Bicultural Competence and Academic Adjustment Across Latino Youth Adaptation from High School to College

M. Dalal Safa[1]

Michaela S. Gusman[2]

Leah D. Doane[2]

[1]Harvard University

[2]Arizona State University

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Abstract

This study investigated the association between bicultural competence and academic adjustment (i.e., engagement, efficacy, achievement) among 193 Latino youth (65.3% female; 89.1% U.S.-born) followed from senior high school year (M_{age} = 17.58 years, SD = .53) to fifth college semester (2017-2019). Latent growth analyses revealed that youth's overall bicultural competence trajectory was moderately high and stable across this period. Youth who maintained or increased bicultural competence levels over time (slopes) demonstrated greater self-efficacy. Youth with greater high school bicultural competence (intercepts) demonstrated higher engagement but lower achievement. No other associations emerged. This study highlights that the promoting influence of bicultural competence may not extend to all indicators of academic adjustment but may depend upon the contexts and demands they navigate.

Keywords: Academic Adjustment, Biculturalism, Longitudinal Growth Trajectories

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Given the ever-growing ethnic, racial, and cultural diversification of the United States (U.S.; U.S. Census Bureau, 2019) and many other countries (United Nations, 2019), understanding the developmental course and consequents of biculturalism is important. Individuals who internalize at least two cultural systems (e.g., host or national and heritage or ethnic-racial cultural systems; Hong et al., 2000) and who develop *bicultural competence*, the ability to respond to host and heritage cultural demands, are referred to as bicultural (LaFromboise et al., 1993). For youth exposed to more than one cultural system, including immigrant and ethnic-racial minoritized youth, internalizing these cultures and acquiring bicultural competence signify a developmental task with important implications for their psychosocial adjustment (e.g., self-perceptions, mental health; Nguyen & Benet-Martinez, 2013; Safa & Umaña-Taylor, 2021).

There is limited knowledge pertaining to the developmental progression of biculturalism over time (see Safa & Umaña-Taylor, 2021, for a review), and regarding the ways in which the development of bicultural competence informs immigrant and ethnic-racial minoritized youth's academic experiences. Understanding the link between biculturalism and academic adjustment is especially important as youth transition from high school and adapt to their first years in college. During this period, youth are faced with making decisions that will ultimately shape their academic journeys and inform the ways in which they will be able to participate in and contribute to society as adults (Rivas-Drake & Mooney, 2009). Notably, immigrant and ethnic-racial minoritized youth continue to show the highest rates of high school and college dropout

and the lowest rates of graduation (National Center for Education Statistics [NCES], 2019), thus underscoring the need to uncover factors that may promote their positive academic experiences.

Building on theoretical notions highlighting the importance of considering the interplay of individual and contextual factors – within systems of social stratification – for immigrant and ethnic-racial minoritized youth's development and adjustment (García Coll et al., 1996), the focus of this study is two-fold. First, we captured U.S. Latino youth's developmental trajectories of bicultural competence spanning their adaptation from their senior year of high school to their first two years in college (i.e., high school senior year to 4th college semester) accounting for family immigrant status (i.e., having at least one vs. no immigrant parent). Next, we investigated how youth's bicultural competence development related to their academic adjustment (i.e., achievement, self-efficacy, and engagement) assessed in their third year in college (5th college semester). We focused on the third college year, which is considered a better proxy for degree attainment compared to earlier years (Allen et al., 2008), and a time when students demonstrate greater trust in their abilities and clearer reasons for attending college (Willcoxson et al., 2011). Further, the focus on U.S. Latinos is warranted as this group comprises approximately one fifth of the total population (18%) and represents the second largest ethnic-racial group, behind White non-Latinos (U.S. Census Bureau, 2019). We use the term "Latino" as a proxy for the multitude of preferred terms that participants in a given sample identify with, to represent Spanish-speaking individuals and individuals of Latin-American, Central-American, Mexican and Spanish descent with diverse sexual and gender identities (Parra & Hastings, 2018). We acknowledge that these groups are diverse in nature and origin, and that the conversation of academic labeling is ongoing and complex (deOnis, 2017).

Bicultural Competence Development: An Interplay of Individual and Contextual Factors

Biculturalism involves the extent to which individuals internalize values, knowledge, behaviors, attitudes, and affiliations associated with at least two cultural systems and develop the competence needed to respond effectively and readily to demands from each (e.g., host and heritage; Basilio et al., 2014; Nguyen & Benet-Martinez, 2007). Bicultural competence comprises an assortment of skills that enable individuals to jointly negotiate host and heritage cultural domains (i.e., values, knowledge, behaviors, attitudes, and affiliations), to move between cultural frames of reference (e.g., frame-switching; Hong et al., 2000), to combine host and heritage culture affiliations (i.e., identity integration; Benet-Martínez & Haritatos, 2005), and to acknowledge and integrate different perspectives (i.e., integrative complexity; Tadmor & Tetlock, 2006). Additionally, bicultural competence involves individuals' degree of *facility* and *comfort* as they negotiate bicultural demands and switch between culturally appropriate repertoires (e.g., the ability to switch with facility and comfort between host and heritage practices; Basilio et al., 2014; David et al., 2009). Focusing on bicultural facility and comfort is important because these behavioral (facility) and affective (comfort) components are theorized to be at the core of the development of the skills needed to navigate bicultural demands (Basilio et al., 2014). Importantly, prior work has suggested that the same processes may inform the development of behavioral and affective components of bicultural competence (Safa et al., 2021); thus, considering their joint development overtime may more accurately reflect bicultural youth's lived experiences in which they are concurrently relying upon skills to respond to bicultural demands behaviorally and affectively.

To internalize these two cultural systems and develop bicultural competence, individuals need to experience opportunities to learn about the host and the heritage cultures (Motti-Stefanidi et al., 2012; Ward & Geeraert, 2016). It is theorized that ethnic-racial minoritized youth develop

bicultural competence through the processes of acculturation and enculturation (Nguyen & Benet-Martínez, 2007). *Acculturation* reflects the process of cultural change or adaptation to the host culture, whereas *enculturation* reflects the process of cultural change or adaptation to the heritage culture (Gonzales et al., 2002). Adaptation to host and heritage cultures unfolds over time and across individuals' lifespan (Oppedal, 2006; Sam & Berry, 2006), and involves some degree of maintenance or change in individuals' internalized domains and acquired competencies derived from each culture (Gonzales et al., 2002; Schwartz et al., 2010). The extent to which individuals experience stability or change in their internalized cultural domains and associated competencies depends on the interplay between individual factors (e.g., family immigrant status, age; Portes & Rumbaut, 2001; Sam & Berry, 2006; Schwartz et al., 2015) and contextual factors (e.g., contextual demands, ethno-racial concentration; Portes & Rumbaut, 2001; Schwartz et al., 2010; Ward & Geeraert, 2016), which is consistent with theoretical notions centering the development of immigrant and ethnic-racial minoritized youth's competencies within systems of social stratification informing such interplay (García Coll et al., 1996).

The current study aimed to shed light on this interplay by tracing youth's trajectories of bicultural competence development across an important period of adaptation while accounting for the influence of family immigrant status (i.e., having at least one immigrant parent vs. having no immigrant parents). Notably, given that most participants in our sample were born in the U.S. (89.1%), we expected greater variability in the process of enculturation or how they adapt and learn about their heritage culture rather than about the host culture, particularly between youth who had no immigrant parents versus youth who had at least one immigrant parent (Suárez-Orozco et al., 2015). It is important to consider that youth in immigrant families experience affordances and demands associated with the heritage culture within the family context that may

provide a stronger foundation of bicultural competence overtime. Specifically, they may develop comfort and facility with their heritage culture affiliations, practices, and values in the home during early stages of development, in addition to experiencing unique opportunities through which to practice bicultural competence, such as serving as language brokers or teaching host culture practices to parents and other family members (Newcomer, 2019; Portes & Rumbaut, 2001). In contrast, youth in non-immigrant families, or who have no immigrant parents, may learn about their heritage culture through interactions with peers or members from co-ethnic communities. Furthermore, they may readily experience contexts that predominantly value the host culture, thus experiencing fewer opportunities to practice navigating and alternating between the heritage and host cultures (Portes & Rumbaut, 2001). As such, it is likely that youth in non-immigrant families demonstrate lower bicultural competence compared to youth in immigrant families.

Notably, the adaptation that youth experience throughout their transition from high school to their first years in college, a period in which they are faced with new individual and contextual affordances and demands (Schulenberg & Zarrett, 2006), may be especially important for youth's bicultural competence development. Youth may undergo a reevaluation of their internalized cultural domains (e.g., attitudes and values) during this adaptation period (Rivas-Drake & Mooney, 2009). As youth adapt to college, they learn to manage resources such as financial matters, personal time, and living arrangements, and to negotiate how to best meet the physical, social, and cognitive demands of large, new contexts (Hurtado et al., 1996). Thus, it is likely that during this period, youth will reflect on their internalized host and heritage cultural domains and engage their bicultural skills to manage resources and meet new demands. For example, they may reflect on their internalized values of individualism and collectivism when

assessing the need to compete against or work together to succeed in a class project or sport activity, or they may attend classes or join organizations in which they rely on competencies associated with host and heritage cultures.

Culturally informed developmental theories posit that biculturalism emerges as a function of both cultural resources and challenges and that more exposure to affordances and demands associated with both cultures – within supportive and inclusive contexts – promotes higher individual bicultural competence (Motti-Stefanidi et al., 2012; Ward & Geeraert, 2016). Youth who experience new, ample opportunities to practice and enhance their host and heritage culture competencies during this adaptation period would likely experience growth in their bicultural competence, unless they have already reached their highest potential, in which case they would likely experience stability in their bicultural competence. Furthermore, those youth who encounter relatively similar opportunities during this period as previously afforded, or those who rely frequently and consistently on skills associated exclusively with one of the cultures, would likely experience stability in their bicultural competence. Thus, as youth transition from high school and adapt to their first years in college, the type and frequency of the bicultural affordances and demands they encounter in these settings may determine whether they experience change (i.e., growth) or maintenance (i.e., stability) in their degree of bicultural competence. Both of these hypotheses are also consistent with broader developmental theories (Rutter, 1996) suggesting that life transitions may serve either to promote change or to reaffirm individuals' pre-existing characteristics and competencies.

Bicultural Competence Development and Academic Adjustment

Achieving developmental competencies may serve as the foundation for future competencies and strengthen youth's ability to cope with adversity (Umaña-Taylor & Douglas,

2017). Thus, understanding the role of bicultural competence development in the academic experiences of U.S. Latino youth may yield important information about how the ability to respond to bicultural demands is tied to youth's academic performance and beliefs vis-à-vis their capacity for meeting educational goals and responding to multiple academic demands. Given that bicultural competence encompasses frame-switching, integrative complexity, and identity integration (Benet-Martínez & Haritatos, 2005; Hong et al., 2000; Tadmor & Tetlock, 2006), it is theorized that biculturally competent youth are better equipped to navigate the physical, social, and cognitive demands associated with new academic contexts, inside and outside the classroom. It is likely that bicultural competence informs how youth negotiate completing academic work; developing positive relationships with faculty, staff, and peers from diverse ethno-racial backgrounds; managing personal time, finances, and housing; and engaging in extracurricular campus activities (e.g., clubs and organizations), while potentially balancing family obligations (Bernal, 2001; Taxis, 2006). Indeed, prior work relying on indirect assessments of biculturalism (see Basilio et al., 2014, for a full discussion) has shown that biculturalism promotes youth academic adjustment. For instance, biculturalism has been positively associated with college engagement and achievement as U.S. Latino youth transition from high school to college (Rivas-Drake & Mooney, 2009); this study, however, did not focus on longitudinal trajectories of biculturalism (only measured biculturalism once during youth's first semester of college).

Further, higher biculturalism has been linked to higher academic self-efficacy and importance ascribed to succeeding in school among U.S. Latino high school students (Acevedo-Polakovich, et al., 2014). It has also been documented that biculturalism is positively associated with academic aspirations (e.g., attend college) in a U.S. Latino high school student sample (Valencia & Johnson, 2006) and negatively linked to perceptions of barriers to college

enrollment and completion in a U.S. national sample of Latino adults (Becerra, 2010). Higher biculturalism has been associated with higher grade point average (GPA) among U.S. Latino high school students (López et al., 2002) and among U.S. Latino college students (Chun et al., 2016). Last, recent work has shown that Latino college students with greater bicultural competence report developing positive relationships with peers and at least one close, personal relationship with a faculty member (Carbajal et al., 2021). These studies support the idea that indicators of biculturalism influence youth educational experiences generally, and their academic perceptions, aspirations, and achievement specifically. None of these studies, however, have assessed how longitudinal trajectories of bicultural competence inform multiple indicators of academic adjustment during the period spanning youth adaptation from high school to their first years in college. In addition, despite theoretical notions highlighting the importance of considering the influence of salient social position constructs, including gender and college generational status, on youth's developmental competencies and their links with adjustment (García Coll et al., 1996), prior work has not tested whether the association between biculturalism and academic adjustment is similar across youth with different social positions.

Furthermore, contexts may determine the benefits and costs associated with specific youth developmental competencies, such that certain competencies may be more valued or adaptive in certain contexts (García Coll et al., 1996; White et al., 2018). It is important to consider, therefore, that the benefits of bicultural competence may not extend to all indicators of academic adjustment in specific college settings. Some of the contextual affordances and demands that college settings offer youth to practice and possibly enhance their bicultural competencies might fail to support their academic adjustment. For instance, youth's frequent need to transition between cultural frames of reference could prove, in part, behaviorally,

cognitively, and socially taxing unless youth are embedded in contexts that are supportive, inclusive, and culturally relevant (Safa et al., 2019). Thus, college settings may promote youth bicultural competence, and this may support youth adaptation to college (e.g., developing positive relationships with peers; Carbajal et al., 2021); however, the additional behavioral, cognitive, and social challenges associated with managing new bicultural demands in settings in which host versus heritage culture competencies may be differentially valued (Darder, 2015) may also have some costs to youth's academic adjustment (e.g., lower GPA).

Relatedly, given the documented disparities in academic achievement between ethnic-racial minoritized youth and their White counterparts (NCES, 2019) and the documented ways in which teachers' attitudes, perceptions, and beliefs shape educational inequality (Turetski et al., 2021), it is possible that youth who exhibit greater bicultural competence obtain lower grades regardless of their performance. Overall, it is possible that college professors may show greater favoritism toward youth who demonstrate host culture competencies rather than bicultural competencies. Therefore, more biculturally competent youth – relying more frequently on their bicultural competencies – may obtain less favorable grades, placement recommendations, and other evaluations compared to less biculturally competent youth who, in our current sample of predominantly U.S. born youth, are more likely to rely on their host culture competencies. These disparate assessments create gaps in academic achievement that do not reflect underlying differences in Latino students' abilities or performance. Further, a recent systematic review of the literature of biculturalism among U.S. Latinos revealed that the association between biculturalism and adjustment differed by the type of measure used and the adjustment indicator that was examined (Safa & Umaña-Taylor, 2021). As such, this study investigated whether a

positive link would emerge between youth bicultural competence and each of three different indicators of academic adjustment.

The Current Study

The current study addresses important gaps in developmental understandings of bicultural competence and its links to academic adjustment by identifying U.S. Latino youth's growth trajectories of bicultural competence (i.e., stability or growth) spanning their adaptation from high school to their first two years in college (i.e., 4th college semester), and considering family immigrant status as an antecedent (Portes & Rumbaut, 2001; Sam & Berry, 2006). Consistent with culturally informed and broader developmental theories (e.g., Motti-Stefanidi et al., 2012; Rutter, 1996), we hypothesized that youth would either maintain their initial levels of bicultural competence overtime (Hypothesis 1a: slopes not significantly different from zero) or that they would experience increases in bicultural competence development across time (Hypothesis 1b: positive slopes). Next, we investigated how youth's bicultural competence development related to their academic adjustment (i.e., academic achievement, self-efficacy, and engagement) assessed in their third year in college (i.e., 5th college semester), controlling for high school academic adjustment. We hypothesized that youth who demonstrate greater (i.e., higher intercepts) and/or increasing bicultural competence (i.e., more positive slopes) would have overall better academic adjustment, or score higher in most indicators of adjustment (Hypothesis 2). The examination of Hypotheses 1 and 2 was confirmatory in nature.

Importantly, prior scholarly work has not directly examined whether the link between bicultural competence and academic adjustment generalizes across male and female youth, or youth who are first in their family to attend college and those who are not. However, based upon extant theory recognizing the influence of salient social position constructs, including gender and

college generational status (i.e., different access to funds of knowledge about higher education), on youth developmental competencies and their links with adjustment (García Coll et al., 1996) and to follow best-practice recommendations to avoid data analytic biases (e.g., Hartung & Lefler, 2019), we examined whether the paths between bicultural competence and academic adjustment apply equally well to male and female youth, and to youth who are first in their family to attend college and those who are not. The examination of gender and college generational status was exploratory in nature. Last, we conducted exploratory sensitivity analyses in which we tested whether findings generalized across affective and behavioral components of bicultural competence (i.e., bicultural facility and comfort).

Method

Participants

Participants included 209 U.S. self-identified Latino youth (64.4% female), recruited during the spring of their senior year of high school prior to enrollment at a large Southwestern U.S. university (2017; M_{age} = 17.59 years, SD = .53). Regarding sexual orientation, youth identified as straight (86.1%), bisexual (7.2%), lesbian or gay (3.3%), or other (3.3%). Recruitment occurred during orientation sessions, through e-mail, text messages, phone calls, university and community partnerships, and by word of mouth. Bilingual research staff answered questions from potential participants and caregivers throughout recruitment. Participants were eligible to participate if they had been accepted to the university, had paid an initial financial deposit or had selected to defer payment, were seniors in high school, self-identified as Latino or Hispanic, and lived within 60 miles of the university during their senior year in high school. Two hundred thirty-nine youth consented to the study and 209 (87.4%) participated in study

procedures during the first wave of data collection (5.9% were excluded based on criteria and 6.7% did not respond to scheduling requests after initial consent).

Participants came from 92 different high schools (ranging from 6% to 96% Latino enrollment; M = 53% Latino enrollment; SD = 26%) from the surrounding metropolitan area and represented a range of Latino backgrounds. Specifically, the majority of the sample identified as being of Mexican (85.1%) or South or Central American (10.1%) descent, while others identified as Cuban (5.3%) or other Latino heritage (3.3%), and 18.2% identified as biethnic-biracial (e.g., Latino and Native American). In terms of immigrant generation, 10.6% of the sample reported being first-generation immigrants (born outside the U.S.), 62% second generation, and 27.4% third generation or greater. Many of the youth (67.9%) were considered first-generation college students. More than half of the sample (55.3%) reported parental education attainment of high school degree or less. Reports of perceived social class varied with 10.5% of the sample identifying as upper or upper-middle class, 47.8% as middle class, 29.8% as lower-middle or working class, and 1.4% as other. Of the original 209 youth, 89% participated at time 2 (T2), 94% participated at T3, 81% participated at T4, 86% participated at T5, and 81% participated at T6. Three participants withdrew from the study after the first wave, thus, were not included in analyses. Further, 13 participants reported that they were not attending any college at T6. Given the current study's focus on academic adjustment, these participants were excluded in analyses (analytic n = 193). There were no significant differences in demographic variables (i.e., age, nativity, gender, family immigrant status, college generation, and perceived social class) or study variables between youth who reported attending any college at T6 and those who did not.

Procedure

The Institutional Review Board of the university approved all procedures. All study procedures were completed in English. After providing written consent (from self or parent if under the age of 18), participants completed the first wave of data collection (T1 2017a) during either the spring of their senior year of high school (64.5%) or the summer prior to college entrance (34.5%). Participants consented to researchers collecting their institutional data from high school and college (i.e., college exam entrance scores and GPA). The current study uses data from the first six waves (approximately every semester from Spring 2017- Fall 2019). Participants completed assessments online either in their home or in a university lab and were compensated for their participation at each wave. Questionnaires were administered every semester following T1, including: Fall semester (T2 2017b: September – December; M = 173 days since T1, SD = 45.5) and Spring semester (T3 2018a: January – July; M = 141 days since T2, SD = 32.7) of participants' first year in college; Fall semester (T4 2018b: September – December; M = 224 days since T3, SD = 38.3) and Spring semester (T5 2019a: January -July; M = 144 days since T4, SD = 30.9) of their second year; and Fall semester (T6 2019b: September – December, M = 173 days since T5, SD = 38.9) of their third year.

Measures

Bicultural Competence (T1-T5)

Participants responded to 18 items from the Mexican American Biculturalism Scale (Basilio et al., 2014), designed to assess affective (i.e., bicultural comfort) and behavioral (i.e., bicultural facility) components of their bicultural competence. Prior work has demonstrated construct validity and reliability of the measure for use with U.S. Mexican youth (Basilio et al., 2014) and Latino youth (Carbajal et al., 2021). Given commonly shared values and practices by Latinos from different backgrounds (Marin & Marin, 1991), we adapted the bicultural comfort

and bicultural facility subscales to capture all Latino backgrounds (i.e., replaced "Mexican or Mexican American" with "Latino or Hispanic"). Each subscale uses nine similar items to assess competencies across host and heritage cultural domains, but on different response scales. In the bicultural comfort subscale (e.g., "Sometimes you may need to work with a group for the group to be successful, and other times you may need to compete with others for you to be successful. Which of the following best describes you?" and "Sometimes you may be obligated to satisfy your family's needs, and other times you may satisfy your own needs. Which of the following best describes you?"), participants responded to a Likert-type scale ranging from 1 (*I am only comfortable when: [former or latter situation])* to 5 (*I am always comfortable in both of these situations*). In the bicultural facility subscale (e.g., "Needing to work with a group for the group to be successful sometimes, and needing to compete with others for me to be successful other times is__" and "Being obligated to satisfy my family's needs sometimes, and satisfying my own needs other times is ___"), participants responded to a Likert-type scale ranging from 1 (*very easy*) to 5 (*very difficult*). Responses were reverse coded for the bicultural facility subscale. Consistent with recommendations from Basilio and colleagues (2014) and observed correlations between subscales across time (range .56 -.68), a total mean score was calculated including items from both subscales. Higher scores indicated higher levels of bicultural competence. Cronbach's alphas were .88 (T1), .90 (T2), and .91 (T3 – T5).

Academic Achievement (T1 and T6)

Cumulative GPA (T6): Cumulative college official GPA data spanning the first to fifth semesters of college were obtained via the university site's Institutional Analysis Office for all enrolled participants. *College Entrance Exam Scores (T1):* American College Testing (ACT) and Scholastic Assessment Test (SAT) scores were obtained via institutional analysis. Specifically,

we used ACT scores since they were more commonly used at the focal institution and then converted SAT scores for all participants who had not taken or reported ACT scores. An online conversion calculator (The Princeton Review, 2016) was used to convert SAT scores to ACT scores when ACT scores were not available. Given that youth came from 92 different high schools, we relied on college entrance exam scores as the T1 covariate (instead of high school GPA) to avoid high school-level variability in grading practices and scales.

Academic Self-Efficacy (T1 and T6)

Participants' academic self-efficacy was measured using a 7-item questionnaire assessing confidence in their academic abilities, based on foundational concepts of self-efficacy (Bandura, 1977) and research on academic self-efficacy with college students (Chemers et al., 2001). Prior work has demonstrated construct validity and reliability of the measure for use with U.S. ethno-racially diverse youth (Roeser et al., 1996). Example items include: "No matter how hard I try, there is some work in my classes I'll never understand" and "I'm certain I can do even the most difficult work in my classes." Participants responded using a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). After reverse coding negatively worded items, a mean score was calculated. Higher scores indicated higher academic self-efficacy. Cronbach's alphas were .83 (T1) and .80 (T6).

Academic Engagement (T1 and T6)

Participants completed the 15-item Behavioral-Emotional-Cognitive School Engagement Scale (Li 2011). All subscales include five items. Prior work has demonstrated construct validity and reliability of the measure for use with U.S. Latino youth samples (Chase et al., 2014; Li & Lerner, 2013). Example items include: "how often do you work hard to do well in school" (behavioral), "I care about the school I go to" (emotional), and "I think the things I learn at

school are useful" (cognitive). In the behavioral subscale, participants responded to a four-point Likert scale ranging from 1 (*never*) to 4 (*always*), and in the emotional and cognitive subscales to a Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). After reverse coding negatively worded items, a total mean score across subscales was calculated. Higher scores indicated greater academic engagement. Cronbach's alphas were .83 (T1) and .85 (T6).

Sociodemographic Variables

Participants reported on a series of demographic characteristics including their gender (0 = female; 1= male), perceived social class (ranging from 1 = upper class to 5 = working class), and whether they were the first in their family to attend college (0 = no; 1 = yes). Participants also reported on their parents' country of birth; based on this information, a family immigrant status variable was calculated, indicating if they had at least one immigrant parent (0 = at least one foreign-born or immigrant parent; 1 = no foreign-born or immigrant parent; Suárez-Orozco et al., 2015). Based on youth reports on their parents' and their own nativity, we also calculated a Latino background variable (0 = non-Mexican origin, 1 = Mexican origin).

Analytic Strategy

First, preliminary analyses were conducted in SPSS 26 (IBM Corp., 2019). We conducted attrition analyses by time of assessment and examined descriptive statistics. If significant differences emerged in attrition analyses, variables were included in subsequent analyses as auxiliary variables to reduce bias attributed to missingness (Enders, 2010). Prior to moving onto primary analyses, we also established longitudinal factorial invariance of the bicultural competence subscales.

Next, we conducted latent growth analyses using software available in *Mplus* version 8.1 (Muthén & Muthén, 2018). Missing data were handled using full information maximum

likelihood estimation (FIML; Enders, 2010). Although model fit indices must be interpreted with caution for latent growth models (Preacher et al., 2008), multiple fit indices were examined to assess global model fit; good (acceptable) fit is reflected by a non-significant chi-square test, CFI greater than .95 (.90), RMSEA less than .05 (.08; Hu & Bentler, 1999; Little, 2013), and SRMR less than .05 (.08; Hu & Bentler, 1999).

To test Hypotheses 1a and 1b, we estimated unconditional growth models for youth bicultural competence development. Both linear and quadratic models were estimated. The shape of the growth trajectory was determined by comparing model fit criteria; better fit is reflected by lower values in AIC, BIC, and adjustment BIC (Bollen & Curran, 2006). Second, we examined if the shape of the trajectory (i.e., linear vs. quadratic) or the growth parameters (i.e., means, variances, covariances) differed by youth's family immigrant status (i.e., having no foreign-born parent vs. having at least one foreign-born or immigrant parent). Last, we included youth's family immigrant status as a predictor of the growth factors to acknowledge any mean level differences in the intercept or the slope.

To test Hypothesis 2, we included T6 academic adjustment variables (i.e., academic achievement, self-efficacy, and engagement) as distal outcomes and tested the influence of youth's bicultural competence growth factors on their academic adjustment. Further, we conducted multi-group analyses to assess generalizability of associations across youth's gender and college generation groups. Specifically, a fully unconstrained model was compared to a partially constrained model (with constrained paths between growth factors and academic adjustment) using a chi-square difference test. A non-significant chi-square suggested invariance across the grouping variable (Little, 2013). Our sample was predominantly U.S. Mexican-origin (84.97%). To account for differences between participants of Mexican background and those

from other Latino backgrounds, we controlled for Latino background (0 = non-Mexican origin, 1 = Mexican origin) in our final model. Finally, we conducted separate sensitivity analyses by bicultural competence component. We included T6 academic adjustment variables as distal outcomes to test the influence of the bicultural facility and the bicultural comfort growth factors on youth's academic adjustment in their fifth college semester. Only associations for growth factors with significant variability were examined. These set of analyses also included multi-group analyses and specified covariates described above.

Results

Preliminary Analysis

First, attrition analyses examined whether youth who participated at T2, T3, T4, T5, and T6 differed on T1 demographic variables (i.e., age, nativity, gender, family immigrant status, college generation, perceived social class, and parent education) from those that did not. Most demographic comparisons were nonsignificant, though youth who participated at T3 (n = 181) reported lower perceived social class [$t(190) = -1.98$, $p = .049$] compared to those who did not participate at T3 (n = 11). No differences were observed in study variables. To reduce bias attributed to missingness (Enders, 2010; Little 2013), we included perceived social class as an auxiliary variable in subsequent analyses.

Descriptive statistics are presented in Table 1. T1, T2, T3, and T5 bicultural competence were negatively associated with T6 cumulative GPA. T3 and T5 bicultural competence were positively associated with T6 academic self-efficacy. T3, T4, and T5 bicultural competence were positively associated with T6 academic engagement. All T6 academic adjustment variables were positively correlated with one another. The distributions of study variables were acceptable (i.e., skewness < 1, kurtosis < 7; West, Finch, & Curran, 1995).

[Insert Table 1 Here]

Last, we found evidence of longitudinal factorial invariance for the bicultural competence subscales across the five time points. We examined invariance using Chen's (2007) criteria (e.g., invariance holds if the difference in the CFI and RMSEA between the constrained model and the unconstrained model is .005) for each of the two bicultural competence subscales separately. We found longitudinal factorial invariance holds at the loading, intercept, and variance levels for the bicultural facility and comfort subscales (See Supplementary Table 1). Following recommended suggestions by Little (2013), we concluded mean comparisons across time were appropriate and proceeded to examine the growth trajectories.

Primary Analyses

Bicultural Competence Development Across Youth Adaptation from High School to their First Two Years of College

The linear growth trajectory model had slightly lower model fit criteria values, AIC = 2010.14; BIC = 2065.61; Adjusted BIC = 2011.76, compared to the quadratic model, AIC = 2014.31; BIC = 2082.83; Adjusted BIC = 2016.30; thus, we proceeded with the linear model. In the linear model, the intercept factors were fixed at 1 to represent the equal influence on each repeated measure and slope factors were fixed at 0 (T1 = 2nd semester 12th grade, hereafter "high school"), 0.5 (T2 = 1st college semester), 1 (T3 = 2nd college semester), 1.5 (T4 = 3rd college semester), and 2 (T5 = 4th college semester) to account for time between assessments. Thus, the growth factors represent youth's bicultural competence in high school (T1, intercept) and amount of linear change from the transition from high school to college and every subsequent college semester thereafter (slope).

The estimated unconditional linear growth model for bicultural competence demonstrated

good fit, χ^2 (10) = 13.07, p =.220; CFI = .99; RMSEA = .04, 90% CI [.00, .09]; SRMR = .05. On average, the bicultural competence growth trajectory spanning high school to fourth college semester was moderately high [$\mu_\propto$ = 3.59, *SE* = .05, p < .001] and stable [μ_β = -.04, *SE* = .03, p =.105]. As indicated by intercept and slope variances, respectively, there were significant individual differences in high school levels of bicultural competence [$\psi_{\propto\propto} = .32$, *SE* =.05, p < .001], and change across time [$\psi_{\beta\beta} = .05$, *SE* =.02, p = .004]. The intercept and slope were not correlated [r = -.01, *SE* = .02, p =.505]. The latent trajectory was a good predictor of the observed measures of youth's bicultural competence. The intercept and the linear slope accounted for 66%, 55%, 65%, 66%, and 76% of the variability in T1, T2, T3, T4, and T5, respectively.

To assess whether the estimated bicultural competence growth trajectory differed by family immigrant status groups (youth with no foreign-born parent vs. at least one foreign-born or immigrant parent), we tested linear and quadratic models separately for each group. The linear growth trajectory model estimated for youth with at least one foreign-born parent had lower model fit criteria values, AIC = 1298.51; BIC = 1345.90; Adjusted BIC = 1292.15, compared to the quadratic model, AIC = 1304.94; BIC = 1363.48; Adjusted BIC = 1297.08. Similarly, the linear growth trajectory model estimated for youth with no foreign-born parents had lower model fit criteria values, AIC = 713.69; BIC = 752.63; Adjusted BIC = 699.06, compared to the quadratic model, AIC = 716.01; BIC = 764.11; Adjusted BIC = 697.94. Thus, we observed no differences in the shape of the trajectory across groups. Next, we compared an unconstrained linear model in which the means, variances, and covariances of the intercept and the slope were free to vary across groups to a constrained linear model in which the means, variances, and covariances of the intercept and the slope were constrained to be the same. A global chi-square

difference test indicated no differences by family immigrant status groups [$\Delta\chi^2(5) = 7.82$, $p = .166$]. A follow-up chi-square difference test, however, in which we compared the constrained model to a model in which the mean intercept was free to vary across groups, revealed differences in the intercept mean levels across youth in immigrant and non-immigrant families [$\Delta\chi^2(1) = 6.89$, $p = .009$]. Based on this analysis, we included family immigrant status as a predictor of the growth factors (i.e., intercept, slope). This estimated model demonstrated good fit (See Figure 1 for standardized coefficients). Youth in non-immigrant families (i.e., had no foreign-born or immigrant parent) had lower average high school or T1 bicultural competence ($\beta = -.23$, $SE = .10$, $p = .022$) compared to youth in immigrant families (i.e., had at least one foreign-born or immigrant parent).

[Enter Figure 1 Here]

Bicultural Competence Development and Academic Adjustment

In addition to family immigrant status, we included gender and college generation as covariates on endogenous variables, after additional chi-square difference tests indicated that the paths between growth factors and academic adjustment did not differ by gender, $\Delta\chi^2$ (6) = 5.72, $p = .456$, or college generation, $\Delta\chi^2$ (6) = 4.72, $p = .580$. The fit of the model was good (See Figure 2 for standardized coefficients). Findings indicated that there was no association between T1 bicultural competence and T6 academic self-efficacy ($\beta = .09$, $SE = .11$, $p = .426$). More positive slopes in bicultural competence, however, were associated with higher T6 academic self-efficacy ($\beta = .81$, $SE = .37$, $p = .029$), controlling for T1 bicultural competence and T1 academic self-efficacy. Further, higher T1 bicultural competence was associated with greater T6 academic engagement ($\beta = .18$, $SE = .06$, $p = .004$), controlling for change in bicultural competence over

time and T1 academic engagement. No association was found between change in bicultural competence over time and T6 academic engagement (β = .27, *SE* = .19, *p* = .168).

[Enter Figure 2 Here]

Contrary to expectations, higher T1 bicultural competence was associated with lower T6 cumulative GPA (β = -.20, *SE* = .08, *p* = .014), controlling for change in bicultural competence over time and college entrance exam scores. No association was found between change in bicultural competence over time and T6 cumulative GPA (β = -.01, *SE* = .27, *p* = .972). The model accounted for 20% of the T6 cumulative GPA variance, 18% of the T6 academic self-efficacy variance, and 12% of the T6 academic engagement variance. Finally, supplementary sensitivity analyses demonstrated that whether participants reported attending the focal institution or not (e.g., attending other higher educational institutions) at T6 did not predict youth's T6 academic self-efficacy (β = -.19, *SE* = .16, *p* = .243) or T6 engagement (β = -.06, *SE* = .09, *p* = .510). Given these findings, we concluded that no further analyses were warranted to examine differences by college settings. T6 cumulative GPA was only obtained for participants attending the focal institution; thus, no supplementary sensitivity analyses were warranted for this outcome.

Sensitivity Analyses: Links Between Bicultural Facility and Comfort with Academic Adjustment

Most associations between the bicultural facility growth factor with significant variability (i.e., T1 bicultural facility) and academic adjustment were significant (See Figure 3 for standardized coefficients). Consistent with main analyses, findings indicated that higher T1 bicultural facility was associated with greater T6 academic engagement (β = .29, *SE* = .09, *p* < .010), controlling for T1 academic engagement. Further, T1 bicultural facility was associated

with lower T6 cumulative GPA (β = -.24, *SE* = .12, *p* = .044), controlling for college entrance exam scores. Similar associations emerged for bicultural comfort (see Figure 4 for standardized coefficients). Findings indicated that higher T1 bicultural comfort was associated with greater T6 academic engagement (β = .12, *SE* = .05, *p* = .018), controlling for change in bicultural comfort over time and T1 academic engagement. Further, higher T1 bicultural comfort was associated with lower T6 cumulative GPA (β = -.16, *SE* = .07, *p* = .018), controlling for change in bicultural comfort over time and college entrance exam scores. No other significant associations emerged across these components.

[Enter Figure 3 and Figure 4 Here]

Discussion

The current study addresses important gaps in the understanding of the development and consequents of bicultural competence across an important transitional period to higher education. First, we examined U.S. Latino youth's developmental trajectories of bicultural competence spanning their adaptation from high school to their first two years in college and accounting for family immigrant status. We found that youth's overall trajectory of bicultural competence was moderately high and stable across this period. Further, youth who had at least one foreign-born or immigrant parent demonstrated greater high school bicultural competence compared to youth who had no immigrant parents. Second, we investigated how youth's bicultural competence development related to their academic adjustment assessed in the third year in college (5th college semester). Findings indicated that youth who demonstrated greater high school and/or increasing or stable bicultural competence over time exhibited later greater academic self-efficacy and engagement. Contrary to expectations, greater high school bicultural competence was associated with lower cumulative GPA. Further, consistent with contemporary calls to

address data analytic bias (Hartung & Lefler, 2019), our explicit examination of possible gender and college generation differences in the association between bicultural competence trajectories and academic adjustment indicated that findings generalized equally well across gender and college generation groups.

Bicultural Competence Development Across Youth Adaptation from High School to College

The current study drew from theoretical notions suggesting that the development of bicultural competence is informed by the interplay of contextual and individual factors (e.g., Portes & Rumbaut, 2001; Ward & Geeraert, 2016). We aimed to shed light on this interplay by tracing U.S. Latino youth's developmental trajectories of bicultural competence spanning high school to their first two years in college, and accounting for family immigrant status to acknowledge developmental differences (Portes & Rumbaut, 2001; Sam & Berry, 2006). Consistent with Hypothesis 1a, youth's overall trajectory of bicultural competence was moderately high and stable across this period. These findings are consistent with prior work suggesting that age influences enculturation and acculturation processes, thus bicultural competence development, such that children adapt more easily than adolescents (Knight et al., 1992), and adolescents adapt faster than adults (Schwartz et al., 2006). Thus, it is important to consider that the rate of change in bicultural competence development may decrease as adolescents move into young adulthood.

In addition, our findings may suggest that youth who pursue higher education are those who demonstrate higher and stable degrees of bicultural competence prior to college enrollment. Further, it is possible that youth in our sample did not experience new opportunities to enhance their host and heritage culture competencies during this period. It is worthy of note that youth in

the current sample live within 60 miles of the focal institution during their senior year in high school. As such, youth may have continued to spend time in the same high school contexts thus restricting some of the growth that might have occurred if they transitioned to a higher education institution that was further away from their homes. Further, it is important to consider that the unique social context of the current study, set in Arizona, played a role in the findings that emerged. Specifically, Latinos are the largest ethnic-racial minoritized group in Arizona (Pew Research Center [PRC], 2020); thus, U.S. Latino youth developing in this region are afforded the benefits associated with having a large and established Latino community in which opportunities to engage in activities that nurture both heritage and host cultures are more readily available (Safa et al., 2019). Consequently, it is likely that youth continued to experience similar exposure to opportunities to engage their bicultural competence as they progress through college given the proximity to their homes and the unique local context in which they were embedded.

Importantly, our findings are consistent with broader developmental theories conceptualizing development as change or stabilization and suggesting that life transitions may serve to reaffirm individuals' pre-existing characteristics and competencies (Rutter, 1996). In addition, prior work focused on different indicators of biculturalism has also documented that U.S. Latino youth's trajectories of biculturalism remain stable over time across early (Matsunaga et al., 2010) and middle (Schwartz et al., 2015) adolescence. Our findings may suggest that similar developmental trajectories manifest from late adolescence into young adulthood. It is worthy of note, however, that prior work and the current study examined U.S. Latino youth longitudinal trajectories of biculturalism across a relatively short period of time (between 1.5 to 2.5 years). Thus, it is possible that developmental changes may be observed over a longer time span. Given the limited number of studies available focusing on different developmental periods

and relying on various assessments of biculturalism, it is important to expand developmental research on biculturalism among U.S. Latinos to elucidate its normative progression.

Our examination of family immigrant status, a key individual factor, as a predictor of youth's bicultural competence trajectories revealed that youth who had at least one foreign-born or immigrant parent demonstrated greater high school levels of bicultural competence (which youth maintained across time). This finding is consistent with prior work suggesting that U.S. Latino adolescents and adults who had spent more time or had been more exposed to heritage and host cultures tended to demonstrate higher indicators of biculturalism (e.g., Chiriboga, 2004; Nieri et al., 2011). Importantly, immigrant and ethnic-racial minoritized youth experience opportunities to learn about the host culture in academic settings - influenced by regional and national factors - and through interactions with teachers and peers (Motti-Stefanidi et al., 2012; Sam & Berry, 2006). Youth who have a closer connection to their Latino roots due to their family's more recent immigration, however, have additional affordances associated with the heritage culture that may promote the development of bicultural competence at early stages of development, such as opportunities to learn Spanish or to participate actively in heritage culture practices and traditions. These same types of affordances may not be available to U.S. Latino youth whose family immigration experiences are further removed.

Taken together, our findings underscore the need for future research to examine contextual and individual factors shaping the bicultural affordances and demands youth encounter, which inform ways in which youth negotiate opportunities and challenges associated with the heritage and host cultures (Knight et al., 2018) and ultimately their bicultural competence development (change or stabilization; e.g., García Coll et al., 1996; Motti-Stefanidi et al., 2012). Considering the degree of stability observed in our study and in prior work

examining biculturalism over time, it is also important to identify early processes that set into motion the development of bicultural competence (Safa et al., 2020).

Bicultural Competence Development and Academic Adjustment

Given that bicultural competence is linked to important affective, behavioral, and cognitive abilities including frame-switching, integrative complexity, and identity integration (Benet-Martínez & Haritatos, 2005; Hong et al., 2000; Tadmor & Tetlock, 2006), and that achieving developmental competencies serves as the foundation for future competencies (Umaña-Taylor & Douglas, 2017), we expected that more biculturally competent youth would overall demonstrate better academic adjustment. In support of Hypothesis 2, we found that youth who demonstrated greater levels of bicultural competence across this period (high school to 4th college semester), as evidenced by higher intercepts or more positive slopes (suggesting stability or growth), exhibited greater academic engagement and self-efficacy in their 5th college semester. These findings extend prior empirical, cross-sectional work documenting a positive link between indicators of biculturalism and U.S. Latinos' academic perceptions, aspirations, and achievement (e.g., Acevedo-Polakovich et al., 2010; Chun et al., 2016; Carbajal et al., 2021). Additionally, they extend prior longitudinal work documenting that indicators of biculturalism may set youth into more positive academic trajectories in college (Rivas-Drake & Mooney, 2009). Findings from main and sensitivity analyses suggest that greater high school bicultural competence and more positive developmental trajectories of affective and behavioral bicultural competence (i.e., increasing or stable) spanning youth's adaptation from high school to the first years in college may promote their later academic engagement and self-efficacy. Of note, when examined separately the significant positive association between bicultural competence and academic self-efficacy did not replicate, suggesting that affective and behavioral components of

bicultural competence may be complementary ingredients for academic adjustment in the context of higher education as youth may utilize such competencies to cope with simultaneous demands of progressing through college. These findings have important implications. Specifically, supporting U.S. Latino youth's bicultural competence development may be key in fostering youth's confidence in their ability to pursue higher education.

Hypothesis 2 was not fully supported, as we found that youth with greater high school levels of bicultural competence (which youth maintained across time) had lower cumulative GPA in their 5th college semester. This finding aligns with theoretical notions positing that a given developmental competency may not similarly promote all indicators of adjustment, and that in certain contexts a specific competency may be associated with both benefits and costs to youth's adjustment (García Coll et al., 1996; White et al., 2018). It is important to place this finding within the sociohistorical context of the U.S., which is characterized by an ethno-racial hierarchy that has historically placed Latinos and immigrants toward the bottom (Omi & Winant, 2014). Given that youth who had at least one immigrant parent demonstrated greater high school bicultural competence (which youth maintained across time) and there is growing evidence suggesting that teachers in the U.S. (and other countries) assess students from marginalized groups (e.g., ethnic-racial minoritized and immigrant status) more negatively than youth from more advantaged groups (e.g., majority status; Turetski et al., 2021), it is possible that more biculturally competent youth, particularly those from immigrant families, consistently obtained lower grades irrespective of their ability or performance. Youth in our current sample were predominantly U.S. born and likely demonstrate strong host culture competencies (e.g., English fluency, knowledge of U.S. norms). In our sample, lower cumulative GPA may reflect professors' overall greater favoritism toward youth who demonstrate host culture competencies

rather than bicultural competencies (and those with less recent history of immigration) as opposed to actual differences in youth's academic ability or performance.

Relatedly, it is possible that moderately high and stable degrees of bicultural competence support youth adaptation to college as evidenced by the positive association with youth's academic engagement and self-efficacy. However, the recurrent behavioral, cognitive, and social challenges associated with managing multiple bicultural demands in U.S. academic settings in which host versus heritage culture competencies are differentially valued (Darder, 2015), even if those demands are consistent with prior experiences, may have some costs to youth's academic adjustment resulting in lower cumulative GPA. For instance, youth's frequent need to transition between different cultural frames of reference such as navigating between heritage and host culture values that may at times compete with one another (García Coll & Marks, 2009; Tamis-Lemonda et al., 2008) could prove taxing in contexts in which others (e.g., professors or peers) may not understand these types of challenges (Darder, 2015) or across settings that are less inclusive and culturally relevant (Safa et al., 2019). Consequently, these cognitive, affective, and behavioral shifts may make it harder for youth to study for an exam or to complete a class project, especially in high-stakes situations (e.g., studying for a final test and needing to take care of a younger sibling), thereby likely resulting in youth obtaining lower grades, which would influence their overall GPA. In this way, it is possible that higher bicultural competence may both promote and undermine youth's academic adjustment in academic settings characterized by social hierarchies that value certain cultural memberships and norms over others.

These findings also align with a recent systematic review of the literature of biculturalism among U.S. Latinos suggesting that the association between biculturalism and adjustment differed by the adjustment indicator that was examined (Safa & Umaña-Taylor, 2021).

Additionally, given that a positive association emerged between bicultural competence and youth's self-reported measures of academic adjustment whereas a negative link emerged for institutional records of cumulative GPA, future research should continue to examine whether the biculturalism-adjustment link is further modified by different types of assessments, including self-report versus non-self-report assessments of academic adjustment. Taken together, our findings indicate that the promoting influence of bicultural competence may not extend to all indicators of academic adjustment and that the benefits and costs to youth's adjustment may depend upon the academic contexts and demands they navigate.

Strengths, Limitations, and Future Directions

The current study had several strengths that should be considered in light of its limitations. First, the study traced U.S. Latino youth's bicultural competence trajectories across an important period of adaptation from high school to first college years and included multiple assessments over the course of 2.5 years. Future work may consider examining if developmental changes emerge over a longer time span. Second, our sample, albeit relatively small, comprised U.S. Latino youth from 92 different high schools in the surrounding metropolitan area with varied perceived social class, family immigrant status, and college generational status. However, it was limited to youth who lived within 60 miles of the university during their senior year in high school, which may have restricted the variability in our sample regarding contextual demands informing youth's bicultural competence development. Future work should examine if similar developmental trajectories and links to academic adjustment emerge across samples in which youth attend higher education institutions further from home and attend different types of educational settings (e.g., vocational). Additionally, it would be important to assess the affordances and demands youth encounter in educational settings shaping the development and

consequents of bicultural competence including school climate and cultural congruity. Considering our sample size, it would be important for future work to replicate this study's findings. Relatedly, given that we observed variability in the intercept and the slope across participants, it is possible that different growth trajectories of bicultural competence would emerge in a larger sample. As such, it would be important for future research to leverage growth mixture modeling to capture meaningful variability in bicultural competence trajectories.

Moreover, while our sample reflected main demographics of the U.S. Latino youth population (i.e., primarily of Mexican descent and born in the U.S.; PRC, 2020), our sample was limited to individuals living in one Southwestern state. Future work should seek to replicate such findings in broader national samples. Further, we controlled for Latino background and tested differences across youth who had foreign-born versus U.S. born parents (Suárez-Orozco et al., 2015). However, given that Latinos from different backgrounds have distinct immigrant histories and varied experiences with reception into the U.S. (Portes & Rumbaut, 2001), it will be important for future studies to investigate the development and benefits of bicultural competence in Central and South American U.S. Latino youth samples, and samples with diverse nativity statuses. Finally, this work focused on behavioral and affective bicultural competence components, which are theorized to be the underpinning for the development of bicultural skills (Basilio et al., 2014). For a more comprehensive picture on bicultural competence development and its links with academic adjustment, future work may consider examining developmental trajectories of youth's bicultural skills, including frame-switching and integrative complexity, which may be especially salient for academic achievement.

Conclusions

This research contributes to developmental science by increasing understanding of longitudinal trajectories of bicultural competence, across an important period of adaptation, and ways in which the course of these trajectories (e.g., initial levels or changes across time) informed youth's academic adjustment in higher education. Findings indicated that in our sample, U.S. Latino youth's overall trajectory of bicultural competence was relatively high and stable across high school to their first college years, and was overall higher for youth who had at least one foreign-born or immigrant parent. In addition, youth with greater high school bicultural competence and more positive developmental trajectories (i.e., increasing or stable) demonstrated higher academic engagement and self-efficacy but lower academic achievement. These findings underscore the need to consider contextual and individual factors informing the development (change or stabilization) of youth's bicultural competence. In addition, they suggest that the promoting influence of bicultural competence may not extend to all indicators of academic adjustment and that the benefits and costs to youth's adjustment may depend upon the academic contexts (and associated hierarchies) and demands they navigate. Importantly, U.S. Latino youth report higher rates of high school dropout and lower rates of college enrollment compared to youth from other ethnic-racial groups (NCES, 2019). Consequently, an advanced understanding of the manner in which bicultural competence development may support U.S. Latino youth's academic adjustment could serve as an initial step to address academic disparities and set U.S. Latino youth onto more equitable academic trajectories.

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Table 1

Descriptive Statistics and Intercorrelations for Study Variables (n = 193)

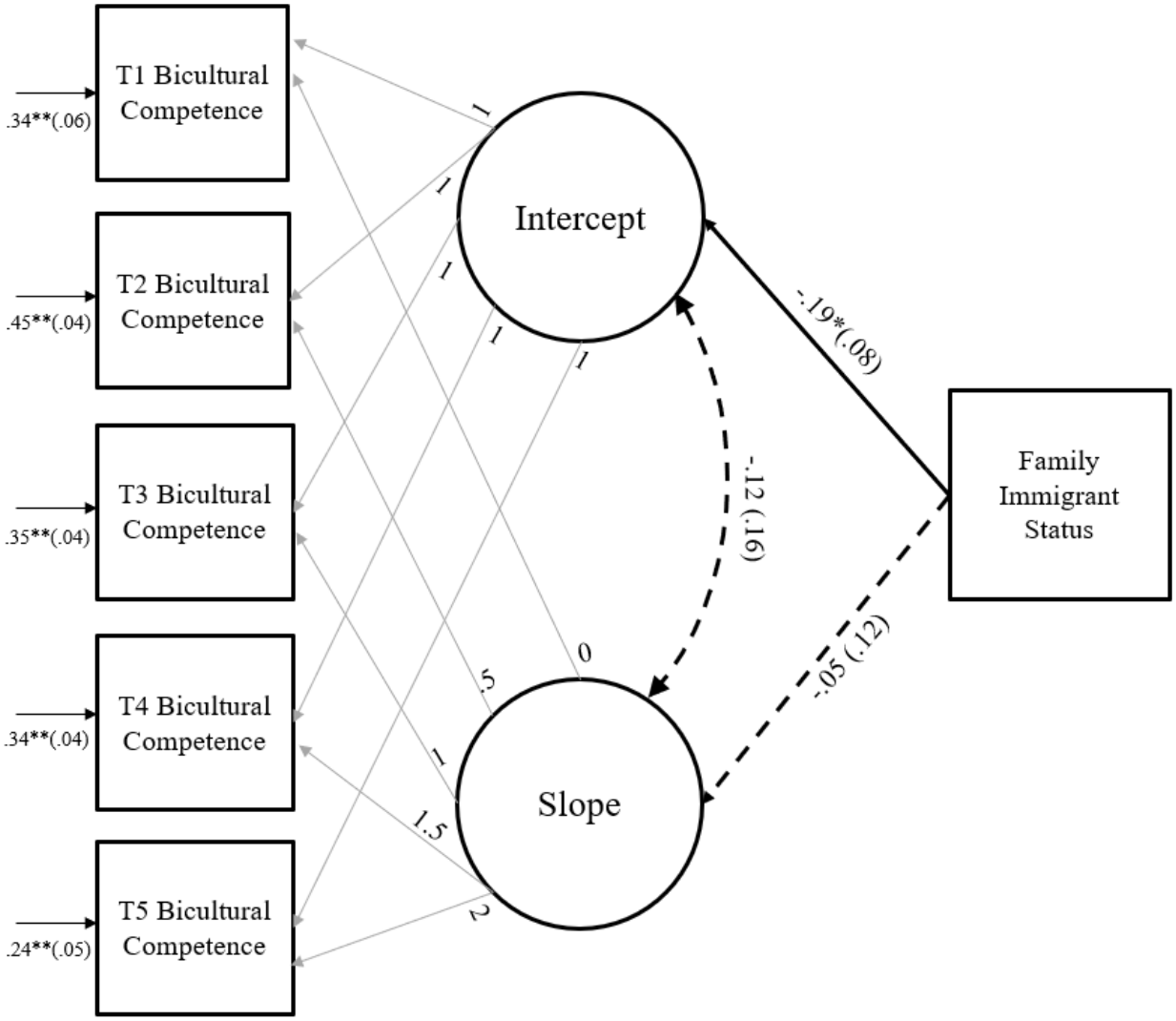
Variable	1	2	3	4	5	6	7	8	9	10	*M*	*SD*
1. T1 Bicultural Competence											3.60	.70
2. T2 Bicultural Competence	.57**										3.55	.75
3. T3 Bicultural Competence	.62**	.62**									3.56	.76
4. T4 Bicultural Competence	.56**	.58**	.59**								3.47	.75
5. T5 Bicultural Competence	.55**	.51**	.71**	.68**							3.51	.79
6. T1 College Exam Entrance Score	-.11	-.06	-.08	.04	-.03						22.84	4.20
7. T6 Cumulative GPA	-.26**	-.21*	-.27**	-.09	-.22**	.40**					3.25	.52
8. T1 Academic Self-Efficacy	.13	.02	.12	.12	.19*	.15*	.04				4.00	.67
9. T6 Academic Self-Efficacy	.05	.09	.16*	.12	.21**	.26**	.24**	.30**			3.91	.64
10. T1 Academic Engagement	.15*	.01	.13	.13	.16*	-.07	-.01	.41**	.16		3.32	.39
11. T6 Academic Engagement	.12	.13	.20*	.17*	.19*	.16	.27**	.12	.47**	.23**	3.29	.38

Note. T1 = January–July 2017; T2 = September–December 2017; T3 = January–July 2018; T4 = September–December 2018; T5 = January–July 2019; T6 = September–December 2019; GPA = Grade point average. Descriptive analyses were conducted in *SPSS* 26 using listwise deletion.

*$p < .05$. ** $p < .01$.

Figure 1

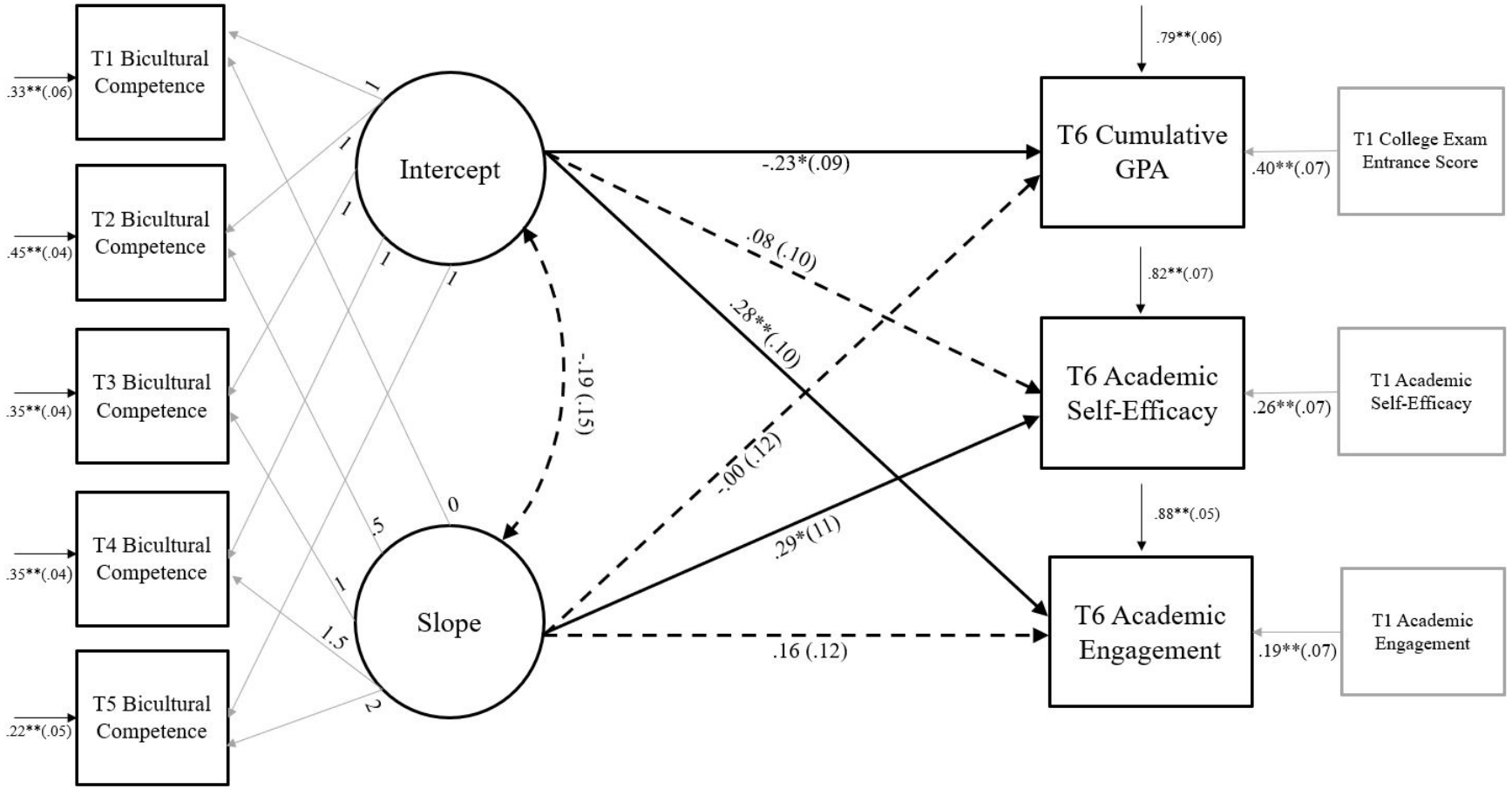
Bicultural Competence Linear Growth Trajectory Across Youth Adaptation from High School to Their First Two Years of College (n = 193)



Note. T1 = January–July 2017; T2 = September–December 2017; T3 = January–July 2018; T4 = September–December 2018; T5 = January–July 2019. Family immigrant status (0 = youth with at least one foreign-born parent; 1 = youth with no foreign-born parent) included as a predictor of the growth factors. Perceived social class was included as an auxiliary variable. Standardized coefficients reported (STDY in Mplus). Standard errors are reported in parenthesis. Dashed lines represent non-significant paths. Model fit: χ^2 (13) = 13.63, p = .401; CFI = 1.0; RMSEA = .02, 90% CI [.00, .07]; SRMR =.04. * p <. 05.

Figure 2

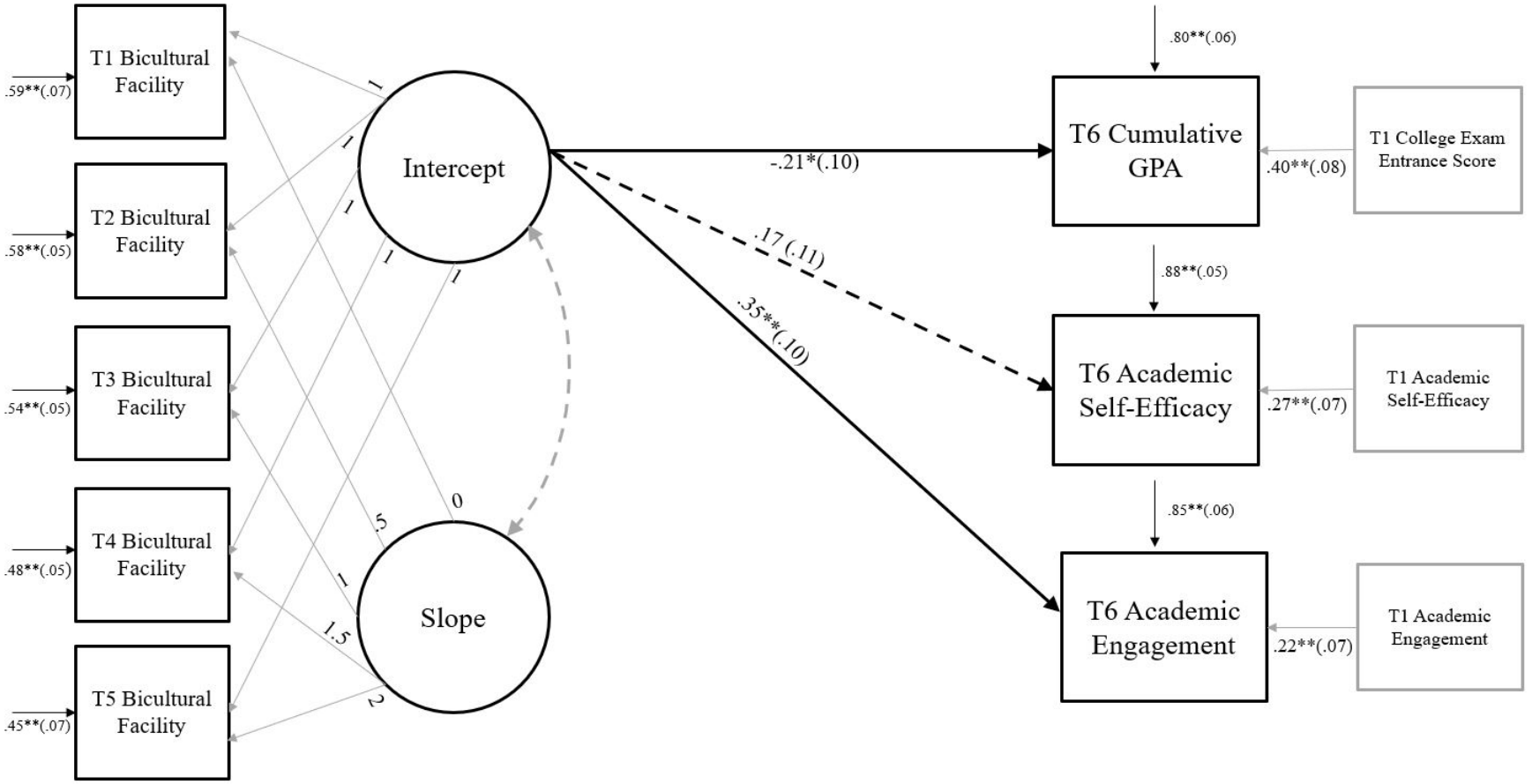
Bicultural Competence Linear Growth Trajectory Predicting Academic Adjustment (n = 193)



Note. T1 = January–July 2017; T2 = September–December 2017; T3 = January–July 2018; T4 = September–December 2018; T5 = January–July 2019; T6 = September–December 2019; GPA = Grade point average. Family immigrant status, gender, college generation, and Latino background were included as covariates of the growth factors (i.e., intercept and slope) and outcome variables but not included in the figure for ease of presentation. Perceived social class was included as an auxiliary variable. Outcome variables were allowed to correlate. Completely standardized coefficients reported (STDYX in Mplus). Standard errors are reported in parenthesis. Dashed lines represent non-significant paths. Model fit: χ^2 (52) = 57.77, p = .271; CFI = .99; RMSEA = .03, 90% CI [.00, .05]; SRMR = .05.
* p <. 05. ** p <. 01

Figure 3

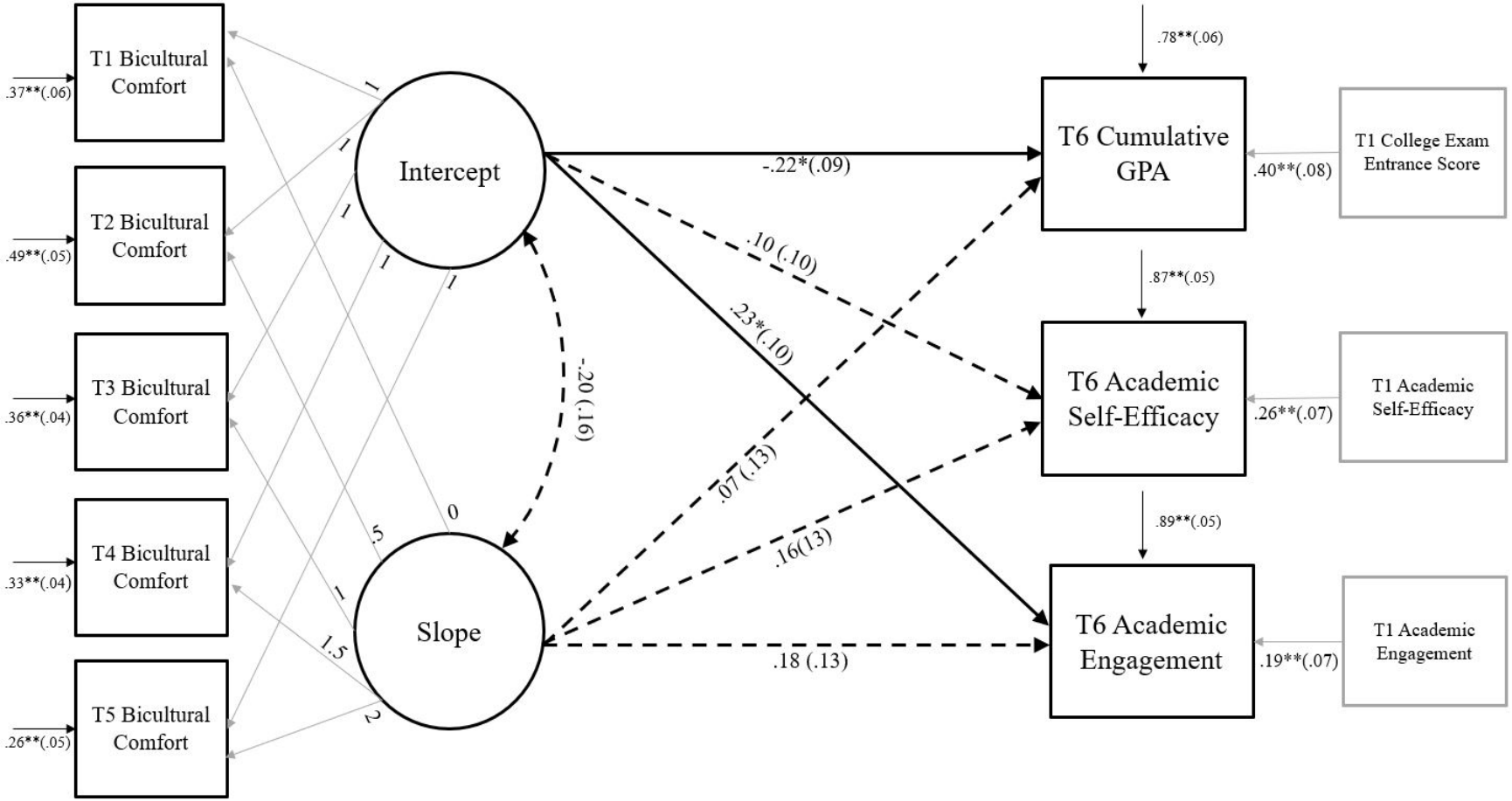
Bicultural Facility Linear Growth Trajectory Predicting Academic Adjustment (n = 193)



Note. T1 = January–July 2017; T2 = September–December 2017; T3 = January–July 2018; T4 = September–December 2018; T5 = January–July 2019; T6 = September–December 2019; GPA = Grade point average. There was no significant variability in the slope [$\psi_{\beta\beta} = .02$, $SE = .02$, $p = .312$]. Chi-square difference tests indicated that the paths between the intercept and academic adjustment did not differ by gender $\Delta\chi^2$ (3) = 5.65, $p = .130$. Models did not converge for the college generation group comparison. Family immigrant status, gender, college generation, and Latino background were included as covariates of the intercept and outcome variables but not included in the figure for ease of presentation. Perceived social class was included as an auxiliary variable. Outcome variables were allowed to correlate. Completely standardized coefficients reported (STDYX in Mplus). Standard errors are reported in parenthesis. Gray dash lines represent correlations involving growth factors with no variability. Black dashed lines represent non-significant paths. Model fit: $\chi 2$ (52) = 60.18, $p = .204$; CFI = .98; RMSEA = .03, 90% CI [.00, .06]; SRMR = .05. * $p <$. 05. ** $p <$. 01

Figure 4

Bicultural Comfort Linear Growth Trajectory Predicting Academic Adjustment (n = 193)



Note. T1 = January–July 2017; T2 = September–December 2017; T3 = January–July 2018; T4 = September–December 2018; T5 = January–July 2019; T6 = September–December 2019; GPA = Grade point average. Chi-square difference tests indicated that the paths between the growth factors (i.e., intercept and slope) and academic adjustment did not differ by gender, $\Delta\chi^2$ (6) = 2.36, p = .884, or college generation, $\Delta\chi^2$ (6) = 4.15, p = .656. Family immigrant status, gender, college generation, and Latino background were included as covariates of the growth factors and outcome variables but not included in the figure for ease of presentation. Perceived social class was included as an auxiliary variable. Outcome variables were allowed to correlate. Completely standardized coefficients reported (STDYX in Mplus). Standard errors are reported in parenthesis. Dashed lines represent non-significant paths. Model fit: χ^2 (52) = 71.61, p = .037; CFI = .97; RMSEA = .04, 90% CI [.01, .07]; SRMR = .05. * p <. 05. ** p <. 01