize many of the studies based upon the freshman versus senior year comparisons that result from analysis of large, nationally representative databases, such as CIRP (Astin, 1993; Astin & Sax, 1998; Sax, 2000). The high-levels of organization and effort linked with conducting longitudinal studies such as this research often deter researchers from employing these rigorous research designs. As such, although past studies have stressed the need to examine civic engagement involvement on the development of students' civic attitudes

over time; examples are not currently available that plot the progression of students' civic engagement involvement and attitudes across all four undergraduate years (Marks & Jones, 2004; Pascarella et al., 1988). As a result, a shortage of longitudinal research exists that examines how college students' involvement in activities and attitudes develop as undergraduates. As noted by Sherrod, Flanagan, and Youniss (2002), this "longitudinal research is sorely needed" (p. 267). This study will fill this void in the research literature by providing data on how both students' activities and attitudes change over time by tracking the development of students' civic engagement involvement in enduring experiences and attitudes across students' freshman, sophomore, junior, and senior years. This data will then be used to determine how involvement influences civic dispositions during each those specific undergraduate contexts.

Constructs and Variables of Interest

As described, this research will explore how participation in various activities affects students' acquisition of the importance of civic engagement.

Active Citizenship

Active citizenship refers to students' responsible, effective, and active participation in a democratic society, including an awareness and understanding of the needs of both their community and diverse populations. As such, active citizenship encompasses many components, including knowing the rights and responsibilities of citizenship, involvement in the political system and community, and tolerance (Sherrod, Flanagan, & Youniss, 2002). Flanagan and Faison (2001) described an active citizen as

one that “matters, has a voice and a stake in public affairs, and wants to be a contributing member of the community” (p. 5). According to the Tufts University Tisch College of Citizenship & Public Service, an active citizen is a:

person who understands the obligation and undertakes the responsibility to improve community conditions, build healthier communities, and address social problems...who understands and believes in the democratic ideals of participation and the need to incorporate the voice, perspective, and contributions of every member of the community

<http://activecitizen.tufts.edu/?pid=10&c=79>

Ehrlich (2000) expanded this definition to include “promoting the quality of life in a community, through both political and non-political processes” by “working to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values, and motivation to make that difference” (p. vi). Active citizens are therefore involved with politically-related civic actions that incorporate multiple forms of engagement with public policy issues, in addition to electoral politics at the local, state, and federal levels (Colby, 2008). Prior to being considered an active citizen, an individual must then “learn to apply knowledge in areas of critical importance for responsible citizenship at every level – local, state, national, and international” (Colby, Ehrlich, Beaumont, & Stephens, 2004, p. 53).

Civic Engagement

The Pew Partnership for Civic Change (2004) noted that active citizenship can be achieved through a process of learning, accepting, and promoting ones role as a citizen in local, national, and international communities. Civic engagement therefore encompasses students' skills, knowledge, and attitudes that prepare them to serve roles as productive citizens in the social and civic life of their communities, including their levels of political awareness and sensitivity to diversity (Ferraiolo, 2004; Pascarella & Terenzini, 2005). It incorporates a "grasp of key civic and political concepts" (Colby et al., 2004, p. 52), such as an understanding of American democratic principles, tolerance and respect for others, concern for the rights of individuals and the welfare of society at-large. Through civic engagement, individuals can gain perspective on social and community problems by "reflecting on and addressing the roots of those challenges" (Pew Partnership for Civic Change, 2004, p. 7).

Students that strengthen in their civic engagement attitudes will therefore be developing their sense of civic responsibility, including their "will and capacity to solve public problems" and internalization of habits that promote the good of the community (Ferraiolo, 2004, p. 91). This research will be based on the distinction between civic and political engagement delineated by Flanagan and Faison (2001); in which civic engagement is higher-level engagement that encapsulates political engagement as one of its facets. This research will therefore explore the extent to which participation in higher education leads to enhanced self-confidence in students' abilities to effect change, a greater commitment to the public good (civic accountability), and increased empathy and

understanding towards others (tolerance) across both civic and political realms. It will comprehensively investigate if students' involvement in civic engagement activities leads to enhanced self-efficacy in their abilities to affect: others' lives through service (service efficacy), political processes (political efficacy), and communities (civic efficacy).

Self-Efficacy Attitudes

In this study, students' confidence in the efficacy of their own civic engagement through community service, political participation, and civic involvement will be measured across their four years at college. Self-efficacy deals with an individual's sphere of influence, or their locus of control, to execute certain courses of action or attain particular goals. Bandura (1994, 1997) defines self-efficacy as individuals' "beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (1994, p. 71). As such, of primary interest to this research will be students' confidence in their abilities to make a difference and impart change by being civically engaged. More specifically, the development of students' attitudes towards their capacities to impact others' lives, political processes, and within communities will be explored through this research.

This research will build upon past studies in political science on political efficacy, which has historically been defined by Campbell, Gurin, and Miller (1954) as:

The feeling that individual political action does have, or can have, an impact upon the political process, i.e., that it is worthwhile to perform one's civic duties. It is the feeling that political and social change is possible, and that the individual

citizen can play a part in bringing about this change (Craig & Maggiotto, 1982, p. 85).

Political efficacy has since been further delineated into two distinct constructs: external and internal political efficacy (Balch, 1974; Craig & Maggiotto, 1982; Jennings & Niemi, 1981). External political efficacy refers to individuals' political trust in the responsiveness of the political system to the needs of individuals, while internal political efficacy is individuals' beliefs in their capabilities to participate in political activities such as voting and campaigning (Finkel, 1985).

Traditionally, political science has focused on measures of external political efficacy, or the stability of the political system and its ability to respond to the influence and demands of its constituents (Balch, 1974). However, given this study's focus on individuals' development with regard to civic engagement attitudes, this research will center on students' development of internal political efficacy and how that self-efficacy influences students' involvement. As such, this research will be grounded in a view of participatory democracy in which political engagement furthers the moral development of the individual that gets involved by increasing connectedness to society and better understanding contemporary issues (Balch, 1974; Finkel, 1985). It will therefore focus on individuals' personal political effectiveness or their ability to "act effectively in the political realm" (Finkel, 1985, p. 892). This construct will be extended to measure the extent to which students' civic, political, and expressive involvement impacts their internal efficacy with regard to helping others (service efficacy), influencing political

processes (political efficacy), and making positive contributions to a community (civic efficacy).

Civic Engagement Activities

In addition to their development of civic engagement attitudes, students' patterns of involvement in civic engagement activities are also of particular interest in this study. An investigation into the types of activities that students participate in is of critical import to understanding their civic engagement attitudes, as it has been suggested that to the "extent that behavior influences individual attitudes, it does so primarily on attitudes about the object(s) toward which one directed one's actions" (Finkel, 1985, p. 907). As such, students' participation in civic engagement activities will be defined in similar categories to their civic engagement attitudes: civic, political, and expressive (public voice). This classification of civic engagement activities is based upon the types of involvement captured on the Civic and Political Health of a Nation Survey administered in 2002 (Keeter, Zukin, Andolina, & Jenkins, 2002). On this instrument, active citizenship was categorized into four distinct types of engagement: civic, political, expression of public voice, and cognitive development (Zukin et al., 2006). The boundaries between these types of activities has been decreasing in recent decades, as stronger links between the private and public sector have blurred the distinctions between various types of engagement activities (Zukin et al., 2006). According to Zukin et al. (2006), this reveals how the "national conception of citizenship is evolving" (p. 52).

In this study, a comprehensive definition of civic engagement will be utilized that encompasses students' involvement in both civic activities that promote public action, as well as political activities aimed at governmental institutions and processes (Flanagan & Gallay, 1995). Notably, this study will not provide data on students' cognitive development, defined as their knowledge of civic information or their awareness of politics and public affairs. It will, however, address the remaining types of activities that represent an expanded mix of engagement activities that fall under the broadening conception of civic engagement, including civic, community service, and political skills and savvy (Youniss et al., 2002). This research will therefore answer the call put forth by Walker (2002) for studies that capture "more nuanced measures of civic outcomes and political engagement" (p. 187), including registering voters, working on political campaigns, and protesting. It will also acknowledge that the range of political activities require differing degrees of commitment, as a continuum exists between performing formal political acts, political actions, and performing political service (Youniss et al., 2002).

Civic activities include participation in activities aimed at community problem solving and helping others, such as volunteering through a social organization. Political activities, on the other hand, encompass those activities aimed at influencing public policy, as well as taking part in political/electoral processes, such as helping to register voters. Expression of public voice refers to the "ways citizens give expression to their views on public issues" (Zukin et al., 2006, p. 54) through combined political and civic activities like signing petitions, contributing to political websites, and contacting public

officials. As noted by Zukin et al. (2006), contacting public officials is of particular import, as it is “usually done for the purpose of affecting government’s behavior and may be the most direct type of public voice” (p. 54). As described, this study will collect information on students’ civic involvement that accounts for the trend that students are “now engaged in a range of activities that go beyond participation in traditional electoral politics” (Zukin et al., 2006, p. 4).

Research questions

In order to investigate the relationship between civic engagement involvement and attitudes, data will be utilized from a multi-year study that is being implemented at Tufts University. The study, which began at the University in 2003, was designed to assess the development of students’ civic involvement, skills, and values while at the institution. The Jonathan M. Tisch College of Citizenship and Public Service (Tisch College) was established in 2000 to facilitate and support the wide range of programs that build faculty and student knowledge, skills, and values around civic engagement. Its purpose was to develop an institutional focus on civic engagement at Tufts University. In order to understand if and how the institution is promoting civic competencies in its students, students from the Classes of 2007 to 2010 were recruited and are being tracked during their four years as undergraduates and two years post-graduation. The undergraduate data from the Classes of 2008 and 2009 (first year through senior year at the University) will be used as the main data source for this research, with results from

the 2007 data collection being used in conjunction with national results from 2006 and 2007 in a pilot-study.

The purpose of this research is to investigate how college students' participation in and attitudes towards civic engagement develop during their time as undergraduates. This research will also investigate the relationship between college students' involvement levels in various activities during their four years as undergraduates and their acquisition and acceptance of pro-civic engagement attitudes. It will therefore utilize psychological (civic engagement attitudes) and behavioral (participation in activities) data to explain affective outcomes (attitudes towards civic engagement).

This study is designed to address three main research questions examining the linkages between the students' participation in activities in college and their attitudes towards civic engagement:

- 1) How does students' civic engagement involvement develop and change during the undergraduate years?
- 2) How do students' civic engagement attitudes (service, political, and civic efficacy, civic accountability and tolerance of diversity) develop and change during the undergraduate years?
- 3) To what extent does civic engagement involvement relate to students' civic engagement attitudes during the undergraduate years?

Hypotheses

Since prior research has shown that high school activities are a strong predictor of college activities (Astin & Sax, 1998; Jones & Hill, 2003; Marks & Jones, 2004), this study will be based on the hypothesis that students with high levels of involvement in civic engagement activities in high school will participate at high levels in these types of activities in college. With regard to attitudes, this study will be based on the hypothesis that students' attitudes towards civic engagement will develop positively during college depending on their level of participation in civic engagement activities. Pro-civic engagement attitudes are therefore believed to be positively correlated with participation in activities in college.

Students' levels of civic engagement participation in high school (reported through the number of civic, political, and expressive [public voice] activities they were involved with in their junior and senior years) will serve as a proxy for their dedication to civic engagement prior to enrolling in higher education. This proxy will then be included as a covariate in the study, as past studies have shown that students who participate in civic engagement activities in high school are more likely to participate in these types of activities as undergraduates (Cruce & Moore, 2006; Griffith & Thomas, 2006). Indeed, recent studies in youth civic development have found that both voluntary and mandatory/required community service in high school resulted in higher levels of volunteerism and adult voting (Hart, Donnelly, Youniss, and Atkins, 2007; McLellan & Youniss, 2003). Hart, Donnelly, Youniss, and Atkins (2007) concluded that the "frequency of community service in high school, but not the type of high school

community service, predicted whether young adults would volunteer in their communities” (p. 210).

Past research has also revealed gaps in involvement in and attitudes towards civic engagement according to gender and minority status in adolescents, in general, and college students, specifically (Astin, 1993; Flanagan, Cumsille, Gill, & Gallay, 2007; Metz, McLellan, and Youniss, 2003; Pascarella et al., 1988; Pascarella and Terenzini, 2005; Sax, 2000). Therefore, this study also theorizes that students’ activities and attitudes will develop differentially between male and female students, as well as White as compared to minority students.

Significance of the research

As active citizenship has resurfaced as a core mission of higher education, this research is critical for exploring if, how, and when institutions of higher education can impart civic knowledge, skills, and values into their students. This research will therefore answer a call put forth in past research to explore how different types of involvement in college affect students’ outcomes with regard to positively developing civic engagement attitudes (Pascarella et al., 1988). Specifically, this research will investigate how participation affects attitudes about civic engagement using more comprehensive measures of the frequency and quality of student involvement during college than have been utilized in past studies (Hart, Donnelly, Youniss, & Atkins, 2007; Pascarella et al., 1988). Given the contemporary context, higher education administrators need to provide and investigate a variety of inlets for student involvement in order to promote civic

engagement in students. Indeed, as noted by the Pew Partnership for Civic Change (2004), institutions of higher education now face the challenge of integrating “existing curricular, co-curricular, and other initiatives into a holistic, integrated, institutionalized approach” (p. 8) to promoting civic engagement. This research will be built upon Astin’s earlier assertions that student involvement is the key to college impact (Astin, 1991, 1993, 1985). This claim was supported by the findings of Pascarella et al. (1988) where they concluded that the undergraduate college experience “had a significant, unique impact on the humanizing of values” (p. 429).

Given these findings, this research will be of importance to members of the higher education community, particularly college and university administrators, who are currently working to find appropriate means through which to promote the notions of civic values and responsibility to their students. The importance of this type of research in the contemporary context is paramount, as most higher education institutions do not currently assess or disseminate outcomes from their programs that foster students’ civic development (Ferraiolo, 2004; Longo & Meyer, 2006). According to Ferraiolo (2004) providing “evidence of the effectiveness of engagement efforts at institutions” will be critical in the coming years to encourage institutions that have not fully embraced promoting civic engagement to do so. This study will therefore serve to provide a framework regarding how best to maximize student development along these themes in support of institutions’ missions. For example, these results could generate valuable information regarding what activities and at what point in a students’ undergraduate tenure that they are most apt to adopt civic engagement attitudes. This information could

help drive decisions at institutions regarding the timing and structure of student programming and curricula to optimally prepare students for lives of active citizenship. These results could also provide a basis for future investigations in which the research could be expanded to explore the results in different contexts, including public institutions, community colleges, and other two-year higher education settings. This research, therefore, could become pivotal to higher education effectively and efficiently generating students dedicated to becoming engaged citizens.

Limitations of the study

As described, this research will explore the development of active citizenship, measured through both participation in activities and the attitudes of college students at a single institution (Tufts University). This research will therefore revert back to a single institution sample, a design which was characteristic of early research on the influence of college on civic engagement that has been largely replaced by the use of national samples (such as the CIRP surveys) to provide a multi-institutional, nationally representative perspective on these issues (Astin & Sax, 1998; Pascarella & Terenzini, 2005; Pascarella et al., 1988). Given its design as a single-institution study, the research will be subject to external validity issues due to the limited scope of the generalizability of the results. The results of this research will only be applicable to the specific population being studied, namely traditional-aged, residential students at a four-year private institution. Due to the known probability of students being sampled through the stratified random sampling technique that is set to be employed, the results of the study will be generalizable back to

all Tufts students, as well as to students at comparable four-year private institutions with regard to institutional selectivity and civic mission.

Another limitation of this study is its specific focus on the development of only civic attitudes, in place of a more general investigation of students' growth with regard to civic knowledge, skills, and attitudes. This represents a typical shortcoming of research on students' values and attitudes, as disconnections have routinely existed between studies of students' beliefs and their actions or behaviors (Pascarella & Terenzini, 2005). Additionally, these researchers also point out that since definitions of attitudes, values, and beliefs have varied considerably across and within the literature, that all research pertaining to one of these three areas in college students is grouped together (Pascarella & Terenzini, 2005). This study will also not look at how students adopt or display the practical skills they need to succeed, or the "particular mechanisms that are likely to be effective in tackling different kinds of issues" (Colby, Ehrlich, Beaumont, & Stephens, 2004, p. 53). Likewise, since the correlation between civic knowledge and civic engagement has found to be relatively small, this study will also not address the development of students' civic knowledge during their four years at Tufts (Hart, Donnelly, Youniss, & Atkins, 2007).

A more unique limitation of this research will be its use of longitudinal data to track the development of students' attitudes towards and involvement in civic engagement over time. Despite the design's beneficial aspects, longitudinal studies are often criticized for being time-consuming and resource-intensive, as challenges often arise for researchers in terms of the depth, breadth, and quality of data collection needed

to observe changes and establish effectiveness (Mowbray & Luke, 1996). Longitudinal studies are therefore subject to unique external and internal threats to validity; including the effect of time itself, the need for more resources, the management of complex data, and the attrition of subjects (White & Arzi, 2005). Pascarella and Terenzini (2005) also indicate that longitudinal studies often suffer from attribution problems, as the changes noted within students could reflect the influence of the overall college experience, normal maturation, cohort effects, or historical changes, as research cannot “simultaneously control for the confounding effects” (p. 272). Due to these unique challenges, the results of such studies are often criticized as being too complex for easy assimilation or comprehension by researchers, with long time intervals often resulting between report dissemination (Mowbray & Luke, 1996). Despite the challenges presented by this research design, it should be noted that longitudinal research offers some unique methodological advantages from other research designs, as it allows researchers to compare participants with their earlier selves, allowing for more detailed accounts of factors that affect changes over time. Therefore, only longitudinal studies enable the individual matching of data that can enhance internal validity, described as “the basic minimum without which any experiment is uninterpretable” (White & Arzi, 2005).

Chapter 2: Review of the Literature

General versus specific civic engagement interventions

In general, the past four decades of research on higher education's impact on students' beliefs indicate that students develop more open, liberal, and tolerant attitudes and values during their undergraduate tenure (Pascarella & Terenzini, 2005). Several more recent research studies have shown that support for liberal values, or "liberalism," can be advanced in college environments that promote social activism, community involvement, and awareness of racial conflict (Astin, 1993). These studies suggest that by creating environments conducive to participation in activities centered on politics, community service, and diversity, institutions of higher education can nurture students into adopting the "civic skills and attitudes that will enable them to be responsible and effective citizens" (Pew Partnership for Civic Change, 2004, p. 7). It has been suggested that higher education institutions need to work on integrating curricular, co-curricular, and other initiatives into an institutionalized approach that increases students' connectedness to local, national, and international communities during their college years and after graduation (Mallory & Thomas, 2003; Pew Partnership for Civic Change, 2004).

It is within this environment that service learning as a pedagogical tool rose to prominence in the late 20th and early 21st century as a mechanism to promote these values among students. Service learning classes have been significantly linked with students' sense of social responsibility and their commitment to social activism (Battistoni, 1997;

Eyler & Giles, 1999; Eyler, Giles, & Braxton, 1997; Giles & Eyler, 1994; Hepburn, Niemi, & Chapman, 2000; Hunter & Brisbin, 2000; Markus, Howard, & King, 1993; Myers-Lipton, 1998). It has been shown that the benefits of this pedagogy are two-fold for both students and institutions. Indeed, these learning environments enable students to “make connections between classroom learning and real-world experiences” while also helping institutions by building “stronger communities by aligning its resources with local needs” (Pew Partnership for Civic Change, 2004, p. 3). Astin and Sax (1998) continued on to cite additional short-term benefits of participating in service learning, including commitment to community service, helping others, and understanding community problems. However, research still needs to be conducted to explore if these benefits extend into long-term impact on students’ sustained development of attitudes supportive of civic and political action. Additionally, mixed results have surfaced in the literature with regard to the effect of service learning on students’ self-efficacy, with some studies noting gains in students’ belief in their own ability to contribute to a community following a service learning course (Astin, 1993; Eyler, Giles, & Braxton, 1997; Myers-Lipton, 1998; Sax & Astin, 1998). Still others showed no increase or even a slight decline in students’ self-efficacy through civic and political engagement during college (Giles & Eyler, 1994; Markus et al., 1993; Sax, 2000).

That being said, more general student experiences in college have also been connected to positive, continued development in civic engagement attitudes in past studies. Indeed, extensive past research has shown that extra-curricular (in addition to curricular) activities can affect students’ development in a wide variety of political and

civic affective outcomes that endure into adulthood (Astin, 1991; Pascarella & Terenzini, 2005). In particular, extended experiences were seen as the most efficacious at imparting civic values, with findings that indicate that the most effective programs are the longest in duration (Astin & Sax, 1998; Eyler, Giles, & Braxton, 1997; Hepburn, Niemi, & Chapman, 2000). Astin's theory that student involvement is the key to college impact reflected these findings, as he indicated that "student's involvement...during college has a potentially significant, positive influence on the importance he or she attaches to civic and humanitarian activities after college" (Pascarella & Terenzini, 2005, p. 430). Importantly, it was suggested through these findings that the quality and intensity of involvement may affect outcomes and that not all students will benefit equally from exposure to the same environmental influences, with differential impact by race and gender (Pascarella, et al., 1988, Pascarella & Terenzini, 2005, Sax, 2000).

In light of these findings, this study will utilize Astin's I-E-O Model to simultaneously explore how participation in community service, civic, and political activities jointly affect students' civic engagement attitudes. This study will therefore explore the impact of the more subtle integration of civic engagement values in enduring environmental experiences in college as opposed to the direct influence of a short-term service learning class. Due to inconclusive past results with regard to the impact of service learning in particular, it will pay specific attention to students' development of self-efficacy as a result of involvement with various activities to gauge the impact of participation on students' beliefs that they are empowered to make a difference in a community.

Astin's I-E-O Model & Theory of Involvement

This study will therefore be structured as a college impact study, investigating the degree of impact of environmental factors on student affective change over students' undergraduate tenure. College impact models seek to quantify the extent to which environmental factors impact students' overall degree of change during college. These models are often compared and contrasted to developmental theories of student change, which are more student-centered and focus more heavily on individual student's moral and cognitive development (Pascarella & Terenzini, 2005). Given that the present study will occur within a single-institution, it will focus on within-college effects, or those experiences that students have while enrolled at Tufts University. Multi-institution studies often explore between-college effects as well, or changes that result from the institutional characteristics (size, type of institution, location) of the colleges and universities that students decide to enroll in. The focus on a single institution was determined to be sufficient for this study as past research has consistently shown that only institutional selectivity, of all possible institutional characteristics, exerted a measurable impact on students' political and social values (Pascarella & Terenzini, 2005). More specifically, Kuh (1993) reported that students enrolled at small, private institutions were more likely than their peers' at large, public institutions to display gains in civic responsibility and altruistic values during their four undergraduate years. However, in their recent comprehensive review of college impact literature, Pascarella and Terenzini (2005) found little evidence supporting that any other institutional

characteristics shape students' political views, attitudes towards social activism, or support for libertarian values.

A college impact model was determined to be appropriate for this study, as these models identify and evaluate the effect of several environmental variables that are expected to induce change within students, such as involvement in particular student experiences. Astin (1985) noted that the educational effectiveness of any policy in higher education is related to its capacity to induce student involvement. Therefore, in structuring the study in this framework, it is expected that students' levels of development with regard to civic engagement attitudes will be proportional to their level of participation in pro-civic-engagement activities in college. In these models, students are seen as active participants in their developmental process, as the students themselves determine the frequency and intensity with which they interact with various environmental influences. The environment (involvement in various extra-curricular activities) is seen as an active force through which students will respond and develop (Pascarella & Terenzini, 2005).

Astin's I-E-O Model has a long history of use in higher education studies (Astin, 1998, 1993, 1991). This conceptual framework hinges on three major components: inputs, environments, and outcomes. In this model, inputs refer to the personal traits, attitudes, and/or characteristics that students enter college with. These incoming demographic characteristics and social experiences are assumed to directly shape students' post-college outcomes, while also indirectly affecting how students choose to interact with their higher education environment (Pascarella & Terenzini, 2005).

Environments include those on-and-off-campus individuals, programs, interventions, social influences, and policies that students are exposed to during their undergraduate tenure. Outcomes are the resulting student attitudes, skills, beliefs, and behaviors that they possess upon completion of college. In this study, students' input characteristics are their participation levels in community service in high school, their pre-college attitudes towards civic engagement, their gender, race/ethnicity, enrollment in the School of Engineering, and financial aid status. The environmental factors of interest include students' participation in a wide arrangement of extra-curricular activities.

The I-E-O model attempts to describe the effects of the environmental factors on student change or growth (Pascarella & Terenzini, 2005). In this simple causal model, it is assumed that the outcomes result from the interaction of students' input characteristics with environmental factors. Students' inputs are assessed prior to any exposure to the college environment, students then interact with the environmental influences and then students' outcome performance is measured (Astin, 1991). In order to determine students' levels of growth during college, outcome characteristics are compared to input qualities. The model therefore assesses the impact of various environmental influences by determining the extent to which students develop in desired outcome areas under varying exposure levels to environmental conditions (Astin, 1993). By focusing on the possible effects of environments on outcomes, Astin's I-E-O Model focuses on highlighting aspects of students' experience that higher education administrators can directly control as it displays how students can achieve desired outcomes (Astin, 1991). The model is structured as such as Astin saw the fundamental purpose of assessment and

evaluation activities to be to “learn as much as possible about how to structure educational environments so as to maximize talent development” (Astin, 1991, p. 18).

By focusing on how outcomes are affected by environmental variables, the model helps to explain why certain students’ outcomes differ from what might be expected based upon their input characteristics (Astin, 1991). This helps higher education administrators distinguish which particular environmental influences positively (or negatively) impact the desired outcomes, above and beyond students’ incoming qualities. As summarized by Pascarella and Terenzini (2005) and Astin (1993), past studies have shown that performance on outcome measures can be affected by various input characteristics unrelated to the construct of interest. As such, these researchers concluded that the observed relationship could be due to the effect of input characteristics on the outcomes (directly) and not the college environment (Astin, 1993). Therefore, the relationship between students’ outcomes and the environmental factors should not be considered until the effects of the input variables are controlled for. Due to this, the robust I-E-O model also takes students’ input characteristics in conjunction with their involvement levels to help describe changes in their pro-civic-engagement attitudes as they exist after college.

As described by Astin (1991), the model allows researchers to “connect or adjust for such input differences in order to get a less biased estimate of the comparative effects of different environments on outputs” (p. 19). As such, the potential connection between students’ input qualities and environmental influences, or students’ likelihood of exposing themselves to certain environmental factors based upon their incoming

characteristics, is controlled for in the model. In other words, the non-random assignment of individuals or self-selection (inputs) to activities that promote civic engagement (environments) is accounted for by controlling for the effects of student input characteristics to ensure that the outcomes associated with involvement are due to participation and not incoming characteristics (Astin, 1998). This design eliminates the potential that any observed relationship is due to the connection between inputs and outcomes, and not the environment and outcomes (Astin, 1991). Astin (1991) referred to environmental factors such as voluntary participation in particular extra-curricular activities as “self-produced” environmental factors, as students controlled their own involvement in these types of higher education experiences. In these situations, the use of involvement measures becomes critical to help explain who and why environmental factors affect student outcomes (Astin, 1993, p. 81).

In a recent study utilizing national CIRP survey data, Astin and Sax (1998) implemented the I-E-O model to investigate how community service participation impacted students’ development in higher education. The researchers applied traditional I-E-O analysis, blocked stepwise regression, to determine the extent of impact on students’ civic responsibility, educational attainment, and life skills. The first block contained students’ input characteristics, followed by five blocks of environmental measures, including students’ major, institutional characteristics, and measures of community service participation. In this analysis, the most influential incoming characteristic on students’ involvement with service in higher education was their service participation in high school (Astin & Sax, 1998). Students involved in community

service were found to show the greatest gains over non-participants in support of the following values: “promoting racial understanding, participating in community action programs, and influencing student values” (Astin & Sax, 1998). Additionally, community service participants better understood community problems, were more committed to helping others, and possessed more knowledge and tolerance of different races and cultures. Despite these strong results linking participation to enhanced academic development, civic responsibility, and life skills, these researchers pointed out the measurement error inherent to their use of single-item scales to examine student outcomes in place of more reliable, aggregate scales (Astin & Sax, 1998).

Emerging Adulthood & Identity Development

Past research has therefore shown that higher education offers a unique environment in which to foster college students’ civic and political engagement (Astin and Sax, 1998; Hillygus, 2005; Pascarella, Ethington, and Smart, 1988; Pew Partnership for Civic Change, 2004; Zukin et al., 2006). In addition to the distinctive setting for personal growth that higher education offers, developmental theorists also assert that college students are in a particular period of their life span development that is conducive to personal exploration and identity development (Valde, 1996, Whitbourne & Tesch, 1985; as cited in Arnett, 2000). Adolescents between the ages of fourteen and twenty-five are in a “crucial learning window,” during which societies prepare young people for future civic duties (Obradović & Masten, 2007).

In particular, Arnett (2000) coined the term “emerging adulthood” to describe individuals in their late teens to mid-to-late twenties in industrialized societies, a distinct time period in life in which great change and exploration occurs. As described by Arnett (2007), emerging adulthood is characterized as an age of: identity explorations, instability, being self-focused, feeling in-between, and possibilities, as these individuals have “relative independence from social roles and from normative experiences” (p. 469). College students are therefore not establishing “long-term adult roles but trying out different experiences and gradually making their way toward enduring choices” (p. 69). Central to these explorations are considerations and re-evaluations of worldviews, as college often offers an opportunity to be exposed to differing and often challenging worldviews from others that often result in re-considerations of one’s own worldviews (Pascarella & Terenzini, as cited in Arnett, 2000). This exploratory time period therefore plays a critical role in solidifying emerging adults’ (including college students) individual worldviews, including their attitudes toward civic and political engagement (Jennings & Niemi, 1981). It is the opinion of some developmental theorists that a successful transition to adulthood should include an interest in civic responsibility and helping one’s community (Erikson, 1968, Havighurst, 1972, as cited in Obradović & Masten, 2007).

College students, as emerging adults, are therefore engaged in the process of identity development throughout their tenure in higher education. During adolescence, “identity is focal” as the “process of consolidating identity is grounded in one’s relationships in and understanding of society” (Youniss & Yates, 1997, Erikson, 1968, as cited in Flanagan & Tucker, 1999, p. 1199). Flanagan and Tucker (1999) concluded

following their research study that the formation of political views occurs concurrently with identity formation, and that outside influences, such as society, can influence the process. Community service has therefore been described as an “avenue to society” that helps adolescents gain exposure to diverse issues in society, the meanings of their actions and interactions, and the influence they can have within a community (Youniss, McLellan, & Mazer, 2001, p. 457). Yates and Youniss (1996) indicated that community service leads towards identity development by enabling students to think about civic, political, and moral aspects of society and their role within it. Emerging adults are thought to be “driven for desire for coherence...between the self and society” (Flanagan, Gallay, Gill, Gallay, & Nti, 2005, p. 197). As such, civic involvement inspires “that part of the identity process that involves situating one’s self within a socio-historical context by identifying with an ideological perspective on it” that adolescents believe is “just and achievable” (Yates & Youniss, 1996, p. 282-283).

Studies of Civic Engagement

Civic engagement, broadly defined as active participation in civic life, can occur through both political and apolitical involvement in a community.

Self-Efficacy

This study will expand the notions of self-efficacy (Bandura, 1994) and internal political efficacy (Balch, 1974; Craig & Maggioletto, 1982) to gather data on students’ development of internal efficacy towards service, politics, and civic responsibility through civic and political involvement. This research will therefore delve into the

connection between involvement in civic engagement activities and students' beliefs that they are personally able to affect community and political change. Past research supports this link, as mastery experiences, in which an individual achieves some level of success related to a desired outcome, have heightened individuals' sense of control over their surroundings (Bandura, 1994). In terms of political engagement, participation in politics has been shown to be the strongest correlate to a sense of internal political efficacy, such that political engagement has been linked with high internal political efficacy and political disengagement with low internal political efficacy (Balch, 1974). This relationship has been explained as fundamental, as "a belief in oneself as an effective political actor may be a necessary condition for the mobilization of political discontent" (Craig & Maggiotto, 1982, p. 87).

The Survey Research Center's 1972-1974-1976 Election Study linked electoral and campaign participation with increased levels of internal and external political efficacy, as through participation, individuals acquire skills and perceptions of self-confidence that make them more likely to participate in the future (Finkel, 1985). Importantly, this relationship has been described as reciprocal (with participation and internal political efficacy building upon and reinforcing one another) as "political efficacy is often the impetus for engagement" (Flanagan, Syvertsen, & Stout, 2007, p.15). As noted by Balch (1974), those with a high sense of political efficacy tend to participate in traditional activities, such as voting, along with being more "politically active, supportive, informed, interested, loyal, satisfied, and public-regarding" (p. 4). Finkel (1985) called for an expanded definition of political involvement beyond the traditional

activities associated with civic duty (voting at the national-level and campaigning), as these activities “may not be sufficiently demanding to promote individual self-development” (p. 907). As such, he stressed the need to investigate the impact of political activities that require deeper levels of personal commitment to political processes. Zukin et al. (2006) recently echoed this connection between political efficacy and sustained attention to civic engagement within higher education in particular:

Among college students, however, those who see the relevance of government for their daily lives and are fairly confident about their ability to affect both government in general and governance issues on-campus are more engaged (p. 153).

In addition to exploring the connections between political engagement and internal political efficacy, this research will also extend previous higher education research that has investigated the impact of involvement in community service and service learning on students’ self-efficacy. In these studies, self-efficacy has referred to students’ beliefs that they can make a difference in a community through community service (Pascarella & Terenzini, 2005). The results of these studies have been mixed, with some showing gains in “citizenship confidence” (Astin, 1993; Eyler, 1997; Myers-Lipton, 1998; Sax & Astin, 1998) following civic engagement experiences and others indicating little to no change in students’ self-efficacy (Giles & Eyler, 1994; Markus et al., 1993; Sax, 2000). Although the studies reporting positive gains are limited and reflect only modest impact on students’ self-efficacy, Pascarella and Terenzini (2005)

note that they “gain credibility by drawing on data from a large and nationally representative sample” (p. 279).

The impact of community service participation on students’ academic development, life skills, and civic responsibility has been shown through studies such as Astin and Sax (1998). In this study, the researchers utilized data from five consecutive administrations of the CIRP Freshman Survey (1990 – 1994) and the 1995 College Student Survey (CSS) to determine that students involved in community service were stronger on the outcome measures than non-participants. Among the changes in civic responsibility that resulted from community service involvement was decreasing endorsement of the notion that “individuals have little power to change society” (Astin & Sax, 1998, p. 256), thus demonstrating that these experiences are correlated with heightened feelings within students that they can make a difference in a community. These gains in self-efficacy were evident even after accounting for students’ pre-college characteristics, including high school community service participation, and involvement in other college experiences (Pascarella & Terenzini, 2005).

Additionally, this research will also build upon past studies of youth civic development that have shown that feelings of self-efficacy are critical to becoming civically engaged. In this previous research, correlations have been drawn between adolescents’ understanding of the potential impact of their participation and their motivation for further involvement (Hart, Donnelly, Youniss, & Atkins, 2007; Sherrod, Flanagan, & Youniss, 2002). As noted by Sherrod, Flanagan, and Youniss (2002), “having responsibility, having a role, and just being involved are other motivators in and

of themselves” (p. 266). Since community service involvement has been linked to identity development, adolescents are thought to gain in values and self-efficacy, along with acquiring civic skills such as contributing to the common good and civic responsibility, through participation in community-based activities (Hart, Donnelly, Youniss, & Atkins, 2007). Studies, such as Flanagan, Cumsille, Gill, and Gallay (2007) have also linked self-efficacy in youth to notions of community connectedness, through which youth have “affective ties to people and institutions in their communities” (p. 429). It is through these strong relationships that adolescents develop a feeling of connectedness, which these researchers showed to be correlated with adolescents’ commitment to their communities and willingness to work towards the public good (Flanagan, Cumsille, Gill, & Gallay, 2007).

Civic Involvement & Attitudes

With regard to higher education in particular, students’ commitment to community service, dedication to helping others, and concerns over the civic life of their communities have been shown in past research to increase during their college years, particularly as a result of participation in particular activities. Pascarella and Terenzini (2005) support these findings in their summary of recent studies that show that community service involvement has statistically significant, positive effects on civic engagement attitudes and values. Indeed, past studies in higher education have displayed student growth in the following areas after community involvement: importance attached to community action, humanistic values, altruism, and sense of civic responsibility (Kuh,

1993; Myers-Lipton, 1998; Sax, 2000; Sax & Astin, 1997; Villalpando, 1996).

Involvement in on-campus demonstrations and volunteerism, in particular, in conjunction with other activities were shown to positively influence students' beliefs that they can impart change in a community (Astin, 1993). Specifically, Astin (1993) concluded that community service participation increases students' self-efficacy by reducing their feelings that they are "helpless to do anything about society's problems" (p. 154). The commitment to future community involvement has also been shown to be a benefit of civic involvement, as students that participate in community service are four times as likely as their non-involved peers to volunteer in following semesters and years (Astin, 1993; Sax & Astin, 1997; Villalpando, 1996).

Studies in youth civic engagement have reinforced the findings linking involvement in community service and exposure to social problems during adolescence to long-term commitment to civic engagement (Flanagan, Galloway, Gill, Galloway, & Nti, 2005; Hart, Donnelly, Youniss, & Atkins, 2007). Through community service activities, adolescents become more prepared to serve civically in the future through exposure to organizations, resources, and skill sets necessary to become an active citizen. Therefore, community service activities present valuable "opportunities to practice democratic skills" that have been predictive of civic and political engagement in adulthood (Flanagan, Galloway, Gill, Galloway, & Nti, 2005, p. 196). A recent longitudinal cohort study that tracked high school students' development twice per year from sophomore to senior year concluded that community service taught students to be "responsible contributors to

the maintenance and betterment of society...and to better understand the workings of government” (McLellan & Youniss, 2003, p. 47).

Political Involvement & Attitudes

Past political science studies have shown that political involvement affects political attitudes (Finkel, 1985). In higher education, studies on students’ awareness of and adherence to political attitudes have investigated students’ understanding of the democratic process, their participation in that process, the subscription to beliefs that support the political process, and their broader political orientations. In general, it has been reported that students with higher levels of education are more likely to participate in political activities, including: voting, discussing politics and national issues, campaigning, and contributing to candidates and political parties (Pascarella & Terenzini, 2005). A few recent studies such as Bennett and Bennett (2003) highlighted in Colby (2008), however, have suggested that the correlation between political engagement and higher education has recently weakened. That being said, college students have still been shown to grow significantly in their understanding of democratic processes, political knowledge, and commitment to political involvement during their undergraduate years (Sax, 2000; Vogelgesang, 2000). Additionally, past studies have shown that this development is enhanced by participation in curricular and co-curricular programs designed to encourage political understanding (Colby, 2008).

Attitudes towards Racial/Ethnic Differences

Past research has shown that positive (albeit modest) gains in students' awareness of and attitudes towards racial equity, reductions in prejudices, understanding of other cultures, and interactions with students of differing racial/ethnic backgrounds occur during college (Pascarella & Terenzini, 2005). More specifically, past studies have displayed increases in students' interactions with diverse individuals (Milem, 1999; Wood & Chesser, 1994), understanding of others' racial and ethnic backgrounds and commitment to promote that understanding (Kuh et al. 2001; Milem, 1999), racial-cultural awareness, perspective, and acceptance (Astin, 1992; Astin & Sax, 1998; Kuh & Vesper, 1997), and views of racism as a perpetual problem (Milem, 1999). Furthermore, past research has indicated that the importance of promoting racial understanding was encouraged in students through their participation in on-campus activities centered on exploring racial/ethnic issues (Astin, 1993; Pascarella & Terenzini, 2005). However, unlike research on civic and political involvement, past research has shown that classroom experiences, as opposed to involvement in activities, have the most powerful influences on students' growth with regard to openness to diversity (Volkwein, 1991).

Connections between Aspects of Civic Engagement

While great attention in recent years has been dedicated to involving college students in apolitical civic engagement activities, such as community service and service learning, less emphasis has been placed on political engagement (Colby, 2008).

Although the value and mechanisms of political involvement have remained relatively obscure to students (Colby, 2008), past research has shown that civic involvement, particularly through community service, can still have a positive impact on students' political attitudes. Indeed, participation in community service has been found to have increased students' affect towards political involvement and attitudes (Astin, 1993; Eyler & Giles, 1999; Eyler, Giles, & Braxton, 1997; Hart, Donnelly, Youniss, & Atkins, 2007; Sax, 2000). Notably, this connection between community service and developments in students' political awareness and dispositions were found to be significant even after controlling for their input characteristics (Astin, 1993). It has been suggested that this link between students' civic involvement and political participation and views may result from the exposure students gain through community service to issues and demands facing their community, many of which require politically-savvy skills (Colby, 2008).

Likewise, past research has shown a connection between civic involvement and enhanced understanding and sensitivity towards racial-cultural diversity as "engaged citizenship is positively related to tolerance" (Dalton, 2008, p. 95). As with the connection between community service and political attitudes, researchers have also attributed this linkage to students' volunteer experiences, suggesting that community service may expose them to people from different races, ethnicities, and cultures in ways that alter students' awareness of and attitudes towards others (Pascarella & Terenzini, 2005). For example, Astin and Sax (1998) found a significant correlation between students' community service participation and their freshman-to-senior year increases in

knowledge of different cultures, acceptance of different races, and understanding of the world around them.

Differential Impact of Civic Engagement

Overall, past research has shown that involvement in civic engagement activities positively influences development of pro-civic engagement attitudes in youth and college students, with involved adolescents being more likely than less involved peers to recognize the importance of civic contributions, political activism, and racial-cultural awareness. However, racial differences have emerged in this relationship, with individuals in racial/ethnic minorities being shown to have lower levels of social trust towards the government, leading towards lower levels of civic involvement and less attachment to citizenship attitudes (Bogard & Sherrod, 2008; Flanagan, Cumsille, Gill, & Galloway, 2007; Putnam, 2000). Flanagan, Cumsille, Gill, and Galloway (2007) attributed these lower involvement rates with past experiences with discrimination and exclusion, as “feelings of marginalization are associated with lower allegiance to the polity” (p. 424). As such, minority adolescents have been shown to be less involved in civically-related activities than White adolescents (Bogard & Sherrod, 2008). Students’ racial status has also been shown in higher education research to be linked with differential development of civic engagement attitudes in college (Pascarella, et al., 1988, Pascarella & Terenzini, 2005, Sax, 2000). Pascarella et al. (1988) found that the “types of social involvement most salient in influencing value development differed by race and gender” (p. 435).

Not surprisingly then, students' gains in attitudes supportive of racial-cultural diversity have been shown to significantly differ by students' minority status (Pascarella & Terenzini, 2005). Indeed, Astin (1993) displayed that White and African-American students' appreciations for the dynamics of diversity actually grew in opposite directions (further apart) during their undergraduate years. Similar shifts in political ideologies also occurred between White and African-American students, with White students becoming more politically conservative and African-American students becoming more politically liberal during college. Racial disparities have also emerged with regard to political activism, with African-American students being more likely to participate in these activities than White students (Astin, 1993).

In addition to students' minority status, gender has also revealed itself as an influential factor in students' development of civic engagement attitudes in college (Pascarella, et al., 1988, Pascarella & Terenzini, 2005, Sax, 2000). With regard to gender differences overall, females have been shown to be more likely than male students to engage in the types of community service that are the most predictive of future civic and political engagement (Bogard & Sherrod, 2008; McLellan & Youniss, 2003). Additionally, Metz, McLellan, and Youniss (2003) recently conducted a study in which they explored gender differences in adolescents' civic involvement through a mixed-factorial, pre-test/post-test design in a public high school. These researchers concluded that female students were more likely than their male counterparts to be concerned with social issues, perform voluntary community service, and have stronger plans for future service (Metz, McLellan, & Youniss, 2003). In addition to participation rates, female

adolescents have also displayed higher levels of dedication to pro-civic engagement attitudes than male peers (Bogard & Sherrod, 2008). With regard to political stances, Astin (1993) found that the political viewpoints of the genders inversely developed during college, with women becoming more politically liberal and men more conservative. Notably, while past research has shown differences in the political orientation of male and female adolescents, significant gender differences have not emerged with regard to political attitudes indicative of political engagement. Findings such as these led Pascarella and Terenzini (2005) to conclude that the differential impacts on college students' attitudes by gender vary "by attitude or value area and by the particular experiences students have" (p. 325). Students' tolerance of racial-cultural diversity has also been shown to significantly vary by students' gender.

While several studies have considered the impact of academic major on students' civic engagement attitudes, Pascarella and Terenzini (2005) note that these investigations have been "specific to a small number of major fields and largely inconclusive" (p. 302). Notably, most past studies have not detected differential increases in students' civic, political, or diversity attitudes by academic major, except with regard to engineering majors (Astin, 1993; Pascarella & Terenzini, 2005; Sax, 2000). Other studies suggest that it is not academic major, but specific course topics, such as social science and humanities curriculum, that have an impact on students' civic engagement attitudes (Hillygus, 2005; Pascarella & Terenzini, 2005).

As a result of these findings, researchers have surmised that there is "no single path to citizenship across all youth," as service involvement has not necessarily equally

promoted civic engagement attitudes between adolescents of varying genders and minority statuses (Bogard & Sherrod, 2008, p. 294). This study will therefore explore the differential development of students' involvement in and attitudes towards civic engagement during their undergraduate years by minority status and gender, but not academic major.

Longitudinal research designs

In order to track students' involvement in civic engagement activities and their corresponding development of civic engagement attitudes across their four years at Tufts, this study will implement a longitudinal research design. Through longitudinal research (as these research designs are referred to in educational research), researchers are able to hone in on the shape of an individual's growth with respect to a particular construct, as the same set of individuals are contacted repeatedly over an extended period of time (usually at least three waves of data collection over a minimum of a year) to document transitions between the individual and the construct of interest (Singer & Willett, 1996). As defined by White & Arzi, longitudinal studies can be viewed as "any study in which two or more measures or observations are made at different times of the same individuals or entities" (2005). In political science, these research designs are referred to as panel designs which can "track the same individuals over time and allows the specification of reciprocal effects with the same model" (Finkel, 1985).

Longitudinal studies must be designed and implemented such that participants remain engaged and motivated over extended periods of time to provide accurate data to

standard data collection instruments. Time itself can create uncertainty in longitudinal studies, as developments can render the construct of interest irrelevant or highlight the need for measures that were not addressed or included (White & Arzi, 2005).

Additionally, attrition can cost longitudinal studies in multiple ways. Indeed, when taking multiple measures of the same participants over time, some individuals may be lost over the course of the implementation of the study. The effects of that attrition can range from moderate to considerable, depending on the length of time between data collections, the number of subsequent data collections, and the characteristics of the participants (McGuigan, Ellickson, Hays, & Bell, 1997). The generalizability, or external validity, of longitudinal studies may also be affected if the respondents differ from the original sample because of differential rates of loss for certain kinds of participants (McGuigan et al., 1997).

Longitudinal studies therefore face significant threats to internal and external validity due to the risk of subject attrition from the specific research groups over time. In order to strengthen the conclusions drawn about these transitions in individuals, comprehensive studies must be undertaken from a perspective of “critical multiplism” that take into account data collected from multiple methods, sites, and time frames (Mowbray & Luke, 1996). The demands and rigor associated with conducting longitudinal studies are accordingly intense, as documentation needs to be provided that the data collection methods (repeated over time) are able to measure and track alterations in the outcome of interest due to changes in subjects’ affect or behaviors from one time to another (White & Arzi, 2005). The feasibility of conducting longitudinal studies in the

contemporary context of increasing accountability despite decreasing availability of monies and time is often limited; with the practicality of this research design being constrained by the time, resources, data management, and concerns over the attrition of subjects associated with these projects (White & Arzi, 2005).

The need for accurate, precise, and automated data management become integral to the success of longitudinal studies, as each participant's responses, transcripts, archival data, personal information, and results have to be linked (White & Arzi, 2005). The high-levels of organization and effort associated with conducting longitudinal studies often deter researchers from employing these rigorous research designs. As indicated by White & Arzi, longitudinal studies "demand more time and resources than do short-term ones" due to the need to administer multiple instruments and maintain or regain contact with the subjects (2005). In addition, given the need for multiple data collections separated by extended time periods, the measures and indicators used in such a study need to be highly sensitive in order to properly reflect intermediate outcomes (Mowbray & Luke, 1996).

The structure of data collection methods in longitudinal studies is therefore extremely important, as measurement stability across time points is key to ensure consistent data collection conditions, instruments, and procedures. In order to draw valid conclusions, the observed scores must also be equitable across all of the occasions of measurement (Singer & Willett, 1996). Data collection schedules in longitudinal studies need to produce precise and unbiased summaries of either event occurrence or changes (Singer & Willett, 1996). Longitudinal studies must therefore be structured to

accommodate for frequent data collection of the variables that fluctuate rapidly, while allowing for more time in between the time points in which more time-invariant variables can be collected (Singer & Willett, 1996). While increasing the number of data collection time periods increases the reliability with which differences or changes within individuals can be detected, it has also been found that data should be collected prospectively as often as possible (Singer & Willett, 1996). Retrospective data collection has often been criticized for being fraught with problems, as the reported occurrence and spacing of events can become unreliable as the intervals between data collection time points increases (Singer & Willett, 1996). The lack of reliability with regard to retrospective data can result from memory failure and rounding, both of which can lead to the under-reporting or over-reporting of event occurrence (Singer & Willett, 1996). As a result Singer & Willett, recommend that data should only be collected retrospectively when this data collection method does not challenge the study's reliability and validity (1996).

Additionally, extensive resources are needed in longitudinal studies for record keeping and data collection to ensure the alignment of participants' archival data, personal information, and results. White and Arzi note that while the effort and resources associated with data management vary depending on the design, number of participants, and the frequency, amount, and nature of data collection, the monitoring of events between data collections is often an essential component of longitudinal studies in order to make certain that the outcomes are properly interpreted (2005). As a result, longitudinal studies always require the complex management of data such that all data for

the same subject across time points and data collection methods remain linked in a manner that can be easily and efficiently accessed.

Along with threatening the validity of the conclusions inferred from longitudinal studies, attrition also presents a practical lost-cost issue, as the time, effort, and materials spent on the individuals who disappear before the completion of all data collection are wasted (White & Arzi, 2005). As Mowbray and Luke note, a “high rate of attrition was and is recognized as problematic for external validity; differential attrition across conditions is equally problematic for internal validity” (1996). The internal validity of the study may be threatened as observed differences may be due to differential non-response; such that observed changes in participants over time might result from a particular subsection of participants dropping out throughout the years and not the actual development in learning or attitudes. Attrition therefore becomes a substantial issue with regard to data analysis and interpretation, as losing a substantial portion of participants can introduce non-response bias when estimating parameters (McGuigan et al., 1997).

The attrition of subjects over time, despite being the largest threat to both the external and internal validity of longitudinal studies, is likely due to the extended scope of the research design. The successful management of attrition depends on the design of longitudinal studies, and the willingness of the researchers to put effort into diminishing the adverse effects of attrition. As attrition can present significant problems to implementing, analyzing, and interpreting the results of longitudinal studies, different paths can be taken to either prevent or adjust for the effect that attrition might have on

data results. Though statistical corrections can be made following data collection, a preferable solution is to minimize attrition in the first place (Mowbray & Luke, 1996).

Substantial efforts need to be expended in longitudinal studies to minimize attrition and incomplete responses at follow-up data collection time points to increase the reliability and validity of the evaluation measures and conclusions that are drawn based on the results (Mowbray & Luke, 1996). Mowbray and Luke have found an “integrated management approach” to tracking participants through a computer-based information system, combined with maintaining participant contact information and fostering participant engagement to be a highly effective means to prevent attrition (1996). In their study, over five years of employing these methods, Mowbray and Luke maintained a 95% participation rate in each of its follow-up data collections (1996). While high-costs (both time and money) have found to be associated with full tracking efforts, tracking efforts have been found to substantially reduce the percentage of subjects lost to follow-up (McGuigan et al., 1997).

For those researchers engaging in longitudinal studies, implementing paper-based repeated measures evaluations have been found to be ineffective on many levels. Rosenberg et al. describe paper-based evaluation systems as inefficient and costly, with the data being difficult to retrieve and analyze (2001). Coordinating the evaluation plan becomes a difficult and daunting task that often demands substantial administrative time to track participants, distribute evaluations, and monitor compliance. Likewise, the compilation, aggregation, and reporting of data and results can be a delayed and arduous process due to the multiple data sources and instruments being used to draw conclusions

(Rosenberg et al., 2001). As such, this study will implement a web-based survey instrument at each of its data collection time points.

Rasch models of measurement

In this study, longitudinal tracking of students' involvement in and attitudes towards civic engagement will be made possible through item response theory procedures (IRT). More specifically, a specific one-parameter IRT model, the Rasch rating scale model (Andrich, 1988; Wright & Masters, 1982), will be utilized to calculate person estimates for each student during each data collection time period (survey administration). IRT models represent a group of statistical models that are designed to define an underlying construct by calculating the probability of a specific response from an individual to a specific item (Hambleton, Swaminathan, & Rogers, 1991; Ludlow, Enterline, & Cochran-Smith, 2008). In other words, these models provide information on how an individual's performance (answers, survey responses, etc.) relates to the underlying construct that is measured by the items on the test, rubric or survey instrument. IRT models are differentiated according to the number of item characteristics that each model takes into account, including item difficulty, item discrimination, and the item pseudo-guess parameter (Ludlow et al., 2008). The associated models are as follows: one-parameter or the Rasch model (item difficulty), two-parameter (item difficulty and discrimination), and three-parameter (item difficulty, discrimination and pseudo-guessing).

The Rasch model has been selected for this study due to its fundamental purpose as a confirmatory test designed to gauge the extent to which scales are performing as expected (Ludlow et al., 2008). More specifically, the Rasch rating scale model (Andrich, 1988; Wright & Masters, 1982) will be applied as it is appropriate when scoring categories have “rigorously defined scoring categories that transcend, or do not depend on, the characteristics of specific items” such as Likert-based agreement scales (Ludlow et al., 2008, p.202). In this model, raw scores are converted to linear measure scores along a unidimensional continuum, a critical conversion prior to conducting parametric statistical tests (Bond & Fox, 2001; Wright & Masters, 1982; Wright & Stone, 1979). This model assumes that difficulty to endorse is the only item characteristic influencing student responses, as all items are assumed to be equally discriminating (Hambleton, Swaminathan & Rogers, 1991; Waugh, 2003). This accounts for any differences in the spacing between response categories, which are assumed to be equal but are not necessarily so under classical test theory (Shireen Desouza, Boone, & Yimez, 2004). Additional technical detail on the Rasch rating scale model (Andrich, 1988; Wright & Masters, 1982) is addressed in Chapter 3.

Through application of the Rasch rating scale model (Andrich, 1988; Wright & Masters, 1982) “students’ willingness to endorse items and the corresponding items are clearly stated and compared along one scale” (Ren, Bradley, & Lumpp, 2008, p. 624). The value of utilizing a Rasch measurement model to analyze attitudinal survey data has been shown through a multitude of studies across a range of educational settings, including both K-12 (Donnelly & Boone, 2007; Funk, Fox, Chan, & Curtiss, 2008; Ren,

Bradley, & Lumpp, 2008; Shireen Desouza, Boone, & Yimaz, 2004) and higher education (Johnson, Green, & Kluever, 2000; Ludlow et al., 2008; Waugh, 2003). Many of these studies have involved analyzing Likert-scale agreement data from attitudinal surveys with the Rasch rating scale model (Evans et al., 2007; Ren et al., 2008; Shireen Desouza et al., 2004; Watson, Kelly, & Izard, 2006).

The Rasch model has been used in these studies to assist in scale development and monitoring, instrument diagnostics (including validity and reliability testing), and analyses, including the creation of scores appropriate for parametric statistical tests. For example, the Rasch rating scale model has been used to convert non-linear Likert scale scores to ratio data for parametric analyses, such as correlations, analysis of variance, and t-tests as “linear measures are made of important variables” in the model (Donnelly & Boone, 2007; Waugh, 2003, p. 159). Several of these studies have combined the use of classical test theory methods with Rasch methods, as proper inferences from survey data have been found to be difficult when totaling raw scores (Waugh, 2003). The Rasch rating scale model adjusts for measurement error, eliminates the use of raw scores in analyses, and generates sample-independent estimates (Donnelly & Boone, 2007).

The analytical benefits of the Rasch model have been shown through studies such as Waugh (2003), in which a secondary analysis was performed on previously collected survey results to apply a “modern measurement technique” to validate the initial findings. Waugh (2003) described this re-analysis as necessary due to the limitations of the traditional analysis, as classical test theory is limited to producing a non-linear, rank-order scale on which student abilities have not been calibrated on the same scale as item

difficulties. Due to these benefits, the Rasch model has been described as a “single parameter model that has been shown to accurately portray data associated with rating scale measures, while being extremely effective and efficient as the simplest of the latent trait models” (Ren et al., 2008, p. 619).

In Funk et al. (2008), classical test theory methods were combined with Rasch modeling to provide “probabilistic results over large item and person groups, enabling meaningful inferences from patterns of responses at the construct level” (p. 187). In this study, classical test theory was used to describe the data on the empathic attitudes of 5th to 7th grade students, with Rasch modeling being used to provide support for the reliability, validity, and functionality of the scale by highlighting patterns not detected by classical test theory (Funk et al., 2008). The Rasch model converted raw survey responses into probabilities of responses (logits), enabling comparisons across items, samples, and survey administrations. The Rasch rating scale model was utilized to create unidimensional scales with both people and items, which could then be used to indicate an individual’s likelihood of endorsing a particular statement. These linear measures were then deemed appropriate for parametric statistical calculations. Through this analysis, these researchers found a “quantifiable distinction among children” (p. 191), leading them to conclude that Rasch models put data into a probabilistic framework, making it possible to understand fit-to-response patterns, to clarify the relations among the persons and items, and to make inferences about other samples of children and other samples of items (Funk et al., 2008, p. 194).

Johnson et al. (2000) also followed classical test theory methods, specifically factor analysis, with Rasch modeling to analyze survey results from graduate students. In this study, Rasch analysis was used to investigate procrastination among graduate students with regard to dissertation completion as both “an examination of the unidimensionality of each set of items and an interval re-scaling of the ordinal Likert responses” (Johnson et al., 2000, p. 274). More specifically, Rasch analysis was used to detect attitudinal and cognitive differences between students on an aggregate procrastination scale as well as eleven sub-scales that were created through factor analysis. Diagnostics were performed to identify any misfitting items, as well as detect any correlations between the subscales to assess the content, construct, and concurrent validity of the overall scale and its sub-scales.

The Rasch rating scale model has also been utilized in past studies to link data from multiple surveys or various iterations of the same survey instrument that contain similar, but not identical survey items. This characteristic of Rasch analysis allows for flexibility in the revision process of a survey instrument by providing metrics to guide item development, along with allowing for the comparison of survey items and responses over time (Donnelly & Boone, 2007). Given this feature of the Rasch model, a few studies have extended the use of the Rasch rating scale model to analyze data from longitudinal studies.

Watson et al. (2006) provide a useful example of the “usefulness of Rasch analysis for placing students from different grades and different times on the same scale in order to make comparisons and for following the development of individual students”

(Watson et al., 2006, p. 47). These researchers applied the Rasch rating scale model to explore overall trends in students' impressions of their comprehension of chance and data, along with an explanation of how students' understanding changed over two, four, and six-year periods. More specifically, the study entailed the collection of survey data from 896 subjects from 1993 to 2003, with subjects enrolled in grades 3 through 11 during the duration of the study to gauge the efficacy of the curriculum on increasing students' understanding of the desired constructs. Through the Rasch rating scale analysis, the common items from the various survey administrations were linked by placing the items along the same scale as the 2000 version of the survey was used to anchor item values from the 1993, 1995, and 1997 survey administrations and was subsequently applied to the 2003 scores. A similar analytical process will be utilized in this study, which will be explained fully in Chapters 3 and 4.

Chapter 3: Methods & Procedures

Population and sample

Traditionally-aged (17 – 19 years old) first-year college students enrolled in Tufts University's Classes of 2008 and 2009 were sampled to participate in this study. Only non-transfer, non-commuter (residential) students were eligible to be included in the sample. The first-year Class of 2008 and 2009 students selected to participate in the study were chosen through a random selection process of students' identification numbers from the responses to a High School Participant Survey administered in these students' first semester at the institution (Fall 2004 and 2005, respectively). This High School Participant Survey was designed to query students on their participation in civic engagement activities in high school. On this survey, students indicated whether or not they were involved in 19 different civic engagement activities (dichotomously-scored, yes/no) during their last two years of high school. The civic engagement activities included participation in: seven civic activities (volunteering for community service, helping to raise money for a charitable cause), seven forms of expression of public voice (participating in a protest, march or demonstration, contacting a public official to express an opinion), and five political activities (working or volunteering for a political campaign, wearing a campaign button).

The High School Participant Survey was administered to the Classes of 2008 and 2009 during the students' first semester at the institution (Fall 2004 and 2005). Roughly 10% of the Class of 2008 population, 137 of 1,397 enrolled students, responded to the

2004 participant survey. Likewise, just over 10% of the Class of 2009 population responded to the participant survey in 2005 (177 of 1,370 students). The respondents to the High School Participant Survey served as the sampling frames from which participants were selected for this longitudinal study. The following strata were utilized in randomly selecting students from these sampling frames: discipline of school enrolled in at the institution, race/ethnicity and gender, as previous research has shown differences in the acclimation of students to civic engagement principles based on these variables (Jones & Hill 2003; Pascarella & Terenzini, 2005). The stratum for these strata were as follows: school affiliation (Liberal Arts or Engineering), minority race/ethnicity status (White or Student of Color) and gender (Male or Female).

This sample of students from the Classes of 2008 and 2009 (N=137) represents roughly 5% of the respective class cohorts, with the population size of these undergraduate cohorts ranging between 1,350 to 1,400 students. This sample size (N=137) was determined by the overall research design for the Tufts University multi-year time-series study that matched equivalent numbers of students involved in the Tisch College Scholars Program (roughly 20 per cohort year) with two groups of students (one highly and one less) involved with community service activities in high school. The student identification numbers were randomly selected from sorted lists based upon their hours of community service involvement, discipline, racial and gender strata, with the appropriate numbers of students selected to reflect the overall population.

Given that this sample is from a larger case study at Tufts University, this research is subject to external validity issues due to the limited scope of the

generalizability of the results. The use of a stratified random sampling procedure from a well-defined population should ease the concerns of generalizability within Tufts, as without these design elements, the “question of generalizability may not be completely resolvable” (Shadish, Cook, & Campbell, 2002, p. 344). Given this sampling technique, the results of the study are generalizable back to all Tufts students. However, the use of a sample from a single-institution restricts the applicability of the results outside of the Tufts context to only the specific population being studied (outlined earlier), namely traditional-aged, residential students at comparably selective and civically-dedicated four-year private institutions.

Variables measured and instruments used

The main data collection instrument for analysis in the study was the Civic and Political Activities and Attitudes Survey (CPAAS), developed at Tufts University, which gathered data on students’ participation in civic activities as undergraduates, as well as their civic and political attitudes, during the spring of each of their four years at Tufts. A corresponding interview protocol was also developed as a secondary data collection instrument to capture sophomore and senior-year reflections on students’ experiences and involvement and the impact of these on their civic and political attitudes. These follow-up interviews presented students with questions designed to illuminate the factors that motivated students to get involved in particular activities, while also highlighting influential sources of their civic and political attitudes. Appendix A contains the questions included in the interview protocol.

The CPAAS was developed after reviewing a number of sources, and was then presented for an expert panel review by Dr. Robert Bringle, Dr. Andrew Furco and Dr. Dwight Giles, known and respected researchers in the areas of civic engagement and service learning. These experts each reviewed the instrument and provided input on the survey instrument to provide further evidence of the entire instrument's construct validity. The survey was compiled from existing instruments designed to gather information on college students' civic and political engagement, along with additional items specific to the research question. The items were integrated or adapted from seven validated instruments, as the study draws on past research that has explicated that civic learning outcomes often result from service learning measurements (Bringle, Phillips, & Hudson, 2004; Eyer & Giles, 1999). Two of the seven survey instruments provided questions about involvement in different types of civic and political activities, including community service, voting, and current affairs. The surveys instruments that provided items for the involvement questions on the CPAAS were: 1) the National Youth Survey (CIRCLE, 2002) and 2) the Civic and Political Health of a Nation Survey (Keeter, Zukin, Andolina, & Jenkins, 2002). The remaining five survey instruments provided Likert-type attitudinal items measuring students' civic and political attitudes across various dimensions of civic engagement, including their confidence in their ability to make a significant contribution in a community, their commitment to the public good, social justice, and diversity. These survey instruments were: 1) the Baseline Survey of AmeriCorps members (Abt Associates, 2001), 2) the Social Responsibility Inventory (Markus et al., 1993), 3) the Civic Attitude and Skills Questionnaire (Moely, Mercer,

Ilustre, Miron, & McFarland, 2002), 4) the Community Service Self-Efficacy Scale (Reeb, Katsuyama, Sammon, & Yoder, 1998), and 5) the Public Service Motivation Scale (Perry, 1996).

Importantly, in past analyses, these final three survey instruments have displayed strong reliability estimates, psychometric properties, and evidence of their respective validity (Bringle et al., 2004; Moely et al., 2002). In particular, each of these survey instruments reported high Cronbach alpha estimates, or coefficient alpha (α), which is the most common measure of internal consistency of items on a scale. This reliability coefficient expresses the extent to which item responses on a scale are correlated with one another. With regard to the Civic Attitude and Skills Questionnaire, factor analysis was used to define six scales - two of which were used as sources for the CPAAS (Moely et al., 2002). These sub-scales, social justice and diversity attitudes, displayed considerable reliability (test-retest = .74, .73, α = .70, respectively), with support for their validity being provided by examining correlations to other measures of motivational and racial beliefs (Moely et al., 2002). Through similar analyses, the Community Service Self-Efficacy Scale has shown to be a reliable (test-retest = .62, α > .90) measure of a unidimensional construct as well (Bringle et al., 2004). Likewise, the Public Service Motivation Scale resulted in strong reliability estimates (α = .90), utilized confirmatory factor analysis to substantiate its four sub-scales, and provided support for its convergent and discriminant validity through investigations into relationships to measures of performance and age (Bringle et al., 2004).

The CPAAS asks a series of questions aimed at examining the extent to which students' involvement in various activities during their college experience influences their attitudes towards civic engagement. The survey questions focus on both students' activities as undergraduates, as well as their civic and political attitudes. These involvement and attitudinal questions are designed to enable a comparative analysis that highlights how students' choices of activities affect their civic and political attitudes during their undergraduate years. The CPAAS queries students on their involvement in a range of activities in college, including those related to civic activities, political activities, and expression of public voice (Zukin et al., 2006). For each of the 22 activities, students are asked to provide how many hours per year they were involved using a 6-point, Likert-type rating scale: 1 = none, 2 = 10 hours or less, 3 = 11-25 hours, 4 = 26-60 hours, 5 = 61-120 hours, and 6 = more than 120 hours.

The attitudinal section of the CPAAS captures students' affect towards the importance of and belief in the values of civic engagement. On these 56 questions, students are asked to provide their level of agreement with a variety of statements expressing various affects towards civic engagement on a 5-point Likert-type rating scale in which: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree. The directionality of scoring is such that it would be expected for students with high-levels of civic engagement to score highly on these items, whereas it would be expected with students with low-levels of these attributes to score lower. The scale contains thirteen negatively-worded items that are reverse-scored for proper

directionality on the scale, such that higher scores reflect stronger positive affect towards civic engagement.

Study Design

To determine if and how students' civic engagement involvement and attitudes develop during their undergraduate tenure, this study employed a mixed three-factor within subjects design. Specifically, this study used a 2 x 2 x 4 factorial design, based on an A x B x (C x S) structure, incorporating two factors that vary between-subjects and one that varies within subjects (Keppel & Wickens, 2006). The factorial design thus included 16 treatment conditions. Factors A and B were the between-subjects independent variables of gender and minority status, while the within-subjects independent variable (factor C) was the repeated measures collected on each subject across their four years at Tufts (factor S). Student data was collected on the CPAAS at the end of the second semester of subjects' first year, sophomore, junior, and senior years. Interview data was also gathered from a sample of subjects during students' sophomore and senior years that served as supplementary data to help explain and confirm the CPAAS results.

Through within-subject study designs, researchers ensure that "comparable subject differences are present in each condition" (Keppel & Wickens, 2006, p. 370), thus reducing the size of the error term used to test for differences between the treatments. Additionally, these designs, often referred to as panel designs, offer increased control over subject variability, as an individual's scores from multiple observations tend to be

more similar to each other than they are to scores of other subjects. As a result of this “economy of design” (Keppel & Wickens, 2006, p. 369), fewer subjects are needed to maintain the desired level of power² as data are collected and used more efficiently. Therefore, these study designs are particularly useful for studies in which data can be collected over multiple time periods, as they enable the use of smaller sample sizes. The use of this study design, therefore, helped to validate the limited size of the sample utilized in this study (N=137).

Data collection procedures

The research design for this study included the administration of an annual web-based survey instrument (the CPAAS) during the students’ four years at Tufts to track the development of students’ civic and political behaviors and attitudes towards civic engagement. Additionally, sophomore and senior follow-up interviews were conducted to collect supplemental data to the CPAAS. A stratified random sub-sample of 10% of the study participants were utilized to select six interviewees from the Class of 2008 and eight from the Class of 2009. The covariate in this study (students’ high school involvement) was used as the strata to randomly select students for the interviews. These structured interviews further illuminated students’ perceptions of any links between their experiences at Tufts and their civic and political attitudes. The interview protocol was also geared towards collecting students’ views on the sources of their civic and political viewpoints. The interviews ascertained more in-depth personal information about the

² The results of the sensitivity power analyses that were conducted in G*Power 3 to determine the Cohen’s f^2 effect size that could be detected through the planned repeated measures analysis of variance in this study are presented later in this chapter. The desired power level for this study was $1 - \beta = 0.8$.

interviewees, such as their high school experiences, academic interests, involvement and interest in current affairs, and career plans. The data generated from these interviews more broadly documented the factors that students interpreted as having impacted the development of their civic engagement involvement and attitudes.

The study was therefore structured as a mixed-method longitudinal design, as longitudinal studies have long been touted as the most legitimate means through which to examine the development of a construct of interest and outcomes in individuals over time, as changes in attitudes may take years to emerge (White & Arzi, 2005). As noted in Shadish et al. (2002), “longitudinal designs allow examination of how effects change over time, allow use of growth curve models of individual differences in response to treatment, and are frequently more powerful than designs with fewer observations over time” (p. 267). Additionally, Astin (1991) recommended the collection of comprehensive longitudinal data on students’ input, environmental, and multiple outcome measures, particularly a cohort study, when possible when utilizing the I-E-O model.

Given the longitudinal nature of the study, it was necessary to ensure participation over the students’ complete undergraduate experience, from their first year to their senior year, as studies have deemed it preferable to minimize attrition in place of statistical corrections (Mowbray & Luke, 1996). Various incentives were used to ensure participation across the four years, with a monetary stipend provided to students upon graduation if they fully complied with the study requirements, including providing data at all appropriate data collection times. To ensure timely responses to the measurement instruments on an annual basis, students were eligible for \$25 gift certificates upon

completion of the annual CPAAS and biennial follow-up interviews (if selected). Throughout the study, these incentives helped participation rates to remain high, with survey responses being received by the vast majority of the students during their time at the institution. Response rates for the various data collections are shown in Table 3.1.

Table 3.1 Sample Sizes for Student Responses by Cohort & Academic Standing

Academic Standing	Cohort			
	2008		2009	
Freshman	60	100.0%	77	100.0%
Sophomore	59 (6 ^a)	98.3%	75 (6 ^a)	97.4%
Junior	59	98.3%	69	89.6%
Senior	59 (6 ^a)	98.3%	59 (8 ^a)	76.6%

^a Number of students interviewed.

Quantitative Analyses

The longitudinal research design enabled an analysis of the results of students' four scores on the CPAAS Involvement and Civic Engagement sub-scales, collected from each student four times over their four years at Tufts. A three-stage analysis plan involving Rasch modeling, repeated measures analysis of variance (RMANOVA), and repeated measures analysis of covariance (RMANCOVA) was utilized to analyze involvement and attitudinal data from the eight sub-scales associated with the first two research questions in the study:

- 1) How does students' civic engagement involvement (civic, political, and expressive) develop and change during the undergraduate years?
- 2) How do students' civic engagement attitudes (service, political, and civic efficacy, civic accountability and tolerance of diversity) develop and change during the undergraduate years?

Canonical correlation analysis addressed the third research question posed in the study:

- 3) To what extent does civic engagement involvement relate to students' civic engagement attitudes during the undergraduate years?

This multivariate analysis technique explored the relationship between participation in activities (as measured on three activity scales) and pro-civic engagement attitudes (as measured on the five civic engagement attitudes scales). A canonical correlation model was generated that investigated the relationship between these two sets of variables for each of the students' four years at Tufts.

Rasch Rating Scale Model

This study applied the Rasch rating scale model (Andrich, 1988; Wright & Masters, 1982) to analyze the raw scores from the participation and attitudinal data collected through the CPAAS. More specifically, the Rasch rating scale model generated item and person estimates for both participation in civic engagement activities (3 scales) and their attitudes towards civic engagement (5 scales). The Rasch rating scale model simultaneously modeled the continuum of attitudinal items from easy to hard to endorse along with students' relative position on the scale for each of the five aspects of civic engagement (Vaughn, 2003). Additionally, the model was used to portray the structure of the involvement in activities scale (from common to rare) while concurrently identifying students' locations along the scale (Ludlow et al., 2008). The involvement and attitudinal Rasch person estimates for individual students were then compared across freshman,

sophomore, junior, and senior administrations of the CPAAS to determine if differences emerged in students' involvement rates and civic dispositions over time.

The data was analyzed using Winsteps (Wright & Linacre, 1998) for rating scale data where each item format is the same across the survey instrument. The Rasch rating scale model is as follows:

$$\pi_{nix} = \frac{e^{\sum_{j=0}^{x_{ni}} [\beta_n - (\delta_i + \tau_j)]}}{\sum_{k=0}^m e^{\sum_{j=0}^k [\beta_n - (\delta_i + \tau_j)]}}$$

In the model, π_{nix} is the probability of person n responding in category x to item i where δ_i is the item difficulty (location of item i on the scale), τ_j is the threshold parameter (location of the k^{th} transition from one scoring category to the next for the $m + 1$ rating categories), and β_n is the parameter for a students' involvement in activities or affect towards civic engagement (Ludlow et al., 2008).

This probabilistic model assumes that more difficult items on the continuum will be endorsed less often than easier items, with only one trait or construct determining an individual's responses to all items (Bond & Fox, 2001; Hambleton, Swaminathan, & Rogers, 1991). Students with very low affect towards the construct of interest are assumed to have a very low probability of strongly supporting a difficult-to-endorse item, with no allowance for the possibility of these students unexpectedly guessing at a strongly-worded item (Hambleton et al., 1991). In the rating scale model, threshold statistics predict the estimated difficulty of choosing one response category over another

(Bond & Fox, 2001; Wright & Masters, 1982). As such, the Rasch rating scale model estimates the probability that a student will select a particular response category, which is then used to compute that students' expected response for a particular item.

The Rasch rating scale model can be used to develop a set of unidimensional subscales consisting of items with invariant measurement properties, enabling the estimation of item locations and identification of any overlap or redundancy among items (Rasch, 1960; Wright & Masters, 1982). In the Rasch rating scale model, scale-free student measures and sample-free item difficulties are placed along a single, unidimensional continuum, such that the differences between pairs of student measures and pairs of item difficulties are expected to be sample independent (Andrich, 1988; Wright & Masters, 1982). This feature of the Rasch model eliminates the dependence of person and instrument characteristics by separately estimating person and item parameters with a probability function for a particular answer. As such, the probability of endorsing an item is a function of the difference between an individual's affect and the item's strength (traditionally described as ability and difficulty with regard to achievement tests) (Rasch, 1960).

In the Rasch rating scale model, it is essential that data fit the measurement model, such that students are shown to answer logically and consistently along the unidimensional scale (Wright & Masters, 1982). Item fit statistics, including INFIT and OUTFIT, provide evidence of an instrument's content and concurrent validity, indicating the extent to which each item and person perform according to expectation. The mean-square residual goodness-of-fit INFIT is an information-weighted fit statistic that it is

most sensitive to unexpected responses to items near a person's measure estimate (Wright & Linacre, 1998; Wright & Masters, 1982). The mean-square residual goodness-of-fit OUTFIT statistic, on the other hand, is an outlier-sensitive fit statistic that it is most sensitive to unexpected responses to items far from a person's measure estimate (Wright & Linacre, 1998; Wright & Masters, 1982). Additionally, the Rasch rating scale model provides separation reliability statistics for both person and item separation that are more conservative than traditional reliability estimates, such as Cronbach alpha, as extreme individuals and items are removed prior to analysis (Wright & Stone, 1979). Separation reliability can be seen as a measure of construct validity, as it describes the extent to which items and individuals are separated on each of the sub-scales. Item separation refers to the number of statistically different types of items that can be identified in the sample. In other words, item separation refers to the confidence in placement of items along a continuum of increasing difficulty of agreement, or the extent to which a second similar sample would be expected to order items along the same continuum (Donnelly & Boone, 2007). Person separation indicates how well the instrument separates individuals in the sample, representing the degree of accuracy that could be expected in a secondary set of scores predicted for a sample of respondents based upon the first set of scores (Donnelly & Boone, 2007).

In order to preliminarily assess the growth in students' involvement and attitudes over time, variable maps were created through Rasch rating scale analysis in Winsteps (Wright & Linacre, 1998) to visualize how students progressed along the various scales during their undergraduate tenure. These Rasch variable maps depicted the continuums

(or rulers) generated for the CPAAS Involvement and Civic Engagement sub-scales, including the three civic activity and five civic engagement attitude sub-scales. On these variable maps, person measures (left side) and item measures (right side) can be compared to examine the distribution of students and activities (or attitudes, respectively) along the scale. In order for all levels of civic engagement involvement and attitudes to be measured on the scales, items should cover the full range of students' involvement (or affect, respectively) levels.

Given the longitudinal nature of the study data, it was necessary to create fixed definitions of the constructs of interest for each of the CPAAS Involvement and Civic Engagement sub-scales in order to be able to directly compare the data over time. As such, the item and step calibrations for each of the CPAAS Involvement and Civic Engagement sub-scales' estimates generated through the Rasch rating scale analysis were anchored in order to produce common metrics. Wright (1996a) stressed the importance of stable item hierarchies, as survey items and rating scales may concurrently change along with student responses over time. Therefore, a need exists to measure persons and items in the same frame of reference, such that comparisons over time have substantive meaning (Wright, 1996b). Ludlow et al. (2008) provide a useful example for how initial item estimates can be used as anchors to re-estimate responses from later survey administrations to measure growth.

In this study, the development of students' involvement and attitudes were estimated from freshman to sophomore to junior to senior year data anchored on item and step calibrations derived from CPAAS data collected on a national sample of college

students. As such, any changes in students' involvement and/or attitudes were understood as progression along a single, fixed variable for each of the sub-scales in the context of a nationally representative sample (Ludlow, Andres, & Haley, 2005). It was expected that students' locations on the sub-scales would monotonically increase during their time at the institution. This was evaluated by placing students' estimates from the four data collections across their undergraduate tenure on the baseline scale defined by the CPAAS national data. See Appendix B for the example of the type of variable map that was generated for each of the eight sub-scales over the freshman, sophomore, junior, and senior CPAAS administrations (Ludlow et al., 2008).

Repeated Measures Analysis of Variance

RMANOVA analysis was conducted following the estimation of Rasch person and item statistics in Winsteps as this method, in its univariate and multivariate forms, is commonly used to examine overall mean differences in a construct of interest across various time points (Stevens, 1999). This subsequent analysis was run in order to determine if the perceived growth in students' involvement and attitudes over their time in college was statistically significant. This analysis plan builds upon past studies (Donnelly & Boone, 2007; Siegel & Ranney, 2003) that followed Rasch modeling with RMANOVA to analyze longitudinal data.

According to Keppel & Wickens (2006), RMANOVA can be utilized to analyze basic within-subjects designs ($A \times B \times S$), in which a single group of subjects are selected and tested within every treatment condition, as well as more complicated mixed factorial designs, such as this study ($A \times B \times (C \times S)$). In general, RMANOVA relies on four

basic assumptions: 1) randomization, 2) normally distributed error on the dependent variable, 3) independence of scores, and 4) homogeneity of variance. RMANOVA compares the means of data from two or more data collection periods from within the same subject. It is appropriate to utilize when investigating the possibility of differences in the average values of a dependent variable within the same subject over multiple time periods. RMANOVA calculates an F-statistic to compare variability between data collection time periods to the variability within the subjects (using mean squares between and within). In RMANOVA, total variation is partitioned into three components – variation among individuals, variation among test occasions, and residual variation to determine if the significant differences emerge between the data collection time periods (Hinkle, Wiersma, Jurs, 2003). If the F-test is significant, then significant growth has occurred within an individual over the data collection time periods.

RMANOVA was utilized in this study to test the between-subjects factors and the interactions of between and within-subjects factors. The within-subjects factors were the Rasch person estimates on the various CPAAS scales, including the three Involvement and five Civic Engagement sub-scales, collected from each subject four times over their four years at Tufts. The between-subjects factors were the between-subjects effects of gender and minority race/ethnicity status. These between-subjects factors were entered into the model to explore the extent to which these demographic variables impact students' participation and attitudes.

In this analysis, the four between-subjects effects were tested as in a two-factor AxB design, using error term S/AB (Keppel & Wickens, 2006). Any effect involving

only between-subjects factors was tested against the variability among the subjects within the groups. Additionally, any effect involving a contrast on a within-subject factor was tested against an error term that includes the interaction of that contrast with subjects. Since all the within-subjects effects involve factor C, the error term for every effect is the interaction of C with the subject effect S/AB, described as C x S/AB (Keppel & Wickens, 2006). The main effects for the factors have degrees of freedom equal to the number of levels of that factor less one, while the interactions have degrees of freedom equal to the product of the degrees of freedom of its separate parts (Keppel & Wickens, 2006).

Given the relatively limited sample and complex research design, sensitivity power analyses were run using G*Power 3 to determine the Cohen's f^2 effect size that could be detected through the RMANOVA (Faul, Erdfelder, Lang, & Buchner, 2007) for each of the eight Involvement and Civic Engagement sub-scales. This effect size index (Cohen's f^2), which represents the ratio of effect variance to the error variance within cells, was calculated due to its appropriateness in the context of between-subjects designs, such as RMANOVA (Cohen, 1988). The detectable Cohen's f^2 effect size was computed as a function of the desired power level ($1 - \beta=0.8$), the significance level ($p=0.05$), the two dichotomous between-subjects independent variables (gender and minority race/ethnicity status) and four within-subjects repetitions, the correlation among repeated measures (freshman and senior years), and the final sample size. See Table 3.2

for the Cohen's f^2 effect size that each RMANOVA was expected to be able to detect with these parameters, assuming a linear relationship over time.³

Table 3.2 Sensitivity Power Analyses

CPAAS Sub-Scales		Power Calculations		
		Final Sample Size	Freshman to Senior Correlation	Effect size
Involvement	Political Activities	N = 116	$r = 0.432$	$f^2 = 0.140$
	Civic Activities	N = 117	$r = 0.454$	$f^2 = 0.137$
	Expressive Activities	N = 116	$r = 0.455$	$f^2 = 0.137$
Civic Engagement	Internal Service Efficacy	N = 118	$r = 0.524$	$f^2 = 0.127$
	Internal Political Efficacy	N = 117	$r = 0.462$	$f^2 = 0.139$
	Civic Accountability	N = 118	$r = 0.579$	$f^2 = 0.120$
	Tolerance of Diversity	N = 117	$r = 0.551$	$f^2 = 0.124$
	Internal Civic Efficacy	N = 117	$r = 0.568$	$f^2 = 0.122$

Each sub-scale was expected to be able to detect a “medium” f^2 value, operationally defined by Cohen (1988) as an effect size of 0.15 (p.478). The RMANOVA analysis was conducted in SPSS following the completion of the Rasch modeling to detect any significant growth in students’ involvement levels in or attitudes towards civic engagement.

Repeated Measures Analysis of Covariance

Since past studies have shown that students who participate in community service in high school are more likely to participate in these types of activities as undergraduates, levels of high school participation in civic engagement activities was included as a covariate in the study (Cruce & Moore, 2006; Griffith & Thomas, 2006). More

³ The presence of a higher-order trend, such as cubic or quadratic, in place of a linear trend would decrease the effect size that each sub-scale was expected to be able to detect.

specifically, prior research has shown that high school activities are a strong predictor of college activities (Astin & Sax, 1998; Jones & Hill, 2003; Marks & Jones, 2004). To account for this relationship, RMANCOVA was utilized following the RMANOVA analysis to adjust for the differences in civic engagement involvement prior to entering Tufts. A proxy for high school civic engagement involvement was calculated from an aggregate measure of students' participation during their last two years of high school in civic activities, political activities, and expression of public voice activities and included as a covariate.

In general, ANCOVA combines the hypothesis-testing procedures for the general linear model with linear regression. It improves the quality of analysis when additional information is available about the value of a dependent variable through a covariate (Keppel & Wickens, 2006). ANCOVA involves two or more groups, and its goal is to compare the means of a dependent variable in which a second score, the covariate, is available from each subject. The relationship between the dependent variable and the covariate is used to reduce the unexplained variability in the outcome variable and improve the power in testing hypothesis about differences among the means. The inclusion of a covariate in the analysis serves to improve the quality of analysis by decreasing the size of the mean square against which the effects are tested and by making the groups more comparable. The general linear model then translates the comparison of models into a statistical test by looking at the variability that is unexplained under each model.

ANCOVA compares two regression analyses of the data, one in which no group differences are allowed, and another in which the vertical separation of the regression line depends on the group. Therefore, it tests the hypothesis of equal group means by comparing a model for the scores in which the means could differ to one in which they are the same. ANCOVA therefore tests for differences between groups by comparing a description of the data based on a single regression line to one based on lines with the same slope and different intercepts for each group (Keppel & Wickens, 2006). The group difference is measured by the extent to which one of the individual-group regression lines is higher than the other.

ANCOVA is based upon nine basic assumptions: 1) randomization, 2) homogeneity of regression slopes, 3) statistical independence of covariate and treatment, 4) covariate is measured without error, 5) covariate is correlated with the dependent variable, 6) linearity of within-group regression, 7) normality of the dependent variable, 8) homogeneity of variance of the dependent variable, and 9) fixed treatment levels. All of the assumptions of ANOVA apply to ANCOVA, with additional assumptions being needed to ensure that the assumptions of the general linear model being employed are not violated (Keppel & Wickens, 2006).

The principal use of ANCOVA is to increase power, though it also produces more precise estimates of the treatment means as adjusted means are calculated from which the effects of differential assignment of subjects to groups are removed. ANCOVA is aimed at identifying and removing extraneous variants, therefore increasing the precision of the analysis. The covariate can be used to reduce the effects of accidental variation on the

treatment means and to obtain more comparable estimates of the effects. The error sum of squares is smaller and the F ratio for the treatment effect is larger than if the covariate were not taken into account. Therefore, ANCOVA allows researchers to both increase power and precision (Keppel & Wickens, 2006).

This RMANCOVA was conducted in SPSS following the RMANOVA in order to determine if any significant development in students' involvement in and attitudes towards civic engagement across their four years at Tufts remains so after statistically controlling for their high school civic engagement involvement. Given the past research on the connection between participation in civic engagement activities in high school and commitment to involvement in and attitudes supportive of civic engagement later in life (Astin & Sax, 1998; Flanagan, Galloway, Gill, Galloway, & Nti, 2005; Hart, Donnelly, Youniss, & Atkins, 2007; Jones & Hill, 2003) it was expected that the RMANCOVA would account for a portion, but not all, of the positive development expected in students' involvement and attitudes over their undergraduate tenure.

Canonical Correlation

Canonical correlation was used as a final step in data analysis to assess the degree to which a multivariate relationship exists between students' involvement in activities and attitudes towards civic engagement across their four years in college. The final research question in this study addresses the extent to which students' participation in activities are associated with their civic engagement attitudes. For this analysis, students' scores on the Involvement scale were examined according to their participation in three distinct types of activities: civic activities, political activities, and expression of public

voice to enable a comparison of how involvement in these groups of activities relate to students' attitudes on the five Civic Engagement sub-scales across their four years at Tufts (Zukin et al., 2006).

Canonical correlation established this relationship, as the procedure has been described as suitable in situations in which one wants to “parsimoniously describe the number and nature of mutually independent relationships existing between two sets” (Stevens, 2002, p. 471). Indeed, canonical correlation is appropriately used for studying the degree of relationships between two variable sets when each set consists of at least two variables (Thompson, 1984). Additionally, it has been shown in past studies to be appropriate at exploring the reciprocal relationship between involvement in activities and attitudes towards civic and political engagement, as the procedure removes concerns over the causal direction of any relationships (Flanagan, Syvertsen, & Stout, 2007; Finkel, 1985). Canonical correlation thus reduces the likelihood of experiment-wise Type I error, acknowledges that the sets of variables are related, and might simultaneously co-exist (Zientek & Thompson, 2009).

In canonical correlation, multiple predictor and multiple criterion variables are defined as two sets of measures. The relationship between these sets of variables is broken down by forming orthogonal functions, or multiplicative weights, of the two sets of variables that are uncorrelated to each other to maximize the relationships between the variable sets (Zientek & Thompson, 2009). These uncorrelated pairs are used to obtain additive partitioning of the total association between the sets of measures on both unobserved latent predictor and criterion variables (Stevens, 2002; Zientek & Thompson,

2009). The correlation between the pairs of linear combinations – the unobserved latent predictor and criterion variables, also known as canonical variates, are the canonical correlations. The canonical variates maximize the relationship between the two variable sets that they represent by weighting each person's data and summing the weighted scores within each variable set (Thompson, 1984). The square of the canonical correlations, the multivariate squared canonical coefficients (R_c^2), are an estimate of the proportion of variance shared linearly by the two canonical variates derived from the two variable sets (Thompson, 1984).

As described, canonical correlation finds linear combinations of the two sets of measures by differentially weighting them to obtain the maximum possible correlation between the two variable sets (Pedhauzer, 1997). Once this is achieved, the procedure then locates another pair of linear combinations that maximizes the possible correlation, which is uncorrelated to the first root. Canonical correlation works on the assumption of uncorrelated means, such as 1) canonical variates within each set are uncorrelated and 2) canonical variates are uncorrelated across sets (Stevens, 2002). Additionally, the procedure relies upon the following three assumptions: 1) that measurement error in the variables is minimal, 2) that the variances of the variables are not restricted, and 3) that the magnitude of the coefficients in the correlation matrix are not attenuated by large discrepancies in the distribution shapes of the variables (Thompson, 1984, p. 17).

In canonical correlation, the first few canonical variates account for most of the association between the sets of measures. The maximum number of canonical correlations obtainable in the data for this study was three, as it relates to the number of

variables in the smaller set of variables (Pedhauzer, 1997; Zientek & Thompson, 2009). In order to determine how many possible canonical correlations indicate statistically significant relationships between the variable sets, tests of statistical significance were conducted that relied on an approximation similar to the X^2 distribution (Bartlett, 1941, as cited in Thompson, 1984; Stevens, 2002). Regardless of the results of these tests, it was deemed important to examine the canonical function to determine the extent to which particular variables contributed to the identified multivariate relationship (Thompson, 1984). This occurred through an investigation of the standardized canonical function coefficients and the structure coefficients, which indicate the extent to which each canonical variate is related to the canonical root for the variable set. In other words, these coefficients helped determine how useful each variable was in defining the canonical solution (Thompson, 1984).

As described, canonical correlation was used to explore the relationship between two sets of measures (three types of involvement and five civic engagement attitudes) across students' four years at Tufts to determine the extent to which particular combinations of involvement influence the development of specific aspects of civic engagement. It investigated if these expanded forms of participation have reciprocal effects on internal efficacy, civic accountability, and attitudes towards diversity within each academic year at Tufts. This analysis highlighted up to three combinations of involvement in particular activities that are maximally associated with a given set of civic engagement attitudes.

Qualitative Analysis

Grounded Theory

In order to categorize the comments provided by students in the structured sophomore and senior interviews, grounded theory was applied as the principal categorizing strategy. This qualitative data collection framework and analysis technique relies upon a “constant comparative method” in which a reiterative process is used to create and refine categories and sub-categories of themes that emerge from the interview data (Glaser & Strauss, 1967; Strauss & Corbin, 1998; as cited in Rossman & Rallis, 2003, p. 273). Grounded theory begins with the “inductive construction of abstract categories” that suggest plausible relationships between the concepts presented in the interviews (Schram, 2003, p. 75). The coding technique then relies upon developing evolving patterns of data by honing these preliminary definitions through comparisons and compatibilities with simultaneous and subsequent data sets. These strengthened and confirmed categories are then clustered into over-arching themes and a comprehensive framework. As such, grounded theory analysis allows for the development of a substantive theory of the qualitative results that are “conceptually dense,” capturing many relationships between the concepts in the interviews, as a result of the “self-corrective process” (Schram, 2003, p. 75). Grounded theory was selected as an appropriate qualitative data analysis technique for this study as it has been shown to be appropriate for research questions that require thick descriptions of specific experiences, as well as documenting changes over time.

Chapter 4: Results

As depicted in Figure 4.1, a multi-step analysis plan was conducted on the CPAAS data to address the research questions. The results of these analyses are presented in this chapter.

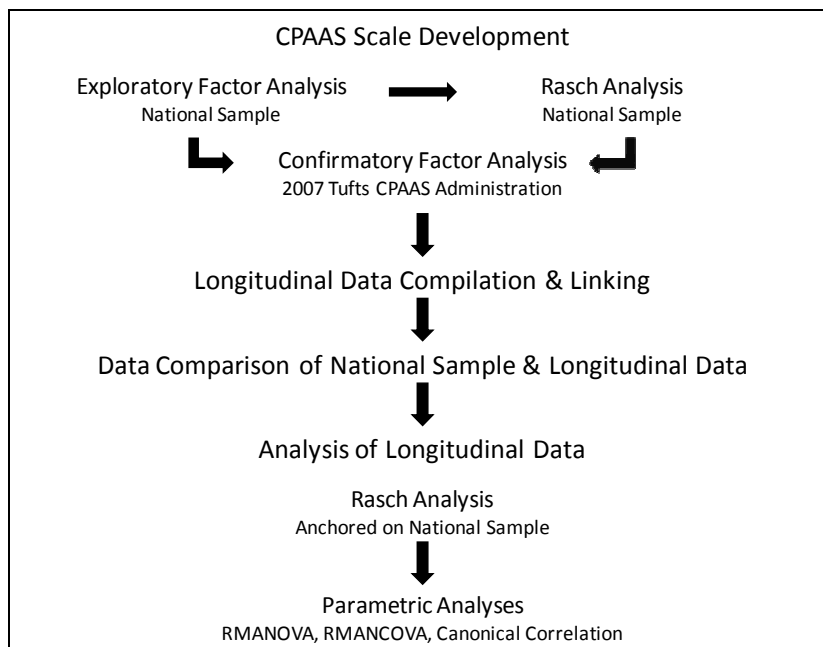


Figure 4.1. Analysis Plan

CPAAS National Sample Pilot-Test

In order to validate and determine the reliability of using the CPAAS as a measure of students' involvement in and attitudes towards civic engagement, classical test theory and item response theory techniques were used to analyze data collected on the CPAAS from a nationally-representative sample of traditionally-aged, full-time undergraduate students at four-year institutions. Adapted versions of the CPAAS were administered in

2006 and 2007 to 789 of these students. While the psychometric properties of some of the instruments used to compile the instrument have been documented by Bringle et al. (2004) and Moely et al. (2002), the overall reliability and validity of the combination of instruments in the context of measuring civic engagement in college students needed to be confirmed.

Principal axis factoring was selected as the extraction technique to examine the number and nature of underlying factors responsible for the covariance among the observed items on the CPAAS Involvement and Civic Engagement scales. Specifically, principal axis factoring with oblimin rotation was utilized to discover the connections between the types of civic engagement involvement that the CPAAS measures. The extraction technique was deemed to be appropriate for the correlation matrix of the Involvement scale data, given the high Kaiser-Meyer-Olkin (KMO) statistic (.946), non-zero determinant, and significant Bartlett's test of sphericity (Ludlow et al., 2008). The oblique rotational technique was selected to allow the factors to be correlated with one another, as activities involving the expression of public voice have been shown to combine elements of both civic and political activities (Zukin et al., 2006). In determining the number of factors to retain from the Involvement scale, it was decided that at least 50% of the variance between the items should be accounted for by all of the factors, as this falls within the usual range of 40-60% often seen in educational studies. Additionally, the minimum eigenvalue for each factor to be retained was set at one, such that each retained factor had to account for the variance associated with at least one item.

Three factors resulted in the final factor analysis solution that met these requirements, with the initial extraction of these three factors accounting for 56% of the variance between the items on the Involvement scale. The three factors reflected the structure of civic engagement involvement delineated in the two original service learning survey instruments used to construct the Involvement scale. In particular, the factors represented the division of civic engagement involvement presented by Zukin et al. (2006), with participation in the 22 activities listed on the CPAAS clustering into three distinct categories of civic engagement involvement. As such, the three factors were named as follows: Political Activities (factor 1 – 5 items), Civic Activities (factor 2 - 6 items), and Expressive (Public Voice) Activities (factor 3 - 11 items). See Appendix C, Figure 1 for the items associated with each factor and the factor loadings for each item. Traditional reliability estimates were generated to provide evidence of the degree to the items on each factor were correlated. The Cronbach alpha estimates were strong for each of the three factors, ranging as follows: Expressive (Public Voice) Activities ($\alpha = .894$), Political Activities ($\alpha = .834$), and Civic Activities ($\alpha = .821$).

With regard to civic engagement attitudes, principal axis factoring with varimax rotation was utilized to discover the relationships between the aspects of civic engagement attitudes that the CPAAS measures. Principal axis factoring was deemed to be appropriate for the correlation matrix of the Civic Engagement scale data, given that the Kaiser-Meyer-Olkin (KMO) statistic was high (.907), the determinant was non-zero, and Bartlett's test of sphericity was significant (Ludlow et al., 2008). Additionally, only three of the 56 items had extracted communalities (the squared multiple correlations for

the individual items) less than 0.2, meaning that the vast majority of items were strongly represented by the five extracted factors.

In determining the factor analysis structure to be applied to the Civic Engagement scale, the minimum eigenvalue for each factor to be retained was set at two, such that each retained factor had to account for the variance associated with at least two items. Additionally, it was considered critical for at least 50% percent of variance to be accounted for by all of the factors combined. A factor analysis solution was derived according to these requirements, with five final factors emerging as acceptable for retention in the final factor analysis solution. The initial extraction of the five final factors accounted for 51.6% of the variance between the items on the Civic Engagement scale. The first factor was also exceptionally strong, singularly accounting for 25.5% of the variance, with all other factors accounting for at least 3.5% of the variance. In addition, each of these factors accounted for the variance of at least two items, with eigenvalues and percent of variance accounted for (respectively) ranging as follows: factor 1 (14.31, 25.5%), factor 2 (5.97, 10.7%), factor 3 (3.61, 6.5%), factor 4 (2.96, 5.3%), and factor 5 (2.06, 3.7%). See Appendix C, Figure 2 for each factor's associated items and factor loadings.

The five factors worked in conjunction to substantiate that the combination of the original five service learning survey instruments were working to measure five distinct categories of civic engagement attitudes. As expected, several of the reoccurring themes from the original survey instruments surfaced as factors within the data from the Civic Engagement scale, including attitudes towards one's ability to impart change in a

community through service, politics, and civic involvement, the necessity of commitment to the public good, and one's attitudes towards the benefits and difficulties associated with diversity. The five factors were named as follows: Internal Service Efficacy (factor 1 - 13 items), Internal Political Efficacy (factor 2 - 9 items), Civic Accountability (factor 3 - 14 items), Tolerance of Diversity (factor 4 - 9 items), and Internal Civic Efficacy (factor 5 - 11 items). The factors were named due to their connection to these concepts, with the basis for the naming conventions coming from past studies on civic and political engagement that have measured similar constructs, including internal political efficacy (Balch, 1974; Craig & Maggiotto, 1982; Finkel, 1985), civic accountability (Flanagan, Syvertsen, & Stout, 2007), and tolerance (Dalton, 2008).

Traditional reliability estimates were calculated for each of the five factors to assess the degree to which the items on each factor were correlated. The Cronbach alpha estimates were fairly strong for each of the five factors, ranging as follows: Internal Political Efficacy ($\alpha = .948$), Internal Service Efficacy ($\alpha = .936$), Internal Civic Efficacy ($\alpha = .866$), Civic Accountability ($\alpha = .799$), and Tolerance of Diversity ($\alpha = .773$).

The Rasch rating scale model was subsequently utilized in Winsteps (Wright & Linacre, 1998) to ascertain how individual respondents and items were operating within the Involvement and Civic Engagement scales. Variable maps for the Involvement and Civic Engagement sub-scales (see Appendix D and E, respectively) were generated and analyzed to assess the degree to which respondents and items were logically falling out along a continuum of the strength of affect. Item and person separation statistics were also evaluated to assess the degree to which the scales were effectively discriminating

between students and items, as these statistics indicate the degree to which items are spread out across item locations.

The three Involvement sub-scales resulted in reasonable hierarchies of items, ranging from more common to more rare political, civic, and expressive activities to participate in during college. On these variable maps (see Appendix D, Figures 1-3), the distance of an item (an activity) from the top of the ruler indicates its difficulty (commonness) relative to other items (activities). The distance of a person from the top of the ruler indicates his/her level of engagement in activities relative to other students. As such, activities at the top of the scale are harder to engage in, with activities becoming easier to become involved with further down the scale. Likewise, students with the highest levels of involvement (top of the scale) engage in the least common activities, with students with lower levels of involvement (bottom of the scale) participating in the more routine, common activities.

The person separation statistics for the Involvement sub-scales were slightly lowered than desired, with each value falling below the critical standard of 2.0. These results, though somewhat sub-par, were deemed acceptable given the correspondingly strong item separation statistics. The person and item separation statistics (respectively) were as follows: Political Activities (1.15, 10.42), Civic Activities (1.22, 9.58), and Expressive (Public Voice) Activities (1.34, 7.43). Given these results, along with the logical variable maps, the Involvement sub-scales were seen to be capable of consistently measuring students' involvement in an array of activities while in college.

The variable maps for each of the five Civic Engagement sub-scales (see Figures 1-5 in Appendix E) also reflected rational hierarchies of items, ranging from easier to endorse items that required less commitment to civic engagement to more controversial items that required much higher levels of dedication to civic engagement. On these variable maps, the distance of an attitudinal item from the top of the ruler indicates its strength of affect towards civic engagement (or difficulty to endorse) relative to other attitudinal items. The distance of a person from the top of the ruler indicates his/her level of commitment to civic engagement relative to other students. As such, attitudinal items at the top of the scale are harder to endorse, with attitudinal items becoming easier to endorse further down the scale. Likewise, students with the highest levels of civic engagement (at the top of the scale) endorse the more controversial items, with students with lower levels of civic engagement (at the bottom of the scale) endorsing the more socially-desirable aspects of civic engagement. Each of the sub-scales worked effectively to differentiate between individuals who could readily agree with the more socially-required aspects of civic engagement to those respondents willing to display higher levels of personal commitment, sometimes on controversial topics, to various aspects of civic engagement.

The results for the Civic Engagement sub-scales were mixed with regard to the person and item statistics, with the scales displaying moderate person separation, yet strong item separation statistics. More specifically, the person and item separation statistics (respectively) were as follows for the sub-scales: Internal Service Efficacy (2.98, 6.78), Internal Political Efficacy (3.05, 4.86), Civic Accountability (1.79, 12.61),

Tolerance of Diversity (1.63, 12.19), and Internal Civic Efficacy (2.22, 10.13). Based on these results, it was determined that the Civic Engagement sub-scales were capable of satisfactorily discriminating between various aspects of students' attitudes towards civic engagement.

Overall, the preliminary psychometric analyses of the national sample of CPAAS data yielded the following results: a rational factor structure consistent with the instrument development and previous research, solid reliability estimates, logical hierarchical variable maps for both the Involvement and Civic Engagement sub-scales, and acceptable person and item separation statistics. Given these results, the CPAAS Involvement and Civic Engagement scales were found to be operating as stable, consistent, and reasonable measures of students' participation in and attitudes towards civic engagement.

CPAAS Data Structure Confirmation

In order to determine the applicability of the nationally-representative CPAAS data structure to the sample of students in this study, confirmatory factor analysis was performed in AMOS 18.0 on data collected during the 2007 administration of the Tisch College Outcomes Evaluation (N=182). The model and the relationships between the items were specified according to the three CPAAS Civic Involvement and five Civic Engagement sub-scales that emerged through exploratory factor analysis on the national sample. Maximum likelihood estimation was utilized to generate the model. Confirmatory factor analysis was deemed appropriate given its common use in developing and refining measurement instruments, including iterative scale development

and determining construct validity (Brown, 2006). This investigation into the fit of the CPAAS national data structure on Tufts' data was important given the lower-than-desired person separation statistics that resulted on many of the CPAAS Involvement and Civic Engagement sub-scales in the initial pilot-test. These sub-par statistics threatened the degree of accuracy that could be expected in the person estimates for a second sample of respondents (Tufts data) based on the item estimates originally generated in the pilot-test (national sample). As such, confirmatory factor analysis was used as a "theory-testing procedure" (Stevens, 2002, p. 411) to gauge the extent to which the latent constructs and relationships found in the CPAAS national data structure held in Tufts-specific data (Jackson, Gillaspay Jr., & Purc-Stephenson, 2009). The 2007 data was selected for the confirmatory factor analysis as it represented the first administration year that students across all four levels of academic standing (freshman, sophomore, junior, and senior students) were surveyed.

Since past research has shown that a variety of fit indices should be simultaneously evaluated to report model fit (Brown, 2006; Jackson, Gillaspay Jr., & Purc-Stephenson, 2009), the root-mean-square error of approximation (RMSEA; Steiger & Lind, 1980), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the comparative fit index (CFI; Bentler, 1990) were investigated to assess the reasonableness of model fit. These three fit indices (CFI, RMSEA, and TLI) were recently shown to be the most commonly reported tests of model fit following the χ^2 test of overall model fit (Jackson, Gillaspay Jr., & Purc-Stephenson, 2009). For this analysis, these three were selected in place of the χ^2 test of overall model fit, as these indices lack dependence on sample size

and are well-equipped to detect model misspecification (Jackson, Gillaspay Jr., & Purc-Stephenson, 2009, p. 10). The RMSEA, a parsimony fit index, assesses the plausibility that a model reasonably fits in a sample by measuring any discrepancies between the observed covariance and the estimated covariance matrix (Jackson, Gillaspay Jr., & Purc-Stephenson, 2009). The TLI and CFI, both comparative fit indices, compare the fit of the specified model to a baseline, null model (Brown, 2006). As in the RMSEA, the TLI compensates for model complexity and penalizes for “freely estimated parameters that do not markedly improve the fit of the model” (Brown, 2006, p. 85).

Overall, the fit of the CPAAS national data structure to the Tufts 2007 data was marginal according to the various fit indices on each of the sub-scales. As seen in Table 4.1, the RMSEA, TLI, and CFI values suggested mediocre alignment for most of the Involvement and Civic Engagement sub-scales, as values close to zero indicate good fit for the RMSEA and values close to one imply good model fit for the TLI and CFI (MacCullum et al., 1996, as cited in Brown, 2006). The Political Activities sub-scale displayed the best fit to the national data structure, achieving the aggressive standards put forth by Hu and Bentler (1999) for fit index cut-offs (RMSEA \leq .06, TLI and CFI \geq .95).

Table 4.1 Confirmatory Factor Analysis Fit Indices

CPAAS Sub-Scales		Fit Indices		
		RMSEA	TLI	CFI
CPAAS Involvement	Political Activities	0.063	0.969	0.984
	Civic Activities	0.100	0.890	0.934
	Expression of Public Voice Activities	0.113	0.717	0.774
CPAAS Civic Engagement	Internal Service Efficacy	0.117	0.852	0.877
	Internal Political Efficacy	0.153	0.873	0.905
	Civic Accountability	0.099	0.714	0.748
	Tolerance of Diversity	0.152	0.520	0.640
	Internal Civic Efficacy	0.134	0.747	0.798

Representativeness of Data to National Sample

In addition to validating the adequacy of the CPAAS national data structure to the Tufts data, it was also deemed important for external validity to explore the degree to which the study sample represented the national sample. Key demographics were compared across the two samples, including academic standing, gender, minority status, and students' status as registered voters. The majority of the Classes of 2008 and 2009 were female (59%), White (68%), and registered voters (94%). The distribution of responses from this sample at each level of academic standing was as follows: freshman (26.5%), sophomore (25.9%), junior (24.8%), and senior (22.8%).

In order to detect any statistically significant differences between the study sample's distributions on these demographics and the national sample, a series of χ^2 goodness-of-fit tests were conducted. The percentage of students at various levels of academic standing did not statistically significantly differ by sample, $\chi^2 (3, N=1,306) = 7.47, p > .05$. Likewise, the proportions of male and female students did not differ by sample as well, $\chi^2 (1, N=1,305) = 2.99, p > .05$. The national sample and the study sample did, however, differ with regard to the proportions of students identifying themselves as registered to vote and/or affiliated with a minority racial/ethnic group. The Tufts sample contained both a higher proportion of students of color, $\chi^2 (1, N=1,298) = 6.43, p < .05$, and registered voters, $\chi^2 (1, N=1,274) = 14.31, p < .01$, than the national sample. See Table 4.2 for the percentages of students in each sample identifying with each demographic group.

Table 4.2 Comparison of Study Sample & National Data Demographics

	Academic Standing				Gender		Minority Racial/Ethnic Status		Registered Voter Status	
	Freshman	Sophomore	Junior	Senior	Female	Male	White	Students of Color	Yes	No
Tufts Sample	26.5%	25.9%	24.8%	22.8%	58.8%	41.2%	67.8%	32.2%	94.4%	5.6%
National Data	24.1%	21.3%	26.4%	28.3%	53.9%	46.1%	74.3%	25.7%	88.1%	11.9%
Pearson Chi-Square	$\chi^2 = 7.472$				$\chi^2 = 2.999$		$\chi^2 = 6.429^*$		$\chi^2 = 14.306^{**}$	

* Significant at the 0.05-level.
 ** Significant at the 0.01-level.

The comparability of the two samples was also considered important given that the Rasch analysis of the national sample provided anchor item and step calibrations for the CPAAS Involvement and Civic Engagement sub-scales for the study data. This anchoring allowed for the linking of students’ scores across their four years at college in context of the common frame of reference from the national sample. As a result of this “stable, fixed definition” of the constructs of interest, Ludlow, Andres, and Haley (2005) suggest that meaningful progress and development along the sub-scales can be measured (p. 323). In order to assess the comparability of the two samples’ involvement and attitudes, a series of independent samples t-tests using the Bonferroni adjustment to control for Type-I error were performed on the mean person estimates from each of the eight Involvement and Civic Engagement sub-scales at each level of academic standing.

As seen in Table 4.3, significant differences emerged between the national sample and the study data on two of the Involvement sub-scales and four of the Civic Engagement sub-scales. As freshman, there was a significant effect for sample with regard to participation in Expressive Activities, $t(322) = -3.90, p < .001$ and attitudes towards Civic Accountability, $t(324) = -6.08, p < .001$, Tolerance of Diversity, $t(324) = -4.75, p < .001$, and Internal Civic Efficacy, $t(324) = -4.33, p < .001$, with the study sample

receiving higher person estimates than the national sample. As sophomores, significant differences emerged between the samples with regard to involvement in Civic Activities, $t(299) = -3.64, p < .001$, with the study sample participating more than the national sample. As juniors, the study sample once again expressed statistically significantly stronger positive attitudes towards Civic Accountability, $t(333) = -5.93, p < .001$, Tolerance of Diversity, $t(333) = -4.30, p < .001$, and Internal Civic Efficacy, $t(324) = -3.25, p < .001$ than the national sample. Finally, as seniors, the two samples differed in their attitudes towards Civic Accountability, $t(337) = -4.80, p < .001$ and Internal Political Efficacy, $t(334) = 4.85, p < .001$; though the person estimates were higher for the study sample for Civic Accountability and the national sample for Internal Political Efficacy.

Table 4.3 Comparison of CPAAS Rasch Scores for Tufts Sample & National Data

	Civic Engagement Scales							
	Involvement			Attitudes				
Academic Standing	Political Activities	Civic Activities	Expressive Activities	Internal Service Efficacy	Internal Political Efficacy	Civic Accountability	Tolerance of Diversity	Internal Civic Efficacy
Freshman	<i>n.s.</i>	<i>n.s.</i>	$t = -3.899^{**}$	<i>n.s.</i>	<i>n.s.</i>	$t = -6.081^{**}$	$t = -4.747^{**}$	$t = -4.326^{**}$
Sophomore	<i>n.s.</i>	$t = -3.641^{**}$	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>
Junior	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	$t = -5.925^{**}$	$t = -4.294^{**}$	$t = -3.249^{**}$
Senior	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	$t = 4.854^{**}$	$t = -4.798^{**}$	<i>n.s.</i>	<i>n.s.</i>

* A Bonferroni-adjustment was calculated on the initial $\alpha = .05$ since multiple statistical tests were computed to explore the representativeness of the study sample to the national data across each of the academic years. As a result, the test statistics were compared at the highly conservative $\alpha = .001$ than $\alpha = .05$ to ensure that the family-wise α does not exceed .05 for the entire series of t-tests.

** Significant at the 0.001-level.

Quantitative Results

Rasch Analysis

In order to generate the person estimates to be used in subsequent analyses, the Rasch rating scale model was used in Winsteps (Wright & Linacre, 1998) on students'

longitudinal CPAAS sub-scale scores from the Classes of 2008 and 2009. Additionally, the Rasch results were used to assess the functionality of the Involvement and Civic Engagement sub-scales for the study sample. As in the CPAAS national sample pilot-test, the variable maps and item and person separation statistics were examined to gauge how the study sample responded to the CPAAS Involvement and Civic Engagement sub-scales throughout their time in college. Additionally, two fit statistics, mean-square INFIT and OUTFIT, were investigated to assess average item and person fit to the model. Both the INFIT and OUTFIT statistics, known as signal to noise fit statistics, have expected values of 1.0, with low values (<0.7) indicating under-fit and high values (>1.4) signaling over-fit (Wright & Masters, 1982). In other words, INFIT and OUTFIT statistics less than the desired cut-off value (0.7) indicate an unexpected lack of variation (dependency) in the data, whereas INFIT and OUTFIT statistics greater than the desired cut-off value (1.4) indicate unexpected variation (noise or outliers, respectively) in the data. The item and step calibrations for the Class of 2008 and 2009 longitudinal CPAAS scores were anchored in the estimates generated through the CPAAS national sample pilot-test.

INVOLVEMENT

The item hierarchy for the Political Activities sub-scale, presented in Appendix F, Figure 1, showed a rational progression of student involvement from the most to least common activities among the five items included on the sub-scale. Indeed, the variable maps displayed “participation in online political discussions or visiting a politically-oriented website” as the most frequently engaged-in activity (-1.14 logits), while “helping

to promote political involvement or assisting with voter registration” was the rarest political activity on the scale (0.54 logits). The range of person estimates (excluding extreme scores) for Political Activities expanded during students’ time at college as follows: freshman (0.62 to -3.02 logits), sophomore (0.88 to -3.02 logits), junior (1.06 to -3.02 logits) and senior (1.42 to -3.02 logits). The variable maps did, however, reveal a modest floor effect for the Political Activities sub-scale, with a substantial proportion of students reporting a complete lack of involvement in all political activities across their four years in college (31.9%, 34.8%, 28.6%, and 26.8%, respectively). Furthermore, taking into consideration those students with minimum extreme scores, the average political activity measures (-2.62, -2.71, -2.61, and -2.32, respectively) contrasted to the average item measure (set at 0) indicated that the activities in the Political Activities sub-scale were somewhat poorly targeted for the sample. Once again, this revealed that students noted overall infrequent participation in political activities. Additionally, a comparison of the four variable maps created for each of the data collections revealed no visible shifts in students’ person estimates for involvement in Political Activities over time.

Overall mean model fit was marginal, with average mean-square INFIT and OUTFIT values exceeding the cut-off value of 1.4 for both item and person estimates at differing data collection time points. More specifically, the average model fit to the senior year data was particularly inadequate, with INFIT and OUTFIT mean-square values being, respectively, 1.94 and 1.72 for item estimates and 1.49 and 1.75 for person estimates. As such, unexpected variation emerged in both the item and person locations.

The sub-scale was also shown to be somewhat lacking in its ability to differentiate between students across their four years in college, with person separation and reliability (respectively) as follows: freshman (0.45, 0.17), sophomore (0.62, 0.28), junior (0.52, 0.21), and senior (0.75, 0.36). The item statistics, in contrast, were all over the conventional cut-offs of 2.0 for item separation and 0.85 for reliability. See Table 4.4 for the relative performance of the Political Activities sub-scale over students' four years at college.

Table 4.4 Summary Rasch Statistics for Political Activities

Academic Standing	Summary of item estimates (N = 5 items)			Summary of person estimates		
	Location	INFIT (MNSQ)	OUTFIT (MNSQ)	Location*	INFIT (MNSQ)	OUTFIT (MNSQ)
<i>Freshman (N=92, 43 minimum extreme scores)</i>						
Mean	0.00	1.32	1.09	-2.62	0.92	1.08
SD	0.62	0.59	0.58	1.32	0.88	1.18
Separation	2.87			0.45		
Reliability	0.89			0.17		
<i>Sophomore (N=86, 46 minimum extreme scores)</i>						
Mean	0.00	1.43	1.23	-2.71	1.08	1.21
SD	0.62	0.64	0.64	1.38	0.90	1.18
Separation	2.98			0.62		
Reliability	0.90			0.28		
<i>Junior (N=90, 36 minimum extreme scores)</i>						
Mean	0.00	1.77	1.32	-2.61	1.24	1.32
SD	0.62	1.08	1.02	1.32	1.16	1.47
Separation	2.70			0.52		
Reliability	0.88			0.21		
<i>Senior (N=87, 31 minimum extreme scores)</i>						
Mean	0.00	1.94	1.72	-2.32	1.49	1.75
SD	0.62	1.46	1.50	1.45	1.29	1.66
Separation	2.81			0.75		
Reliability	0.89			0.36		

* Minimum extreme scores were computed in the mean person locations.

As for the Civic Activities sub-scale, a reasonable hierarchy of items emerged on the variable maps, as seen in Appendix F, Figure 2. The six items on the sub-scale spread along a logical succession from “participation in community service” as the most

ordinary activity (-0.81 logits) to traveling on a “volunteer vacation/service-trip” as the most infrequent activity (0.90 logits). The person estimates (with extreme scores eliminated) for Civic Activities ranged over students’ four years on-campus as follows: freshman (0.69 to -3.19 logits), sophomore (1.08 to -3.19 logits), junior (1.88 to -3.19 logits) and senior (1.10 to -3.19 logits). There was evidence of a minor floor effect for the Civic Activities sub-scale, with the proportion of students reporting no involvement in any civic activities increasing during students’ time on-campus (14.1%, 15.0%, 18.9%, and 21.2%, respectively). A comparison of the average civic activity measures, including extreme minimum scores, (-1.63, -1.56, -1.89, and -1.80, respectively), to the average item measure (set at 0) suggested mis-targeting between the items on the Civic Activities sub-scale and the sample. In particular, students, on average, were less involved in these types of activities than expected. A visual analysis of the longitudinal variable maps alluded to the possibility of differential involvement in civic activities during students’ college experience, with a noticeable drop in student locations on the continuum during their junior year.

The mean model fit was fair overall, with acceptable average INFIT and OUTFIT mean-square values for person estimates across the four data collections. Additionally, the longitudinal item estimates displayed suitable OUTFIT mean-square values but elevated INFIT mean-square values. As shown in Table 4.5, the average freshman year INFIT mean-square value was borderline (1.39), while the mean sophomore, junior, and senior values all surpassed the cut-off value of 1.4 (1.69, 1.48, and 1.69, respectively). This was indicative of unexpected variation in the data with regard to item locations.

However, the item separation and reliability emerged as strong across students' four year college experience, with more than satisfactory differentiation between the item difficulties and reliability on the Civic Activities sub-scale for freshman (3.82, 0.94), sophomores (4.23, 0.95), juniors (4.01, 0.94), and seniors (3.83, 0.94). The person separation and reliability was less robust (falling below the critical value of 2.0 at each level of academic standing), suggesting that the sub-scale might not have sufficiently distinguished between students' involvement levels.

Table 4.5 Summary Rasch Statistics for Civic Activities

Academic Standing	Summary of item estimates (N = 6 items)			Summary of person estimates		
	Location	INFIT (MNSQ)	OUTFIT (MNSQ)	Location*	INFIT (MNSQ)	OUTFIT (MNSQ)
<i>Freshman (N=116, 19 minimum extreme scores)</i>						
Mean	0.00	1.39	1.15	-1.63	1.09	1.16
SD	0.61	0.74	0.30	1.39	0.98	1.24
Separation		3.82			1.12	
Reliability		0.94			0.55	
<i>Sophomore (N=113, 20 minimum extreme scores)</i>						
Mean	0.00	1.69	1.39	-1.56	1.37	1.37
SD	0.61	0.56	0.30	1.57	0.92	0.97
Separation		4.23			1.45	
Reliability		0.95			0.68	
<i>Junior (N=103, 24 minimum extreme scores)</i>						
Mean	0.00	1.48	1.25	-1.89	1.22	1.24
SD	0.61	0.36	0.30	1.59	0.85	0.95
Separation		4.01			1.40	
Reliability		0.94			0.66	
<i>Senior (N=93, 25 minimum extreme scores)</i>						
Mean	0.00	1.69	1.36	-1.80	1.42	1.35
SD	0.61	0.38	0.29	1.67	0.98	0.96
Separation		3.83			1.38	
Reliability		0.94			0.65	

* Minimum extreme scores were computed in the mean person locations.

The Expressive (Public Voice) Activities sub-scale resulted in a sensible ladder of activities on the variable maps, with the eleven items spanning from -1.12 to 1.14 logits. These variable maps, displayed in Appendix F, Figure 3, showed “attendance at an on-campus speaker on a particular issue” as the most routine activity and association with a

“civil liberties organization,” such as the American Civil Liberties Union (ACLU), as the most uncommon activity on the sub-scale. Additionally, “helping to raise awareness about a particular social issue” also emerged as a recurrent activity (-1.09 logits) for student involvement. With the extreme scores removed, students’ person estimates were spread out consistently throughout their college experience, with ranges as follows: freshman (0.33 to -4.36 logits), sophomore (0.72 to -4.36 logits), junior (0.08 to -4.36 logits) and senior (0.08 to -4.36 logits). As with the other two CPAAS Involvement sub-scales, a slight floor effect surfaced for the Expressive (Public Voice) Activities sub-scale, as over 10% of students at each level of academic standing indicated not being involved with any expressive activities (12.6%, 11.2%, 15.0 %, and 16.1%, respectively). With the extreme minimum scores included, the average expressive activity measures (-2.82, -2.84, -3.08, and -3.01) were substantially lower than the average item measure (set at 0). This, again, indicated inadequate alignment between the activities on the Expressive (Public Voice) Activities sub-scale and the sample. More specifically, students were shown to be infrequently (on average) involved in these activities. A comparison of the four Expressive (Public Voice) activities did not illuminate any development in students’ positions on the scale over time.

Overall mean model fit was mediocre, as the average INFIT and OUTFIT statistics for both person and item estimates were higher than the desired mean-square value of 1.4 for the sophomore, junior, and senior CPAAS administration. The freshman year fit statistics were acceptable, with INFIT and OUTFIT mean-square values of 1.20 and 1.04 for item estimates and 1.00 (each, respectively) for person estimates. As such,

the results once again suggested unexpected variation in the data for estimating both person and item locations. However, the item separation and reliability were suitable for each of the data collections, indicating that the item difficulties for the Expressive (Public Voice) activities were being adequately distinguished across freshman (2.74, 0.88), sophomore (2.58, 0.87), junior (2.30, 0.84), and senior (2.28, 0.84) year. The person separation and reliability were below the standard values of 2.0 and 0.85 during each of the four data collections. As seen in Table 4.6, the low person separation and reliability (each, respectively) for the freshman (1.01, 0.50), sophomore (1.44, 0.67), junior (1.26, 0.61), and senior (1.38, 0.66) estimates exposed potential inadequacies in the sub-scale's ability to differentiate between the participation rates of students in expressive activities.

Table 4.6 Summary Rasch Statistics for Expressive (Public Voice) Activities

Academic Standing	Summary of item estimates (N = 11 items)			Summary of person estimates		
	Location	INFIT (MNSQ)	OUTFIT (MNSQ)	Location	INFIT (MNSQ)	OUTFIT (MNSQ)
<i>Freshman (N=118, 17 minimum extreme scores)</i>						
Mean	0.00	1.20	1.04	-2.82	1.00	1.00
SD	0.63	0.67	0.46	1.33	0.78	0.90
Separation		2.74			1.01	
Reliability		0.88			0.50	
<i>Sophomore (N=119, 15 minimum scores)</i>						
Mean	0.00	1.92	1.41	-2.84	1.33	1.40
SD	0.63	1.28	0.85	1.52	0.94	1.18
Separation		2.58			1.44	
Reliability		0.87			0.67	
<i>Junior (N=108, 19 minimum scores)</i>						
Mean	0.00	2.05	1.59	-3.08	1.52	1.59
SD	0.63	1.87	1.35	1.54	1.08	1.38
Separation		2.30			1.26	
Reliability		0.84			0.61	
<i>Senior (N=99, 19 minimum scores)</i>						
Mean	0.00	2.05	1.48	-3.01	1.46	1.48
SD	0.63	1.35	0.80	1.59	1.05	1.38
Separation		2.28			1.38	
Reliability		0.84			0.66	

* Minimum extreme scores were computed in the mean person locations.

ATTITUDES

The item hierarchy for the Internal Service Efficacy sub-scale, presented in Appendix G, Figure 1, showed a rational progression from easier to endorse items that required less commitment to these ideals to more controversial items that required much higher levels of dedication. The thirteen items on the sub-scale ranged from the agreeable “If I choose to participate in community service in the future, I will be able to make a meaningful contribution” (-0.72 logits) to the more disputable “I feel I have the ability to make a difference in my community” (0.73 logits). The range of person estimates (excluding extreme scores) for Internal Service Efficacy fluctuated during students’ time at college as follows: freshman (6.66 to -1.40 logits), sophomore (6.66 to -3.21 logits), junior (6.66 to -2.12 logits) and senior (6.66 to -1.98 logits). The variable maps revealed no evidence of a ceiling effect, with only a trivial proportion of students agreeing to all of the items on the sub-scale across their four years in college (1.5%, 3.0%, 3.9%, and 1.7%, respectively). However, the average attitudinal measures (2.57, 2.14, 2.17, and 1.84, respectively) contrasted to the average item measure (set at 0) indicated that the attitudes expressed in the Internal Service Efficacy sub-scale were targeted somewhat too low for the sample, as students were more positive towards the items than expected. A comparison of the four variable maps created for each of the data collections suggested a potential decrease in students’ attitudes over time, with a perceptible decline in students’ person estimates for Internal Service Efficacy from freshman to senior year.

The mean model fit was good overall, with acceptable INFIT and OUTFIT mean-square values for both item and person estimates across the four data collections. Additionally, both item and person separation and reliability emerged as strong across students' four year college experience. In particular, there was more than satisfactory differentiation between the item difficulties on the Internal Service Efficacy sub-scale for freshman (2.72, 0.88), sophomores (2.72, 0.88), juniors (2.78, 0.89), and seniors (2.63, 0.87). The person separation and reliability was also robust at each level of academic standing, indicating that the sub-scale was sufficiently distinguishing between students' commitment to these attitudes. The values were as follows: freshman (2.38, 0.85), sophomores (2.35, 0.85), juniors (2.51, 0.86), and seniors (2.68, 0.88). See Table 4.7.

Table 4.7 Summary Rasch Statistics for Internal Service Efficacy

Academic Standing	Summary of item estimates (N = 13 items)			Summary of person estimates		
	Location	INFIT (MNSQ)	OUTFIT (MNSQ)	Location	INFIT (MNSQ)	OUTFIT (MNSQ)
<i>Freshman (N=137, 2 maximum extreme scores)</i>						
Mean	0.00	1.14	1.11	2.50	1.12	1.11
SD	0.51	0.39	0.40	1.59	0.80	0.81
Separation		2.72			2.38	
Reliability		0.88			0.85	
<i>Sophomore (N=129, 4 maximum extreme scores)</i>						
Mean	0.00	1.12	1.10	2.14	1.11	1.10
SD	0.51	0.38	0.39	1.54	0.88	0.87
Separation		2.72			2.35	
Reliability		0.88			0.85	
<i>Junior (N=123, 5 maximum extreme scores)</i>						
Mean	0.00	0.95	0.95	2.17	0.95	0.95
SD	0.51	0.34	0.33	1.56	0.72	0.72
Separation		2.78			2.51	
Reliability		0.89			0.86	
<i>Senior (N=116, 2 maximum extreme scores)</i>						
Mean	0.00	1.15	1.11	1.84	1.11	1.10
SD	0.51	0.41	0.44	1.70	0.96	0.97
Separation		2.63			2.68	
Reliability		0.87			0.88	

With regard to the Internal Political Efficacy, a reasonable hierarchy of items emerged on the variable maps, as seen in Appendix G, Figure 2. The nine items on the sub-scale spread along a logical succession from “In the future, I will be able to find political service opportunities which are relevant to my interests and needs” (-0.75 logits) as the most neutral attitude to “By participating in political activities, I can help people to help themselves” as the most intense attitude (0.60 logits). The person estimates (with extreme scores eliminated) for Internal Political Efficacy ranged over students’ four years on-campus as follows: freshman (7.03 to -4.96 logits), sophomore (7.03 to -5.47 logits), junior (7.03 to -3.33 logits) and senior (7.03 to -4.55 logits). There was no evidence of a ceiling effect for the Internal Political Efficacy sub-scale, with an inconsequential proportion of students strongly agreeing to all of the attitudes on this sub-scale during students’ time on-campus (2.2%, 3.0%, 4.7%, and 0.9%, respectively). A comparison of the average attitudinal measures (1.81, 1.44, 1.43, and 1.25, respectively) to the average item measure (set at 0) suggested slight mis-targeting between the items on the Internal Political Efficacy sub-scale and the sample. In particular, students, on average, were more supportive of these attitudes than expected. A visual analysis of the longitudinal variable maps did not reveal any clear changes in students’ political self-efficacy attitudes during their college experience.

Overall, the model was well-fitting to the sample, as the average INFIT and OUTFIT statistics for both person and item estimates were well within the acceptable range of mean-square values of 0.7 to 1.4 for all of the CPAAS administrations. The person separation and reliability were also suitable for each of the data collections,

indicating that the sub-scale was adequately differentiating between the strength of students' attitudes towards Internal Political Efficacy. More specifically, the person separation and reliability values exceeded the standard values of 2.0 and 0.85 for freshman (3.10, 0.91), sophomores (2.83, 0.89), juniors (2.91, 0.89), and seniors (3.27, 0.91). The item separation and reliability, on the other hand, were marginal, suggesting that the difficulties of the items might be insufficiently distinguished on the sub-scale. As seen in Table 4.8, the item separation and reliability estimates were a little lower than desired across the freshman (1.72, 0.75), sophomore (1.88, 0.78), junior (1.74, 0.75), and senior (1.78, 0.76) years.

Table 4.8 Summary Rasch Statistics for Internal Political Efficacy

Academic Standing	Summary of item estimates (N = 9 items)			Summary of person estimates		
	Location	INFIT (MNSQ)	OUTFIT (MNSQ)	Location	INFIT (MNSQ)	OUTFIT (MNSQ)
<i>Freshman (N=134, 3 maximum extreme scores)</i>						
Mean	0.00	1.14	1.11	1.81	1.16	1.16
SD	0.51	0.39	0.40	2.52	1.14	1.15
Separation	1.72			3.10		
Reliability	0.75			0.91		
<i>Sophomore (N=128, 4 maximum extreme scores)</i>						
Mean	0.00	0.92	0.91	1.44	0.90	0.91
SD	0.36	0.25	0.25	2.14	0.79	0.80
Separation	1.88			2.83		
Reliability	0.78			0.89		
<i>Junior (N=121, 6 maximum extreme scores)</i>						
Mean	0.00	1.00	1.00	1.43	0.98	0.99
SD	0.36	0.41	0.41	2.23	0.93	0.95
Separation	1.74			2.91		
Reliability	0.75			0.89		
<i>Senior (N=116, 1 maximum extreme scores)</i>						
Mean	0.00	0.82	0.85	1.25	0.84	0.84
SD	0.36	0.33	0.36	2.47	0.80	0.81
Separation	1.78			3.27		
Reliability	0.76			0.91		

The Civic Accountability sub-scale resulted in a sensible ladder of attitudes on the variable maps, with the fourteen items spanning from -1.09 to 1.16 logits. These variable

maps, displayed in Appendix G, Figure 3, progressed from routine endorsement of “It is important that equal opportunity be available to all people” (-1.09 logits) to the infrequent support for “I don't have a lot to learn about local and national events” (1.16 logits).

There were no extreme scores on the sub-scale, and thus no possibility of either a ceiling or a floor effect. The students' person estimates were spread out consistently throughout their college experience, with ranges as follows: freshman (2.69 to -0.46 logits), sophomore (2.47 to -0.12 logits), junior (2.69 to -0.50 logits) and senior (3.29 to -0.38 logits). The average attitudinal measures (1.09, 1.04, 1.12, and 1.21) were moderately comparable to the average item measure (set at 0), indicating that the items on the Civic Accountability sub-scale mostly aligned with the sample. A comparison of the four Civic Accountability variable maps illuminated possible developments in students' positions on the scale over time. More specifically, there was perceptible movement up the scale between students' sophomore and senior years.

As shown in Table 4.9, the model fit very well to the sample, with mean INFIT and OUTFIT mean-square values for item and person estimates close to the expected value of 1.0 across the four data collections. The item separation and reliability were also more than acceptable across students' four years in college, with values much higher than the conventional cut-offs of 2.0 for item separation and 0.85 for reliability. As such, the sub-scale was shown to readily distinguish between the strength of particular attitudes towards Civic Accountability for freshman (4.87, 0.96), sophomores (4.81, 0.96), juniors (4.72, 0.96), and seniors (4.37, 0.95). The person separation and reliability were less robust, as these statistics did not meet the critical values at each level of academic

standing. These results called into question the ability of the sub-scale to accurately differentiate between students' attitudes across their four years in college.

Table 4.9 Summary Rasch Statistics for Civic Accountability

Academic Standing	Summary of item estimates (N = 14 items)			Summary of person estimates		
	Location	INFIT (MNSQ)	OUTFIT (MNSQ)	Location	INFIT (MNSQ)	OUTFIT (MNSQ)
<i>Freshman (N=137)</i>						
Mean	0.00	0.98	1.00	1.09	1.06	1.00
SD	0.57	0.42	0.44	0.59	0.58	0.51
Separation	4.87			1.19		
Reliability	0.96			0.59		
<i>Sophomore (N=132)</i>						
Mean	0.00	1.02	1.02	1.04	1.08	1.02
SD	0.57	0.43	0.45	0.56	0.63	0.56
Separation	4.81			1.10		
Reliability	0.96			0.55		
<i>Junior (N=128)</i>						
Mean	0.00	0.93	0.96	1.12	1.02	0.96
SD	0.57	0.42	0.45	0.64	0.59	0.53
Separation	4.72			1.34		
Reliability	0.96			0.64		
<i>Senior (N=118)</i>						
Mean	0.00	1.00	1.01	1.21	1.07	1.01
SD	0.57	0.41	0.45	0.70	0.64	0.58
Separation	4.37			1.42		
Reliability	0.95			0.67		

The item hierarchy for the nine items on the Tolerance of Diversity sub-scale, shown in the variables maps in Appendix G, Figure 4, presented a realistic continuum of attitudes towards the benefits and challenges associated with differences. Indeed, “I enjoy meeting people who come from backgrounds very different from my own” (-1.10 logits) surfaced as the easiest item for students to approve of, while “I spend a lot of time with people outside my immediate circle of friends” (0.67 logits) required the strongest levels of commitment to the ideals of Tolerance of Diversity. Since there was only one instance of a student receiving a maximum extreme score for their attitudes on this sub-scale, there was no presence of a ceiling effect. The range of person estimates for

Tolerance of Diversity was as follows: freshman (3.96 to -1.49 logits), sophomore (3.28 to -0.85 logits), junior (3.78 to -1.02 logits) and senior (4.57 to -1.20 logits). The average attitudinal measures (1.21, 1.00, 1.10, and 0.97, respectively) contrasted to the average item measure (set at 0) indicated that the attitudes on this sub-scale were somewhat well targeted for the sample. A comparison of the four variable maps created for each of the data collections revealed no visible shifts in students' person estimates for attitudes towards Tolerance of Diversity over time.

Overall mean model fit was good, as the INFIT and OUTFIT statistics for both person and item estimates were well within conventional ranges. As with the Civic Accountability sub-scale, the item separation and reliability for the Tolerance of Diversity sub-scale were strong for each of the data collections, whereas the person separation and reliability fell short of the standard desired values of 2.0 and 0.85 at each level of academic standing. These results indicated that the difficulties of the Tolerance of Diversity items were being effectively distinguished between across freshman (4.46, 0.95), sophomore (4.73, 0.96), junior (4.71, 0.96), and senior (4.47, 0.95) years. As seen in Table 4.10, the slightly low person separation and reliability statistics for the freshman (1.28, 0.62), sophomore (1.33, 0.64), junior (1.42, 0.67), and senior (1.57, 0.71) sub-scale scores exposed potential inconsistencies in the sub-scale's ability to differentiate between the attitudes towards diversity of the students. See Table 4.10.

Table 4.10 Summary Rasch Statistics for Tolerance of Diversity

Academic Standing	Summary of item estimates (N = 9 items)			Summary of person estimates		
	Location	INFIT (MNSQ)	OUTFIT (MNSQ)	Location	INFIT (MNSQ)	OUTFIT (MNSQ)
<i>Freshman (N=137)</i>						
Mean	0.00	0.91	0.91	1.21	0.95	0.93
SD	0.59	0.11	0.11	0.96	0.83	0.83
Separation		4.46			1.28	
Reliability		0.95			0.62	
<i>Sophomore (N=132)</i>						
Mean	0.00	1.04	1.06	1.00	1.06	1.06
SD	0.59	0.20	0.21	0.85	0.72	0.75
Separation		4.73			1.33	
Reliability		0.96			0.64	
<i>Junior (N=127, 1 maximum extreme score)</i>						
Mean	0.00	0.94	0.94	1.10	0.96	0.94
SD	0.59	0.20	0.21	0.87	0.60	0.59
Separation		4.71			1.42	
Reliability		0.96			0.67	
<i>Senior (N=117)</i>						
Mean	0.00	0.98	1.00	0.97	1.02	1.00
SD	0.59	0.23	0.26	0.96	0.73	0.72
Separation		4.47			1.57	
Reliability		0.95			0.71	

For Internal Civic Efficacy, a reasonable hierarchy of items emerged on the variable maps, as seen in Appendix G, Figure 5. The eleven items on the sub-scale spread along a logical succession from the rarely disputed “I am interested in seeking information about local or national issues” (-1.17 logits) to the more divisive “I unselfishly contribute to my community” (0.84 logits). The person estimates for Internal Civic Efficacy narrowed following students’ freshman year scores, with values ranging over students’ four years on-campus as follows: freshman (5.08 to -1.90 logits), sophomore (3.80 to -1.26 logits), junior (3.80 to -1.26 logits) and senior (3.80 to -1.90 logits). With a complete lack of extreme scores from all of the data collections, there was no ceiling and/or floor effect for the Internal Civic Efficacy sub-scale. A comparison of

the average attitudinal measures (1.25, 1.09, 1.11, and 0.97, respectively) to the average item measure (set at 0) suggested reasonable alignment between the items on the sub-scale and the sample. A visual analysis of the longitudinal variable maps did not suggest the presence of any development in students' attitudes towards their civic self-efficacy during their college experience.

The mean model fit very well to the sample overall, with near-expectation (1.0) average INFIT and OUTFIT statistics for both person and item estimates for all of the CPAAS administrations. The item separation and reliability also emerged as more than suitable across students' four year college experience, with satisfactory differentiation between the item difficulties on the Internal Civic Efficacy sub-scale for freshman (4.05, 0.94), sophomores (3.98, 0.94), juniors (4.08, 0.94), and seniors (3.86, 0.94). As seen in Table 4.11, the results for the item separation and reliability were mixed, with borderline acceptable item separation and slightly lower than desired reliability. Across students' college experience, the statistics were as follows: freshman (1.98, 0.80), sophomore (1.96, 0.79), junior (2.11, 0.82), and senior (2.25, 0.83) years. These results suggested that the Internal Civic Efficacy sub-scale might not consistently distinguish between the intensity of students' attitudes with regard to these topics.

Table 4.11 Summary Rasch Statistics for Internal Civic Efficacy

Academic Standing	Summary of item estimates (N = 11 items)			Summary of person estimates		
	Location	INFIT (MNSQ)	OUTFIT (MNSQ)	Location	INFIT (MNSQ)	OUTFIT (MNSQ)
<i>Freshman (N=137)</i>						
Mean	0.00	1.00	0.98	1.25	1.00	0.98
SD	0.53	0.21	0.21	1.09	0.61	0.59
Separation		4.05			1.98	
Reliability		0.94			0.80	
<i>Sophomore (N=132)</i>						
Mean	0.00	1.05	1.05	1.09	1.06	1.05
SD	0.53	0.25	0.25	1.07	0.64	0.63
Separation		3.98			1.96	
Reliability		0.94			0.79	
<i>Junior (N=128)</i>						
Mean	0.00	0.89	0.89	1.11	0.91	0.89
SD	0.53	0.17	0.17	1.11	0.54	0.52
Separation		4.08			2.11	
Reliability		0.94			0.82	
<i>Senior (N=117)</i>						
Mean	0.00	0.94	0.93	0.97	0.93	0.93
SD	0.53	0.22	0.21	1.15	0.58	0.58
Separation		3.86			2.25	
Reliability		0.94			0.83	

Repeated Measures ANOVA

Following the calculation of Rasch person estimates for the students' scores on the three CPAAS Involvement and five CPAAS Civic Engagement sub-scales, a series of two (gender) by two (minority status) by four (academic standing) RMANOVA were performed to test the significance of the group mean differences. These statistical tests investigated how involvement and attitudes developed over time in college, taking into consideration any statistically significant differences that may be present between female and male students, along with White and Minority/International students. Therefore, the RMANOVA were conducted to detect the presence of any statistically significant growth as proposed in the first two research questions in this study:

- 1) How does students' civic engagement involvement develop and change during the undergraduate years?
- 2) How do students' civic engagement attitudes (service, political, and civic efficacy, civic accountability and tolerance of diversity) develop and change during the undergraduate years?

The criterion variables were students' Rasch person estimates on the eight sub-scales of the CPAAS Involvement and Civic Engagement scales.

INVOLVEMENT

A RMANOVA revealed no statistically significant differences in involvement rates in Political Activities between the four data collections across students' four years on-campus, $F(3, 321) = 1.97, p=.118, \eta^2=.02$. Additionally, neither significant main nor interaction effects emerged for the between-subjects factors of gender and minority status with regard to Political Activities. See Table 4.12.

Table 4.12 RMANOVA for Involvement in Political Activities

	df	MS	F	<i>p</i>	η^2
<i>Within-Subjects</i>					
Political Activities	3	1.92	1.97	0.118	0.018
Political Activities * Minority Status	3	2.46	2.53	0.058	0.004
Political Activities * Gender	3	0.41	0.42	0.738	0.023
Political Activities * Minority Status * Gender	3	0.72	0.74	0.532	0.007
Error (Political Activities)	321	0.97			
<i>Between-Subjects</i>					
Minority Status	1	0.06	0.01	0.911	0.000
Gender	1	0.00	0.00	0.985	0.000
Minority Status * Gender	1	4.55	0.91	0.343	0.008
Error	107	5.01			

These results indicated that students' mean involvement did not significantly change during their time at college, with mean averages as follows: freshman ($M= -2.58$,

$SD=1.35$) to sophomore ($M= -2.68, SD= 1.42$) to junior ($M=-2.59, SD=1.37$) to senior year ($M= -2.32, SD=1.46$). Likewise, students' level of involvement in political activities did not significantly vary according to gender or minority status. Figure 4.2 depicts the students' scores on the Political Activities sub-scale over time.

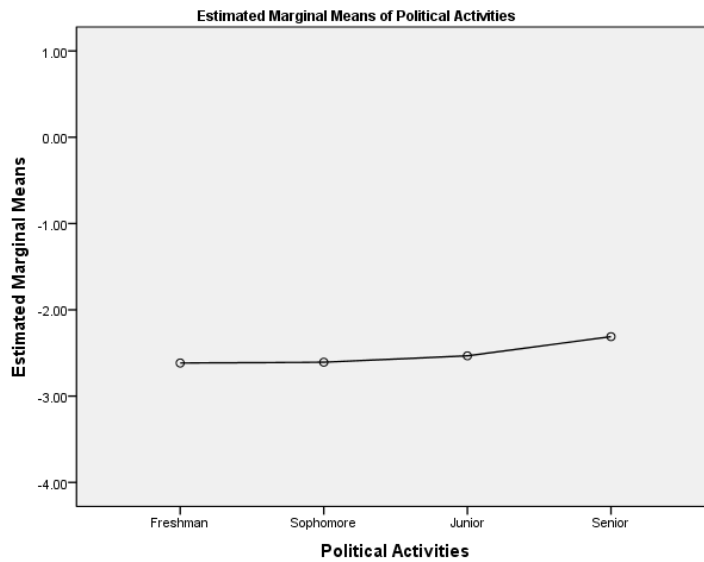


Figure 4.2. Involvement in Political Activities over Time

With regard to Civic Activities, there were significant main effects for academic standing, $F(3, 327) = 2.90, p < .05, \eta^2 = .026$, and gender, $F(1, 109) = 8.94, p < .01, \eta^2 = .076$. The test of within-subjects contrasts revealed a cubic relationship between academic standing and participation rates in Civic Activities, $F(1, 109) = 4.52, p < .05$. These results indicated that involvement in Civic Activities significantly varied across students' time on-campus. Additionally, the estimated marginal means for gender showed that female students ($M= -1.41$) participated significantly more in Civic Activities across their four years at college than male students ($M= -2.13$). As seen in Table 4.13, the effect size

for the between-subjects gender difference suggested that the average female student participated in Civic Activities at greater rates than 57.6% of male students.

Table 4.13 RMANOVA for Involvement in Civic Activities

	df	MS	F	p	η^2
<i>Within-Subjects</i>					
Civic Activities	3	3.66	2.90	0.035*	0.026
Civic Activities * Minority Status	3	0.13	0.10	0.958	0.012
Civic Activities * Gender	3	1.69	1.34	0.262	0.001
Civic Activities * Minority Status * Gender	3	0.37	0.30	0.828	0.003
Error (Civic Activities)	327	1.26			
<i>Between-Subjects</i>					
Minority Status	1	0.65	0.12	0.734	0.001
Gender	1	50.17	8.94	0.003**	0.076
Minority Status * Gender	1	0.17	0.03	0.862	0.000
Error	109	5.61			

* Significant at the 0.05-level.

** Significant at the 0.01-level.

Students' participation rates fluctuated over their time at college, with steady involvement freshman ($M=-1.63$) to sophomore year ($M=-1.60$), a drop in involvement between sophomore and junior year ($M=-2.02$), and a slight rebound in the senior year ($M=-1.84$). See Figure 4.3.

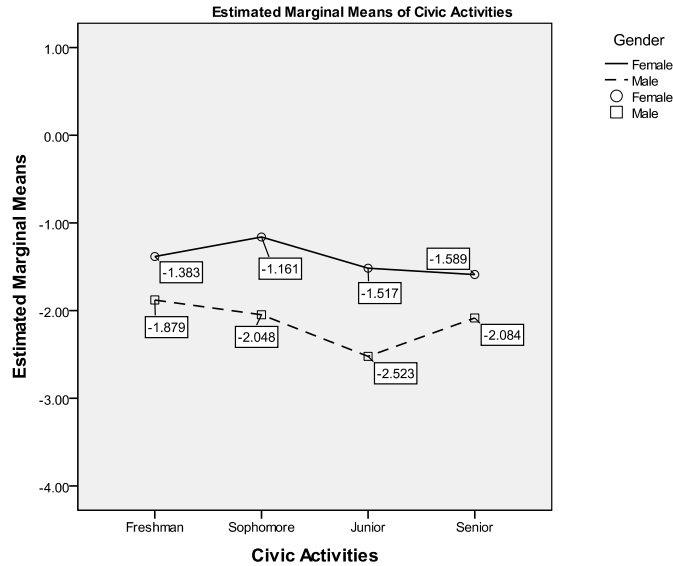


Figure 4.3. Involvement in Civic Activities over Time

Since Mauchly’s Test of Sphericity was significant ($W=.850, \chi^2=17.529, p<.05$) for the Expressive (Public Voice) Activities sub-scale scores, the Greenhouse-Geisser estimates were interpreted to correct for this violation of sphericity. As seen in Table 4.14, the interaction and main effects within students (academic standing, $F(2.71, 295.33) = 1.53, p=.210, \eta^2=.014$) and between students (minority status, $F(1, 109) = .06, p=.806, \eta^2=.001$ and gender, $F(1, 109) = 2.77, p=.099, \eta^2=.025$) all emerged as statistically non-significant for Expressive (Public Voice) Activities.

Table 4.14 RMANOVA for Involvement in Expressive (Public Voice) Activities

	df	MS	F	p	η^2
<i>Within-Subjects</i>					
Expressive (Public Voice) Activities	2.71	1.70	1.53	0.210	0.014
Expressive (Public Voice) Activities * Minority Status	2.71	0.17	0.16	0.910	0.009
Expressive (Public Voice) Activities * Gender	2.71	1.15	1.04	0.372	0.001
Expressive (Public Voice) Activities * Minority Status * Gender	2.71	0.26	0.23	0.856	0.002
Error (Expressive (Public Voice) Activities)	295.33	1.11			
<i>Between-Subjects</i>					
Minority Status	1	0.38	0.06	0.806	0.001
Gender	1	17.40	2.77	0.099	0.025
Minority Status * Gender	1	8.18	1.30	0.257	0.012
Error	109	6.29			

These results indicated that students' involvement in Expressive (Public Voice) Activities did not significantly change throughout their college experience, nor did students' participation levels significantly vary between male and female or White and Minority/International students. See Figure 4.4.

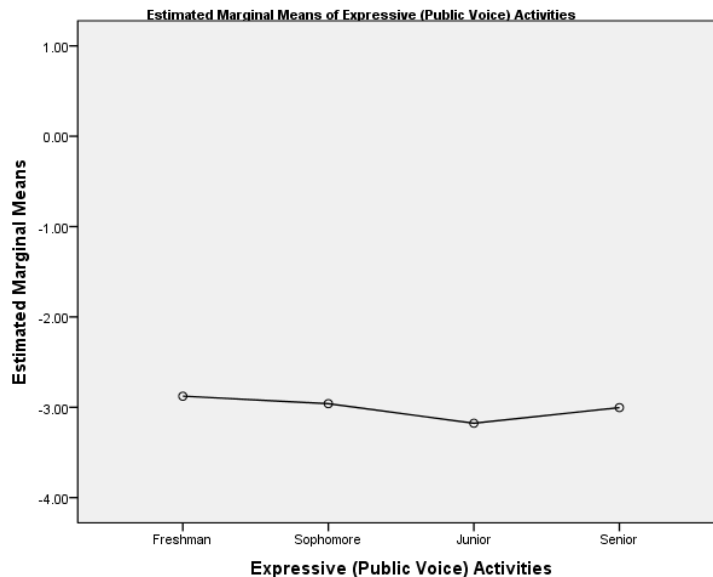


Figure 4.4. Involvement in Expressive (Public Voice) Activities over Time

ATTITUDES

RMANOVAs were also conducted to investigate the existence of any development in students' civic engagement attitudes over time. With regard to Internal Service Efficacy, a significant main effect emerged for academic standing, $F(3, 330) = 4.58, p < .01, \eta^2 = .040$. The test of within-subjects contrasts revealed a significant linear trend for academic standing and attitudes towards Internal Service Efficacy, $F(1, 110) = 8.06, p < .01$. The interaction and main effects were non-significant between students of differing genders, $F(1, 110) = 2.58, p = .111, \eta^2 = .023$, and minority status, $F(1, 110) = 4.85, p = .047, \eta^2 = .005$. See Table 4.15.

Table 4.15 RMANOVA for Attitudes towards Internal Service Efficacy

	df	MS	F	p	η^2
<i>Within-Subjects</i>					
Internal Service Efficacy	3	5.84	4.58	0.004**	0.040
Internal Service Efficacy * Minority Status	3	0.61	0.48	0.697	0.004
Internal Service Efficacy * Gender	3	0.72	0.57	0.637	0.005
Internal Service Efficacy * Minority Status * Gender	3	1.52	1.20	0.311	0.011
Error (Internal Service Efficacy)	330	1.27			
<i>Between-Subjects</i>					
Minority Status	1	4.85	0.52	0.472	0.005
Gender	1	24.03	2.58	0.111	0.023
Minority Status * Gender	1	0.08	0.01	0.929	0.000
Error	110	9.31			

* Significant at the 0.05-level.

** Significant at the 0.01-level.

In order to investigate the particular developments in students' Internal Service Efficacy attitudes during their college experience, follow-up independent sample t-tests with a Bonferroni adjustment were conducted to explore students' estimated marginal means during their freshman, sophomore, junior, and senior years. As seen in Figure 4.5, these independent pairwise comparisons resulted in significant differences in students'

attitudes between their freshman and senior year scores, $p < .05$, as well as junior and senior year scores, $p < .05$. More specifically, students' estimated marginal means were as follows: freshman ($M = 2.48$), sophomore ($M = 2.28$), junior ($M = 2.38$), and senior ($M = 1.92$). These results indicated that students' attitudes towards Internal Service Efficacy significantly weakened over time on-campus, with the lowest scores on the sub-scale being provided by students' responses during their senior year.

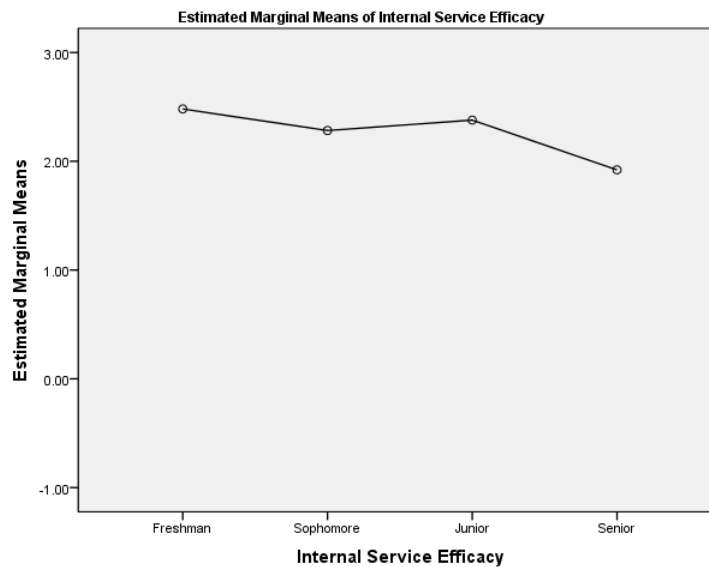


Figure 4.5. Attitudes towards Internal Service Efficacy over Time

For Internal Political Efficacy, a significant interaction effect emerged between students' academic standing and their minority status, $F(2.69, 292.68) = 3.45, p < .05$, $\eta^2 = .031$, with the Greenhouse-Geisser estimates being interpreted due to a significant Mauchly's Test of Sphericity ($W = .828, \chi^2 = 20.319, p < .01$). Further analysis of the tests of within-subjects contrasts revealed a linear relationship between these variables, $F(1, 109) = 7.52, p < .01$. No other interaction and/or main effects resulted in statistically significant

results for differences between students' Internal Political Efficacy scores. See Table 4.16.

Table 4.16 RMANOVA for Attitudes towards Internal Political Efficacy

	df	MS	F	p	η ²
<i>Within-Subjects</i>					
Internal Political Efficacy	2.69	3.63	1.12	0.337	0.010
Internal Political Efficacy * Minority Status	2.69	11.13	3.45	0.021*	0.031
Internal Political Efficacy * Gender	2.69	3.99	1.24	0.297	0.011
Internal Political Efficacy * Minority Status * Gender	2.69	1.43	0.44	0.700	0.004
Error (Internal Political Efficacy)	292.68	3.23			
<i>Between-Subjects</i>					
Minority Status	1	1.61	0.09	0.771	0.001
Gender	1	0.77	0.04	0.841	0.000
Minority Status * Gender	1	15.87	0.84	0.361	0.008
Error	109	18.84			

* Significant at the 0.05-level.

With regard to the specific differences in Internal Political Efficacy attitudes, follow-up pairwise comparisons with Bonferroni adjustments did not reveal any significant development in Minority/International students' scores over their four years on-campus. For White students, however, significant differences ($p < .01$) emerged between their freshman and senior year scores on this sub-scale. In particular, White students' support of their Internal Political Efficacy significantly diminished between their freshman year ($M=2.09$) and their senior year ($M=1.05$). These results indicated that while White students' Internal Political Efficacy attitudes grew significantly weaker during their college experience, Minority/International students did not demonstrate any significant evolution over time. See Figure 4.6.

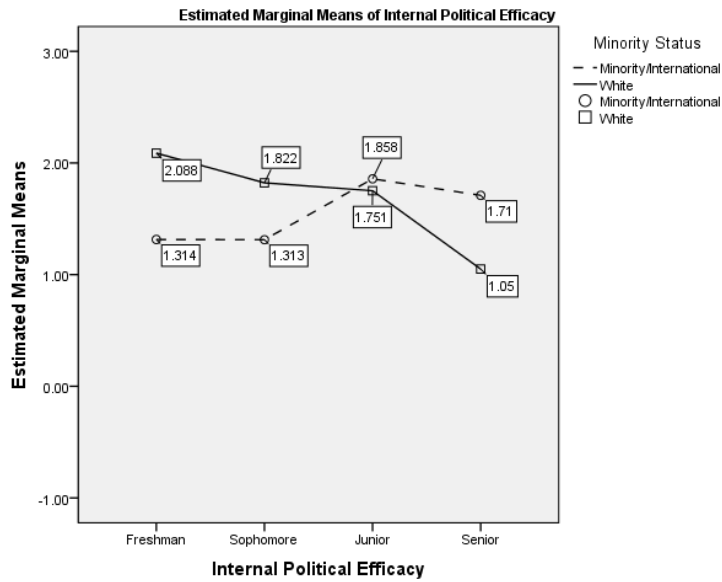


Figure 4.6. Attitudes towards Internal Political Efficacy over Time

As seen in Table 4.17, the RMANOVA for Civic Accountability revealed significant main effects for academic standing, $F(2.36, 259.69) = 4.20, p < .05, \eta^2 = .037$, and gender, $F(1, 110) = 6.04, p < .05, \eta^2 = .052$. Since Mauchly's Test of Sphericity was significant ($W = .674, \chi^2 = 42.91, p < .01$) for Civic Accountability sub-scale scores, the Greenhouse-Geisser estimates were interpreted to correct for this violation of the sphericity assumption. In particular, the effect of academic standing on Civic Accountability attitudes emerged as quadratic, $F(1, 110) = 4.73, p < .05$. These results therefore indicated that endorsement of Civic Accountability attitudes changed significantly across students' four years on-campus. In addition, the estimated marginal means for gender indicated that female students ($M = 1.19$) expressed significantly stronger Civic Accountability attitudes across their entire college experience than male

students ($M= 0.93$). The effect size for the between-subjects main effect for gender suggested that the average female student was significantly more committed to Civic Accountability attitudes than 55.2% of male students.

Table 4.17 RMANOVA for Attitudes towards Civic Accountability

	df	MS	F	p	η^2
<i>Within-Subjects</i>					
Civic Accountability	2.36	1.17	4.20	0.011*	0.037
Civic Accountability * Minority Status	2.36	0.43	1.55	0.210	0.014
Civic Accountability * Gender	2.36	0.43	1.56	0.209	0.014
Civic Accountability * Minority Status * Gender	2.36	0.28	1.02	0.371	0.009
Error (Civic Accountability)	259.69	0.28			
<i>Between-Subjects</i>					
Minority Status	1	1.21	1.17	0.282	0.011
Gender	1	6.27	6.04	0.016*	0.052
Minority Status * Gender	1	2.70	2.60	0.110	0.023
Error	110	1.04			

* Significant at the 0.05-level.

The pairwise comparisons showed that students' attitudes towards Civic Accountability significantly increased over time at college, with significant development ($p<.05$) between sophomore ($M=0.96$) and senior year ($M=1.19$). The quadratic trend for this main effect can be seen in Figure 4.7, with a slight decrease between freshman ($M=1.03$) and sophomore year, and then positive growth from sophomore to junior ($M=1.05$) to senior year.

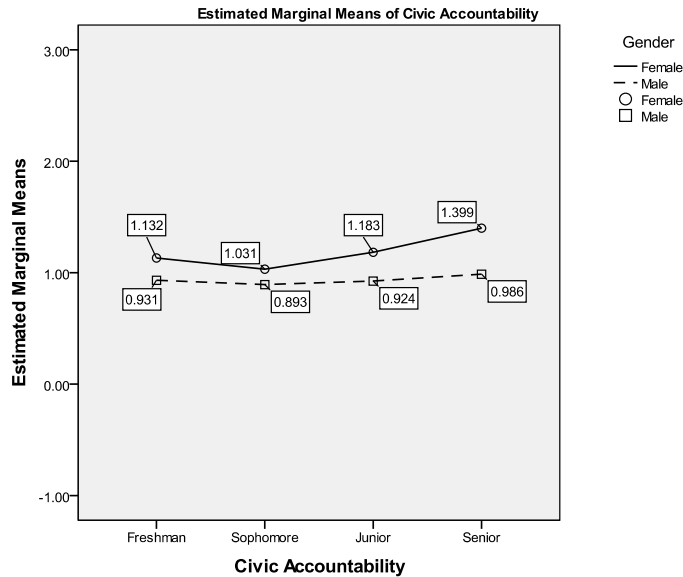


Figure 4.7. Attitudes towards Civic Accountability over Time

With regard to Tolerance of Diversity, a significant interaction effect emerged between students’ academic standing and gender, $F(2.81, 305.92) = 4.06, p < .01, \eta^2 = .036$, with the Greenhouse-Geisser estimates being interpreted due to a significant Mauchly’s Test of Sphericity ($W = .893, \chi^2 = 12.237, p < .05$). An examination of the tests of within-subjects contrasts revealed a linear relationship between these variables, $F(1, 109) = 7.89, p < .01$. While a significant main effect was also present for academic standing, $F(2.81, 305.92) = 5.53, p < .01, \eta^2 = .048$, the interaction effect was further investigated as it subsumed the significant finding of the main effect. Neither additional interaction nor main effects emerged as statistically significant for minority status on the Tolerance of Diversity sub-scale scores. See Table 4.18.

Table 4.18 RMANOVA for Attitudes towards Tolerance of Diversity

	df	MS	F	<i>p</i>	η^2
<i>Within-Subjects</i>					
Tolerance of Diversity	2.81	2.13	5.53	0.001**	0.048
Tolerance of Diversity * Minority Status	2.81	0.91	2.36	0.076	0.021
Tolerance of Diversity * Gender	2.81	1.56	4.06	0.009**	0.036
Tolerance of Diversity * Minority Status * Gender	2.81	0.61	1.59	0.195	0.014
Error (Tolerance of Diversity)	305.92	0.39			
<i>Between-Subjects</i>					
Minority Status	1	0.43	0.18	0.677	0.002
Gender	1	9.00	3.66	0.058	0.033
Minority Status * Gender	1	0.88	0.36	0.552	0.003
Error	109	2.46			

* Significant at the 0.05-level.

** Significant at the 0.01-level.

In order to explore the particular linear relationship between academic standing and gender with regard to Tolerance of Diversity attitudes, the follow-up pairwise comparisons were explored. As seen in Figure 4.8, male students' attitudes towards of Tolerance of Diversity statistically significantly weakened following their freshman year, such that significant differences ($p < .05$, each, respectively) emerged between their freshman year sub-scale scores ($M_M = 1.29$) and sophomore ($M_M = 0.76$), junior ($M_M = 0.91$), and senior years ($M_M = 0.78$). As a result of this significant drop, male and female students' support for attitudes representing a Tolerance of Diversity significantly differed ($p < .05$, respectively) in their sophomore ($M_F = 1.11$), junior ($M_F = 1.37$), and senior years ($M_F = 1.24$). More specifically, the effect size for the academic standing by gender interaction effect suggested that the average female student was significantly more committed to Tolerance of Diversity attitudes than 53.8% of male students during sophomore year, 54.6% male students in junior year, and 55.3% of male students in senior year. These results indicated that male students' endorsement of Tolerance of

Diversity significantly lessened after their first year at college, while female students' perspectives, though consistently more supportive than male students, did not significantly develop over time.

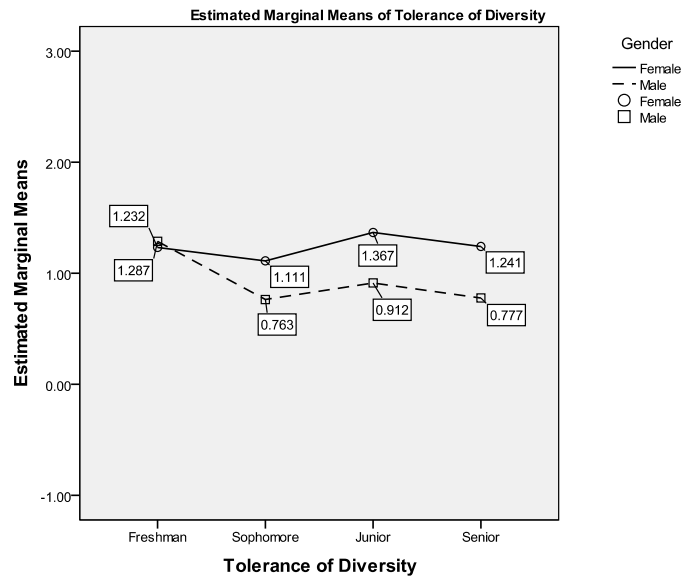


Figure 4.8. Attitudes towards Tolerance of Diversity over Time

Students' attitudes towards Internal Civic Efficacy did not significantly change across students' four years at college, as no statistically significant differences were revealed through the RMANOVA on this sub-scale. Indeed, students' attitudes did not develop significantly over time, $F(3, 327) = 1.93, p=.124, \eta^2=.017$, nor did their perspectives significantly vary according to their gender, $F(1, 109) = 1.95, p=.166, \eta^2=.018$, or minority status, $F(1, 109) = 0.21, p=.652, \eta^2=.002$. See Table 4.19.

Table 4.19 RMANOVA for Attitudes towards Internal Civic Efficacy

	df	MS	F	p	η^2
<i>Within-Subjects</i>					
Internal Civic Efficacy	3	0.81	1.93	0.124	0.017
Internal Civic Efficacy * Minority Status	3	0.49	1.17	0.321	0.011
Internal Civic Efficacy * Gender	3	0.59	1.40	0.242	0.013
Internal Civic Efficacy * Minority Status * Gender	3	0.65	1.55	0.200	0.014
Error (Internal Civic Efficacy)	327	0.42			
<i>Between-Subjects</i>					
Minority Status	1	0.76	0.21	0.652	0.002
Gender	1	7.21	1.95	0.166	0.018
Minority Status * Gender	1	12.28	3.31	0.072	0.029
Error	109	3.71			

These results indicated that students' attitudes on the Internal Civic Efficacy subscale remained statistically constant during their time at college, as seen in Figure 4.9. The mean averages were as follows: freshman ($M=1.17$, $SD=1.10$), sophomore ($M=1.09$, $SD= 1.11$), junior ($M=1.09$, $SD=1.13$), and senior year ($M=0.95$, $SD=1.14$). Students' Internal Civic Efficacy attitudes also did not significantly vary according to gender or minority status.

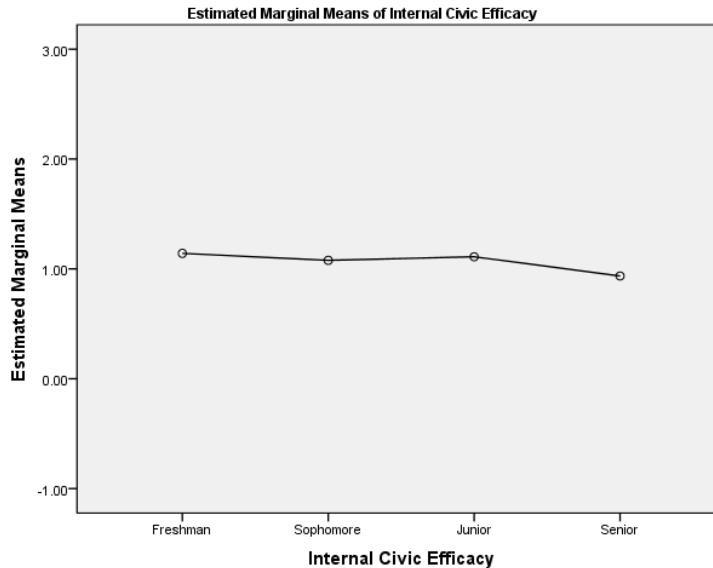


Figure 4.9. Attitudes towards Internal Civic Efficacy over Time

Repeated Measures ANCOVA

RMANCOVA with students’ high school civic engagement involvement from the High School Participant Survey included as a covariate were subsequently conducted on the Rasch person estimates from the Involvement and Civic Engagement sub-scales. Of particular interest was if the significant interaction and main effects established through the RMANOVA would remain so after partialling out the effect of the covariate on the various sub-scale scores. With regard to involvement, the covariate (students’ participation in civic engagement activities in high school) was significantly related to Political Activities, $F(1, 106) = 47.35, p < .01, \eta^2 = .309$, Civic Activities, $F(1, 108) = 20.91, p < .01, \eta^2 = .162$, and Expressive (Public Voice) Activities, $F(1, 108) = 55.77, p < .01, \eta^2 = .341$. Students’ high school civic engagement involvement also significantly predicted four of the five attitudinal sub-scales: Internal Service Efficacy, $F(1, 109) =$

7.72, $p < .01$, $\eta^2 = .066$, Internal Political Efficacy, $F(1, 108) = 35.41$, $p < .01$, $\eta^2 = .247$, Civic Accountability, $F(1, 109) = 6.80$, $p < .05$, $\eta^2 = .059$, and Internal Civic Efficacy, $F(1, 108) = 40.51$, $p < .01$, $\eta^2 = .273$. Tolerance of Diversity emerged as the only CPAAS sub-scale that was not significantly associated with students' high school civic engagement participation, $F(1, 108) = 0.65$, $p = .422$, $\eta^2 = .006$. See Table 4.20.

Table 4.20 Relationship Between High School Covariate & CPAAS Sub-Scales

	df_w	df_b	MS	F	p	η^2
<i>Involvement:</i>						
Political Activities	1	106	165.53	47.35	0.000**	0.309
Civic Activities	1	108	99.26	20.91	0.000**	0.162
Expressive (Public Voice) Activities	1	108	233.61	55.77	0.000**	0.341
<i>Attitudes:</i>						
Internal Service Efficacy	1	109	67.75	7.72	0.006**	0.066
Internal Political Efficacy	1	108	507.03	35.41	0.000**	0.247
Civic Accountability	1	109	6.70	6.80	0.010*	0.059
Tolerance of Diversity	1	108	1.60	0.65	0.422	0.006
Internal Civic Efficacy	1	108	110.21	40.51	0.000**	0.273

* Significant at the 0.05-level.

** Significant at the 0.01-level.

These results indicated that students more involved in civic engagement activities in high school were more likely to have higher participation rates and stronger attitudes in college on all of the CPAAS sub-scales other than Tolerance for Diversity. Given the non-significant relationship between Tolerance for Diversity and the covariate, the RMANCOVA results were not interpreted for this sub-scale.

As in the RMANOVA, the RMANCOVA interaction and main effects were non-significant for the Political Activities, Expressive (Public Voice) Activities, and Internal Civic Efficacy sub-scales following the removal of the effect of high school civic engagement involvement. Once again, these results indicated that students' participation in these particular types of activities as well as support for these specific attitudes neither

developed significantly over time at college nor varied significantly between students of differing genders and/or minority status. The inclusion of students' high school civic engagement participation as a covariate did, however, affect the RMANOVA results for the other CPAAS Involvement and Civic Engagement sub-scales.

For Civic Activities, the RMANOVA revealed a significant cubic trend between academic standing and involvement rates, along with statistically significant differences between female and male students' participation rates in these activities across their college experience. As seen in Table 4.21, the RMANCOVA displayed a significant main effect for gender on involvement levels in Civic Activities that remained even after partialling out the effect of the high school covariate, $F(1, 108) = 4.34, p < .05, \eta^2 = .039$. However, when the effect of students' high school civic engagement involvement was accounted for, the main effect for academic standing no longer emerged as significant, $F(3, 324) = 1.59, p = .192, \eta^2 = .014$.

Table 4.21 RMANCOVA for Involvement in Civic Activities

	df	MS	F	<i>p</i>	η^2
<i>Within-Subjects</i>					
Civic Activities	3	2.00	1.59	0.192	0.014
Civic Activities * HS Covariate*	3	1.69	1.35	0.260	0.012
Civic Activities * Minority Status	3	0.18	0.14	0.935	0.001
Civic Activities * Gender	3	2.20	1.75	0.157	0.016
Civic Activities * Minority Status * Gender	3	0.45	0.36	0.785	0.003
Error (Civic Activities)	324	1.26			
<i>Between-Subjects</i>					
HS Covariate	1	99.26	20.91	0.000**	0.162
Minority Status	1	0.67	0.14	0.708	0.001
Gender	1	20.68	4.36	0.039***	0.039
Minority Status * Gender	1	0.44	0.09	0.762	0.001
Error	108	4.75			

* Met assumption of homogeneity of regression slopes ($p > .05$)

** Significant at the 0.01-level.

*** Significant at the 0.05-level.

These results indicated that when keeping the covariate constant, significant differences no longer emerged within students' involvement in Civic Activities according to their academic standing. Therefore, students' Civic Activities participation rates were shown to not significantly change throughout their four years on-campus. Additionally, these results revealed that even after adjusting for differences in students' high school civic engagement involvement, female students' estimated marginal means ($M = -1.49$) still displayed significantly higher participation rates in Civic Activities than male students ($M = -1.97$) across their college experience. The effect size for the covariance-adjusted gender difference suggested that the average female student participated in Civic Activities at greater rates than 53.9% of male students.

With regard to attitudes, the significant linear trend between academic standing and Internal Service Efficacy found in the RMANOVA ceased to exist following the removal of the effect of students' high school civic engagement involvement. This non-significant main effect for academic standing, $F(3, 327) = 0.16, p = .925, \eta^2 = .001$, indicated that by partialling out the effect of the covariate, students' affect towards Internal Service Efficacy did not significantly decrease over their time on-campus. As such, the significant negative trend in the development of students' attitudes towards their self-efficacy through community service was eliminated by the inclusion of their participation in civic engagement in high school. Students' adjusted estimated marginal means for Internal Service Efficacy were as follows: freshman ($M = 2.52$), sophomore ($M = 2.32$), junior ($M = 2.42$), and senior ($M = 1.94$). As such, through this RMANCOVA, students' attitudes towards Internal Service Efficacy were shown to be statistically

similar throughout college, as well as statistically similar between male and female students and White and Minority/International students. See Table 4.22.

Table 4.22 RMANCOVA for Attitudes towards Internal Service Efficacy

	df	MS	F	<i>p</i>	η^2
<i>Within-Subjects</i>					
Internal Service Efficacy	3	0.20	0.16	0.925	0.001
Internal Service Efficacy * HS Covariate*	3	1.91	1.51	0.213	0.014
Internal Service Efficacy * Minority Status	3	0.66	0.52	0.667	0.005
Internal Service Efficacy * Gender	3	0.98	0.78	0.509	0.007
Internal Service Efficacy * Minority Status * Gender	3	1.81	1.43	0.235	0.013
Error (Internal Service Efficacy)	327	1.27			
<i>Between-Subjects</i>					
HS Covariate	1	67.75	7.72	0.006**	0.066
Minority Status	1	12.04	1.37	0.244	0.012
Gender	1	8.24	0.94	0.335	0.009
Minority Status * Gender	1	0.32	0.04	0.848	0.000
Error	109	8.77			

* Met assumption of homogeneity of regression slopes ($p > .05$)

** Significant at the 0.01-level.

The addition of students' high school civic engagement involvement as a covariate also similarly affected the significant results of the RMANOVA for Internal Political Efficacy. Since Mauchly's Test of Sphericity was significant ($W=.827$, $\chi^2=20.289$, $p<.01$) for the Internal Political Efficacy sub-scale scores, the Greenhouse-Geisser estimates were interpreted to correct for this violation of sphericity in the RMANCOVA. By adjusting for differences in the covariate, the previously significant interaction effect between academic standing and minority status for Internal Political Efficacy attitudes no longer emerged as significant, $F(2.69, 290.44) = 2.68$, $p=.054$, $\eta^2=.024$, as shown in Table 4.23. The interaction and main effects also remained non-significant between students of differing genders. These results indicated that after partialling out the effect of high school civic engagement participation, students' Internal

Political Efficacy attitudes did not differentially change throughout their college experience according to their minority status. Instead, students' attitudes towards Internal Political Efficacy did not display either significant development or significant variation by students' gender or minority status during college. Overall, their adjusted estimated marginal means across their undergraduate tenure for Internal Political Efficacy were as follows: freshman ($M=1.81$), sophomore ($M=1.65$), junior ($M=1.89$), and senior ($M=1.44$).

Table 4.23 RMANCOVA for Attitudes towards Internal Political Efficacy

	df	MS	F	p	η^2
<i>Within-Subjects</i>					
Internal Political Efficacy	2.69	4.53	1.42	0.238	0.013
Internal Political Efficacy * HS Covariate*	2.69	7.99	2.51	0.065	0.023
Internal Political Efficacy * Minority Status	2.69	8.51	2.68	0.054	0.024
Internal Political Efficacy * Gender	2.69	4.23	1.33	0.266	0.012
Internal Political Efficacy * Minority Status * Gender	2.69	1.24	0.39	0.738	0.004
Error (Internal Political Efficacy)	290.44	3.18			
<i>Between-Subjects</i>					
HS Covariate	1.00	507.03	35.41	0.000**	0.247
Minority Status	1.00	4.46	0.31	0.578	0.003
Gender	1.00	19.77	1.38	0.243	0.013
Minority Status * Gender	1.00	2.33	0.16	0.687	0.002
Error	108.00	14.32			

* Met assumption of homogeneity of regression slopes ($p > .05$)

** Significant at the 0.01-level.

For Civic Accountability, the RMANOVA revealed significant main effects for academic standing and gender using the Greenhouse-Geisser estimates due to a significant Mauchly's Test of Sphericity. The assumption of sphericity was also violated ($W=.682$, $\chi^2=41.22$, $p<.01$) for the Civic Accountability RMANCOVA, resulting again in an interpretation of the Greenhouse-Geisser estimates. Following the inclusion of students' high school civic engagement participation as a covariate, the main effect for academic standing remained significant, $F(2.37, 258.45) = 6.47$, $p<.01$, $\eta^2=.056$. As in

the RMANOVA, the tests of within-subjects contrasts delineated a quadratic relationship between academic standing and Civic Accountability attitudes, $F(1, 109) = 3.99, p < .05$. In contrast, the main effect of gender on Civic Accountability attitudes no longer emerged as significant after partialling out the effect of the covariate, $F(1, 109) = 3.43, p = .07, \eta^2 = .031$. Additionally, the main and interaction effects for minority status remained statistically non-significant. See Table 4.24.

Table 4.24 RMANCOVA for Attitudes towards Civic Accountability

	df	MS	F	<i>p</i>	η^2
<i>Within-Subjects</i>					
Civic Accountability	2.37	1.75	6.47	0.001**	0.056
Civic Accountability * HS Covariate*	2.37	0.99	3.65	0.021	0.032
Civic Accountability * Minority Status	2.37	0.25	0.93	0.409	0.008
Civic Accountability * Gender	2.37	0.75	2.77	0.055	0.025
Civic Accountability * Minority Status * Gender	2.37	0.37	1.35	0.261	0.012
Error (Civic Accountability)	258.45	0.27			
<i>Between-Subjects</i>					
HS Covariate	1.00	6.70	6.80	0.010**	0.059
Minority Status	1.00	0.46	0.47	0.494	0.004
Gender	1.00	3.38	3.43	0.067	0.031
Minority Status * Gender	1.00	1.88	1.90	0.171	0.017
Error	109.00	0.99			

* Failed to meet assumption of homogeneity of regression slopes ($p < .05$)

** Significant at the 0.01-level.

These results indicated that students' Civic Accountability attitudes significantly developed during their four years at college, even after accounting for the effect of high school civic engagement involvement. These results also revealed that students' endorsement of Civic Accountability did not significantly vary by gender when the effect of the covariate is partialled out. As seen in Figure 4.10, students' attitudes towards Civic Accountability significantly changed throughout their college experience, with a

decrease between freshman ($M=1.05$) and sophomore year ($M=0.98$) followed by steady increases through junior year ($M=1.06$) to senior year ($M=1.19$).

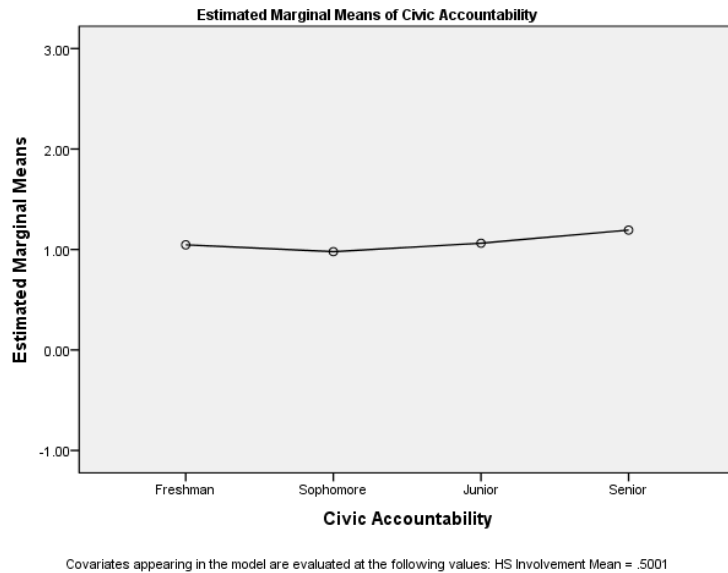


Figure 4.10. Covariate-Adjusted Attitudes towards Civic Accountability over Time

Canonical Correlation

Canonical correlation analysis was conducted to explore the presence of a multivariate relationship between students' participation in activities and their civic engagement attitudes. It was therefore utilized to address the third main research question in this study:

- 3) To what extent does civic engagement involvement relate to students' civic engagement attitudes during the undergraduate years?

Based upon past research in youth civic development and higher education linking civic involvement to pro-civic engagement attitudes, it was hypothesized that statistically significant ($p<.05$) multivariate squared canonical correlations (R_c^2) would emerge

between the latent canonical variates generated by the Involvement and Civic Engagement sub-scales. In these analyses, students' Rasch person estimates for the Involvement sub-scales were treated as the predictor variables while their Rasch person estimates for the Civic Engagement sub-scales were considered the criterion variables. The predictor Involvement sub-scales included: Civic Activities, Political Activities, and Expressive (Public Voice) Activities. The criterion Civic Engagement sub-scale represented attitudes on: Internal Service Efficacy, Internal Political Efficacy, Civic Accountability, Tolerance of Diversity, and Internal Civic Efficacy. Due to the longitudinal research design, canonical correlation analyses were performed to explore the relationship between activities and attitudes within each of students' four years at Tufts: freshman, sophomore, junior, and senior. Each of these canonical correlation analyses yielded three canonical functions since the maximum number of canonical functions generated equals the number of variables in the smaller of the two variable sets. Given that the Involvement scale contains three sub-scales (civic activities, political activities, and expression of public voice) as compared to the five sub-scales on the Civic Engagement scale, only three canonical functions were calculated for each academic year.

Within each academic year, the first canonical function explained the most variance, as it represented the best combination of weights for the variables across the two sets (Morris & Daniel, 2008). The number of canonical functions retained within each academic year was determined by investigating the tests of statistical significance along with the magnitude of each canonical function. As is inherent to the analysis, each

subsequent canonical function explained a smaller proportion of variance than the previous function. Based on recommendations from past analyses (Daniel, Adams, & Smith, 1994, as cited in Morris & Daniel, 2008), structure coefficients were utilized in the interpretation of these results in place of standardized canonical function coefficients. For these results, a cut-off value of $|.5|$ was applied as the standard for further investigation into the structure coefficients. See Appendix H for the standardized canonical function coefficients and structure coefficients from the statistically significant canonical roots from across the four academic years.

FRESHMAN YEAR

The canonical correlation analysis on the freshman year data indicated that the two sets of variables (scores on the Involvement and Civic Engagement sub-scales) were significantly associated by canonical correlation. More specifically, when combined, all three canonical functions were statistically significant ($F = 5.32, p < .001$), as shown in Table 4.25. With the first canonical root removed, the second and third canonical roots were still statistically significant ($F = 2.97, p < .01$). However, when the first two canonical roots were removed, the third canonical root was not statistically significant ($F = 1.31, p = .274$). The first two canonical roots were therefore further interpreted to assess the proportion of shared variance explained between the variable sets within each canonical root. These two canonical roots were shown to significantly contribute to the shared variance between the predictor and criterion variables, with each individually accounting for over the 10% standard set forth by Pedhauzer (1997).

Table 4.25 Freshman: Tests of Canonical Dimensions

Roots	Wilks' λ	Multiple F	df ₁	df ₂	<i>p</i>
1 to 3	0.57	5.32	15.00	348.23	0.000*
2 to 3	0.84	2.98	8.00	254.00	0.003*
3 to 3	0.97	1.31	3.00	128.00	0.274

* Significant at the 0.01-level.

As seen in Table 4.26, the squared canonical coefficient for the first root ($R_{c1} = .57, p < .001$) explained 32.3% ($R_{c1}^2 = .323$) of the shared variance across the two variable sets, while the squared canonical coefficient for the second root ($R_{c2} = .37, p < .01$) accounted for 13.8% ($R_{c2}^2 = .138$) of the significant relationship between involvement and attitudes. Combined, these two pairs of canonical variates indicated that by optimizing the weights for the variables across both sets; that the CPAAS Involvement sub-scale scores could account for 46.1% of overlapping variance in CPAAS Civic Engagement sub-scale scores.

Table 4.26 Freshman: Relationship Between Involvement & Civic Engagement Attitudes

Variable	First Root		Second Root	
	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient
<i>Involvement Dimension:</i>				
Political activities	-0.49	-0.73	0.89	0.67
Civic activities	-0.27	-0.57	-0.50	-0.55
Expressive activities	-0.57	-0.85	-0.42	-0.31
<i>Attitudes Dimension:</i>				
Internal service efficacy	0.23	-0.46	-0.88	-0.72
Internal political efficacy	-0.59	-0.84	0.77	0.24
Civic accountability	-0.02	-0.56	-0.07	-0.25
Tolerance of diversity	-0.05	-0.26	-0.22	-0.41
Internal civic efficacy	-0.68	-0.86	-0.17	-0.41
Can. Correlation (r_c)	0.57		0.37	
% of Variance (r_c^2)	32.3%		13.8%	
Eigenvalue (r_c^2)	0.48		0.16	

An examination of the structure coefficients revealed that for the predictor variable set, Expressive (Public Voice) Activities ($r_s = -.855$) and Political Activities ($r_s = -.729$) were most correlated with the first canonical function. With regard to the criterion variable set, attitudes towards Internal Civic Efficacy ($r_s = -.864$), Internal Political Efficacy ($r_s = -.843$), and Civic Accountability ($r_s = -.564$) accounted for the highest proportion of variance of the function. These results indicated that those students with infrequent involvement in expressive and political activities tended to promote attitudes unsupportive of Internal Civic Efficacy, Internal Political Efficacy, and Civic Accountability. The second canonical function was most closely linked to Political Activities ($r_s = .668$) and Civic Activities ($r_s = -.552$) from the involvement set. Only Internal Service Efficacy was highly correlated with the second canonical root from the attitudes set ($r_s = -.721$). These results indicated that participation in political activities was positively related and taking part in civic activities was negatively related to lower Internal Service Efficacy sub-scale scores. As such, students both highly involved in political activities and hardly involved in civic activities were less endorsing of attitudes favorable towards Internal Service Efficacy.

SOPHOMORE YEAR

For sophomore scores, the CPAAS Involvement and Civic Engagement sub-scales were once again statistically significantly associated by canonical correlation ($F = 7.05, p < .001$). While the second and third canonical roots were statistically significant ($F = 4.59, p < .001$) following the removal of the first canonical root; the third canonical root was no longer statistically significant when the second canonical root was excluded ($F =$

.80, $p=.497$). The first and second canonical roots were therefore interpreted to explore the magnitude of the relationship between the two sets being explained by the canonical functions. See Table 4.27.

Table 4.27 Sophomore: Tests of Canonical Dimensions

Roots	Wilks' λ	Multiple F	df ₁	df ₂	p
1 to 3	0.48	7.06	15.00	342.71	0.000*
2 to 3	0.76	4.59	8.00	250.00	0.000*
3 to 3	0.98	0.80	3.00	126.00	0.497

* Significant at the 0.01-level.

As seen in Table 4.28, in conjunction, the two pairs of canonical variates accounted for 59.9% of the shared variance between involvement and attitudes. More specifically, Table 4.28 shows that 37.4% ($R_{c1}^2 = .374$) and 22.5% ($R_{c2}^2 = .225$) of the significant relationship between the two variable sets were explained, respectively, by the first root ($R_{c1} = .61, p<.001$) and the second root ($R_{c2} = .47, p<.001$).

Table 4.28 Sophomore: Relationship Between Involvement & Civic Engagement Attitudes

Variable	First Root		Second Root	
	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient
<i>Involvement Dimension:</i>				
Political activities	0.36	0.76	0.87	0.58
Civic activities	0.27	0.70	-0.80	-0.62
Expressive activities	0.58	0.93	-0.11	-0.06
<i>Attitudes Dimension:</i>				
Internal service efficacy	-0.12	0.49	-0.91	-0.62
Internal political efficacy	0.30	0.67	0.84	0.44
Civic accountability	0.12	0.49	0.14	0.10
Tolerance of diversity	-0.15	0.17	0.14	0.00
Internal civic efficacy	0.87	0.94	-0.22	-0.25
Can. Correlation (r_c)	0.61		0.47	
% of Variance (r_c^2)	37.4%		22.5%	
Eigenvalue (r_c^2)	0.60		0.29	

According to the structure coefficients for the sophomore canonical functions, all variables from the involvement set correlated closely with the first canonical root, including Expressive (Public Voice) Activities ($r_s = .932$), Political Activities ($r_s = .763$), and Civic Activities ($r_s = .697$). In the attitudes set, Internal Civic Efficacy ($r_s = .943$) and Internal Political Efficacy ($r_s = .674$) were strongly related to the first canonical root. These results revealed a positive correlation between involvement and internal self-efficacy towards civic outcomes and politics, with a particularly strong link between participation in Expressive (Public Voice) Activities and attitudes supportive of Internal Civic Efficacy. As in the freshman year, civic activities ($r_s = -.617$) and political activities ($r_s = .576$) were the involvement variables most related to the second canonical root, with Internal Service Efficacy ($r_s = -.615$) again being the only attitude sub-scale correlating highly with the second pair of canonical variates. Once again, this indicated

that both a lack of involvement in civic activities and involvement in political activities were linked with weak viewpoints of Internal Service Efficacy.

JUNIOR YEAR

In the junior year, the scores on the Involvement and Civic Engagement subscales were again statistically significantly associated by canonical correlation ($F = 7.14$, $p < .001$), with two pairs of canonical variates significantly contributing to the shared variance between involvement and attitudes. As in the freshman and sophomore year analyses, the second and third canonical roots remained statistically significant ($F = 5.10$, $p < .001$) in the absence of the first canonical root. With the second canonical root removed, though, the third canonical root no longer stayed statistically significant ($F = 1.79$, $p = .153$). See Table 4.29.

Table 4.29 Junior: Tests of Canonical Dimensions

Roots	Wilks' λ	Multiple F	df ₁	df ₂	p
1 to 3	0.45	7.14	15.00	323.39	0.000*
2 to 3	0.73	5.10	8.00	236.00	0.000*
3 to 3	0.96	1.79	3.00	119.00	0.153

* Significant at the 0.01-level.

The squared canonical coefficient for the first root ($R_{c1} = .61$, $p < .001$) accounted for 37.6% ($R_{c1}^2 = .376$) of the significant relationship between involvement and attitudes, with the squared canonical coefficient for the second root ($R_{c2} = .49$, $p < .001$) explaining 24% ($R_{c1}^2 = .240$) of the shared variance across the two variable sets. Therefore, by using the best weights for the variables across the Involvement sub-scale scores from

junior year, 61.6% overlapping variance could be accounted for in the Civic Engagement sub-scale scores.

As shown in Table 4.30, the first canonical root was comprised mainly of Expressive (Public Voice) Activities ($r_s = -.879$) and Civic Activities ($r_s = -.849$) from the involvement set and four of the five sub-scales from the attitudes set, including Internal Civic Efficacy ($r_s = -.871$), Internal Service Efficacy ($r_s = -.805$), Tolerance of Diversity ($r_s = -.690$), and Civic Accountability ($r_s = -.552$). These results indicated that a lack of participation in Expressive and Civic Activities was negatively related to high Civic Engagement sub-scale scores. In particular, given the magnitude of these correlations, these results showed that students less involved in expressive and civic activities were more likely to report attitudes unsupportive of Internal Civic Efficacy and Internal Service Efficacy. The second canonical root derived from the junior year sub-scale scores related solely to politics, with only political activities ($r_s = .926$) from the involvement set and Internal Political Efficacy ($r_s = .765$) from the attitudes set emerging as highly positively correlated with the canonical function. These results indicated that students very involved in political activities supported attitudes in favor of Internal Political Efficacy.

Table 4.30 Junior: Relationship Between Involvement & Civic Engagement Attitudes

Variable	First Root		Second Root	
	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient
<i>Involvement Dimension:</i>				
Political activities	-0.09	-0.38	1.05	0.93
Civic activities	-0.56	-0.85	-0.20	-0.25
Expressive activities	-0.55	-0.88	-0.26	0.10
<i>Attitudes Dimension:</i>				
Internal service efficacy	-0.42	-0.81	-0.67	-0.03
Internal political efficacy	0.18	-0.36	1.03	0.77
Civic accountability	-0.11	-0.55	-0.41	-0.10
Tolerance of diversity	-0.29	-0.69	0.02	-0.08
Internal civic efficacy	-0.54	-0.87	0.43	0.34
Can. Correlation (r_c)	0.61		0.49	
% of Variance (r_c^2)	37.5%		24.0%	
Eigenvalue (r_c^2)	0.60		0.32	

SENIOR YEAR

Table 4.31 shows that the canonical correlation analysis on the senior year data indicated once again that the involvement and attitudes were associated by canonical correlation ($F = 3.98, p < .001$). However, for this data, only the first canonical root emerged as statistically significant, as once this canonical root was removed, the second and third canonical roots were statistically non-significant ($F = 1.43, p = .183, F = 1.29, p = .283$, respectively).

Table 4.31 Senior: Tests of Canonical Dimensions

Roots	Wilks' λ	Multiple F	df ₁	df ₂	p
1 to 3	0.60	3.99	15.00	298.54	0.000*
2 to 3	0.90	1.44	8.00	218.00	0.183
3 to 3	0.96	1.29	3.00	110.00	0.283

* Significant at the 0.01-level.

On its own, the pair of canonical variates for the first canonical root ($R_{c1} = .57$, $p < .001$) accounted for 33% of the shared variance between the two variable sets ($R_{c1}^2 = .331$). Further investigation into the structure coefficients revealed that all three types of activities in the predictor variable set, civic activities ($r_s = -.918$), expressive activities ($r_s = -.834$), and political activities ($r_s = -.677$) correlated substantially with the canonical function. With regard to the attitudes set, attitudes towards Internal Civic Efficacy ($r_s = -.985$), Internal Political Efficacy ($r_s = -.680$), and Internal Service Efficacy ($r_s = -.573$) were negatively related to the canonical root. These results indicated that those students with little involvement in the types of activities measured on the CPAAS Involvement sub-scales were unsupportive of attitudes endorsing individuals' abilities to make a difference in a community through community service, civic participation, and political activities. More specifically, as noted by the magnitude of the correlations, these results highlighted that students with low involvement levels in civic activities were particularly unsupportive of attitudes surrounding Internal Civic Efficacy. See Table 4.32.

Table 4.32 Senior: Relationship Between Involvement and Civic Engagement Attitudes

Variable	First Root	
	Standardized coefficient	Structure coefficient
<i>Involvement Dimension:</i>		
Political activities	-0.28	-0.68
Civic activities	-0.66	-0.92
Expressive activities	-0.24	-0.83
<i>Attitudes Dimension:</i>		
Internal service efficacy	0.05	-0.57
Internal political efficacy	-0.09	-0.68
Civic accountability	0.03	-0.44
Tolerance of diversity	0.15	-0.30
Internal civic efficacy	-1.04	-0.99
Can. Correlation (r_c)	0.57	
% of Variance (r_c^2)	33.1%	
Eigenvalue (r_c^2)	0.49	

Qualitative Results

Structured interviews were conducted during the fall semester - October, 2005 (Class of 2008) and November, 2006 (Class of 2009) - with six randomly selected participants from each cohort. The twelve sophomore interviews, which were tape-recorded, varied in length from thirty to forty-five minutes. Follow-up senior interviews were conducted during the spring semester – April, 2008 (Class of 2008) and April, 2009 (Class of 2009). The fourteen senior interviews, which were tape-recorded, varied in length from forty-five minutes to one hour. For both sets of interviews, students' high school involvement was used as the strata to randomly select students for the interviews to ensure representation of a wide variety of perspectives on civic engagement involvement and attitudes at the institution.

The primary purpose of the follow-up interviews was to corroborate, refute, and/or better understand any significant findings from the quantitative section of the study. In particular, this supplemental data was gathered to clarify both the significant and non-significant findings, as well as provide insight into additional, confounding, and/or unidentified factors potentially influencing students' development of civic engagement involvement and attitudes during their time in college. While the interviews generated a surplus of data on the interviewees, including insights into their high school civic engagement experiences, academic interests, involvement and interest in current affairs, and career plans, only those results pertinent to the research questions in this study are presented in this chapter.

Students' sophomore-year comments were clustered into three broad themes: their impressions of their college environment, their involvement in activities, and their civic and political attitudes. The sophomore coding scheme was applied and modified to accommodate the senior-year sentiments. Seniors' comments grouped together into four broad themes: impressions of their college environment, their involvement in activities, their civic and political attitudes, and their reflections on their growth and development during their four years at college. The final coding scheme, including the themes, categories, and sub-categories, that was applied to both the sophomore and senior interviews can be found in Appendix I.

Impressions of College Environment

It was deemed critical to capture students' reflections on their college environment during their time on-campus, particularly given the single-institution design

of this study and its framework as an I-E-O college impact model of student change. As such, interviewees were encouraged to discuss their opinions of the environment at Tufts in order to illuminate any unique aspects of the institution's atmosphere that might affect the generalizability of the findings. Students' remarks on their college environment fit into three distinct categories, including the general atmosphere at Tufts, along with the specific contexts surrounding diversity and civic and political engagement.

GENERAL IMPRESSIONS OF CAMPUS ATMOSPHERE

Civic engagement was reported most consistently as the distinguishing characteristic of the Tufts' college atmosphere, with students noting that the theme permeates many settings and aspects of student life. In particular, interviewees noted "*a lot of different ways that [civic engagement has] manifested itself*" as in the "*Tufts environment, whether or not you actively or passively seek it out, you do soak in a lot of information and eventually you find yourself taking a side.*" Several interviewees highlighted the multiple "*opportunities to be civically active on-campus,*" in addition to "*the courses and everything else that are inundating the idea of active citizenship.*" A few interviewees continued on to describe how Tufts' reputation for civic involvement was actually a motivational factor behind them applying to and attending the University. In response to this, one interviewee commented, "*I feel like Tufts seems to put this on a really high pedestal, this active citizenship idea.*" Many students expressed appreciation for this pervasive focus on civic and political involvement as it provided an outlet through which to "*get out and do things that I wanted to do.*" One interviewee noted that this emphasis had encouraged him to be more involved civically than in the past as "*a lot*

of things at Tufts kind of push you towards that point,” while another noted that it had given her a sense of “*community spirit.*”

A few students contended that the overall atmosphere at Tufts extended the emphasis beyond civic engagement to politics as well. With regard to political involvement, these interviewees noted that “*this campus is extremely politically active,*” with one interviewee stating that “*Tufts basically provided an opportunity for me to express my interest in politics in a more direct way.*” Another interviewee commented more generally on political awareness as a focal point on-campus, noting,

In the college atmosphere in general, you’re supposed to be informed, you’re a college student - you’re supposed to have opinions about everything and be involved in everything. I feel at Tufts it’s very highly encouraged - you can’t help but pay attention...[issues] just keep coming up and it helps motivate you to stay on top of things.

IMPRESSIONS OF CIVIC AND POLITICAL ATMOSPHERE

Overall, interviewees reported that Tufts’ students are extremely varied in their dedication to civic and political issues. In representing those students that feel that the Tufts’ environment promotes civic engagement, interviewees noted a “*fair number of students who are involved in community service*” while also describing Tufts as a “*really politically active campus.*” In support of these statements, one interviewee commented, “*I think being on a campus that’s so politically aware definitely has given me more opportunity to get involved or at least know things that I wouldn’t elsewhere.*” However, other interviewees took a middle-of-the-road stance, describing the Tufts’ atmosphere as

a “double bell curve where there’s a lot of people like me that are fairly apathetic about it and a lot of people that volunteer four or five hours a week.”

That being said, most felt that the campus overall is geared towards civic engagement, in addition to being a politically-driven campus and atmosphere. As noted by one interviewee, “everyone, either they are involved in [civic engagement] in or they have a friend who’s deeply involved in it.” Several interviewees therefore indicated feeling like the campus atmosphere was heavily entrenched in civic engagement. For instance, one involved student commented, “I feel like I’ve for the first time been in a place with people who do care about similar things as I do or do want to have a similar social life that involves positive change.” With regard to active citizenship, another interviewee indicated, “it played a defining role in my Tufts experience – [it was] one of the reasons why I decided to come to Tufts, it’s been one of the biggest extra-curricular and co-curricular elements [in my college experience].” A few other interviewees indicated that while they themselves had not been directly linked with civic engagement on-campus, that civic engagement was a persistent theme on-campus. For example, one interviewee detailed, “I definitely have friends who are extremely involved in active leadership programs...so just hearing about what he does and the stuff that he’s involved in kept me informed on what’s going on.”

Several interviewees also indicated that students are politically-aware and up-to-date on current affairs. Indeed, several students felt that the Tufts atmosphere had consisted of “being surrounded by students who have a lot of issues that they really care about” such that being informed was “expected in my social community at Tufts.” These

sentiments led these interviewees to characterize the students on-campus as *“pretty active, so if you don’t know about things going on you kind of feel like, wow, I’m ignorant.”* As described by another interviewee, *“one of the most interesting traits in most Tufts students I’ve met is that everyone is very strong willed, they have strong convictions about things.”* That being said, students also frequently indicated that limited viewpoints were present on-campus, with the atmosphere coming across as overwhelmingly liberal. In describing this liberal environment, one interviewee described the student body as, *“people who are extremely liberal, people who are extremely compassionate.”* A few students felt that the *“liberal campus”* eclipsed the availability of alternate viewpoints, arising in a politically narrow-minded student body. However, one interviewee described how this environment was beneficial to her development though, as *“it’s a pretty liberal campus, but, it’s good, because I get to hear a perspective at home and a perspective here.”* That being said, similar numbers of students reported that the political viewpoints on-campus were more *“balanced.”*

IMPRESSIONS OF DIVERSITY

Overwhelmingly, students classified Tufts as more diverse than their respective hometown or high school. These interviewees saw their college environment as *“a lot more diverse”* than what they experienced prior to enrolling at the University, offering many different types of diversity, including racial, religious, and geographical. In particular, these students noted that *“Tufts is more diverse than where I’m from,”* with one interviewee commenting, *“compared to my high school and my hometown, it’s completely diverse.”* Another interviewee described her hometown as *“95% Caucasian,*

so it was very homogeneous.” As such, when this interviewee entered Tufts “*race relations were totally new*” as there had been “*no racial diversity*” in her hometown, thus making the issue of diversity “*not that striking in my high school.*” Therefore, these interviewees tended to view Tufts as a diverse environment, one in which “*there is a group for every single ethnicity background.*”

The state of diversity did surface as a precarious topic among students during the interviews, however, as some interviewees recognized that the level of diversity present in their college environment was debatable depending on the definition of diversity. One interviewee summed up these sentiments by stating, “*it’s good that [Tufts] has such a diverse community, but is it artificially diverse? Does [Tufts] really have diversity?*” Another interviewee presented a limitation on the level of diversity that could be present at Tufts, as she indicated that “*one huge level of diversity that [Tufts] obviously can’t have is diversity in educational background.*” Other interviewees expressed that there was “*not as much socioeconomic diversity*” at Tufts, leading one interviewee to doubt that “*Tufts is the bastion of diversity.*” Another interviewee questioned, “*Tufts prides itself on being this really great diverse place, but almost everyone I know is from the same socioeconomic class. How much diversity is that?*”

Other interviewees felt that the diversity on-campus was artificial in some senses, as “*there really isn’t integration*” as different student groups tend to self-segregate. As described by one interviewee, “*it’s just sort of a general feeling here that people tend to hang out with people that are like them and have similar experiences.*” In support of this phenomenon on-campus, one interviewee commented:

It definitely gives an interesting look at the difficulties of self-segregation - we have different countries, we have people representing different races and ethnic groups [on-campus]. But even with all those people here, there's diversity in the sense that on this campus, there are people representing all these different groups, but the level of interaction among all these people is so low. Again, what's the point?

This isolation of different student groups on-campus from the student body at-large led one interviewee to question, "*Do you define diversity as a bunch of people who are co-existing, or a bunch of people who are interacting?*"

Some interviewees, though substantially less than those that described Tufts as diverse, indicated that there was less diversity on-campus than had been present in their hometown or high school. As such, these interviewees did not view the University as an overtly diversified environment, with one student commenting that "*basically rich white people*" attend Tufts. These interviewees grew up in diverse atmospheres, with one interviewee describing the demographics of his high school as, "*a third white, a third Hispanic, and a third African-American.*" These interviewees noted experiencing a "*big culture shock*" when they arrived at college, as "*there's a lot less racial difference and economic difference here.*" As a result of their past experiences with such varied populations, these interviewees felt like "*Tufts is racially not that diverse.*" One interviewee described:

I grew up in a huge immigrant population of Asian, broadly defined, so it was Chinese, Korean, and Indian...in a lot of my classes, I was one of a handful of

white kids, which was actually an interesting experience to grow up in. Then I came here where it's almost flipped completely.

As such, a few interviewees proposed that diversity is more a public-relations construct on-campus than a consistent factor in their college environment. As described by one interviewee, *"I feel that being in this school where there's a lot of talk of diversity and differences and how we can overcome is absurd at times"* since *"a lot of times, the organizations think they're more diverse than they are."* Another interviewee described another dichotomy around diversity on-campus, as *"a lot of universities pay lip service to diversity"* but then the atmosphere did not reflect this focus, as he did not view *"Tufts as being that diverse."* However, still other interviewees felt that the presence of diversity at Tufts is high, in times more prevalent than at other universities and colleges. As noted by one interviewee, *"the great thing about Tufts I feel as opposed to a lot of other campuses is how heterogeneous it is. There are so many different people from so many different backgrounds."* Another interviewee commented that *"there's diversity at Tufts"* as *"Tufts does place such an emphasis on diversity in all forms."*

Despite the inconsistencies in how interviewees viewed the diversity in their college environment, several interviewees noted that the diversity on-campus added to their educational experience and viewpoints. These interviewees noted that they have *"encountered more things as a result of being a student here,"* indicating that they have *"seen more, experienced more"* than they would have in a less diverse environment. One interviewee stated that *"Tufts really helped me to have the opportunity to see differences,"* while another noted that due to the *"Tufts community"* she *"definitely*

understands the benefits of having a diverse culture, and a diverse society or community.”

Involvement in Activities

In order to better understand any shifts in students’ involvement during their college experience, interviewees were queried on their participation in various activities over their four years of college, including their motivations for and barriers to their involvement. In their senior year, students also provided insights into the reasons for any changes that had occurred in their involvement during their time on-campus. Students’ comments on their participation in activities while in college clustered into five unique categories, which are included in Table 4.33.

Table 4.33 Themes Regarding Involvement

Levels of involvement
Civic engagement involvement
Political involvement
Motivation for involvement in activities
Barriers to involvement in activities
Barriers to political involvement
Plans for future involvement

With regard to involvement on-campus, interviewees noted having participated in a wide variety of activities during their four years at college. Overwhelmingly, students indicated having gotten involved with general higher education organizations and clubs, including activities related to (in order of prevalence): athletics, performing arts, programming board and/or admissions guide, cultural or religious organizations, academic clubs and/or pre-professional societies, media outlets (including on-campus

newspaper, radio, and television), and student government. Students also commonly described community service opportunities they had taken advantage during their college experience, including “*volunteer vacations*” and “*service projects with community organizations nearby*.” With regard to off-campus activities, a few students participated in community service and volunteerism activities out in the community. As described by the interviewees, many of these efforts were directed towards helping children in need.

Interviewees also participated in activities related to civic issues, including both civil liberties organizations and community-oriented groups. Seniors’ examples of these types of activities ranged from the “*student health advisory board*” to a “*global activism club*” to a “*collaboration on issues in Africa*.” Some interviewees participated in political activities, including both government/political organizations (such as “*Tufts Democrats*”) and/or a politically-driven issue-based groups (such as an organization focused on promoting “*marriage rights for lesbian and gay students*”). Additionally, a few students indicated attending presentations or discussions facilitated by civic and political speakers invited to campus. Notably, those students indicating having gotten involved in civic, political, and expressive (public voice) activities were far fewer than those involved in routine college extra-curriculars and/or community service.

LEVELS OF INVOLVEMENT

Interviewees reflected back upon their involvement levels during their four years at college. During the interviews, students commonly indicated that their involvement in activities had varied greatly during their college experience. In particular, many interviewees indicated that they had been more involved during their freshman and

sophomore years than as an upper-classman. These interviewees noted “*definitely doing a lot in college...probably more in sophomore and junior years a little more than this year, so it kind of varies.*” As indicated by one interviewee, his participation changed as he established himself on-campus:

When I was a freshman or sophomore, I was definitely more involved... think a lot of that had to do with still trying to find a place to fit in, and groups of friends... I found a group of people I think I could fit in with well, and none of them are really involved...so that definitely influences it.

Still others noted that their involvement changed after their first two years on-campus as they honed in on the particular activities that they wanted to focus their time on. In support of this, one “*pretty involved*” interviewee described, “*I wanted depth rather than breadth. It was my junior year, and I felt like freshmen and sophomore year had been this crazy exploration, and now it was time to really deepen and focus.*” The interviewees also indicated spending a great deal more time off-campus in their junior and senior years, which also altered their involvement in activities. As noted by one interviewee being “*off-campus so much*” prohibits involvement, while another stated, “*I used to be involved with a lot of activities on Tufts and now I’m involved with a lot more engagements, you know, off Tufts.*”

Some interviewees continued on to specifically highlight how studying abroad had affected their interest in and participation in activities. These interviewees noted that their involvement clearly declined while they were abroad, as they were either off-campus for a semester or an entire year. One interviewee described the pattern of his

involvement as follows, *“I’d say it’s held pretty constant throughout my years at Tufts too, except for last year, I was abroad for the whole year, so I wasn’t directly engaged in anything at Tufts.”* In addition, a few interviewees indicated feeling *“so disconnected from everything after getting back from abroad”* that their levels of involvement on-campus declined after their return. Another interviewee commented:

I was abroad in the spring, so especially once I got back from abroad, I pretty much felt no connection to anything here except for my group of friends anymore, I didn’t feel part of Tufts anymore really, I felt no connection to my class. So I think that was sort of a big severing tie to be here in the fall but still sort of absent from everything, and then to be actually absent in the spring.

Post-graduation preparation also emerged during the senior interviews as an influential factor in interviewees’ irregular involvement patterns during their time on-campus. Specifically, interviewees indicated that their involvement had decreased during their senior year as their focus shifted from their college experience to their post-graduate plans. With regard to her current level of involvement, one interviewee remarked, *“[it’s] probably a little bit of a low right now for me, with trying to figure out life and things to do once I graduate.”* Other interviewees echoed this sentiment, stating, *“I’m finding myself taking a step from [participation in activities] and really just trying to focus on my own personal and professional development.”* Of his senior year involvement, one interviewee stated:

I have to admit this year, I think being a senior a lot of my priorities have changed. I’m still invested in what I’m doing with the Tisch college, but I’ve also

been spending a lot of time looking for jobs and things like that. So that's not as, I'm not as active as I have been in the past. Yeah, so I haven't been as dedicated.

In this context, a dichotomous split surfaced in interviewees' perceptions of their current involvement levels. Indeed, some seniors indicated being not very involved in activities, where as others considered themselves to still be highly involved. Those interviewees who felt removed from activities on-campus described their involvement as *"probably pretty minimal"* as they do not *"take an active role through any clubs or political organizations."* In contrast, a few other interviewees considered themselves *"very involved,"* describing their participation in activities as very high *"compared to the general population."*

LEVELS OF CIVIC ENGAGEMENT INVOLVEMENT

Interviewees also routinely provided insights into their current levels of civic engagement, with a split emerging between interviewees' perceptions of their involvement since entering college. Indeed, roughly half of the interviewees' reflections described their current civic involvement as greater than their participation in similar activities in college, whereas the other half highlighted being less involved than in high school. For instance, one interviewee described herself as *"more engaged, more passionate"* about civic involvement than in the past, while another interviewee noted feeling *"more meaningfully and deeper involved in issues relating to service and positive change"* since being at college. In contrast, another interviewee described his current civic involvement as *"low, if you compare it to high school"* but continued on to acknowledge that *"it's all a perspective thing, especially because I did so much more in*

high school, I feel like I don't do anything here." A few of the less involved students indicated that their participation in civic engagement activities had decreased since high school as community service had been a mandatory graduation requirement.

A few interviewees pointed out other specific reasons for their low participation in civic activities, including past failed attempts at community service that discouraged future involvement. For example, one interviewee described a "*frustrating experience*" during his sophomore year that made him question "*how much change I can make.*" Still others indicated that their academic interests do not align with civic engagement activities. One interviewee noted, "*I walked in thinking I was going to be more of a political science, economics type major, and then I discovered that math and chemistry were more of my suit – so that re-focused my activities.*" These students indicated gravitating towards activities that matched their interests, of which community service was not one. One interviewee expressed his disinterest as such, "*I feel that if that's...your bag – being an active citizen and going out and volunteering homeless shelters, that's awesome – and if it's not what you're about, there are resources to do other activities.*"

LEVELS OF POLITICAL INVOLVEMENT

Overall, in the interviews, students described themselves as less committed to political involvement than to civic engagement involvement. Although a few interviewees described themselves as highly involved with political activities, most interviewees did not consider themselves very involved in politics or political actions. Indeed, many of the interviewees were self-classified "*low participators,*" categorizing

their levels of political engagement as “*pretty low*” and “*not that much.*” Accordingly, one interviewee described his political involvement as, “*pretty minimal*” but continued on to note that, “*I observe pretty closely, but I’m not actually involved.*” Likewise, another interviewee admitted that her “*[my political involvement] is not very high at all*” despite the fact that she “*feels strongly politically, and I’m willing to talk about that with people.*”

That being said, interviewees did often display political engagement by registering as voters in their home states, with interviewees recognizing “*it’s important for people to keep track of what’s going on and to try and cast their votes according to their views.*” In particular, one interviewee noted that “*it’s very important to get people out there to [vote],*” while another declared, “*my role in voting, I certainly do believe in that.*” As such, several interviewees noted that political involvement, especially through voting, was important for all citizens to become an active part of the political process. One interviewee described this efficacy as, “*before you had no power over what happened, and now you do... now that I know I can vote I can go out there and change something.*” Primarily due to their ability to vote, several students described having increased their participation in political activities since high school. Indeed, one interviewee classified himself as “*definitely more involved overall*” in politics since “*in high school, no one cared about politics that much.*” Another student noted that the “*power to vote*” coupled with “*disappointment with the current President*” had fueled his enhanced interest in political involvement and an increase in his political engagement.

With specific regard to barriers to political involvement, interviewees cited two main reasons for their lack of involvement in political activities: disillusionment with politics and time constraints due to civic activities. Indeed, several interviewees attributed their feeling “*a little bit insignificant*” in the political realm with their decision not to participate at higher levels. These interviewees described the political realm as “*subjective,*” such that “*disenchantment with the current system*” had prevented them from getting further involved with political activities. For instance, one interviewee described, “*Politically, I might be less inclined to become involved, just because sometimes I feel so frustrated.*” Other interviewees expressed how the time they dedicated to civic and community-based activities precluded their political involvement, with these students noting being “*more involved in civic activities than political ones.*” One of these interviewees stated, “*I wouldn’t say that it’s important for everybody to go downtown and talk about every issue all the time.*”

MOTIVATION FOR INVOLVEMENT IN ACTIVITIES

In addition to describing how they were involved in various activities while in college, interviewees also detailed why they decided to participate. Most often, interviewees noted “*following their interests*” and getting involved in activities at college that they were interested in and/or participated in during high school. Indeed, interviewees repeatedly noted that their Tufts’ activities were “*a lot of interests that I’ve had since before Tufts,*” so that continuing with participation in college “*made sense.*” Interviewees provided specific examples of this connection, with one interviewee involved in athletics at Tufts noting “*I’ve always been involved in a sport,*” while another

who had “*volunteered for the blood drive last year*” had been the “*blood drive coordinator at [her] high school.*” Not surprisingly then given interviewees’ levels of civic engagement in college, several interviewees indicated having been involved with volunteerism, community service, and/or political service in high school.

Interviewees also frequently indicated being drawn to activities due to a personal interest in or connection to the cause that a particular club or organization supports. In describing this phenomenon, one interviewee noted that “*I think I get involved with things that have to do with my identity.*” For example, in explaining her affiliation with the Lesbian, Gay, Bisexual, and Transgender Center on-campus, one interviewee stated, “*I don’t know why anyone would get involved with that unless it seriously meant something to them.*” Another interviewee linked his civic participation with a desire to contribute to his community. He commented, “*I’ve always been interested in being active - not necessarily in volunteering, but in finding a way that I can improve the world.*”

Other interviewees attributed their involvement in particular activities to a personal connection to the specific activities’ civic or political mission, with these interviewees being attracted to “*a cause that’s really worthwhile.*” As noted by one interviewee, “*a lot of the activities I chose to do I do because of social awareness and just trying to be involved in the larger Tufts community or the larger community in general.*” Additionally, another interviewee credited his involvement in particular activities to his desire to “*be involved in groups that care about justice and equity and things that I care about.*” These interviewees thus indicated selecting activities that would allow them to connect to “*a cause that is really important to me*” or “*a community*

that I feel is an important part of me.” These personal connections to the activities in which they participated gave interviewees the opportunity to *“feel welcomed into a community”* of like-minded individuals or students with similar characteristics to them, which was described by some interviewees as another motivating factor for involvement.

BARRIERS TO INVOLVEMENT IN ACTIVITIES

Despite this multitude of motivating factors, interviewees pointed towards a variety of barriers that prevented them from being more involved during college. Time considerations emerged as a major deterrent to students’ involvement levels in particular activities, including civic and political engagement activities. Indeed, interviewees described *“time”* as a *“huge”* restriction in their participation levels, with several interviewees doubting their abilities to *“fit anything else into my schedule.”* In particular, students indicated that time constraints due to multiple interests and commitments severely affected their availability to participate in certain activities at Tufts. For example, one interviewee noted that her participation in varsity-level sports, including *“cross-country, indoor-track, and outdoor-track”* created a *“vacuum for [her] time.”* With regard to her involvement with the track team, this interviewee continued on to state, *“it’s a bit of a time commitment, and I know I sacrificed civic and political engagement for athletics.”* Other interviewees noted that they would be *“stretching too thin”* if they were to participate in another activity. As such, interviewees noted that time limits constrained their ability to participate in all of the activities that interested them, as one interviewee noted having to, *“put a cap on any new activities because I really don’t have the time.”*

The academic demands placed on college students also inhibited interviewees from getting further involved in activities, as they commonly indicated that the time that they devote to studying and undergraduate research limits their remaining free time for involvement in activities. Interviewees described how *“most of my energy is going toward my schoolwork...and outside of that I don’t have the time or energy.”* One interviewee in particular stated that academics precluded involvement as college *“was such a greater level of academia than I had ever had before.”* The amount of time required for academics was particularly apparent in the sophomore interviewees, as the students were still transitioning into college-level academics from high school. One interviewee described this shift in responsibilities as she stated, *“it was just overwhelming, I came, I was taking five courses, and I was over my head with work, so I never made that initial outreach to join groups.”*

Therefore, interviewees often indicated having to prioritize their involvement in activities as *“most of their time”* is being taken up by *“enormous responsibilities.”* As such, one interviewee stated, *“its the decision on which [activity] I will focus on that’s the hard part.”* Several students continued on to describe how competing priorities left them with desires to get *“hopefully more involved”* if only they had *“a little more free time, more of a schedule where I can go to more.”* Another explained that the *“time and the seriousness with which I am pursuing the other things have really just limited my participation in political and civic things.”* Interviewees also cited other responsibilities, such as time-consuming commitments to part-time jobs that involved *“working twenty hours a week”* and *“fixing people’s laptops about ten hours a week.”* When asked why

other students were able to have higher levels of involvement in activities, one of these interviewees curtly replied, *“they don’t have a job.”*

PLANS FOR FUTURE ACTIVITIES

Looking forward, the vast majority of interviewees described plans to participate in community service activities relevant to their interests and needs in the future. These students tended to *“believe in the value of volunteering”* with interviewees stating intentions to *“volunteer more steadily with an organization.”* One interviewee described this desire by indicating that it was *“important to my community that I provide my particular skill set to helping out whatever issue there is, civically or politically.”*

Interviewees continued on to describe how these community service activities would most likely tie into pre-existing interests of theirs. For instance, with regard to future community service activities, one interviewee commented that she would explore *“things I enjoy - like helping little kids, tutoring or mentoring them. Those are the things I enjoy doing, so it’s something I would continue pursuing not out of a sense of obligation, but since it’s fun to do.”* Others expressed a specific interest in pursuing community service opportunities that coincided with their career or graduate and/or graduate school plans. For instance, one interviewee attending medical school indicated, *“I don’t think you can be a good doctor without adding some aspect of community service to your work...with all those skills, it’s almost a waste to keep them to yourself.”*

Several interviewees also expressed intentions of being politically involved in the future, primarily through voting in national and local elections. These interviewees commonly stated a *“a need to be involved in some way in the future”* citing potential

activities such as “*voting, supporting a candidate, being on some kind of campaign and a volunteer.*” Most often, interviewees indicated that they felt a civic duty to actively participate in elections. As stated by one interviewee, “*I know with the US system, that is my role in voting, and I certainly do believe in that.*” A few interviewees noted wanting to “*become more involved in politics,*” particularly getting “*more involved in local politics than I have been.*” However, far more interviewees indicated that their future plans leaned more towards involvement in community service rather than political activities. One interviewee described this dichotomy in civic involvement:

I’ll probably get involved in like the local community service aspect. I mean, getting involved in politics, political groups is never really something that I do. As far as like community service, I’m interested in that, so I’ll probably get involved in it.

Civic Engagement Attitudes

In order to further understand students’ attitudes towards civic and political engagement, interviewees were asked a series of questions aimed at detailing the sources of their viewpoints. Additionally, questions were posed that provided expanded insight into their attitudes towards the constructs covered on the CPAAS Civic Engagement subscales. As seen in Table 4.34, interviewees’ comments clustered into four main categories, including the sources of their viewpoints and their specific opinions on four topics.

Table 4.34 Themes Regarding Civic and Political Attitudes

In order of prevalence:

Sources of viewpoints
Internal service and political efficacy
Civic Accountability
Internal Civic Efficacy
Tolerance of Diversity

SOURCES OF VIEWPOINTS

Interviewees illuminated a multitude of factors that contributed to their current attitudes, including their civic and political viewpoints as well as their perspectives on diversity. Overwhelmingly, students pointed towards their upbringing as the dominant force behind their current civic and political opinions. More specifically, students most commonly attributed their viewpoints to their parents, citing that the influence of their parents' attitudes and actions had had a significant impact on their own civic and political opinions. These interviewees individually noted that, *"most of my viewpoints, I think, were shaped by my upbringing, my parents."* In general, one interviewee stated, *"My parents definitely had a lot of influence in my life and continue to, so I definitely see myself adopting many of their views and their beliefs."*

More specifically, interviewees recalled how their parents' attitudes and encouragement had an effect on their own beliefs towards the importance of and potential impact of civic engagement. For instance, when asked to explain her desire to be involved in the community, an interviewee stated, *"that comes from my parents and their urging me to get involved and to help with the world."* Likewise, another interviewee attributed his self-efficacy to evoke change and impact a community to his parents and

the supportive environment in which he grew up. Indeed, he stated, *“I think when you have the close family that I do... I think all those things help to give you the mindset that you can affect that kind of change.”* Yet other interviewees credited their parents with instilling in a sense of civic accountability and internal civic efficacy, noting that their parents had promoted *“a sense of responsibility to be a member of a community.”*

Interviewees also acknowledged the impact that their parental influence had on their political engagement, including exposure to politics through both acquiring knowledge and forming opinions about political issues. One interviewee supported this notion by stating, *“I would say I learned a lot from my parents about political service, just in talking with them about it.”* Students also connected their political affiliations to their parents’ political stances, noting that they have *“similar political views to them, as most people do.”* For example, one interviewee commented, *“the best political indicator out there is the politics of somebody’s parents, and I think I fit that pretty well.”*

Additionally, several interviewees attributed their attitudes on diversity to their parents, with most noting that their parents had encouraged *“being accepting of differences, being accepting of differences of opinion.”* One interviewee expanded as follows, *“my parents have always been very much like diversity is a good thing and having lots of different opinions and different backgrounds or different race or gender, all sorts of things, is important.”*

The cultural atmosphere of interviewees’ hometown and high school was also commonly linked by students to their development of particular civic and political attitudes. Indeed, interviewees noted that *“the environment that I was in”* greatly

impacted their attitudes towards civic and political engagement. One interviewee described this influence as follows, *“I’ve grown up in Massachusetts for 19 years, and it’s a pretty liberal place...so I feel just the environment had an impact.”* Another interviewee acknowledged that, *“growing up in a sort of democratic enclave in Austin, Texas (which is very Republican) has sort of made me very cynical...it makes me identify with the more cynical political analyses of things.”* Often, students indicated that their hometown environment had helped to shape their attitudes towards diversity. For instance, one interviewee attributed her current views on diversity to past *“positive experiences...with people from different backgrounds who are different.”* Another interviewee explained that he *“was probably affected a lot by going to a high school like the one I did,”* in which he *“had a real diverse group of friends.”*

Students also frequently cited that *“talking to people”* and *“witnessing different peoples’”* civic and political opinions, namely their friends and classmates (both in high school and in college), had contributed to their own current attitudes. In some instances, students noted that their opinions had *“been reinforced by peers”* while others noted that *“just talking to friends changes your viewpoints.”* One interviewee explained, *“my fellow students are a wealth of information - their experiences personally and what they’ve been learning in classes. So just talking to my friends over dinner about different things...can inform my position on things.”* Likewise, another interviewee commented that her current viewpoints have been molded by *“the people I’ve met...and the experience of interacting with different people.”*

Current civic and political affairs were also seen by some interviewees as a source of their civic and political viewpoints. These interviewees described how their attitudes towards civic and political engagement had been shaped by “*news and reading*” about “*what’s going on on-campus and in our country.*” Additionally, a few interviewees described how remaining informed about current events also exposed them to the context of social change. One student explained, “*growing up in sort of the American tradition of believing in, believing that anybody can have an impact and can do amazing things.*” Also, a few interviewees pointed towards a particular racially-driven incident on-campus, a “*controversy that surrounded the conservative magazine,*” as having driven their opinions on the benefits and challenges associated with diversity.

Travel abroad experiences were also mentioned by interviewees as significant contributing factors to the civic and political viewpoints. These students indicated that their college experience had shaped their attitudes, “*particularly while being abroad and living abroad in different places.*” In reflecting back on their experience studying abroad, one interviewee noted, “*My year abroad was great, definitely. It impacted in a large way how I view the world, and things like that. I definitely think that I’d benefit a lot from going abroad again and have a different experience.*” Another interviewee explained how an internship in Italy “*impacted my views and political and civic engagement a lot*” as this was the “*first time*” that the student had a “*first introduction to working on the government level.*”

INTERNAL SERVICE & POLITICAL EFFICACY

The vast majority of interviewees expressed high levels of internal service and political efficacy during the senior interviews, with interviewees regularly indicating that individuals can make a difference, evoke a change in a community, and/or have an impact on the world through community service and/or political actions. Most commonly, students mentioned that they felt that individuals can make a difference and positively impact the world through community service and political involvement, as evidenced through the fact that *“people have made individual actions”* that have helped communities. More specifically, interviewees made comments such as: *“I feel like I can make a difference,” “the things that I choose to do can at least make one community better,” “it is possible for our society to change,” “I can help people in significant ways”* and *“I believe in the ripple effect of your own interaction with others.”* These interviewees therefore saw power in individual efforts as *“it’s really easy to get into programs to contribute”* and *“positively affect people’s lives by getting involved in communities or organizations.”* With regard to political activism, one interviewee noted, *“If you’re working with the community then you can impart political change on some level.”*

However, feelings that collective group efforts (not just individual contributions) are needed to evoke change in a community often emerged during the interviews. Several interviewees felt that *“groups can more effectively combine for the pursuit of their mutual interest”* as *“if everyone does their part, it definitely adds up over time.”* As such, these interviewees tended to express disillusionment with the worth of individual

civic and political contributions as they viewed the ability of an individual to positively change a community as fairly minimal. For instance, one interviewee commented, “*I definitely think for any type of really positive change to happen a lot of people in the community trying to make change have to be involved.*” Another interviewee echoed this sentiment, stating, “*I feel like while one person can make a difference, the more people that get involved, the larger a difference it can make.*”

In spite of these perspectives, several interviewees acknowledged that there are many different means through which community service can affect a community. Indeed, interviewees described how “*there are so many different choices out there*” and that “*it’s a matter of [picking] which one aligns with your beliefs the most.*” They continued on to point out how there are “*a lot of different ways that people can be involved civically.*” In support of this, one interviewee remarked, “*it’s just interesting to see what a lot of people can do, taking their interests, becoming engaged, and raising awareness about different issues.*” A few interviewees continued on to describe how their own civic engagement was empowering and had reinforced their self-efficacy through involvement. Indeed, these interviewees cited the reactions and “*feedback*” of “*the people that you interact with [through community service]*” as evidence of the powerful effect of their efforts in the community. For example, one interviewee explained that she experienced “*immediate gratification and satisfaction*” from her civic engagement, while another noted that his experiences had given him “*a richer and a more nuanced picture of where to go and how to contribute.*” In their words, these

interviewees had learned *“how to directly impact one person and how that’s making a difference.”*

Despite these positive experiences with civic engagement, a few interviewees noted avoiding political involvement as they viewed the impact from their efforts as minimal. For example, one interviewee stated, *“I’m not interested in getting involved in politics, and I don’t think I could truly make a big difference by doing that.”* Another described political activities as *“frustrating”* as he does not *“necessarily believe in the political system we work with.”* A few interviewees expressed skepticism in American politics for their doubts about the power of political involvement. As described by one interviewee, *“I’ve just become very disenchanted with politics – things just take way too long of a time...and...I know most people in Massachusetts will be voting a certain way, so maybe my one vote out of thousands isn’t that important.”*

CIVIC ACCOUNTABILITY

During the interviews, students frequently expressed their viewpoints on civic accountability and the need for societal commitment to the public good. Most commonly, interviews indicated that in order for civic and political issues to be addressed, that public policy needs to be adapted. These interviewees highlighted the need for *“changes in policy”* in order to *“effect more systemic change.”* One interviewee noted that *“some things need to be changed in the political and civic environment”* and that the needed alterations are *“big changes, not small changes.”*

For some interviewees, the need for structural changes also emerged with a realization that individuals are not always responsible for their own misfortunes. For

example, one interviewee reflected, *“I used to think people are poor because they don’t have money...but there’s more to it...there’s more forces in play than just the immediate lack that they have.”* These interviewees noted that *“there are reasons why people are poor,”* citing how *“inequalities in education”* and *“economic issues and economic problems”* often prevent equal opportunity from being available to all citizens. A few of these students described how they now viewed social problems as being caused by institutional factors, such as the *“the role of power hierarchies,”* *“oppression of certain groups over others,”* and *“structural violence.”* As such, these students acknowledged that personal responsibility is not always sufficient, as *“picking yourself up by the bootstraps is not always going to work.”*

In addition to the causes of social problems, interviewees also frequently commented on the importance of staying informed about local and national civic and political affairs. Several interviewees cited remaining up-to-date with current events and *“raising awareness about issues”* as an important part of their civic duty as a *“responsible adult community member.”* As explained by one interviewee, *“I feel like it’s my responsibility to be an informed citizen and I think that’s the easiest thing that I can do.”* One interviewee expanded upon this sentiment as follows, *“I feel like apathy is something that hurts everyone - to get things done, you can’t be apathetic about things...have an opinion, that’s something that’s important...you should have an opinion about certain things and take a side.”*

INTERNAL CIVIC EFFICACY

With regard to internal civic efficacy, the majority of interviewees considered public service and an individual commitment to the public good to be every individual's civic duty. These interviewees discussed civic "*values*" that centered on the importance on involving "*more people in being civically and politically and socially engaged.*" As such, they highlighted that it is ones' responsibility in "*a society to give back when you've received a lot*" as there is "*an obligation to perform a civic duty.*" These interviewees also indicated that "*[political and civic engagement] are both really important*" as "*it's a really bad idea to be aloof when it comes to your own community.*" One interviewee expanded upon this sentiment by stating, "*I think as a member of society you should have some sense of what's going on around you so that you can at least attempt to contribute. I think it's important to give back.*" These interviewees also felt that due to the multitude of "*different ways for someone to get involved,*" that all individuals should devote at least some time to improving their community.

In contrast, a few interviewees noted that it is important for some individuals to have a strong commitment to the community, but that it is not a personal responsibility of all individuals to perform civically. These interviewees commonly felt that "*we all have our place in this world*" and "*some are just more engaged in civic and political activities than others.*" For instance, one interviewee detached his personal responsibility from the overall societal need for civic efforts by stating, "*I think for the average person [civic involvement] is really not that important, but it's important that somebody does it.*" With regard to community and political involvement, another interviewee commented:

They're important for someone - they're really not necessarily the things that I want to think about all the time. I'm glad other people want to because then I don't necessarily have to. So, it's not important to me, but it is important in general.

TOLERANCE OF DIVERSITY

Interviewees also provided their attitudes towards diversity consistently throughout the senior interviews. Overwhelmingly, interviewees indicated being tolerant of differences and appreciative of the benefits that diverse individuals bring to a group setting. These interviewees noted that *"it's important to have differences in a society"* and that they *"understand and recognize [diversity's] value."* Individual interviewees described their tolerance of diversity as *"it's important to have people from different viewpoints,"* and that there is *"a lot of value in diversity and differences...it's a strength both for the US and for working with issues."* As noted by one interviewee, *"people can have a lot of different opinions, but somehow still get along and still get things done... there's so many positives that come out of it."* With regard to the specific positive aspects of diversity, one interviewee stated:

It's just more interesting to have people with different opinions, different backgrounds. It just makes life more interesting. You learn more from other people if they're different. If everyone's the same, then I think you get into this stagnant point of view, you get into this rut. So, I think just in terms of your intellectual development and development as a community, development as a

society, we have to have dialogue that has representatives from different cultures and different backgrounds.

Another interviewee echoed these sentiments by commenting, *“I’ve always felt that it’s important to experience differences because I think you learn a lot about yourself when you’re within a diverse group and you learn a lot about people in general.”*

Growth & Development

In order to help explain the significant and non-significant growth witnessed on the CPAAS Involvement and Civic Engagement sub-scales over students’ freshman, sophomore, junior, and senior years, interviewees were asked to reflect back upon their college environment and how it had influenced their civic and political engagement. As such, students discussed any progression that had occurred in their viewpoints during their four years on-campus. Additionally, students provided their perspective on the role that their college experience had in influencing their involvement and formulating their attitudes. Table 4.35 contains the four themes that surfaced regarding interviewees’ growth and development in civic engagement during their time at college.

Table 4.35 Themes Regarding Growth and Development

Outcomes of involvement in activities
Effect of college involvement on attitudes
Attitudinal development
Effect of college experience on attitudes

OUTCOMES OF INVOLVEMENT IN ACTIVITIES

Interviewees pointed towards several positive outcomes that resulted from their participation in on-campus and off-campus activities. Most commonly, students highlighted that their involvement in activities raised their awareness about civic, economic, and political issues. In general, one interviewee commented that her on-campus volunteer activity had, *“increased her awareness on issues that are important.”* More specifically, these interviewees’ participation increased their exposure to problems surrounding *“healthcare,” “financial literacy,”* and *“immigration issues,”* among other topics. For instance, one interviewee specifically discussed how *“working at the newspaper has definitely made me more aware of political happenings both on-campus and off- campus.”*

Students also frequently noted that their participation enabled them to *“get really involved in the community.”* As a result of *“working in the community and connecting through an endless number of means,”* the interviewees indicated being able to increase their connection to the community. As such, students felt that their involvement had increased their exposure to the community, including the issues that community members face, which had in heightened their concern about their community. Overall, one interviewee described how community service had allowed her to *“learn so much more about the Somerville community, and the different issues that are there.”* Similarly, another interviewee indicated that the opportunity to *“perform in various communities”* through a community-based activity had *“raised my awareness about some of the things that are going on.”* In particular, for example, one interviewee noted that his off-campus

volunteering opportunity at a free-clinic has, “*definitely opened his eyes*” to the issues of affordable health-care currently facing a large population of individuals in the metro-Boston area.

A few interviewees also stated that their participation in community service activities had enhanced their belief in their own ability to make a difference. In support of this increase in self-efficacy, one interviewee stated “*my attempt and my ability to make a difference, it has changed because of the activities.*” Participation in civic and political activities also served to expose a few interviewees to other individuals’ community service efforts, with one interviewee noting that through her community service involvement, she’s, “*seen more actual examples of people that I know or just more people that have [had an impact] or who are working to do so.*”

Additionally, a few interviewees felt that their participation in activities had exposed them to individuals with diverse racial, economic, and social backgrounds. These interviewees indicated that their involvement expanded their viewpoints on diversity by “*seeing the way people interact with community members.*” For instance, one interviewee described how “*learning how to work with people from all different countries, with completely different backgrounds from people with PhDs and MDs to people who just got their GEDs...is a valuable skill to me.*”

EFFECT OF INVOLVEMENT ON ATTITUDES

Interviewees continued on to point out specifically how their involvement during college had affected their attitudes towards civic and political engagement. Most often, interviewees noted that their participation during college provided them with tools to be

effectively civically engaged in the future. These interviewees described “*using this time*” on-campus to “*get the tools*” to be involved with community service and politics post-graduation. One interviewee explained, “*I feel like I learned how to do some community needs assessments and use different tools for community development or community-based projects.*” A few interviewees noted that their involvement during college increased their interest and participation in civic and political engagement activities. One interviewee noted that her activities had “*made me realize that I want to be in some sort of environment where I can really have a say in what’s going on*” while another claimed that certain types of experiences had “*gotten me more interested in, more involved in public things.*”

ATTITUDINAL DEVELOPMENT

Students also reflected back upon how their attitudes have changed and progressed during their four years at college. With regard to this development, interviewees specifically noted having gained a better understanding of civic and political issues over the past four years. These interviewees regularly described knowing “*more about the complexities of problems than I did before,*” “*realizing the issues I really care about,*” and “*having a richer picture of like what social change looks like.*” Several interviewees explained that their college experience had encouraged them to analyze civic and political issues at a deeper-level than they had previously, leading towards a “*more nuanced understanding of issues.*” Interviewees also attributed their time on-campus with giving them the “*tools to better examine*” issues so that they are able to “*sort through and diagnose all the things that are going into a problem.*” As described

by one interviewee, *“one of the things you kind of learn in college is how to analyze... I’ve learned how to think below the surface a little bit and figure out what is really involved.”* Another interviewee expanded upon this sentiment, noting that he now *“understands more that things are not just black and white... it’s way more complicated than I thought before.”*

More generally, several interviewees felt that their attitudes have grown as a result of their overall college experience and becoming more mature while on-campus. Therefore, these interviewees noted that *“college just shaped my beliefs in terms of getting older and [having] general experiences.”* As such, these interviewees saw the college experience as presenting a lot of opportunities to work on *“finding out who I am, finding out my own beliefs.”* One interviewee remarked, *“over time, I have formed opinions, and as I grow and learn more, they change sometimes”* while another indicated being *“more aware of the world now...more intellectually involved...due to my age and just being older, being wiser, and more in tune.”*

In contrast, other interviewees noted that their viewpoints have not fundamentally changed during their time on-campus, but acknowledged that they are now better able to express their attitudes and understand their own perspectives. With regard to tolerance of diversity, one interviewee commented, *“I have a better understanding of what those groups are and what their interests are than I did coming in, but I don’t think my overall view on any sort of system has really changed that much.”* Another interviewee indicated that during college, his viewpoints became *“more sharpened”* such that he is

now aware of “*what issue I feel most strongly about*” and is “*willing to take the extra mile to convince someone else of my issue.*”

With regard to specific civic and political attitudes, some interviewees stated their internal self-efficacy through community service and political activities had increased over the past four years. Through their college experience, these interviewees indicated becoming “*much more optimistic about my own ability to create social change.*” In support of this, one interviewee remarked, “*I think that I’m slightly more confident in myself - I mean I haven’t cured any social issues, but I’m more able to develop a prescription to do that than I was before.*” Another interviewee echoed this sentiment, focusing particularly on political action, “*I think that my involvement has helped me see that...there is some level of public input...that is not only desirable but totally within the realm of possibility.*”

EFFECT OF COLLEGE EXPERIENCE ON ATTITUDES

When asked to detail how their college experience had affected their attitudes, students most often indicated that their classes at Tufts had influenced their civic and political views. Interviewees noted that a lot of their civic and political knowledge “*comes through coursework*” and a large part of their perspective can be attributed to “*classes, like when professors talk about more root causes of issues.*” One interviewee expanded upon this by stating, “*a lot of my classes...exposed me to different ways of thinking about social problems, immediate or not, in terms of what’s the cause of a lot of these issues.*” The specific college classes mentioned by interviewees were highly varied in content and departmental origin, encompassing classes such as “*Introduction to*

Community Health, “*American Politics,*” “*Education for Active Citizenship,*” “*Race in America,*” “*Biology and the American Social Contract,*” and “*Comparative Politics.*”

Through the topics presented in these courses, interviewees indicated that their perspectives towards “*socioeconomic issues,*” “*race relations,*” “*the biological basis for homosexuality,*” along with awareness of “*political processes*” and “*health disparities*” had changed.

Several interviewees indicated that although their college classes had not changed their civic or political opinions, that their classroom experiences had led them to be able to better express and understand their own viewpoints. For instance, one interviewee stated that while his “*core views will not change*” as a result of his classes, that he did “*end up expressing them differently.*” These interviewees consistently made comments regarding how “*taking classes and going to lectures has helped me gain a better understanding*” of various issues. Likewise, many of these interviewees noted that they had “*definitely challenged the way I think about things.*” As explained by one interviewee, “*I think [my classes] they haven’t changed my viewpoints, more than that they’ve helped me crystallize them and put them into words.*” Another interviewee remarked, “*I don’t know if [my classes] changed my views from what I had before Tufts, but they’ve definitely sharpened them and given them a little more focus.*” Likewise, an interviewee commented, “*I think I came to Tufts with a lot of my views already formed but I couldn’t voice them as well as I can now - that’s probably the biggest way that those courses have helped me.*”

In addition to their class experiences, interviewees also regularly indicated that the diversity present at Tufts has positively affected their educational experience, as well as their civic and political views. For these students, the diverse student body seemingly increased their tolerance for others and understanding of the dynamics of difference by “*exposing*” them to “*more different groups of people.*” These interviewees felt that their college environment had allowed them to encounter “*more diverse politically, and also economically, socially*” peers. Interviewees indicated that their civic and political viewpoints had been influenced by these interactions with more diverse students, with interviewees most commonly stating that it had “*broadened my understanding of other groups.*” Interviewees mentioned other specific ways in which the diversity on-campus had influenced their viewpoints, including enhancing their understanding of the benefits and difficulties associated with diversity. For instance, one interviewee remarked, “*I have learned a lot since I came to Tufts...being in communities that are diverse in all spectrums of that word is important. I definitely think I realized how important and in specific ways while being at Tufts.*” In context of the complexities of diversity, another interviewee commented, “*I think I both value them more and find them more challenging to work with. I think I’ve definitely become more complex in the way that I think about the dynamics of difference, or diversity.*”

Interviewees commonly continued on to highlight how their college experience had encouraged self-discovery that led to enhanced exposure to, awareness of, and interest in civic and political issues. As noted by one interviewee, “*I’m learning - my beliefs personally, politically have changed so much, and a lot of it seems through*

groups, what people believe in, and through my own classes, and just through my own friendships and experiences.” Another interviewee echoed this sentiment, and attributed the changes within her to the *“combination of being outside in the community...and growing much stronger with my own self.”* Other interviewees linked their college experience to an exploration of their civic and political viewpoints, as described by one interviewee as follows:

I’m finding myself, and I don’t want to commit myself...I think the best way to do that is change your whole outlook and experiences and being open-minded.

The most important thing I can do right now is not judge and view everything as an experience to learn from, and share it with others.

With regard to political knowledge in particular, one interviewee commented, *“I don’t think I really knew all the differences between a conservative and a democrat before I got to Tufts and now I totally understand the differences.”*

Additionally, many interviewees recalled how their experiences on-campus had changed their civic and political viewpoints. These changes surprised one interviewee, as she remarked *“before going to college I didn’t really know how my viewpoints would change, and they did... I think every new experience you learn a lot.”* With regard to particular developments over their four years at college, individual interviewees indicated: *“I’ve learned a lot in terms of political and civic issues,” “my opinions changed about social causes,”* and *“I’ve experienced a lot of changes on how I feel I can be effective in creating change.”* One interviewee discussed specifically how his college experience had affected his political stance:

I think I'm probably leaving Tufts more sort of left than I was when I got here... I think a lot of what I had been taught before in school or just sort of in general in life before I got here, it was just sort of a lot of "this is the way things are," and there's just that way because. And here I spent a lot of time going beyond that "they're just this way because" and finding out exactly why they are that way. And I think just inherent in doing that- it's nearly impossible not to move toward a more liberal viewpoint.

Other interviewees spoke in more general terms about a "*shift in terms of how I view things*," with one interviewee noting, "*my attitudes have really changed, my understanding of things have really changed.*" That being said, several other interviewees felt that their experiences during college did not alter their civic and political viewpoints. For example, one interviewee stated, "*I've stayed pretty much the same in my level of commitment, and my opinions about things.*" Another interviewee credited his inactivity in civic and political activities with the consistency of his opinions. He stated, "*In terms of socially and politically, I feel like because I didn't have as much of an opportunity to focus on those aspects at Tufts, so [my attitudes] haven't changed dramatically since high school.*"

Discussions on-campus, with other students, faculty members, and invited speakers, were also attributed with altering interviewees' civic and political attitudes. More specifically, these interviewees pointed out that by "*talking to other people informally*" through "*interactions with peers and professors*" and "*panel discussions and special events*," new and different perspectives were brought forth that influenced

their own viewpoints. As described by one interviewee, his opinions changed by *“being open-minded and listening to other people, and deciding what is best in a rational sense.”* Interviewees also viewed their general involvement on-campus as key to the development of their attitudes, with students frequently attributing their participation in specific activities with broadening their viewpoints. For example, one interviewee commented that *“being at Tufts has helped me to be more involved, and that’s what shaped my ideas on my ability to make a change.”*

Chapter 5: Discussion & Conclusions

Contributions of the Study

Astin's I-E-O Model of student change was used as the theoretical framework in this study to explore the extent to which college students' environment, defined as their civic engagement involvement during their undergraduate tenure, impacted their acquisition of attitudes supportive of civic engagement over their time in college. This was deemed appropriate for this study given the particular context of Tufts University, characterized by students for its pervasive promotion of civic engagement ideals on-campus. As described by one student in a follow-up interview, "*It was very obvious even before I got [to Tufts] that people are very active in social and political [issues]...I feel like Tufts gives a really good message that 'You can make a difference and we're going to try to give you all the tools we can to make sure that happens.'*" This was critical to this study, as past research has shown that environments supportive of community involvement, social activism, and tolerance of diversity can increase students' support of liberal attitudes (Astin, 1993; Pascarella & Terenzini, 2005; Pew Partnership for Civic Change, 2004).

This study signaled a shift from past research in higher education and youth civic development as it simultaneously explored the development of college students on multiple civic engagement involvement and attitudinal outcomes. In particular, it measured students' growth over their four-year college experiences in an expanded assortment of civic engagement activities. It also jointly tracked students' affect towards

their own self-efficacy, the importance of commitment to the public good, and racial understanding. This included an extended definition of students' internal political efficacy, to include their self-confidence to have an impact on a community through community service and civic involvement as well as political action. The study therefore investigated the process through which students' involvement and attitudes change over time in college, while concurrently exploring the relationship between students' participation in a wide variety of activities and their acquisition of a comprehensive set of pro-civic engagement attitudes. It therefore answered a call put forth by Longo and Meyer (2006) for more research to be conducted that further explores the connections, or lack of connections, between civic and political engagement. This study also highlighted any differential impact that students' college involvement had on students of different gender and racial/ethnic backgrounds.

Results of the Study

The presence of a significant relationship between all three CPAAS Involvement sub-scales, along with four of the five Civic Engagement sub-scales, and the covariate in this study confirmed the hypothesis that students with high levels of involvement in civic engagement activities in high school would participate at high rates as well as endorse pro-civic engagement attitudes in college. These results therefore corroborated past research supportive of a connection between pre-college involvement and participation in and positive affect towards civic engagement during college (Astin & Sax, 1998; Cruce & Moore, 2006; Flanagan, Galloway, Gill, Galloway, & Nti, 2005; Griffith & Thomas, 2006;

Hart, Donnelly, Youniss, & Atkins, 2007; Jones & Hill, 2003). The Tolerance of Diversity sub-scale emerged as the only CPAAS attitudinal scale that was not significantly correlated with students' civic engagement involvement levels in high school. This finding, though unpredicted, was supported by a past study (Volkwein, 1991) that showed that classroom experiences, not involvement, have the strongest relationship to the development of racial understanding.

It was also expected in this study that the inclusion of the covariate would account for some, but not all, of any significant development that was witnessed in students' involvement and attitudes over their undergraduate tenure. However, students' high school civic engagement participation was shown to account for the changes found in Civic Activities, Internal Service Efficacy, and Internal Political Efficacy. These results will be discussed in further detail in subsequent sections in this chapter, which place the specific significant and non-significant findings in context of the three research questions posed in this study. It also presents the limitations of the study and suggestions for extensions of this study into future research.

Research Question 1: Development of Civic Engagement

Involvement

With regard to students' patterns of involvement in civic engagement activities over their undergraduate tenure, it was expected that students' Rasch person estimates on the CPAAS Involvement sub-scales would monotonically increase during their time at the institution. It was therefore hypothesized that students' participation in Political

Activities, Civic Activities, and Expressive (Public Voice) Activities would continually increase across their four years at college. Particular student groups' involvement in civic engagement activities were also investigated in this study. In particular, since past research has shown differential involvement between male and female students in community service, it was anticipated that female students would participate at higher levels in all types of civic engagement activities than male students. Additionally, given the literature supportive of differences between White and minority adolescents' participation rates, it was hypothesized that White students would be more engaged in all three types of civic engagement activities than Minority/International students.

The Rasch rating scale, RMANOVA, and RMANCOVA analyses performed in this study, however, revealed that students' longitudinal commitment to civic engagement involvement was much more complex than anticipated. Indeed, students' mean involvement levels in political and expression of public voice activities did not significantly change over their four years in college, indicating that students' participation in these activities did not develop during their undergraduate tenure. Additionally, students' participation in political and expressive (public voice) activities did not significantly vary according to their gender and/or minority status. More specifically, for political activities, students indicated consistently infrequently participating in these activities, with their mean Rasch person estimate being below -2.0 logits. As seen in Appendix F, Figure 1, this indicated that the average student failed to participate in even the most common political activity on the Rasch variable map during college, "participation in online political discussions or visiting a politically-oriented

website.” On average, students were also constantly disengaged from expression of public voice activities during their time on-campus. Indeed, the most recurrent activity, “helping to raise awareness about a particular social issue,” on the Rasch variable map (shown in Appendix F, Figure 3) was located at -1.09 logits, substantially higher than students’ mean involvement levels, which fell below -2.75 logits.

The results for students’ participation in civic activities were mixed, with the data confirming the hypothesis regarding differential involvement by gender and refuting the others. Students’ participation rates in civic activities were initially shown to fluctuate significantly across students’ four years at college through both a visual analysis of the Rasch variable maps as well as the RMANOVA. However, once high school civic engagement involvement was held constant, significant differences no longer exist within students’ participation rates according to their academic standing. As such, students’ involvement in civic activities was also shown not to develop significantly from their freshman to sophomore to junior to senior years in college. Instead, participation rates in college were steadily low, with mean involvement in civic activities less than -1.5 logits, as depicted on the Rasch variable map in Appendix F, Figure 2.

As expected, female students reported significantly more regular involvement in civic activities across their four years at college than male students even after accounting for the significant relationship between students’ high school civic engagement participation and their civic involvement in college. More specifically, female students’ adjusted mean involvement levels were -1.49 logits, as compared to -1.97 for male students; such that the average female student participated in civic activities at greater

rates than 53.9% of male students. Therefore, on average, female students were shown to be significantly closer to habitual “participation in community service” (located at -0.81 logits) than male students. Despite these significant findings for gender, students’ racial/minority status again did not significantly impact their involvement levels in civic activities throughout their undergraduate tenure.

As such, the significant difference between male and female students’ participation in civic activities emerged as the only significant finding with regard to differences between students’ involvement in civic engagement activities in college. These results therefore support the differential involvement by gender that has been found in past research on adolescents’ and college students’ participation in community service activities (Bogard & Sherrod, 2008; McLellan & Youniss, 2003; Metz, McLellan, & Youniss, 2003). This finding was expected, as the Civic Activities sub-scale contained the items most geared towards traditional community service activities, including participating in a community service organization, volunteering through a social organization, and helping to raise money for a charitable cause. This study failed to produce results, however, justifying the extension of these gender differences to other types of civic engagement involvement, including political and expressive activities. The results also did not serve to confirm past findings (Astin, 1993; Bogard & Sherrod, 2008; Flanagan, Cumsille, Gill, & Gallay, 2007) illuminating differences in the participation rates between students of varying racial/ethnic backgrounds in civic engagement activities.

The development of students' civic engagement involvement was also different than expected, as students did not significantly increase their participation levels in political, civic, nor expression of public voice activities throughout their undergraduate tenure as had been anticipated. Instead, students' involvement was shown to remain relatively constant across their four years in college in political, civic, and expression of public voice activities. In particular, student participations' levels in Political Activities, Civic Activities, and Expressive (Public Voice) Activities were shown to be fairly low on the CPAAS Involvement scale. Importantly, students helped to provide explanations for this trend. Indeed, students noted that time constraints due to competing priorities, such as commitments to other extra-curricular activities and academic demands, served as major barriers to participating in multiple activities. While several interviewees did highlight community service activities that they were involved with during their undergraduate tenure, many more pointed towards heavy involvement in time-consuming routine college extra-curricular activities. Additionally, students described themselves as less committed to political involvement than civic engagement involvement, with most students limiting their political activities to voting. Overall, however, students most often engaged in activities on-campus similar to those that they had participated in during high school. As such, since the majority of students indicated being involved in typical higher education extra-curricular activities such as athletics, performing arts, and cultural or religious organizations, interviewees noted that there was little free time left over to engage in civic engagement activities.

Students also provided insight into the deficiency of linear growth in their involvement levels in civic engagement activities during college in their follow-up interviews. Notably, students commonly indicated that their participation in activities had varied during their college experience; particularly between their freshman/sophomore and junior/senior years. In particular, students expressed that specific upper-classman experiences, including studying abroad, living off-campus, and post-graduation preparations had affected their interest and participation in activities during their last two years in college. Additionally, other students noted that their involvement throughout college evolved from exposure to a breadth of activities early on to focusing in depth on a select few activities that they considered most important. With regard to involvement in civic activities in particular, students were split as to whether their involvement increased or decreased from their high school participation levels during their undergraduate tenure. Notably, a few students indicated that their participation in civic activities declined slightly through their four years on-campus as community service was no longer a mandatory requirement for them to complete.

The students' reflections on their college participation in activities expressed in the follow-up interviews therefore provided plausible reasons that steady, increasing civic engagement involvement across students' four years in college was not revealed through the results of this study.

Research Question 2: Development of Civic Engagement Attitudes

In this study, it was also hypothesized that students' attitudes towards civic engagement would develop positively during their four years at college. Therefore, it

was expected that the results would provide evidence of significant, continual increases in students' Rasch person estimates on the CPAAS Civic Engagement sub-scales across their undergraduate years. These developments were anticipated to occur in all five areas of civic engagement attitudes, including Internal Service Efficacy, Internal Political Efficacy, Civic Accountability, Tolerance of Diversity, and Internal Civic Efficacy. As with involvement, since past research (Pascarella et al., 1988; Pascarella & Terenzini, 2005; Sax, 2000) has revealed differences in students' commitment to civic engagement ideals by gender and minority status, it was also theorized that differential development would occur between these student groups during students' undergraduate tenure. In particular, it was expected that female students would display higher levels of dedication to pro-civic engagement attitudes than their male peers (Bogard & Sherrod, 2008; Metz, McLellan, & Youniss, 2003). Given previous studies also detected differential development in students' civic engagement attitudes by minority status, it was also anticipated that White and Minority/International students' growth would significantly vary on the five sub-scales.

As with the development of students' involvement, however, students' growth in civic engagement attitudes across their undergraduate tenure were shown to be more complicated than expected through the Rasch rating scale, RMANOVA, and RMANCOVA analyses performed in this study. In actuality, dissimilar patterns of development during college and differential attitudes by gender and/or minority emerged in this study for each of the five Civic Engagement sub-scales. While significant development was not shown to occur with regard to service, political, or civic self-

efficacy, students did display significant growth in their attitudes towards civic accountability and differential changes in their tolerance for diversity by gender during their college experience. As such, gender was not shown to be a divisive factor in students' acquisition of pro-civic engagement attitudes, as was expected from previous research (Bogard & Sherrod, 2008; Metz, McLellan, & Youniss, 2003). Additionally, students' attitudes in college across all five aspects of civic engagement also did not vary significantly according to their minority status. These results therefore refuted past studies that had depicted students' development of pro-civic engagement attitudes as connected to their minority status (Bogard & Sherrod, 2008; Flanagan, Cumsille, Gill, & Gallay, 2007; Pascarella et al., 1988; Pascarella & Terenzini, 2005; Sax, 2000).

SELF-EFFICACY

The results for students' affect towards their Internal Service Efficacy and Internal Political Efficacy were different than expected based on previous research. Students' attitudes towards their ability to impact a community through community service and political processes were both initially shown to change significantly across students' four years at college. These longitudinal shifts were detected through both a visual analysis of the Rasch variable maps as well as the RMANOVAs. In particular, students' support for their Internal Service Efficacy was shown to significantly weaken over their undergraduate tenure. Likewise, a significant negative trend was also witnessed with regard to students' Internal Political Efficacy attitudes. These significant changes differed by students' minority status, however, with White students' self-efficacy towards politics significantly diminishing during their college experience. In contrast,

Minority/International students' affect towards their individual power to invoke change through political processes remained statistically consistent. However, once the effect of high school civic engagement involvement was removed, the significant trends in students' attitudes for both sub-scales according to their academic standing (and minority status, for political self-efficacy) ceased to exist.

As such, students' self-confidence in the power of their community service and political engagement was shown not to significantly develop across students' undergraduate years. Instead, students continued to support attitudes indicative of their belief in their service and political self-efficacy throughout their freshman, sophomore, junior, and senior years. As displayed in Appendix G, Figures 1 and 2, on average⁴, students displayed continual endorsement of even the most intense attitudes on the Internal Service Efficacy and Internal Political Efficacy sub-scales. This equated to the average student agreeing that "I feel I have the ability to make a difference in my community" (0.73 logits) and "By participating in political activities, I can help people to help themselves" (0.60 logits).

Students' attitudes towards their Internal Civic Efficacy also did not significantly change across students' four years at college, nor did their perspectives significantly vary by gender and/or minority status. On average, students constantly endorsed statements in favor of their ability to personally invoke change through a connection to their community across their four years at college. Specifically, students' mean attitude measures, which centered around 1.0 logits, were slightly above the most controversial

⁴ Students' mean attitudinal measures across their college experience were 2.3 logits from the Internal Service Efficacy sub-scale and 1.7 logits for the Internal Political Efficacy sub-scale.

item on the sub-scale, “I unselfishly contribute to my community,” shown to be located at 0.84 logits on the Rasch variable map in Appendix G, Figure 5.

The expectation for positive student growth in self-efficacy purported in this study was based on past evidence from studies that described significant development in students’ belief in their own ability to contribute to a community through community service following college experiences (Astin, 1993; Eyler, Giles, & Braxton, 1997; Myers-Lipton, 1998; Sax & Astin, 1998). The results of this study did not confirm these previous findings, but instead upheld the conclusions from other previous studies that showed either no development or even a slight decline in students’ self-efficacy during college (Giles & Eyler, 1994; Markus et al., 1993; Sax, 2000). This study also failed to corroborate past research that highlighted significant development in students’ commitment to an understanding of political processes, involvement, and knowledge during their undergraduate years (Sax, 2000; Vogelgesang, 2000). With regard to gender differences, the anticipated split between female and male students’ service, political, and civic self-efficacy attitudes also did not emerge, refuting past research that showed female students as more dedicated to these ideals than male students (Bogard & Sherrod, 2008; Metz, McLellan, & Youniss, 2003).

Students’ reflections on the sources of their civic and political attitudes in the follow-up interviews provided perspective on these non-significant findings. Overwhelmingly, students, regardless of their gender or minority status, linked their parents’ civic engagement actions and attitudes with their own beliefs towards the importance of and potential impact of community and political engagement. As such,

students indicated that their attitudes towards the power of the community service, political, and community involvement had largely been determined before their college experience. Therefore, while some students pointed towards gains in their internal self-efficacy during their undergraduate tenure, many more students noted their self-confidence had not grown across their four years in college. Instead, for these students, college afforded them the opportunity to further explore and express their own perspectives. These sentiments put forth by the students therefore echoed the conclusion in Pascarella and Terenzini, as cited in Arnett (2000) that college can afford students the chance to be exposed to differing and challenging beliefs from others that often result in better understanding of their own viewpoints.

CIVIC ACCOUNTABILITY

In contrast, students' support of Civic Accountability attitudes did increase during students' undergraduate tenure, albeit in a slightly different way than expected due to a slight decrease in the intensity of their commitment to the public good between freshman and sophomore year, followed by positive growth from sophomore to senior year. This development, first illuminated by perceptible changes on the Rasch variable maps and significant results of the RMANOVA, was upheld through the RMANCOVA. However, though students' attitudes were initially shown to vary by gender, these differences were eliminated following the inclusion of the high school covariate. Therefore, all students' Civic Accountability attitudes were shown to significantly develop during their four years at college, even after accounting for the influence of high school civic engagement involvement. In particular, on average, students grew in their sense of civic

responsibility from routine backing as underclassmen of the sentiment “People ought to help those in need as a "payback" for their own opportunities, fortunes, and successes,” located at 0.57 logits on the Rasch variable map in Appendix G, Figure 3, to acceptance of the notion that “I don't have a lot to learn about local and national events,” situated at 1.16 logits, as seniors. This finding corroborated with results of past research that indicated that college students displayed growth in the importance attached to community involvement in social problems following civic involvement in college (Kuh, 1993; Myers-Lipton, 1998; Sax, 2000; Sax & Astin, 1997; Villalpando, 1996).

In the follow-up interviews, students substantiated this development in their attitudes towards civic accountability and the need for societal commitment to the public good. Indeed, several students highlighted how their college experience had illuminated the need for systemic changes in public policy to address civic and political issues. For a few interviewees, this corresponded to a realization that individuals are not always responsible for their own misfortunes as they moved towards an understanding that social problems are commonly caused by institutional factors. When asked to explain these shifts in their attitudes towards civic accountability, students indicated that their college experience had afforded them the opportunity to gain incrementally deeper perspective, as well as more advanced analytical tools, on civic and political issues across their four years on-campus.

TOLERANCE OF DIVERSITY

Although students’ attitudes towards Tolerance of Diversity were shown to significantly change during their undergraduate tenure according to their gender, these

shifts did not unfold as anticipated (continual positive growth for all students). More specifically, this study found that male students' acceptance of differences significantly weakened following their freshman year, whereas female students' affect did not significantly develop over their four years in college. As a result of the significant decrease in male students' endorsement of attitudes representing sensitivity to diversity, female students presented significantly more understanding attitudes than 53.8%, 54.6%, and 55.3% (respectively by upper-classman academic standing) of male students during their sophomore, junior, and senior years. As displayed in the Rasch variable map in Appendix G, Figure 4, this equated to more female students consistently supporting the most controversial item on this sub-scale, "I spend a lot of time with people outside my immediate circle of friends" (located at 0.67 logits) than male students during their last three years on-campus.

These results therefore contradicted past research on students' universal development of attitudes in favor of racial equity, interactions with students of differing racial/ethnic backgrounds, and understanding of the benefits and challenges associated with diversity throughout their college experience (Astin, 1992; Astin & Sax, 1998; Kuh et al., 2001; Kuh & Vesper, 1997; Milem, 1999; Wood & Chesser, 1994). Additionally, these results failed to corroborate findings from Astin (1993) that detailed inverse development in students' appreciation for the dynamics of diversity by minority status. This study did, however, highlight differences between male and female students' appreciation for and openness to diversity.

Students helped explain these unforeseen findings during the follow-up interviews. Importantly, while many students characterized the on-campus environment at Tufts as more diverse than their respective hometown or high school, several other students questioned how diverse the campus truly was due to the lack of differences in educational background and socio-economic status in the student body. Additionally, students also highlighted that the persistent presence of self-segregation among various racial and ethnic groups on-campus mitigated the benefits of having a diverse student population. A few students did point out, however, that the diverse atmosphere enhanced their educational experiences and viewpoints by increasing their understanding of the dynamics of difference by exposing them to more different groups of people. That being said, more students described the most influential factor in their acquisition of tolerance of others as their upbringing, including their parents' attitudes towards diversity and the cultural atmosphere of their hometown and high school. As such, many students felt that their opinions of the benefits of diversity were decided prior to their enrollment in college.

Research Question 3: Relationship between Involvement & Attitudes

In terms of the relationship between students' civic engagement involvement and attitudes, this study hypothesized that students' development of pro-civic engagement attitudes would be proportional to their involvement levels in civic engagement activities in college. In general, it was expected for college involvement to be positively correlated with attitudes supportive of civic engagement within each of students' four-years in college based on previous studies that confirmed this connection. This study confirmed

this hypothesis, as various CPAAS Involvement and Civic Engagement sub-scales were shown to be significantly associated by canonical correlation within students' freshman, sophomore, junior, and senior years. More specifically, students' involvement accounted for 46.1%, 59.9%, 61.6%, and 33% (each, respectively) of overlapping variance in their civic engagement attitudes across their college experience. This study therefore provided valuable insights about which type of civic engagement involvement, at what point in students' college experiences, were maximally related to their development of specific civic engagement attitudes. Overall, it also displayed that those students regularly involved in civic engagement activities in college display stronger commitments to civic engagement ideals.

During students' freshman and sophomore years, recurrent involvement in expressive (public voice) and political activities was positively correlated with support for Internal Civic Efficacy attitudes. As such, students heavily involved in expression of public voice and political activities were more likely than less involved students to agree to the potential influence of their participation on a community. Additionally, in students' freshman year, high levels of involvement in both expressive (public voice) and political activities were also significantly linked to self-confidence in terms of Internal Political Efficacy. This finding therefore supported past research that showed the development of political attitudes to be significantly enhanced by participation in activities designed to encourage political understanding (Colby, 2008; Sax, 2000; Vogelgesang, 2000). These results also provided more evidence for the positive connection between participation in community-oriented activities and the development

of altruistic values (Astin & Sax, 1998; Kuh, 1993; Myers-Lipton, 1998; Sax, 2000; Sax & Astin, 1997; Villalpando, 1996).

Furthermore, in students' freshman and sophomore years, students' Internal Service Efficacy attitudes were positively related to involvement in civic activities and negatively associated with participation in political activities. As such, in students' first two years on-campus, frequent civic activities and infrequent political activities involvement were linked with students' endorsement of their ability to invoke change in a community through community service. This finding expanded previous research on the connection between civic and political involvement and perceptions of the ability of community service to effect change in a community. Indeed, this finding lends support to the assertion by Longo and Meyer (2006) that community service is seen as an "alternative to politics" (p. 9), as disconnect emerged between students' participation in apolitical and political activities and their corresponding viewpoints on the power associated with volunteerism and involvement in community service.

As in freshman and sophomore year, a connection also emerged in students' junior year between their participation in expressive (public voice) and civic activities. Once again, participation in these activities corresponded to strong attitudes towards Internal Civic Efficacy, however, during this academic year; this involvement was also significantly related to positive attitudes towards Internal Service Efficacy and Tolerance of Diversity. The relationship between involvement and attitudes during the junior year therefore coincided with past studies that have found improvements in students' self-efficacy following civic engagement involvement (Astin, 1993; Astin & Sax, 1998;

Eyler, 1997; Myers-Lipton, 1998; Sax & Astin, 1997). The finding regarding the link between participation in expression of public voice and civic activities and sensitivity towards diversity also matched the results of past research linking community service participation with understanding of racial differences (Astin & Sax, 1998; Pascarella & Terenzini, 2005).

Students' junior year signaled a particularly strong correlation between their political involvement and their feelings of Internal Political Efficacy, such that students highly engaged in political activities expressed attitudes in favor of their political self-efficacy. This finding lent support to a past study that connected students' participation in political activities with their self-confidence to impact a community through political processes (Balch, 1974).

During students' senior year, involvement in any civic engagement activities (civic, expressive (public voice), and/or political) were shown to be positively linked with students' support for pro-civic engagement attitudes with regard to Internal Civic Efficacy, Internal Political Efficacy, and Internal Service Efficacy. These results therefore expanded upon the findings from freshman, sophomore, and junior years, as students' involvement in any or all of the civic engagement activities on the CPAAS Involvement scale were related to their self-confidence in their abilities to make a difference in a community through community service and civic participation, in addition to political involvement. As such, this finding in students' senior year expanded upon past research that has found community service to be linked with increased students' affect towards political involvement and attitudes (Astin, 1993; Colby, 2008; Eyler &

Giles, 1999; Eyler, Giles, & Braxton, 1997; Hart, Donnelly, Youniss, & Atkins, 2007; Sax, 2000).

Limitations of the Study

Since this study explored the development of college students' civic engagement involvement and attitudes at a single institution, its external validity is limited due to the scope of the generalizability of the results. In particular, the findings of this study are applicable only to other traditionally-aged, residential students at four-year institutions. More specifically, since past research has shown institutional selectivity and status as a private institution to be positively correlated with students' development of civic and political values (Kuh, 1993; Pascarella & Terenzini, 2005), these results are only relevant for college students at comparable four-year private institutions with similar standards for institutional selectivity. Additionally, since students reiterated in the follow-up interviews that the defining aspects of the Tufts' college environment are its reputation for and dedication to civic engagement, political awareness, and diversity, the appropriate application of the results of this study were further constrained. Indeed, this environment on-campus further trimmed the transferability of these results to students at institutions with similar civic missions, as recent studies have connected liberally-oriented campus atmospheres with student gains in civic engagement (Astin, 1993; Pascarella & Terenzini, 2005; Pew Partnership for Civic Change, 2004).

In order to help ameliorate concerns over the external validity of the findings of this study, the CPAAS data structure for the study sample were anchored on item and

step calibrations from a nationally-representative sample of college students. The Rasch rating scale model was then utilized as a confirmatory test in this study to identify the extent to which the Involvement and Civic Engagement sub-scales were performing as expected with the study data. Confirmatory factor analysis, however, exposed some misalignment between the CPAAS national data structure and the 2007 Tufts data. While the Political Activities sub-scale was well-fit to the national data, the other sub-scales did not line up as satisfactorily as desired. Significant differences also emerged between the national sample and the study sample with regard to key demographics (minority status) and mean involvement and attitudes on particular sub-scales at specific times during their college experience. These discrepancies presented potential measurement issues with applying the national structure to the study data.

As such, it was not surprising that students' placement on various sub-scales surfaced as a limitation in this study. In particular, all three of the CPAAS Involvement sub-scales displayed floor effects, poor targeting to the sample, and unexpected variation due to students' low participation rates. As a result of these measurement issues, students' involvement levels might have been inadequately distinguished due to a lack of participation rates at the low-end of the CPAAS Involvement scale⁵. The scale, designed as a 6-point, Likert-type rating scale on which students were asked to designate their participation hours per year, might have been more appropriately designed with a smaller range of options, expanding the low-end involvement levels and eliminating the high-end options. Additionally, the scale could be improved by the inclusion of more common

⁵ Scale: 1 = none, 2 = 10 hours or less, 3 = 11-25 hours, 4 = 26-60 hours, 5 = 61-120 hours, and 6 = more than 120 hours.

civic engagement activities in which college students routinely participate. This study was also slightly limited by the measurement capabilities of the CPAAS Civic Engagement sub-scales for the study sample. In particular, the students' attitudes were unexpectedly supportive of the items on the Internal Service Efficacy and Internal Political Efficacy sub-scales, suggesting a need for additional items requiring more intense commitment to how individual community service and political actions can impact a community.

These measurement issues might have been exacerbated by the attribution problems often associated with longitudinal studies, another unique limitation of this study due to its research design. Indeed, the development and lack of development of students' particular civic engagement involvement and attitudes over time could have also been affected by extenuating factors not accounted for in this study, including the impact of their overall college experience, normal maturation, and historical changes. Several interviewees highlighted this limitation of the study in their follow-up interviews, as they attributed any growth in their civic engagement attitudes over time in college to their overall college experience and becoming more mature while on-campus. Therefore, instead of pointing to specific experiences or environments that influenced their development, these interviewees noted that their undergraduate tenure simply allowed for self-discovery and self-exploration that included exposure to, awareness of, and interest in civic and political engagement.

Implications for Future Research

The findings of this study suggest several possible directions for future research into college students' development of and the connections between civic engagement involvement and attitudes during the college experience.

First, it would be interesting to extend the use of the CPAAS Involvement and Civic Engagement sub-scales to different higher education environments, including public institutions, community colleges, and institutions that do not specify civic engagement as a part of their institutional mission. While the data structure for this study was based on a national sample, the specific results were based upon students in a specific college environment. As such, it would be interesting to investigate how, if at all, results would vary with regard to students' development in involvement and attitudes over their undergraduate tenure in alternate higher education settings. Additionally, it would be useful to explore how civic engagement involvement relates to attitudes at campuses with different atmospheres, student demographics, extra-curricular activities, and institutional foci.

In addition to expanding the use of the CPAAS to other higher education settings, it could also be interesting to track college students' development on these scales post-college to gauge how involvement and attitudes develop in the final stages of emerging adulthood and beyond. Indeed, since the developmental period in which students attend college is so critical to their adaptation of viewpoints, an analysis of individuals' civic engagement involvement and attitudes following this life stage could prove informative to the overall impact of the college experience in the development of these values. These

analyses would enable additional exploration into how developmental characteristics, such as autonomy, community connectedness, and leadership skills impact students' civic engagement involvement and development. Likewise, further investigations into the differences between college-attending emerging adults and non-college attendees could shed further light on the specific influence of the college experience on the acquisition of the ideals of active citizenship.

The impact of further refinement of the CPAAS Involvement and Civic Engagement sub-scales could also be explored, given the measurement issues with the current scales highlighted in this study. In particular, the scales could be augmented with additional items geared towards measuring students' civic knowledge and skills, in addition to their civic attitudes. For example, elements of students' classroom experiences could be included, as students have suggested these to be influential in their development as active citizens. Additionally, the CPAAS Involvement scale, specifically, could benefit from the inclusion of more routine civic engagement activities for adolescents and college students to engage in, such as voting. Also, given the limited findings between the connection of civic engagement involvement and the development of tolerance of diversity, more items should be included that query individuals on their participation in activities designed to promote an understanding of racial/ethnic issues. Likewise, this finding highlighted possible disconnects between civic and political involvement, and resulting attitudes towards the importance of these elements of active citizenship. Additional research should be conducted on this specific relationship to more clearly define how civic and political engagement influence one another.

Final Conclusions

This dissertation explored if, how, and when higher education institutions can impart civic values into their students through involvement in civically-related aspects of their college environment. Despite its limited significant findings with regard to students' development in participation in community service, politics, and expressive activities as well as internal service, political, and civic self-efficacy, this study did provide some insight into students' growth in their beliefs in civic accountability and tolerance of diversity. In addition, differences between male and female students were only highlighted in terms of students' community service participation and openness to diversity. As such, these findings revealed an important lack of differences between students of varying genders and minority status with regard to civic engagement involvement and attitudes. Additionally, though the magnitude of the specific relationships varied by academic standing, this study provided a framework regarding how best to maximize students' involvement to promote civic engagement attitudes in support of institutions' missions. These findings will help higher education administrators trying to distinguish which particular environmental influences positively or negatively impact the desired civic engagement outcomes, above and beyond students' incoming dedication to civic engagement. This study is therefore of import to members of the higher education community who are currently working to find appropriate means through which to promote the notions of civic values and responsibility to their students.

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Appendices

Appendix A: Interview Protocol

1. How would you describe your current level of involvement in civic and political activities?
 - a. High-participator? Low-participator?
 - b. Do you feel that you are more or less involved in these types of activities than you were in high school?
 - i. What do you feel has influenced your decision to become more/less involved since you have been at Tufts?
2. What types of Tufts-sponsored activities have you been involved with in the past year?
 - a. How and why did you get involved in this activity?
 - i. Do you feel that your involvement in this activity has influenced your levels of community and civic involvement?
 - b. Do you feel as if your participation in these activities has been dedicated to a political or social improvement purpose?
 - i. If yes, how so?
3. Have any of your academic courses contributed to your understanding of or interest in civic or political issues and events?
 - a. If yes, which courses?
 - b. How have these courses affected your attitudes, activities, or viewpoints with regard to civic and political involvement?
4. What types of activities outside of Tufts have you been involved with in the past year?
 - a. How and why did you get involved in this activity?
 - i. Do you feel that your involvement in this activity has influenced your levels of community and civic involvement?
 - b. Do you feel as if your participation in these activities has been dedicated to a political or social improvement purpose?
 - i. If yes, how so?
5. Do you feel that your participation in the activities or courses listed above has shaped or altered your civic and political viewpoints at all?
 - a. Has your view of your own ability to make a difference through politics or community-service changed at all?
 - i. If yes, how so? To what extent and in what ways?
 - ii. What aspects of the experience altered your attitudes?
 - b. Has your opinion towards the value of involving others in solving social problems changed at all?
 - i. If yes, how so? To what extent and in what ways?
 - ii. What aspects of the experience altered your attitudes?

- c. Has your opinion towards the positive and negative dynamics of difference changed at all?
 - i. If yes, how so? To what extent and in what ways?
 - ii. What aspects of the experience altered your attitudes?
 - d. Has your opinion towards the causes of social problems and potential solution strategies changed at all?
 - i. If yes, how so? To what extent and in what ways?
 - ii. What aspects of the experience altered your attitudes?
 - e. Do you keep informed about current social and political issues that are important to you?
 - i. If yes, how so? To what extent and in what ways?
 - ii. Is this different from how you remained up-to-date in high school?
 - iii. What aspects of your Tufts experience have altered your practices?
6. In your perspective, what has shaped your current civic and political viewpoints?
- a. Why do you feel that you've formed particular opinions with regard to:
 - i. Your ability to make an impact through political and community service?
 - ii. The value of an individual's commitment to community, society's commitment to the public good, and the importance of working towards social justice?
 - iii. The difficulties and benefits of diversity?
 - iv. The degree to which you remain informed about current civic and political issues, the causes of social problems, and solution strategies?
 - b. Overall, how important do you feel that these issues are?
7. As you contemplate the coming year, do you plan on pursuing any new/different activities or courses?
- a. What are the activities and/or courses?
 - b. Please describe what you hope to gain by becoming involved in these activities.
 - c. Do you feel that these additional activities will impact your current civic and political viewpoints?
 - i. Why or why not?
8. As of right now, to what extent do you expect to be engaged in community and political service activities in the future?
- a. What factors have influenced how you currently anticipate being involved in the future?
 - b. How do you expect to become involved?
 - c. What do you feel will be the results of these actions/in-action?
9. How have you arrived at your current point-of-view regarding the impact of your civic and political engagement?
10. Looking back on your time at Tufts, to what extent do you feel that active citizenship played a significant role in your time at Tufts?

- a. In what areas of your experience was active citizenship highlighted (courses, activities, extracurricular activities, friendships)?
11. How prepared do you feel to enter the world as an “active citizen”?

Appendix C: CPAAS Exploratory Factor Analysis

Figure 1. CPAAS Involvement Scale

Factors		Total Variance Explained					
		Initial Eigenvalues			Extraction Sums of Squared Loadings		
		Total	% of Variance	Cum %	Total	% of Variance	Cum %
1	Political Activities	8.93	40.60	40.60	8.45	38.40	38.40
2	Civic Activities	2.30	10.45	51.05	1.89	8.58	46.98
3	Expressive (Public Voice) Activities	1.09	4.98	56.03	0.58	2.65	49.63

		Structure Matrix		
		1	2	3
q9a.11	Government or Political Organization	0.815		
q12a.4	Worked or volunteered for a political campaign	0.780		
q12a.17	Helped to promote political involvement or assisted with voter registration	0.767		
q12a.3	Wrote a policy analysis paper	0.633		
q12a.7	Participated in online political discussions or visited a politically oriented website	0.602		
q12a.1	Participated in community service		0.865	
q9a.3	Community Service Organization (e.g. Jumpstart, TLC, National Student Partnerships)		0.806	
q12a.12	Volunteered through a social organization		0.733	
q12a.6	Helped to raise money for a charitable cause		0.612	
q9a.6	Volunteer vacation/service-trip		0.483	
q9a.4	Outreach Organization		0.471	
q12a.5	Participated in a protest, march or demonstration			0.742
q12a.14	Attended an off-campus civic issue related conference or seminar			0.692
q12a.16	Helped to organize efforts aimed at solving environmental issues			0.672
q9a.5	Civil Liberties Organization (e.g., ACLU)			0.637
q12a.13	Helped to raise awareness about a particular social issue			0.600
q9a.2	Civic issue related conference or seminar			0.528
q12a.2	Conducted community-based research			0.524
q12a.15	Attended an on-campus speaker on a particular issue			0.521
q12a.8	Contacted or visited a public official (at any level of government) to ask for assistance or to express my opinion			0.516
q12a.10	Attended a meeting of town or city council, school board or neighborhood association			0.510
q12a.9	Contacted a newspaper, magazine, radio, or television program to express my opinion on an issue or candidate			0.505

Extraction Method: Principal Axis Factoring. Rotation Method: Oblimin with Kaiser Normalization.

Figure 2. CPAAS Civic Engagement Scale

Factors		Total Variance Explained					
		Initial Eigenvalues			Extraction Sums of Squared Loadings		
		Total	% of Variance	Cum %	Total	% of Variance	Cum %
1	Internal Service Efficacy	14.30	25.54	25.54	13.05	24.74	24.74
2	Internal Political Efficacy	5.97	10.66	36.20	5.45	9.73	34.47
3	Civic Accountability	3.61	6.45	42.65	3.10	5.58	40.16
4	Tolerance of Diversity	2.96	5.29	47.94	2.34	4.18	44.33
5	Internal Civic Efficacy	2.06	3.67	51.62	1.53	2.72	47.06

		Rotated Factor Matrix				
		1	2	3	4	5
R indicates reverse-coded items						
q20.4	I am confident that, through community service, I can make a difference in my community.	0.756				
q20.8	Through community service, I can apply knowledge in ways that solve "real-life" problems.	0.753				
q20.5	I am confident that I can help individuals in need by participating in community service activities.	0.730				
q20.6	I am confident that, in future community service activities, I will be able to interact with relevant professionals in ways that are meaningful and effective.	0.712				
q20.7	I am confident that, through community service, I can help in promoting equal opportunity for citizens.	0.705				
q20.3	I am confident that, through community service, I can help in promoting social justice.	0.695				
q20.9	By participating in community service, I can help people to help themselves.	0.692				
q20.10	I am confident that I will effectively participate in community service activities in the future.	0.667				
q20.2	In the future, I will be able to find community service opportunities which are relevant to my interests and needs.	0.648				
q20.1	If I choose to participate in community service in the future, I will be able to make a meaningful contribution.	0.633				
q20.33	I feel I have the ability to make a difference in my community.	0.569				
q10.15	Having an impact on the world is within reach of most individuals.	0.527				
q10.21	I feel that I can make a difference in the world.	0.516				
q20.11	If I choose to participate in political service in the future, I will be able to make meaningful contribution.	0.851				
q20.17	Through political activities, I can apply knowledge in ways that solve "real-life" problems.	0.816				
q20.14	I am confident that, through political activities, I can make a difference.	0.813				
q20.15	I am confident that, in future political activities, I will be able to interact with relevant professionals in ways that are meaningful and effective.	0.790				
q20.16	I am confident that, through political activities, I can help in promoting equal opportunity for citizens.	0.778				
q20.12	In the future, I will be able to find political service opportunities which are relevant to my interests and needs.	0.759				
q20.13	I am confident that, through political activities, I can help in promoting social justice.	0.741				
q20.19	I am confident that I will participate in political activities in the future.	0.739				
q20.18	By participating in political activities, I can help people to help themselves.	0.734				
q10.17	If I could change one thing about society, it would be to achieve greater social justice.	0.667				
q18.16	Most misfortunes that occur to people are frequently the result of circumstances beyond their control.	0.616				
R q18.2	People are not poor because they choose to be poor.	0.579				
q18.6	We need to institute reforms within the current system to change our communities.	0.562				
q10.5	In order for problems to be solved, we need to change public policy.	0.559				
R q10.4	We need to look further than the individual in assessing his/her problems.	0.559				
R q10.3	Individuals are not responsible for their own misfortunes.	0.551				
R q18.1	I understand why some people are poor when there are boundless opportunities available to them.	0.484				
q18.12	I would prefer seeing public officials do what is best for the whole community even if it harmed my interests.	0.479				
R q20.21	I don't have a lot to learn about local and national events.	-0.472				
q18.20	People ought to help those in need as a "payback" for their own opportunities, fortunes, and successes.	0.468				
q18.19	People, regardless of whether they have been successful or not, ought to help those in need.	0.419				
q18.8	It is important that equal opportunity be available to all people.	0.369				
q18.7	We need to change people's attitudes in order to solve social problems.	0.266				
R q20.25	I do not find it difficult to relate to people from a different race or culture.	0.602				
R q20.23	It is easy for a group to function effectively when the people involved come from very diverse backgrounds.	0.570				
R q20.24	I do not prefer the company of people who are very similar to me in background and expressions.	0.562				
R q10.22	I do not make quick judgments about people based on their apparent economic status.	0.550				
q20.26	I enjoy meeting people who come from backgrounds very different from my own.	0.452				
R q10.10	I do not tend to make certain assumptions about how homeless people go to where they are.	0.394				
R q20.28	I spend a lot of time with people outside my immediate circle of friends.	0.365				
q20.27	Cultural diversity within a group makes the group more interesting and effective.	0.290				
q20.29	I actively seek out and maintain relationships with individuals very different from me.	0.159				
q18.11	Meaningful public service is very important to me.	0.567				
q20.30	I have a strong attachment to my community.	0.566				
q10.13	I consider public service my civic duty.	0.501				
q20.31	I often discuss and think about how larger political and social issues affect my community.	0.501				
q20.34	I try to find the time or a way to make a positive difference in my community.	0.461				
R q18.9	It is easy to get me genuinely interested in what is going on in my community.	0.452				
q18.14	Adults should give some time for the good of their community or country.	0.452				
R q20.20	I know a lot about what is happening in my community.	0.442				
q18.10	I unselfishly contribute to my community.	0.368				
q20.32	I am aware of what can be done to meet the important needs in my community.	0.295				
q20.22	I am interested in seeking information about local or national issues.	0.292				

Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.

Figure 2. Civic Activities Rasch Variable Map

INPUT: 789 PERSONS 6 ITEMS MEASURED: 785 PERSONS 6 CATS

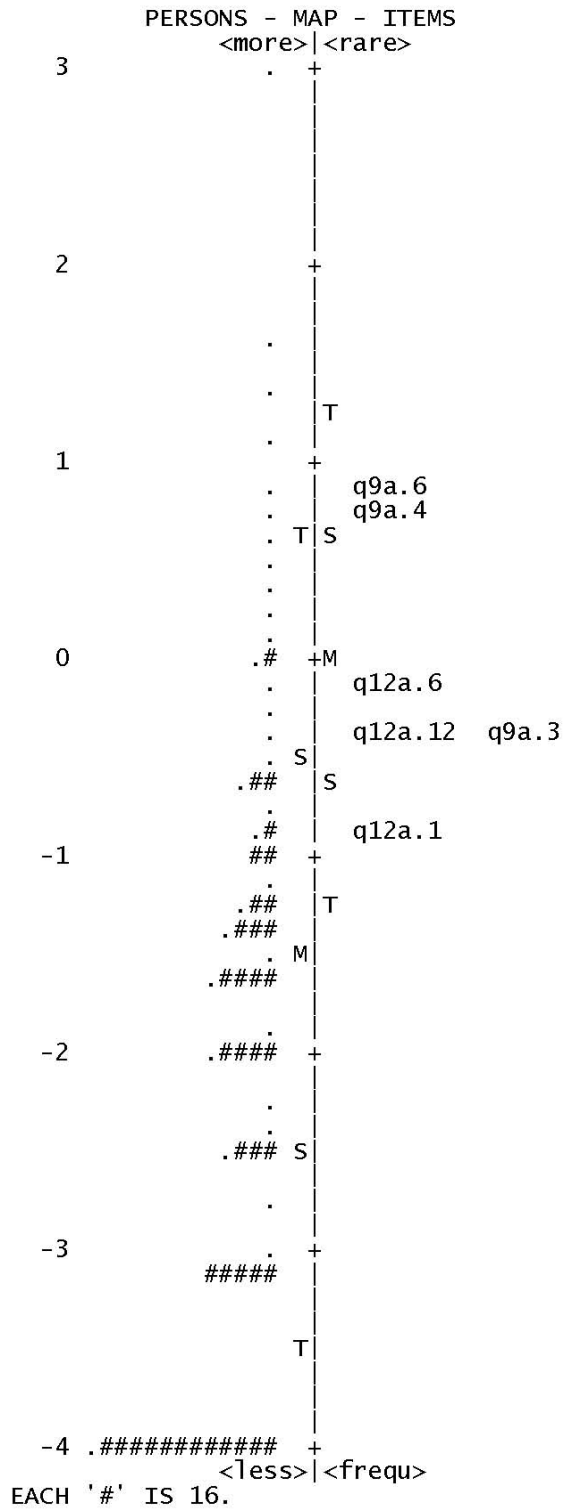
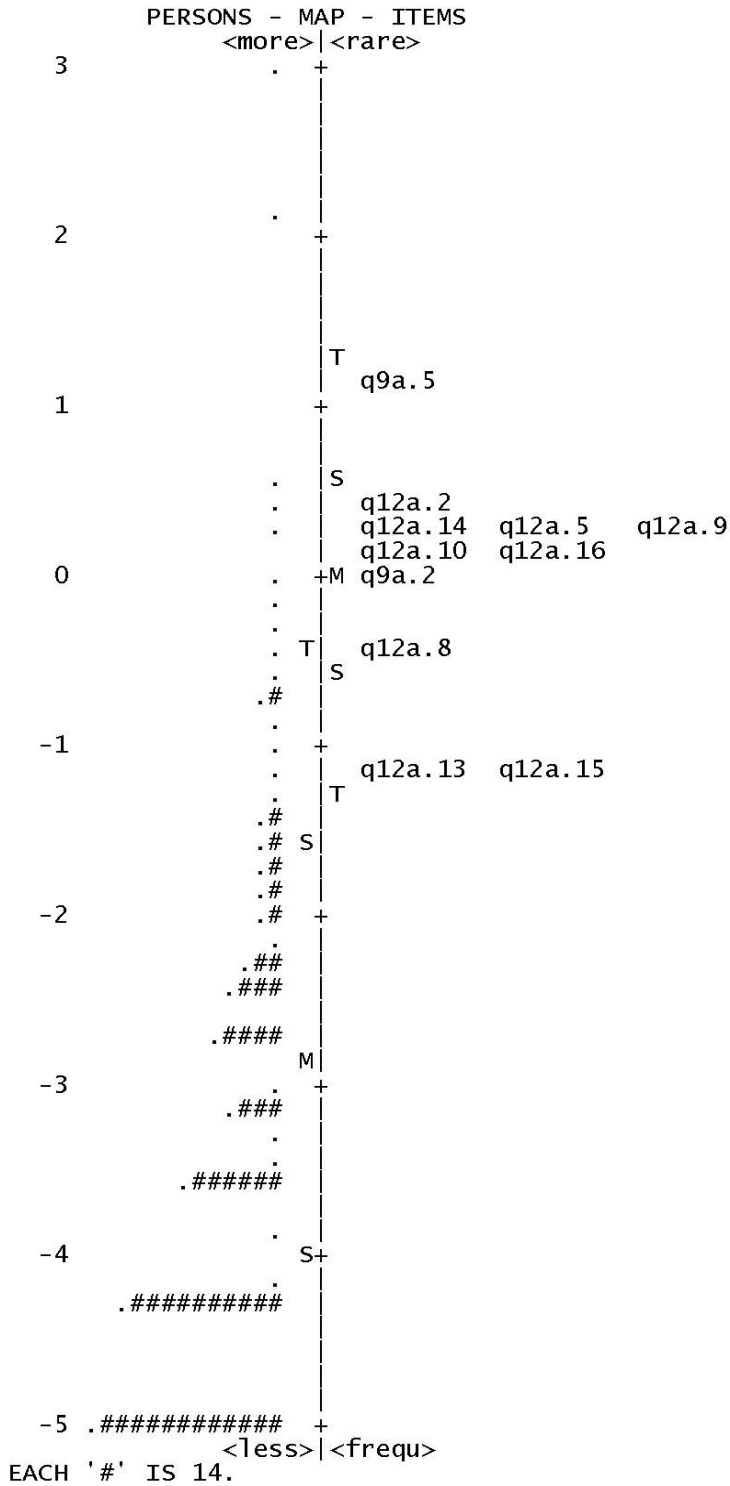


Figure 3. Expressive (Public Voice) Activities Rasch Variable Map

INPUT: 789 PERSONS 11 ITEMS MEASURED: 785 PERSONS 6 CATS



Appendix E: National Sample Rasch Variable Maps for Attitudes

Figure 1. Internal Service Efficacy Rasch Variable Map

INPUT: 789 PERSONS 13 ITEMS MEASURED: 784 PERSONS 5 CATS

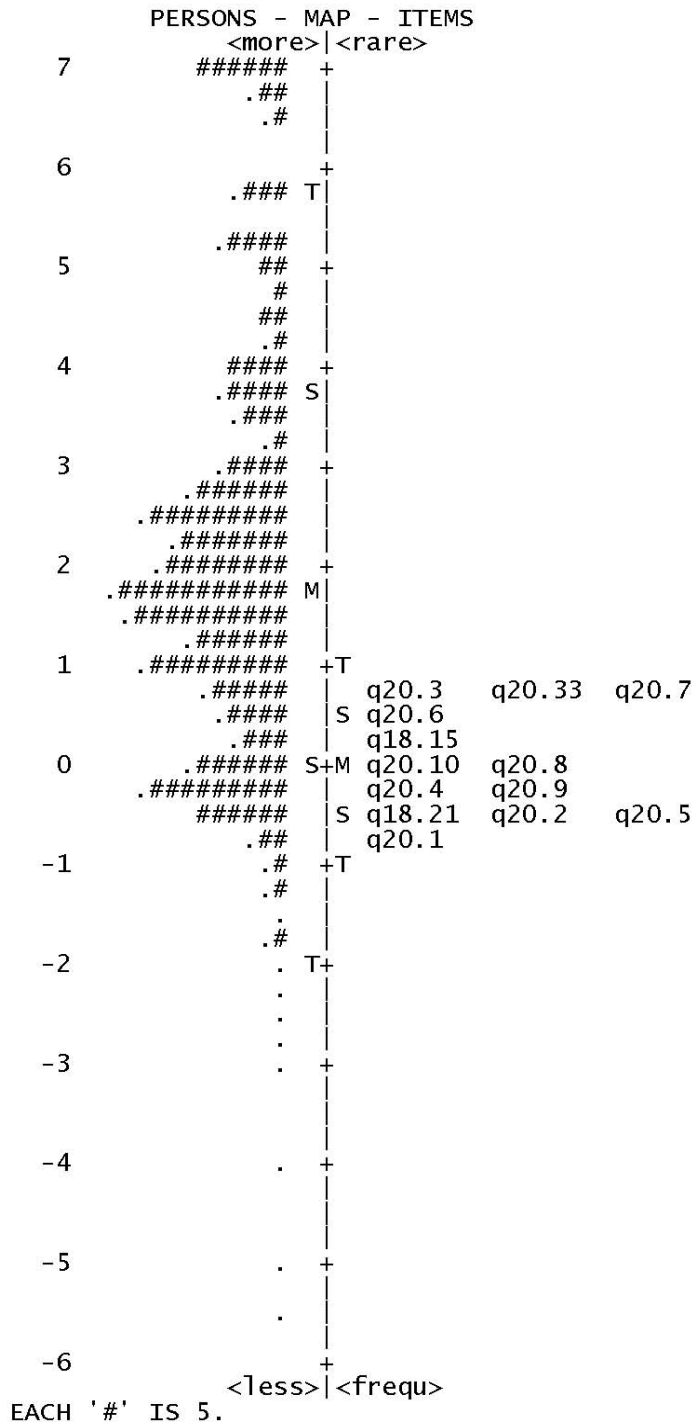


Figure 2. Internal Political Efficacy Rasch Variable Map

INPUT: 789 PERSONS 9 ITEMS MEASURED: 780 PERSONS 5 CATS

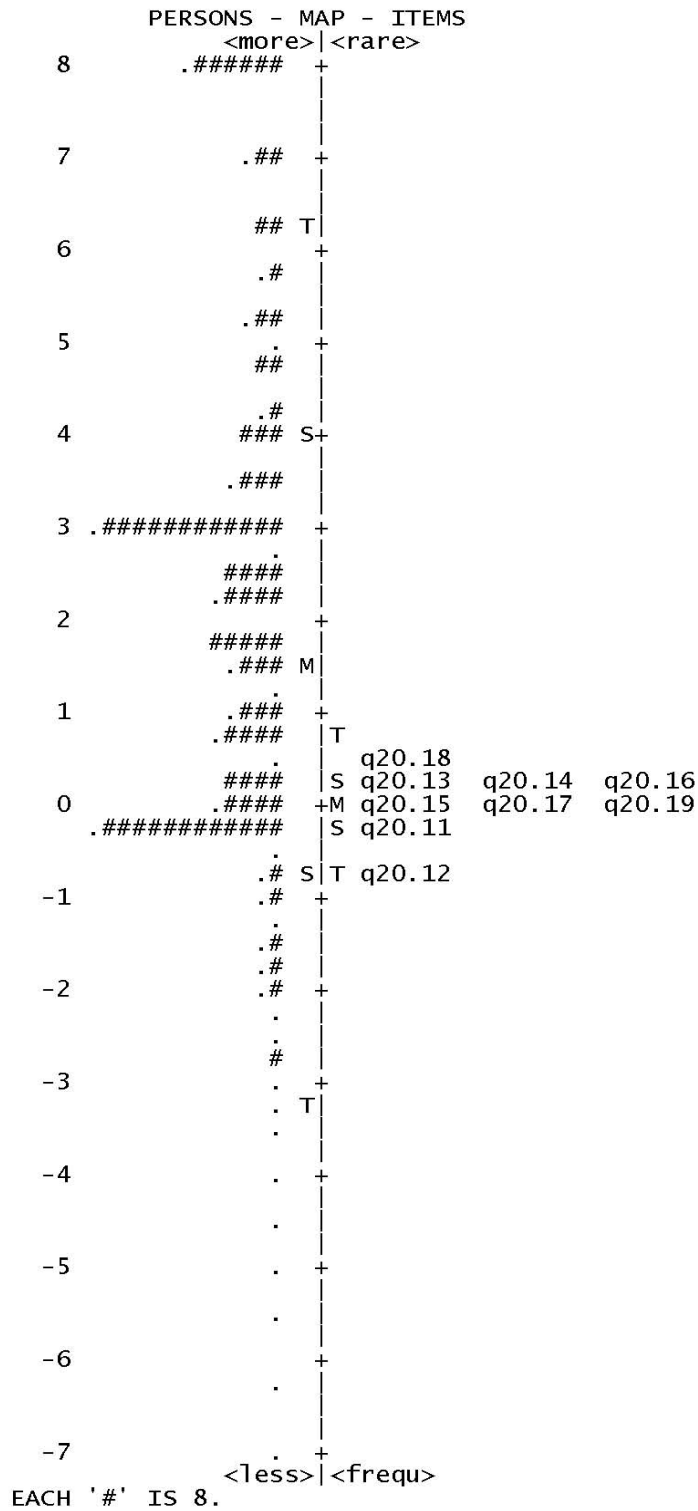


Figure 3. Civic Accountability Rasch Variable Map

INPUT: 789 PERSONS 14 ITEMS MEASURED: 784 PERSONS 5 CATS

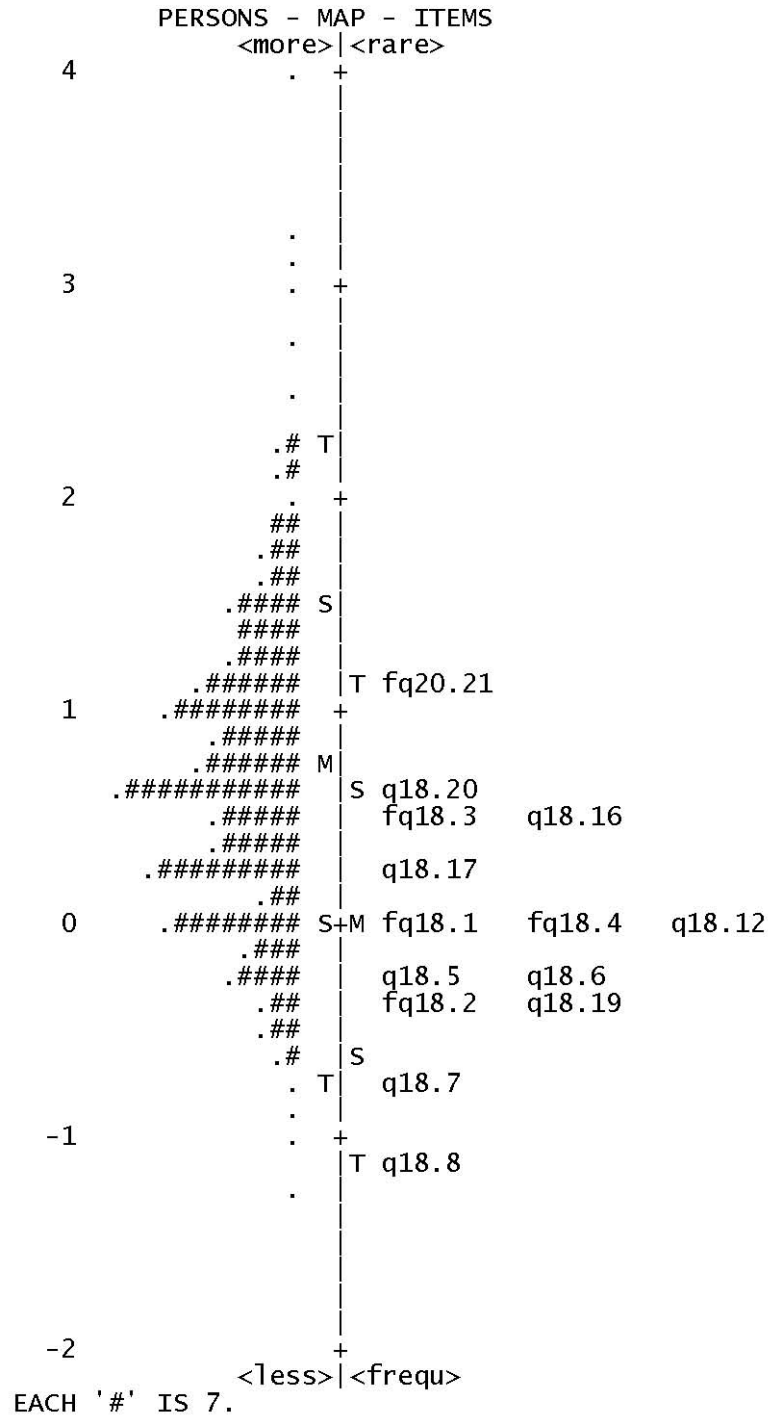


Figure 4. Tolerance of Diversity Rasch Variable Map

INPUT: 789 PERSONS 9 ITEMS MEASURED: 784 PERSONS 5 CATS

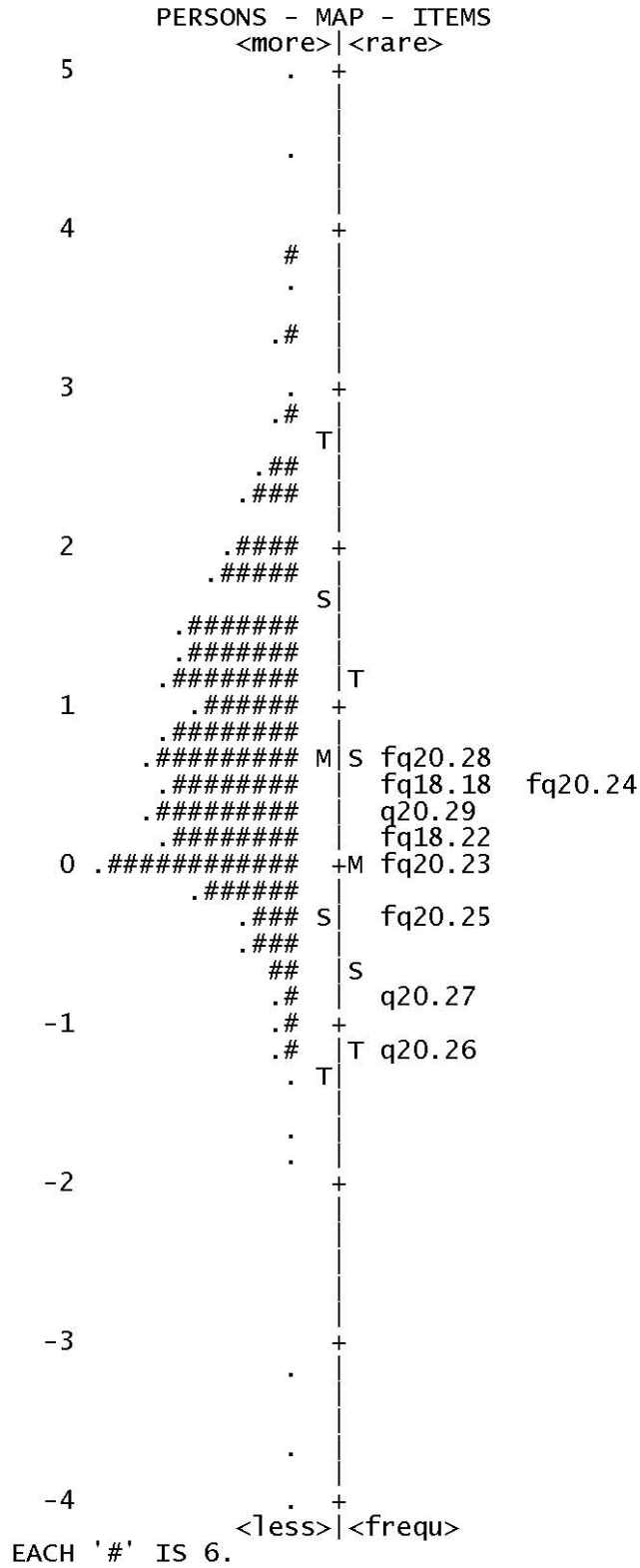
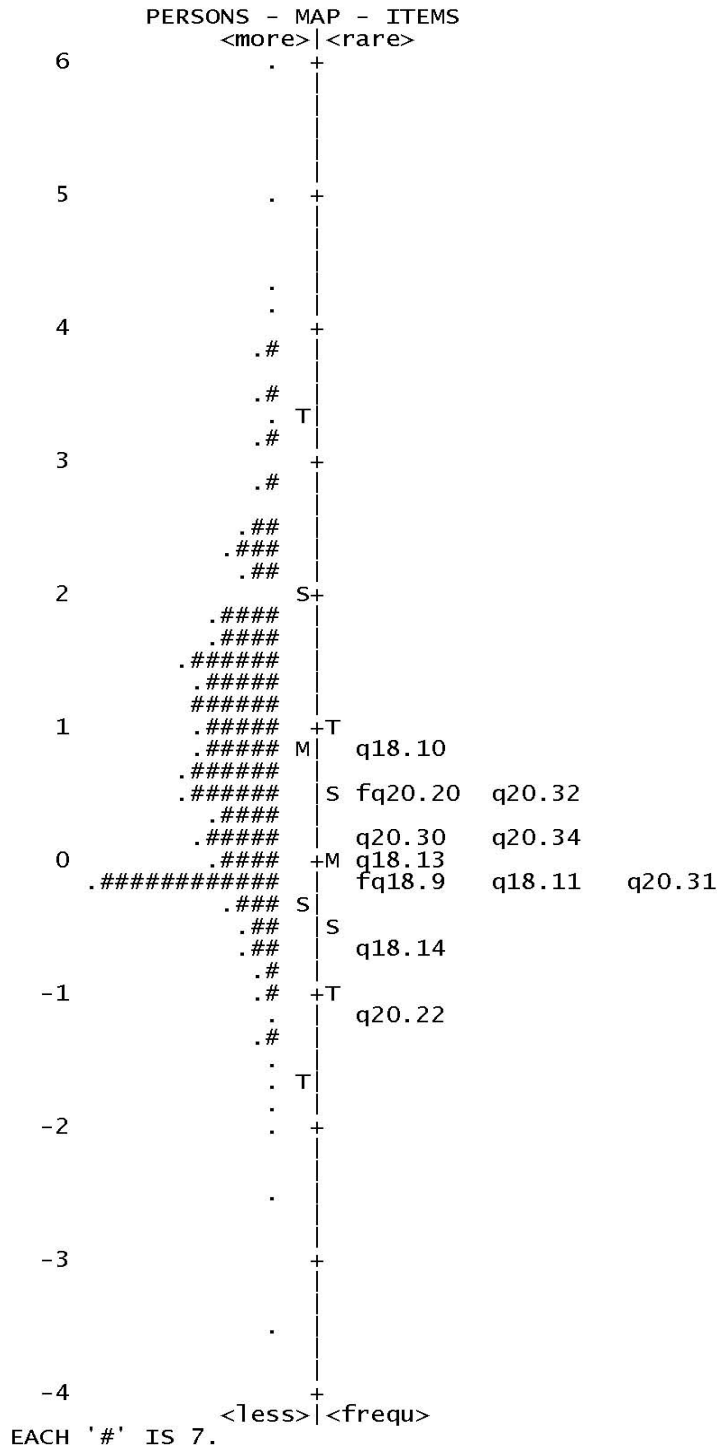


Figure 5. Internal Civic Efficacy Rasch Variable Map

INPUT: 789 PERSONS 11 ITEMS MEASURED: 784 PERSONS 5 CATS



Appendix F: Rasch Variable Maps for Involvement

Figure 1. Anchored Political Activities Variable Map over Time

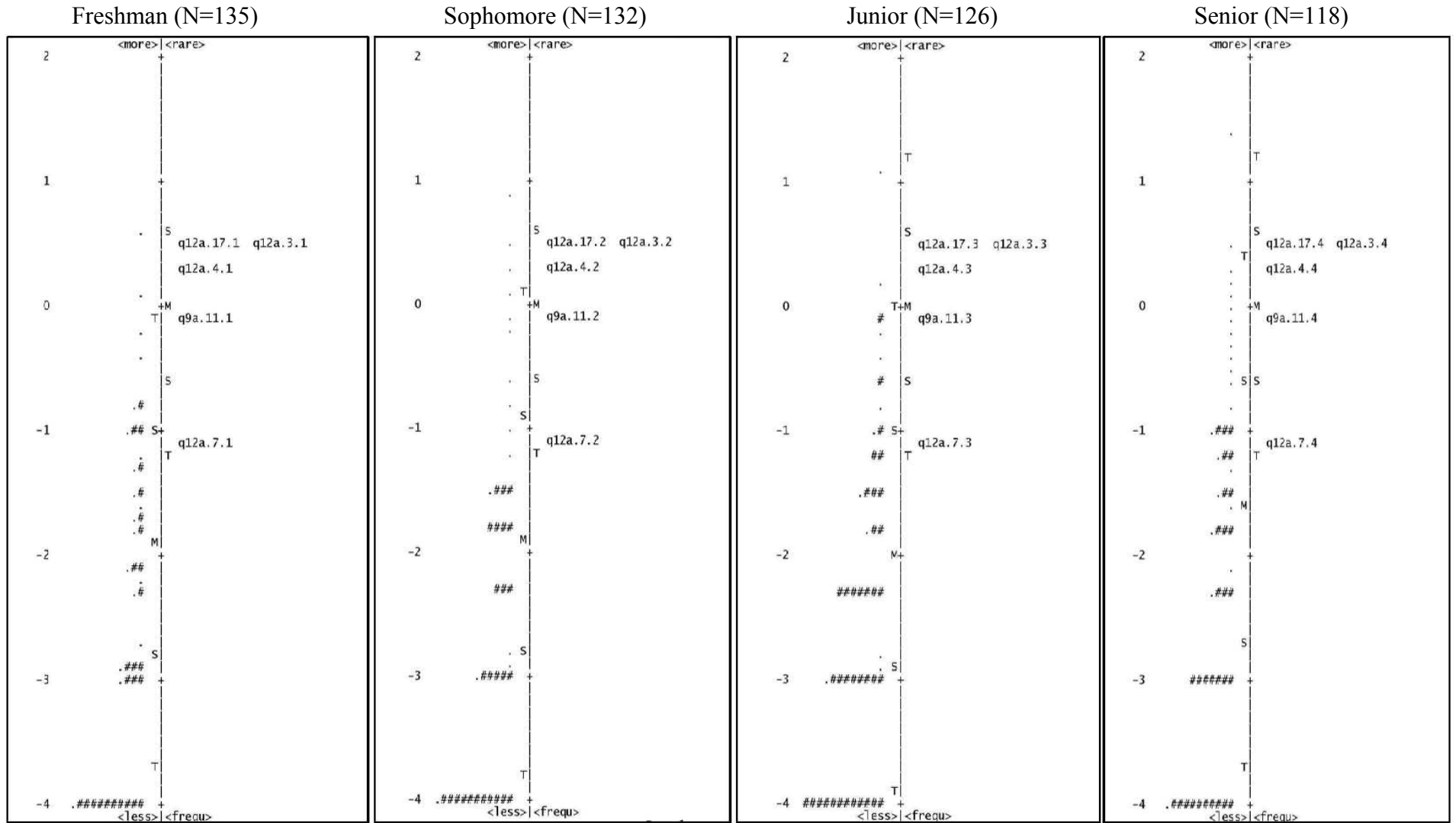


Figure 2. Anchored Civic Activities Variable Map over Time

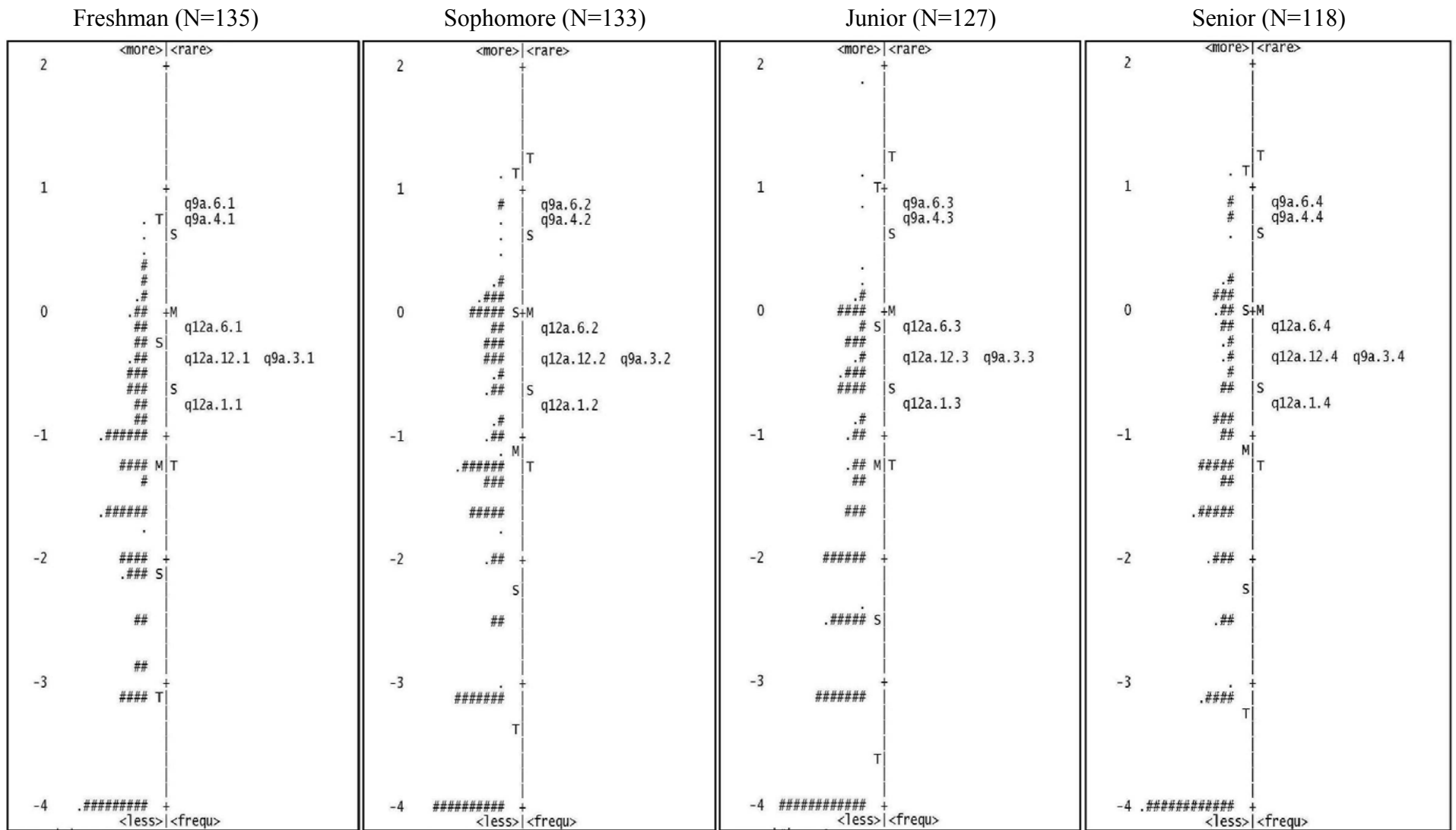
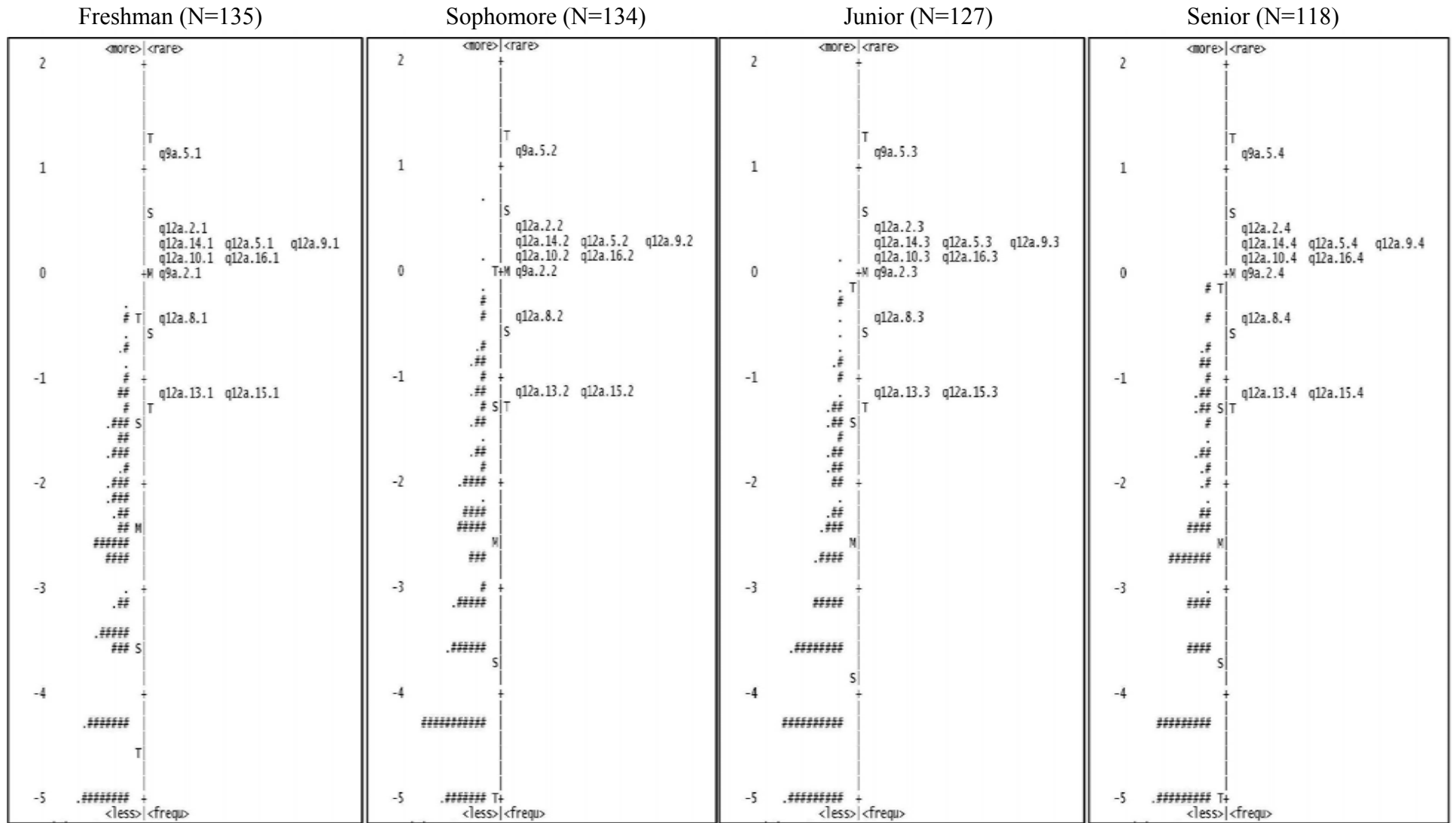


Figure 3. Anchored Expressive (Public Voice) Activities Variable Map over Time



Appendix G: Rasch Variable Maps for Attitudes

Figure 1. Anchored Internal Service Efficacy Variable Map over Time

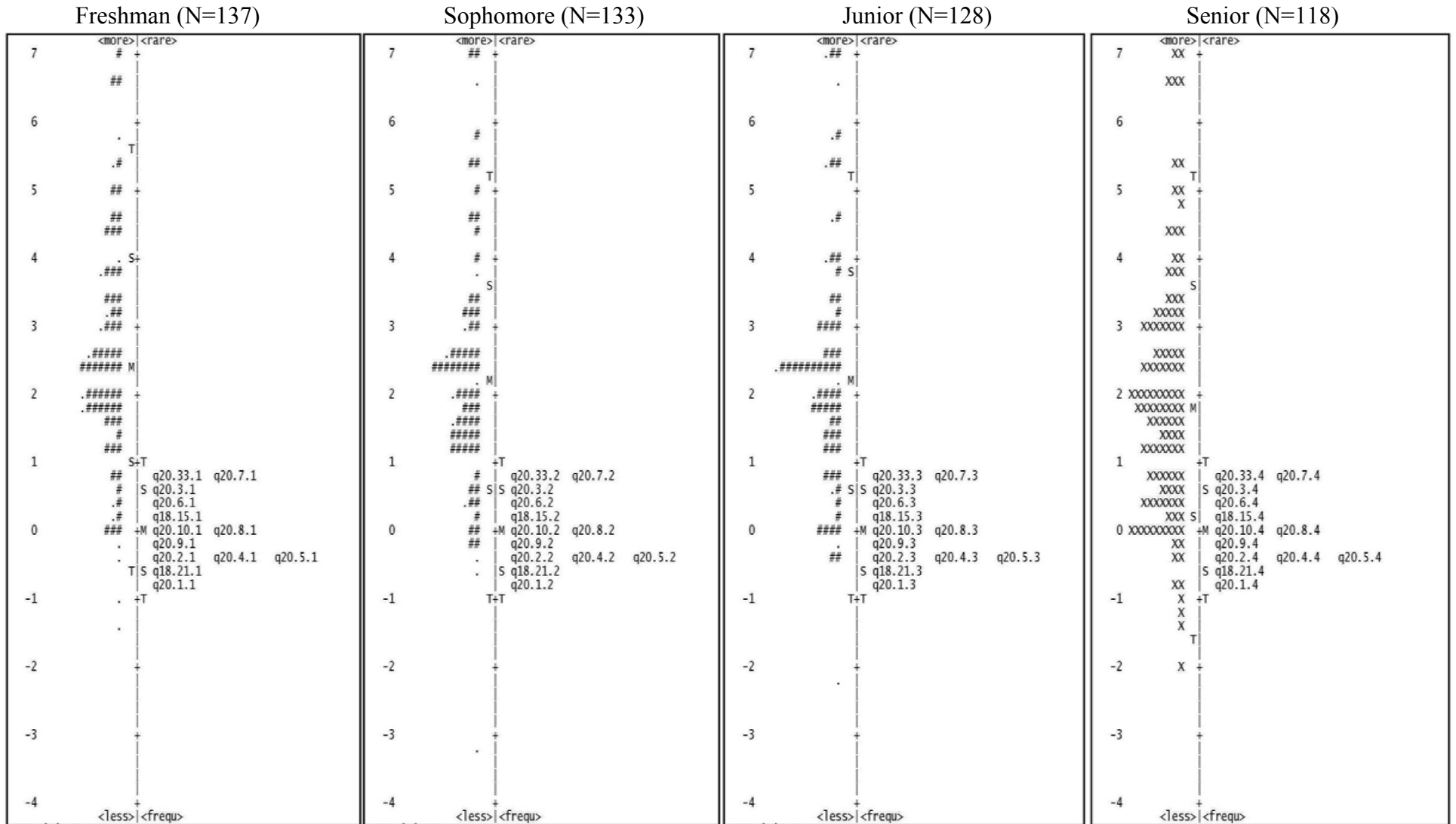


Figure 2. Anchored Internal Political Efficacy Variable Map over Time

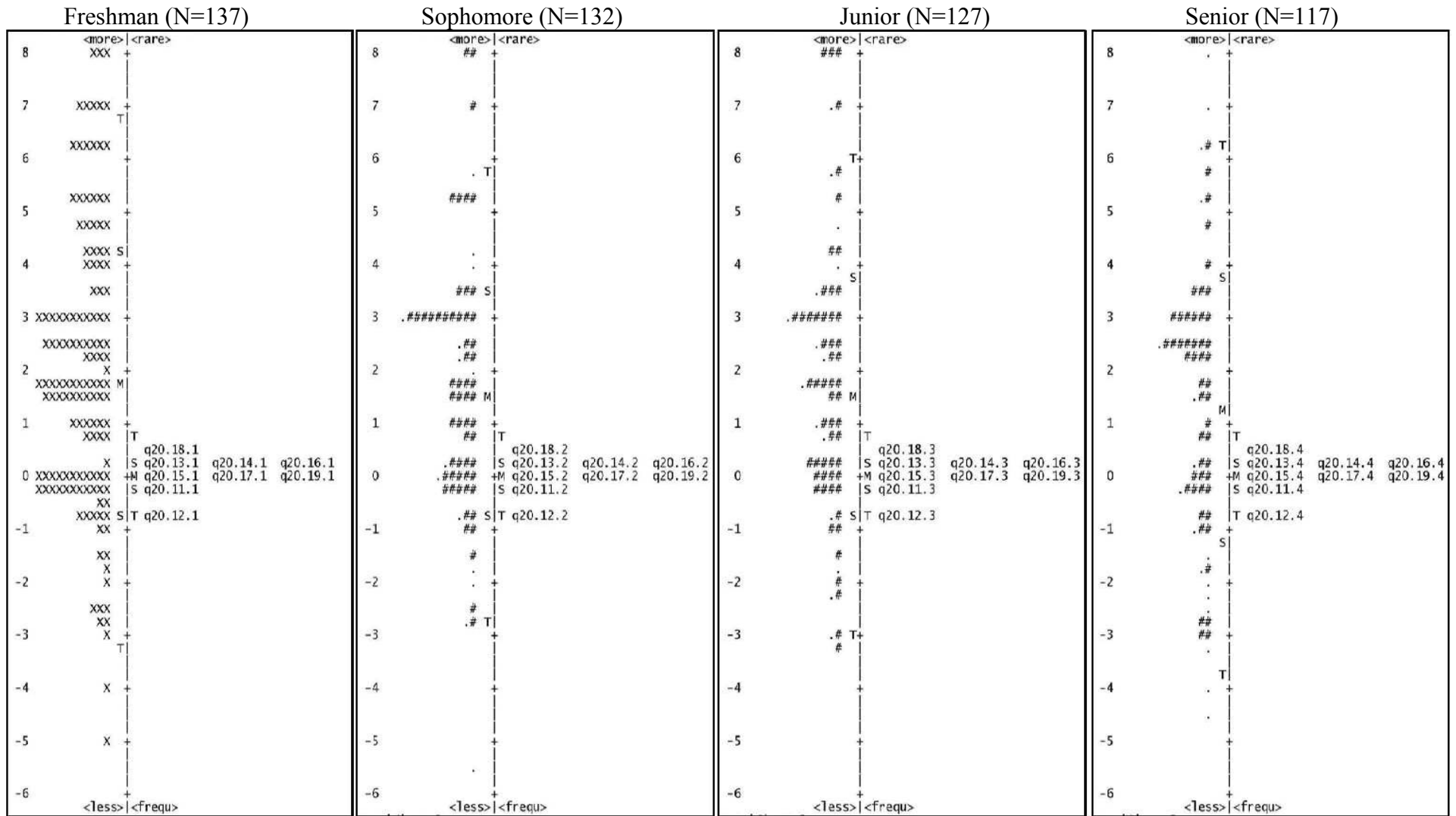


Figure 3. Anchored Civic Accountability Variable Map over Time

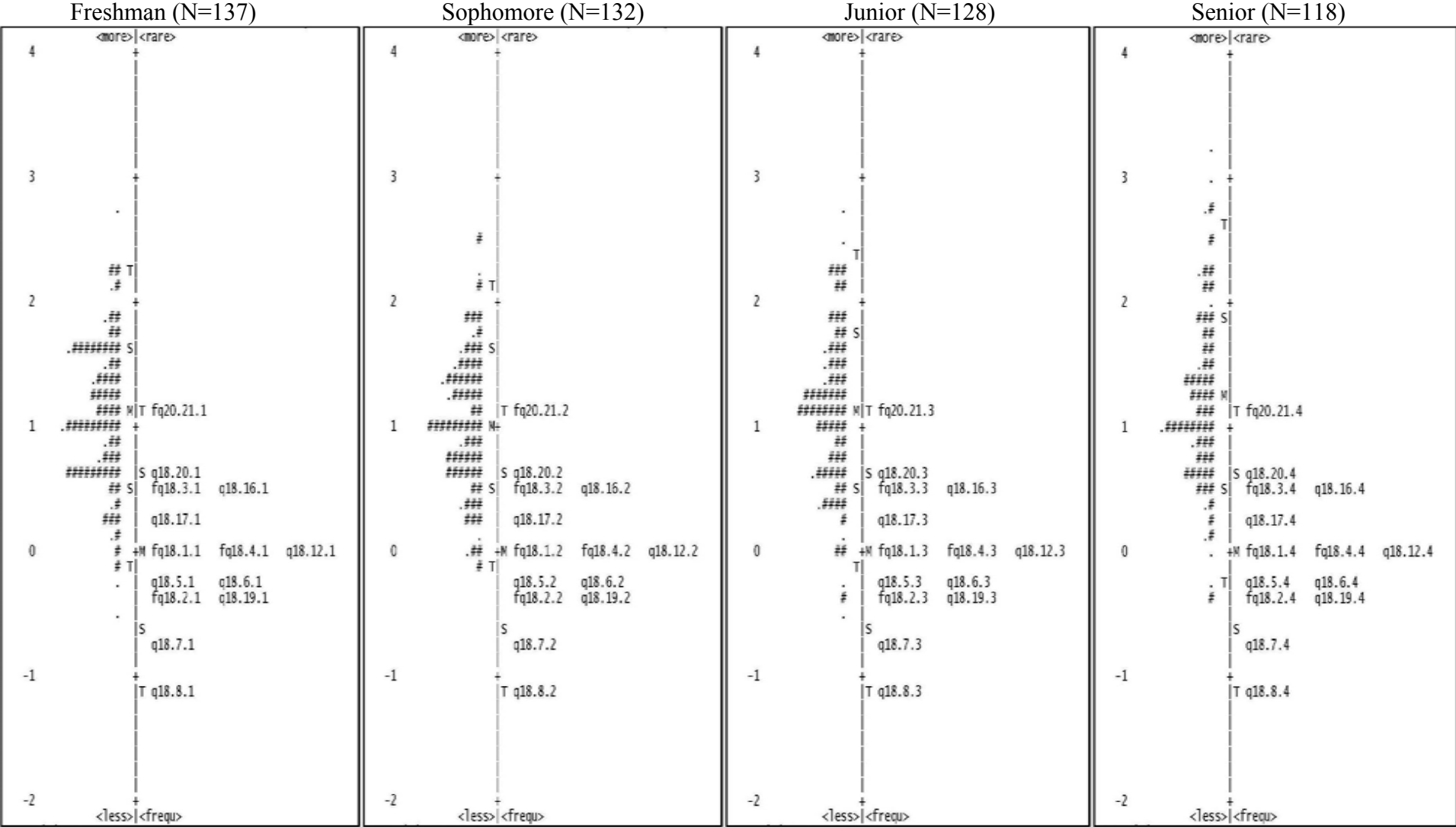


Figure 4. Anchored Tolerance of Diversity Variable Map over Time

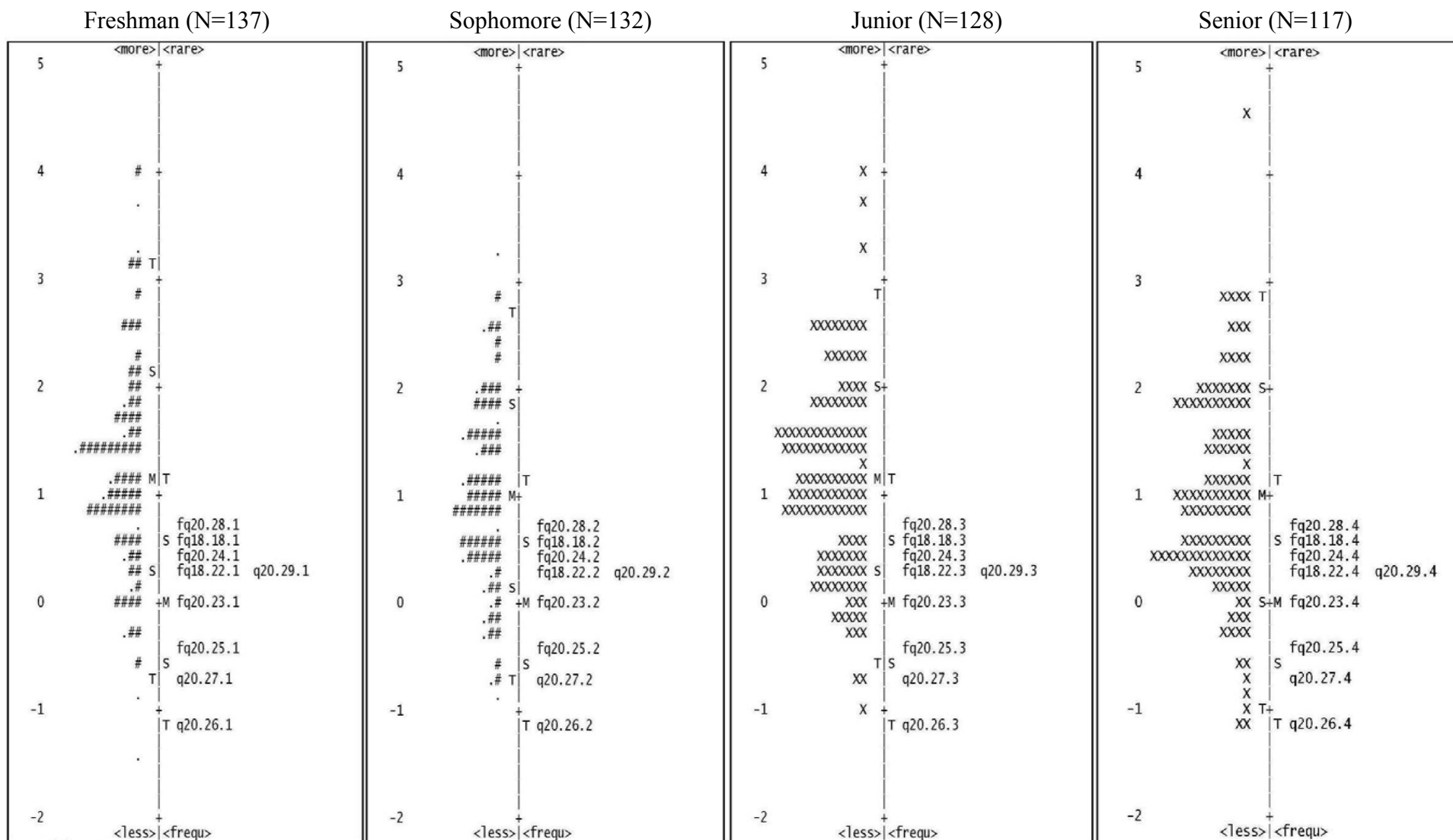
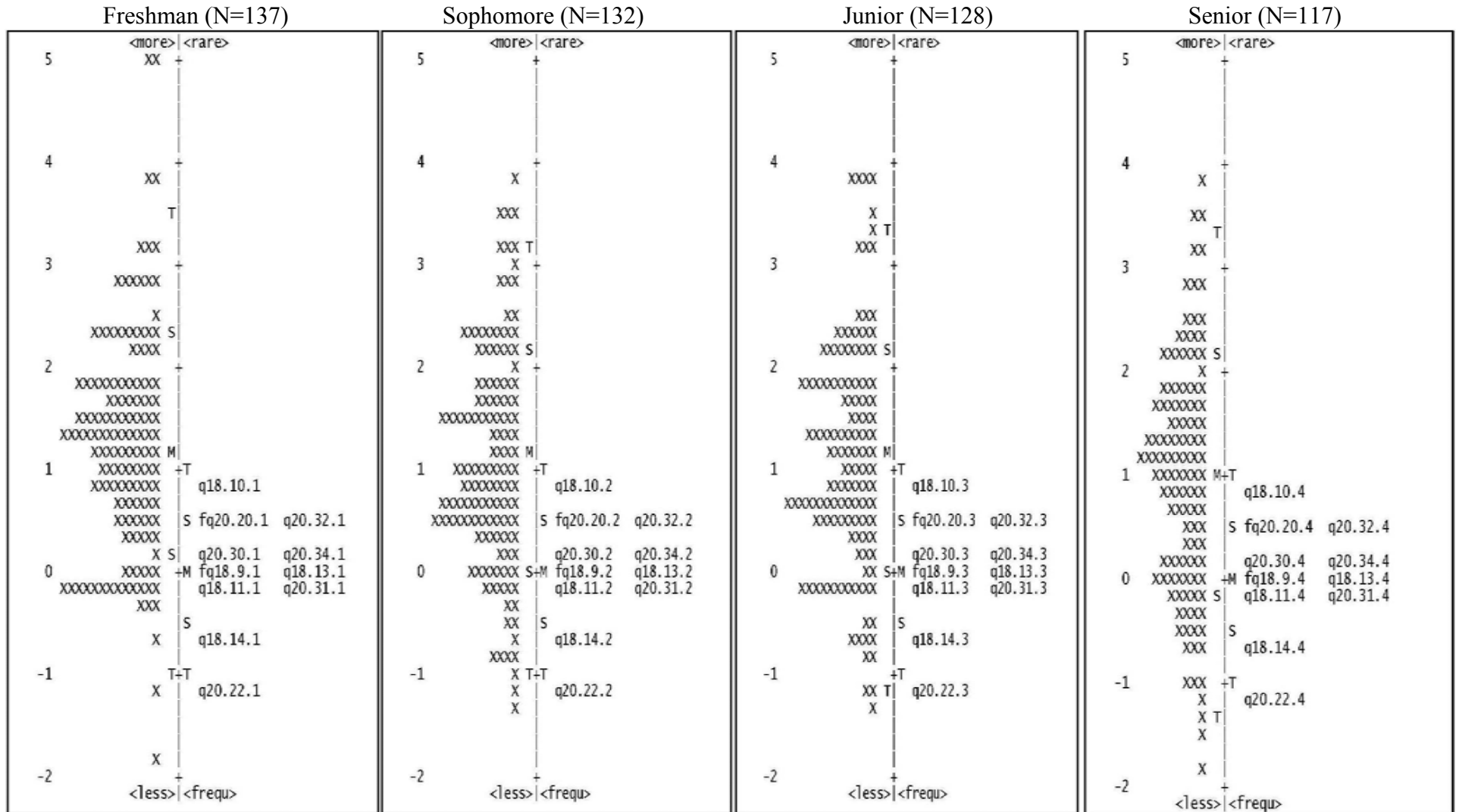


Figure 5. Anchored Internal Civic Efficacy Variable Map over Time



Appendix H: Canonical Correlations between Involvement & Attitudes

Variable	Freshman				Sophomore				Junior				Senior	
	First Root		Second Root		First Root		Second Root		First Root		Second Root		First Root	
	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient	Standardized coefficient	Structure coefficient
<i>Involvement Dimension:</i>														
Political activities	-0.49	-0.73	0.89	0.67	0.36	0.76	0.87	0.58	-0.09	-0.38	1.05	0.93	-0.28	-0.68
Civic activities	-0.27	-0.57	-0.50	-0.55	0.27	0.70	-0.80	-0.62	-0.56	-0.85	-0.20	-0.25	-0.66	-0.92
Expressive activities	-0.57	-0.85	-0.42	-0.31	0.58	0.93	-0.11	-0.06	-0.55	-0.88	-0.26	0.10	-0.24	-0.83
<i>Attitudes Dimension:</i>														
Internal service efficacy	0.23	-0.46	-0.88	-0.72	-0.12	0.49	-0.91	-0.62	-0.42	-0.81	-0.67	-0.03	0.05	-0.57
Internal political efficacy	-0.59	-0.84	0.77	0.24	0.30	0.67	0.84	0.44	0.18	-0.36	1.03	0.77	-0.09	-0.68
Civic accountability	-0.02	-0.56	-0.07	-0.25	0.12	0.49	0.14	0.10	-0.11	-0.55	-0.41	-0.10	0.03	-0.44
Tolerance of diversity	-0.05	-0.26	-0.22	-0.41	-0.15	0.17	0.14	0.00	-0.29	-0.69	0.02	-0.08	0.15	-0.30
Internal civic efficacy	-0.68	-0.86	-0.17	-0.41	0.87	0.94	-0.22	-0.25	-0.54	-0.87	0.43	0.34	-1.04	-0.99
Can. Correlation (r_c)	0.57		0.37		0.61		0.47		0.61		0.49		0.57	
% of Variance (r_c^2)	32.3%		13.8%		37.4%		22.5%		37.5%		24.0%		33.1%	
Eigenvalue (r_c^2)	0.48		0.16		0.60		0.29		0.60		0.32		0.49	

Appendix I: Interview Coding Scheme

COLLEGE ENVIRONMENT
General Impressions
Tufts - Overall Atmosphere - Civic engagement is a focus across many settings
Tufts - Overall Atmosphere - Politics and political involvement are prominent on-campus
Tufts - Overall Atmosphere - An emphasis is placed on diversity across many settings
Tufts - Overall Atmosphere - Tufts is a racially charged campus
Tufts - Overall Atmosphere - Internationalism is a focus across many settings
Tufts - Overall Atmosphere - The Tisch College of active citizenship and public service sets us apart
Tufts - Overall Atmosphere - Internationalism is a focused on more than at other colleges/universities
Impressions of Civic & Political Atmosphere
Tufts - Civic Atmosphere - Student dedication to civic and political issues is really varied
Tufts - Political Atmosphere - Students are politically-aware and up-to-date on current affairs
Tufts - Civic Atmosphere - Many students are civically-engaged
Tufts - Political Atmosphere - Overwhelmingly liberal campus
Tufts - Political Atmosphere - High - Politically-driven campus and atmosphere
Tufts - Civic Atmosphere - Civic engagement is more a buzz-word than a reality on-campus
Tufts - Political Atmosphere - Politically diverse with varied viewpoints being present on-campus
Tufts - Political Atmosphere - Limited with regard to varying viewpoints - not ideologically diverse
Tufts - Political Atmosphere - Students are not that politically-aware or informed
Tufts - Political Atmosphere - Students are politically narrow-minded
Impressions of Diversity
Tufts - Diversity - HS - Tufts is more diverse than my high-school or hometown
Tufts - Diversity - Different student groups self-segregate
Tufts - Diversity - More a public-relations construct than a reality
Tufts - Diversity - Adds to educational experience and viewpoints
Tufts - Diversity - Presence - High or more than other universities or colleges
Tufts - Diversity - Debatable - Depends on how you operationalize or define diversity
Tufts - Diversity - Needs to address its upper class status (not socio-economically diverse)
Tufts - Diversity - HS - Tufts is less diverse than my high-school or hometown
Tufts - Diversity - Witnessed interactions on-campus that highlight the pros and cons of diversity
Tufts - Diversity - High prevalence of International students
INVOLVEMENT
Current Involvement
Current Involvement - Involvement in activities varied greatly during my college experience
Current involvement - Study abroad affected interest in and participation in activities
Current Involvement - Involvement decreased senior year due to time dedicated to post-college planning
Current Involvement - Low involvement or not very involved
Current Involvement - High involvement or very involved
High School Activities
Activities - HS - Volunteerism, community service, civic organization, or political activities
Activities - HS - Involved in a variety of activities in high school
Activities - HS - Insincere motivations behind my civic and political involvement in high school

On-Campus Activities
Activities - On-Campus - General higher education activities
Activities - On-Campus - General higher education - Athletics
Activities - On-Campus - General higher education - Performing Arts
Activities - On-Campus - General higher education - Programming Board or Admissions Guide
Activities - On-Campus - General higher education - Cultural or Religious Organization
Activities - On-Campus - General higher education - Academic organization/Pre-Professional Society
Activities - On-Campus - General higher education - Media - Newspaper TV Radio
Activities - On-Campus - General higher education - Student government
Activities - On-Campus - Civic activities
Activities - On-Campus - Civic - Community Service
Activities - On-Campus - Civic - Civic-issue organization or community-oriented group
Activities - On-Campus - Political activities
Activities - On-Campus - Political - Government or Political Organization
Activities - On-Campus - Political - Political-issue based group
Activities - On-Campus - Expression of public voice activities
Activities - On-Campus - Voice - Political or civic speakers (on-campus or off-campus)
Off-Campus Activities
Activities - Off-Campus - Volunteerism or community service
Activities - Off-Campus - Volunteerism or community service - Works with children
Activities - Off-Campus - Political campaign or politically-related internship
Employment
Plans for Future Activities
Activities - Future - Civic - Participate in community service relevant to my interests and needs
Activities - Future - Civic - Plans for future community service involvement
Activities - Future - Political - Plans for future political involvement
Activities - Future - Political - Plans to vote as sole means of political involvement
Activities - Future - Political - No plans for future political involvement
Activities - Future - Civic - No plans for future community service involvement
Activities - Future - Civic - Plans to increase involvement in the future
Recruitment into Activities
Activities - Recruitment - Individuals or groups at Tufts connected me with off-campus activities
Activities - Recruitment - Found at orientation sessions or information sessions during my first year
Activities - Recruitment - Found through promotional materials on-campus or via word of mouth from peers
Activities - Recruitment - Found through friends who were already involved
Activities - Recruitment - Found through another club or organization
Activities - Recruitment - Required as part of a class
Motivation for Involvement in Activities
Activities - Motivation - Interest from high school
Activities - Motivation - Personal connection to the cause that the activity supports
Activities - Motivation - Opportunity to connect with a community with similar characteristics to me
Activities - Motivation - Attracted to civic or political mission of the activity
Activities - Motivation - Available resources and plentiful opportunities on-campus
Activities - Motivation - Disillusionment with domestic politics and political process motivated my involvement
Activities - Motivation - Past positive experiences with a similar activity
Activities - Motivation - Use as an outlet or means of stress relief
Barriers to Involvement in Activities
Activities - Barriers - Need to prioritize interests affects my level of involvement
Activities - Barriers - Time constraints are a major factor leading towards my inactivity
Activities - Barriers - Time Constraints - Academics
Activities - Barriers - Time Constraints - Research
Activities - Barriers - Time Constraints - Multiple extra-curricular activities
Activities - Barriers - Concern over direction of the particular organizations
Activities - Barriers - Atmosphere surrounding particular activities at Tufts is intimidating
Activities - Barriers - Time Constraints - Employment at a part-time job

Civic Engagement Involvement
Activities - Civic Involvement - HS - More involved in civic engagement activities than I was in high-school
Activities - Civic Involvement - Highly involved with civic engagement activities
Activities - Civic Involvement - Minimally involved with civic engagement activities
Activities - Civic Involvement - HS - Less involved than I was in high-school (mandatory service)
Activities - Civic Involvement - Discouraged by past failed or misguided attempts at community service
Activities - Civic Involvement - Barriers - Academic interests do not align with civic engagement
Activities - Civic Involvement - Used involvement in activities to promote awareness of civic and political issues
Activities - Civic Involvement - Moderately involved in civic engagement activities
Activities - Civic Involvement - Less involved in civic engagement activities than is appropriate or I should be
Activities - Civic Involvement - Barriers - Less interested in civic engagement than other activities
Activities - Civic Involvement - Select students have greater access to and interest in civic engagement
Political Involvement
Activities - Political Involvement - Minimally involved in politics and political activities
Activities - Political Involvement - HS - Involvement in political activities has increased since high-school
Activities - Political Involvement - Registered voter
Activities - Political Involvement - Highly involved with the 2004/2008 presidential election campaigns
Activities - Political Involvement - Less involved than would like
Activities - Political Involvement - HS - Involvement in political activities has decreased since high-school
Activities - Political Involvement - Highly involved
Activities - Political Involvement - Moderately involved
Activities - Political Involvement - Viewed as important for all citizens
Activities - Political Involvement - Still involved with my local hometown politics
Activities - Political Involvement - Better informed about home state than MA politics
Activities - Political Involvement - HS - Maintained similar levels of political involvement as in high-school
Barriers to Political Involvement
Activities - Political Involvement - Barriers - Disillusionment with politics and national political processes
Activities - Political Involvement - Barriers - Time constraints due to civic engagement limit political involvement
Involvement in Current Affairs
Current Affairs - Involvement - Informed about current affairs
Current Affairs - Important to stay informed and up-to-date on community and national current affairs
Current Affairs - Involvement - More informed about current affairs than I was in high-school
Current Affairs - Involvement - More active in seeking out viewpoints in areas of interest that in the past
Current Affairs - Involvement - Remain informed with current affairs due to peers and atmosphere on-campus
Current Affairs - Involvement - Time constraints limit ability to remain informed and up-to-date
Current Affairs - Involvement - Uninformed or not particularly informed with regard to current affairs
Current Affairs - Involvement - Enjoys reading others' viewpoints on current community and national issues
Current Affairs - Involvement - Higher priorities take precedence over staying informed on current affairs
Current Affairs - Involvement - Interest in current affairs peaked when studying abroad
Current Affairs - Involvement - Interest in current affairs has been affected by recent political and civic events
Current Affairs - Involvement - Dissatisfaction with the current state of affairs/domestic politics limits activity
Current Affairs - Involvement - Not interested in remaining informed with regard to current affairs
Ways of Staying Informed
Current Affairs - Information Sources - Internet (websites, blogs, etc.)
Current Affairs - Information Sources - Newspaper (New York Times, Tufts Daily, etc.)
Current Affairs - Information Sources - HS - Newspaper
Current Affairs - Information Sources - Discussions with other students

ATTITUDES	
Sources of Attitudes	
Attitudes - Sources - Parents' viewpoints and actions influenced my civic and political views	
Attitudes - Sources - Affected by current civic and political affairs	
Attitudes - Sources - Viewpoints of various friends and peers influenced my viewpoints	
Attitudes - Sources - Involvement in activities has affected my civic and political viewpoints	
Attitudes - Sources - Travel abroad expanded my viewpoints and interests	
Attitudes - Sources - Cultural atmosphere of hometown helped shape viewpoints	
Attitudes - Sources - Developments in my viewpoints over time due to maturity, still in development	
Attitudes - Sources - Affected by positive past experiences (community service, diversity, etc.)	
Attitudes - Sources - Affected by classes in high school	
Attitudes - Sources - Affected by activities in youth and high school	
Internal Service & Political Efficacy	
Attitudes - Internal Efficacy - Individuals can make a difference, evoke change in a community, or have an impact	
Attitudes - Internal Efficacy - Many different mechanisms of community service can affect a community	
Attitudes - Internal Efficacy - Need collective group efforts not individual actions to evoke change	
Attitudes - Internal Efficacy - Involvement in community service and/or political activities is empowering	
Attitudes - Internal Efficacy - Avoids political involvement as impact of efforts is minimal	
Attitudes - Internal Efficacy - Difficult for one individual to impact community or make a difference	
Attitudes - Internal Efficacy - I am skeptical of American politics and the power of political involvement	
Civic Accountability	
Attitudes - Civic Accountability - Need to adapt current system and public policy for change to occur	
Attitudes - Civic Accountability - Important to stay informed about community and political affairs	
Attitudes - Civic Accountability - Individuals are not always responsible for their misfortunes	
Attitudes - Civic Accountability - Societal problems caused by struggles and inequities between groups	
Attitudes - Civic Accountability - Equal opportunity must be available for all citizens	
Attitudes - Civic Accountability - Individuals must be responsible for themselves and their misfortunes	
Internal Civic Efficacy	
Attitudes - Internal Efficacy - Public service and commitment to the community are every individuals' civic duty	
Attitudes - Internal Efficacy - Individual commitment to the community is important for some, but not all	
Attitudes - Internal Efficacy - It is not all individual's responsibility to perform community service	
Tolerance of Diversity	
Attitudes - Diversity - Tolerant of differences and benefits that diversity brings to a group	
Attitudes - Diversity - Integration of different groups is key to efforts	
GROWTH & DEVELOPMENT	
Outcomes of Involvement in Activities	
Activities - Outcomes - Increased my connection to the community	
Activities - Outcomes - Raised awareness of civic, political, and economic issues	
Activities - Outcomes - Increased exposure to community and its issues	
Activities - Outcomes - Community service activities enhanced my belief in my self-efficacy to make a difference	
Activities - Outcomes - Exposed to people with diverse racial, economic, and social backgrounds	
Activities - Outcomes - Did not increase my involvement in and concern about my community	
Activities - Outcomes - Increased my exposure to the community service efforts of others	
Effect of Tufts Involvement on Attitudes	
Activities - Tufts Effect - Provided tools to be effectively civically engaged in the future	
Activities - Tufts Effect - Increased interest in or participation in civic or political engagement activities	
Activities - Tufts Effect - Involvement allowed for exploration of civic and political issues	
Activities - Tufts Effect - Shaped my views on the importance of civic engagement	
Attitudinal Development	
Attitudes - Development - Better understanding of civic and political issues	
Attitudes - Development - Growth during college experience coupled with gaining maturity	
Attitudes - Development - No significant change in views, now better able to express or understand	
Attitudes - Development - Increase in belief in self-efficacy through involvement	
Attitudes - Development - Increase in belief in civic accountability	
Attitudes - Development - Change in belief in self-efficacy through involvement	
Attitudes - Development - Became more politically aware and politically-savvy	
Attitudes - Development - Shift in political viewpoints and affiliations	

Effect of Tufts Experience on Attitudes
Attitudes - Tufts Effect - Classes - Shaped civic and political viewpoints
Attitudes - Tufts Effect - Classes - Specific classes
Attitudes - Tufts Effect - Classes - No changes, but more understanding and better expression of views
Attitudes - Tufts Effect - Diversity - Positively expanded or changed views of diversity
Attitudes - Tufts Effect - Overall experience led to self-discovery and interest in civic and political issues
Attitudes - Tufts Effect - Viewpoints have changed
Attitudes - Tufts Effect - Discussions on-campus have altered viewpoints
Attitudes - Tufts Effect - Involvement in activities shaped viewpoints
Attitudes - Tufts Effect - Viewpoints have not changed
Attitudes - Tufts Effect - Community service has shaped viewpoints
Attitudes - Tufts Effect - Diversity - Has not expanded views of diversity
Attitudes - Tufts Effect - Classes - Did not shape viewpoints nor were they politically- or civically-driven
Attitudes - Tufts Effect - Community service has not shaped viewpoints
Preparedness for Active Citizenship
Active citizenship - Prepared due to education and experiences
Active citizenship - Displays social responsibility and dedication to civic engagement ideals
Active citizenship - Prepared due to maturity
Active citizenship - Does not feel prepared to serve as an active and responsible citizen
Active citizenship - Prepared due to past political involvement