LATINE CHILDREN OF IMMIGRANTS: DOES FAMILISMO PROTECT AGAINST

SCHOOL-BASED DISCIRMINATION?

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ABSTRACT

TOXIC SCHOOL SETTINGS: FAMILISMO DOES NOT PROTECT ACADEMIC

ACHIEVEMENT FOR LATINE ADOLESCENTS EXPERIENCING SCHOOL-BASED

DISCRIMINATION

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There is a disparity in Latine students' educational attainment in higher education compared to individuals from other cultural backgrounds in the United States. Discrimination is a risk factor for the academic success of Latine students, whereas *familismo* is promotive of academic success. Biological sex and national origin are also found to contribute to differences in academic achievement for Latine adolescents. As such, this study explored how these factors influence high school grade point average (HSGPA).

The Children of Immigrants Longitudinal Study data set was used to examine (a) the relationships between school-based discrimination, family cohesion, family obligation, and HSGPA and (b) the extent to which these relationships differ between Latine subgroups split by sex and immigrant generation. The sample used for this study included majority Cuban Americans (40%) and Mexican Americans (25%) and a smaller, but diverse representation of other Central and South Americans (35%). A majority of participants were recruited in Florida (73%) and were female (51%). The results demonstrated that both school-based discrimination and family obligation had a significantly negative association with HSGPA. In contrast, family cohesion had a significantly positive association with HSGPA. There were no significant interactions between discrimination, family cohesion, or family obligation, and there were no differences in any estimated pathway across the subgroups.

The negative association between school-based discrimination and HSGPA sheds light on future avenues of research to continue exploring discrimination within school contexts. The lack of interaction between discrimination, family cohesion, and family obligation highlights the importance of discrimination being addressed within school settings and not within family units. It is vital for school personnel to recognize the negative impact of discrimination within school settings has on important academic outcomes for Latine youth.

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Table of Contents

List of Tables

List of Figures

Dedication

This thesis is dedicated to all the Latine students and their families in the U.S. school system who

deserve an exceptional, supportive school environment.

Toxic School Settings: Familismo Does Not Protect Academic Achievement for Latine

Adolescents Experiencing School-Based Discrimination

Latine[1] students' academic achievement and educational attainment lag behind those of

individuals from other cultural backgrounds. For instance, only 23% of Hispanic young adults

from 25 to 29 years old have a bachelor's degree, compared to 72% of Asian, 45% of White, and

26% of Black young adults (Mora, 2022). Additionally, individuals attending school in the

United States (US) with national origins from Mexico, Central America, and the Caribbean have

the highest rates of high school attrition, whereas individuals originating from Asian and African

countries have the highest rates of professional degree completion (Budiman, 2020). These

disparities are of great concern as the Latine population is the largest growing minority group in

the US, with a 23% increase in the past decade (Passel et al., 2022). This concern is further

amplified when examining differences between Latine immigrant generations. As of 2017, about

12.9 million foreign-born Hispanic adults over the age of 25 did not receive a high school

diploma, whereas only 2.3 million of their US-born Hispanic counterparts did not receive their

high school diploma (Schmidt, 2018). In response to these ethnic and generational disparities,

there is a growing area of research that addresses the various promotive and hindering factors

related to academic and educational outcomes among Latine children.

A frequently studied factor that promotes the academic success of Latine children is the

core value of attitudinal familism – the value placed on family in terms of respect, reference,

support, and obligation (Lugo Steidel & Contreras, 2003; Valdivieso-Mora et al., 2016). On the

other hand, discrimination is a risk factor that hinders academic success for Latino high school

and college students (Castro et al., 2022). Understanding the associations among attitudinal

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[1] This paper will use the term Latine for the population of interest when referring to the target population. The paper will use Hispanic, Latino/a, and Latinx when referencing the population of a specific source.

1

familism, experiences of discrimination, and academic success is important to uncover the interaction between promotive and risk factors known to affect academic and educational outcomes for Latine first- and second-generation children.

The operationalization of immigrant generation for children is complex. *First generation* typically refers only to adults who migrated to the US. *Second generation* typically refers only to children who are born in the US with at least one foreign-born parent. These two mainstream definitions exclude children who are born outside the US but moved to the US as an infant or young child with at least one foreign-born parent, so a third category, the 1.5 generation, was proposed to distinguish first generation children from both first generation adults and second generation children (Rumbaut, 2022). For the purposes of this study, foreign-born children with at least one foreign-born parent will be operationalized as first generation, while US-born children with at least one foreign-born parent will be operationalized as second generation.

This study of secondary data proposes that Latine children's experiences of discrimination within their school environment affects their concurrent high school grade point average (HSGPA). Results from this study will contribute to understanding the effect of discrimination in secondary education environments on an educational outcome, HSGPA. In this study, HSGPA was selected as the target outcome since it is commonly used to predict college readiness (e.g., number of college applications submitted, goal striving, study skills, and academic self-confidence) and college graduation rates (Allensworth & Clark, 2020; Hurtado et al., 2020). It is proposed that the relationship between discrimination and HSGPA is dependent upon levels of endorsement of attitudinal familism, which may act as a buffer against the negative effects of discrimination. Additionally, these relationships will be examined separately for immigrant generation (first, second) and sex (female, male) to incorporate two identities

2

relevant to the development of Latine children. It is expected that the degree to which discrimination and familism affects Latine immigrant children will vary with their immigration status and sex. All variables used for this study will be operationalized after introduction of the theoretical framework.

Theoretical Framework

García Coll and colleagues (García Coll et al., 1996) proposed the Integrative Model for the Study of Developmental Competencies in Minority Children[2] to address the inadequacies of previous developmental frameworks that were built using data from predominantly White middle-class families and children (see Figure 1). Older research used two deficit models – the Genetically Deficient Model and the Culturally Deficient Model (García Coll et al., 1996). Both models posited that non-White children deviate in various developmental outcomes compared to their White counterparts due to either their inherent genetic deficits or being "culturally deprived" – in other words, lacking advantages of White middle-class culture. Garcia Coll's developmental model was the first designed to assess the unique normative developmental processes of children of color. The Integrative Model was proposed during a time when research examined developmental variation among ethnicities through comparisons to White middle-class children, rather than attempting to understand the normative developmental trajectories for children of color as a distinct process (García Coll et al., 1996).

Global developmental models, such as Bronfenbrenner's Ecological model, are useful in explaining more universal elements of children's development but are limited in their specificity in factors affecting development for children with varying social identities. Nonetheless, global models can serve as a baseline for designing models that do address the unique, normative

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[2] This will be referred to as the Integrative Model for the rest of the proposal.

3

developmental processes for children of color. The Integrative Model was developed with roots in global developmental models. This model branches from previous models to incorporate specific, salient factors that make unique contributions to the developmental processes of populations of color and emphasizes the social identity of the individual at the forefront of all developmental processes. As seen in Figure 1, *social positions* (#1; e.g., race, social class) are attributes of individuals that place them within a social hierarchy. Social position does not directly affect development; rather, its influence on ecological systems is mediated by *social stratification* (#2; e.g., discrimination, oppression). Social stratification and *segregation* (#3; e.g., residential, economic) influence *environments* to be either *promoting or inhibiting* (#4; e.g., schools, hospitals). The individual's environment then directly influences their *adaptive culture* (#5; e.g., acculturation, enculturation) and *family* (#7; e.g., family structure and values) while also interacting with the *child characteristics* (#6; e.g., age, temperament, health status). Families and children create an adaptive culture that differs from the dominant culture in reaction to promoting/inhibiting environments. Adaptive culture then directly influences child characteristics, family, and a child's *developmental competencies* (#8; e.g., cognitive, emotional). Child characteristics directly influence a child's competencies as well as the family. Finally, the family influences a child's competencies.

Instead of ascribing variations in developmental outcomes for children of color to genetic differences or cultural inadequacies, the Integrative Model attributes variations in development to unique microsystems (i.e., promoting/inhibiting environments, family) and macrosystems (i.e., social stratification, segregation, and adaptive culture) that influence the individual. A novel proposition of the Integrative Model was to separate an individual's social position from other characteristics, such as age, temperament, and biological factors. Thus, social position is a stable,

pervasive factor influencing all ecological systems and their relationships (García Coll et al., 1996).

The emphasis on social positions and the integration of relationships between specific microsystem and macrosystem factors within the Integrative Model provides an excellent framework to conceptualize the combined effect of the school context and family unit on educational outcomes. The effect of a current context, such as the school (microsystem), being either a promoting or inhibiting environment, is influenced by social stratification (macrosystem). For example, if the resources at a school are limited and outdated, this would be an inhibiting environment. The family unit (microsystem) is informed by adaptive culture (macrosystem). Family structure, roles, goals, and behaviors are informed by traditions and cultural legacies. Ecological systems are not influencing developmental competencies in isolation, but rather, in conjunction with each other. This inherent integration between ecological systems provides a realistic model of pathways to developmental competencies. The Integrative Model is adaptable to analyze numerous combinations of the factor subdimensions and relationships presented. Given the unique intersection of social positions held by Latine children, the Integrative Model works well to capture the relevant ecological systems that affect their educational development.

Adaptation of The Integrative Model

This study adapts the Integrative Model in order to evaluate the associations between the individual's social positions (#1), social stratification (#2), promoting/inhibiting environments (#4), adaptive culture (#5), and family (#7) in relation to HSGPA, the developmental competency (see Figure 2). Immigrant generation and gender (#1) are conceptualized to be two social positions that set up alternative developmental pathways unique to an individual's

5

identities. Discrimination within the school environment (#2: social stratification + #4: promoting/inhibiting environments) combined reflect an *inhibiting environment (i.e., school-based discrimination)*. Attitudinal familism is inherently influenced by adaptive culture (#5: adaptive culture + #7: family). Familism is expected to moderate the relationship between the inhibiting environment and the developmental competency, HSGPA.

The Integrative Model conceptualizes all relationships between variables to be mediational. For instance, social stratification mediates the relationship between social position and promoting/inhibiting environments. However, many variables that function as mediators can also be conceptualized as moderators (Kraemer et al., 2008). Familism is one such variable as it can act as either a mediator or moderator in relation to developmental competencies. For example, there is evidence that family cohesion, an aspect of familism, mediates the positive relationship between bilingualism and reading achievement scores, as well as the negative relationship between perceived discrimination and externalizing symptoms (Ponting et al., 2018; Ramos Salazar et al., 2022). There is also evidence that familism moderates the relationship of intergenerational conflict on depressive symptoms. For instance, higher endorsement of familism is associated with fewer depressive symptoms at high levels of intergenerational conflict in contrast to lower endorsement of familism (Li, 2014). This study conceptualizes familism as a moderator to determine whether the relationship between school-based discrimination and HSGPA is dependent upon differing degrees of attitudinal familism endorsement.

The following sections will further define, conceptualize, and review the current literature related to the specific factors adapted from the Integrative Model: HSGPA, school-based discrimination, attitudinal familism, and social positions. First, HSGPA will be reviewed as a predictor of academic success and enrollment in higher education to demonstrate the

importance of HSGPA as a developmental competency. Then, the function of social stratification within school settings will be reviewed with an emphasis on the effects of school-based discrimination on academic and educational outcomes. Next, the function of attitudinal familism will be discussed with a detailed review of evidence that demonstrates familism to be both a protective factor and risk enhancer. Finally, the review will conclude with an elaboration on differences in developmental outcomes found for the social positions of immigrant generation and gender.

Grade Point Average: Developmental Competency

This study utilized HSGPA to represent the cognitive developmental competency factor from the Integrative model. Within a large sample of students from the Chicago Public Schools who enrolled in a 4-year college degree, HSGPA had a strong, positive linear and quadratic relationship with college graduation rates above and beyond school characteristics (Allensworth & Clark, 2020). These results indicate that as HSGPA increased, the likelihood of graduating from college increased, and this relationship was stronger for students with high HSGPA and weaker for students with low HSPGA. High school GPA was also found to have a significant, moderate correlation with the GPA during the first year of college (Westrick et al., 2015), and self-reported HSGPA also significantly contributed a moderate amount of variance to cumulative college GPA (Komarraju et al., 2013). For a majority Latinx sample of high school graduates, HSGPA significantly and moderately predicted the number of college applications submitted by students as well as the selectivity of college enrollment (Hurtado et al., 2020). When looking at HSGPA retrospectively reported by undergraduate first year students, high HSGPA was significantly associated with five subscales from the Student Readiness Inventory: goal striving, academic discipline, determination, study skills, and academic self-confidence (Komarraju et al.,

2013). Additionally, HSGPA was found to be predictive of income, occupational prestige, lower depressive symptoms, and increased likelihood of having a yearly physical in adulthood (Hasl et al., 2019). Thus, there is substantial evidence that HSGPA is a college-aligned developmental competency indicative of educational outcomes related to higher education.

School-based Discrimination: An Inhibiting Environment

Discrimination takes place whenever an individual is treated in an unequal manner in comparison to their peers in any given environment (Sullivan, 2009). School–based discrimination is defined by this study as the following: any report of non-specific discrimination from school-based personnel – that is, discrimination from teachers, counselors, staff/faculty, and peers in an educational space. School-based discrimination reflects an inhibiting environment given the presence of social stratification (i.e., discrimination) within the school environment. Although this study does not examine racial discrimination, non-specific unequal treatment of students by school personnel remains an external critical factor that can have detrimental effects on an individual's educational development.

Institutional and systemic barriers can exist wherever there is a majority-minority group context, and these barriers stem from systems being created by and for those in the majority group (Ashcraft, 2021). Thus, the transformation of an institution into a system of oppression occurs due to the original system inhibiting the success of new members since these new social groups have differing needs than the original creators (Ashcraft, 2021). Systems of oppression for the social identity of race are found at the institutional, systemic, and structural levels (National Museum of African American History and Culture, 2022). Institutional racism occurs when policies or behaviors within an organization discriminate against people of color, whereas systemic racism occurs when a given system is founded on racist principles or practices that are

pervasive in the actions of an organization. Structural racism refers to the cultural values of a society that reflect normalcy of discrimination through individual behaviors. For example, a teacher accuses an English-second language learner of plagiarism when the student provides a well-written essay. Institutional and systemic barriers are found throughout all US institutions and systems, especially educational contexts.

The growing body of literature that examines the role of discrimination and institutional barriers within educational contexts demonstrates that these factors are associated with negative developmental outcomes for minoritized students. Discrimination is a structural form of oppression found to hinder the academic success of minoritized populations. Discrimination in the school setting is especially salient for Latinx students throughout their entire school career (Córdova & Cervantes, 2010; Taggart, 2018). Latino immigrant families in Arizona report that the main perpetrators of discrimination in school contexts include peers and teachers (Ayón & Philbin, 2017). For these families, discrimination in the school was the manifestation of institutional barriers such as teachers enforcing a "no Spanish in classrooms" policy (enforced by Proposition 203 legislation that ended bilingual education in Arizona) and displaying differential treatment towards Latino children (Ayón & Philbin, 2017). This is concerning since Latinx students who learn in an environment with caring teachers that provide guidance, support, and encouragement are more likely to experience positive academic outcomes such as better grades, high school completion, and college enrollment (Mireles-Rios et al., 2020; Taggart, 2018).

In contrast to supportive school personnel, perceived school-based discrimination is associated with negative educational outcomes. When interviewing Latinx high school students, there is a clear recognition of discrimination within the school context, and Latinx students in high school and college report perceived discrimination during their secondary education as a

major barrier to higher education (Manzano-Sanchez et al., 2019; Sahay et al., 2016). In a sample of high school Latinx students, reported peer discrimination was associated with lower probability in self-rating only their English skills as good (Medvedeva, 2010). In a sample of Mexican American high school students, poor school quality was related to increased perception of discrimination by teachers (Stone & Han, 2005), and perceived school-based discrimination was related to lower educational attainment for Mexican American high school girls, but not boys (Wheeler et al., 2020).

As noted above, perceived discrimination has direct effects on a variety of student academic outcomes. It also impacts student mental health and risk for substance use, with higher levels of perceived discrimination during high school associated with increased internalizing and externalizing behaviors and a higher risk for cigarette and marijuana use (Bennett et al., 2020; Castro et al., 2022; Rogers et al., 2020). Finally, these direct effects may be mediated by parental monitoring. In a sample of ethnic minority adolescents, parental monitoring mediated the relationship between perceived discrimination and academic adjustment measured by intrinsic motivation and school self-esteem (Dotterer & Lowe, 2015). Perceived discrimination from both teachers and peers negatively predicted parental monitoring, and parental monitoring positively predicted academic adjustment buffering the negative effects of discrimination. Thus, it is essential to further explore the potential negative impact school-based discrimination has on HSGPA for Latine students.

Attitudinal Familism: A Risk Buffer and Enhancer

Attitudinal familism is referred to interchangeably with *familismo* in Latine research. *Familismo* is defined as the high value placed on the Latine family unit "in terms of respect, support, obligation, and reference" (Valdivieso-Mora et al., 2016). The family is an extremely

important value across Hispanic cultures; family values exert a strong influence on academic aspirations and attainment throughout childhood, adolescence, and young adulthood development (Arbelo Marrero, 2016; Sabogal et al., 1987). Attitudinal familism reflects the influence of adaptive culture in the sense that cultural traditions and legacies inform family values, beliefs, and attitudes (Perez-Brena et al., 2018). A variety of educational outcomes are associated with attitudinal familism, including school engagement (emotional and cognitive), school belonging, and academic motivation (Rivas-Drake & Marchand, 2016; Stein et al., 2015, 2020).

Historically, the construct of attitudinal familism in Latino/a populations was operationalized as consisting of three subdimensions: obligation, referent, and support (Sabogal et al., 1987). A more recently developed scale, the Attitudinal Familism Scale (AFS; Lugo Steidel & Contreras, 2003), used only Latino/a respondents to measure familism specific to Latino/a culture. In contrast to previous scale development, the AFS resulted in four subdimensions – familial support, familial interconnectedness, family honor, and subjugation of self for family (Lugo Steidel & Contreras, 2003). Although there is a general consensus of how to define *familismo* conceptually, the measurement of this construct is inconsistent across research (Lugo Steidel & Contreras, 2003; Valdivieso-Mora et al., 2016). Since attitudinal familism is commonly measured by distinct scales that operationalize familism differently, it is important to analyze the separate and joint effect of the subdimensions in relation to educational outcomes.

There is evidence supporting differentiated effects on developmental outcomes for two subdimensions of attitudinal familism, family cohesion and family obligation. Family cohesion refers to *familial interconnectedness* – togetherness of the family, such as family members

feeling close to one another (Lugo Steidel & Contreras, 2003). Family obligation refers to *familial support* – an individual must provide emotional and financial support to the family (Lugo Steidel & Contreras, 2003). Toyokawa and Toyokawa (2019) conducted a confirmatory factor analysis with a Latino/a sample and two scales (Family Cohesion Scale and Familism Index) taken from the Children of Immigrants Longitudinal Study (CILS). Both scales lacked clear definitions of family cohesion and familism. To fill this gap, Toyokawa and Toyokawa (2019) tested one-factor, two-factor, and three-factor models and found the two-factor model to be best fit in explaining the family cohesion and familism scales. The two-factor model supports the important distinction between family cohesion and family obligation. Toyokawa and Toyokawa (2019) analyzed the separate effects of family cohesion and family obligation on HSGPA within the Latinx subsample of the CILS data set. For both Latino and Latina children, family cohesion positively predicted HSGPA and educational expectations. In contrast, family obligation negatively predicted HSGPA and educational expectations. These results are consistent with literature that examines family cohesion and family obligation as separate constructs. In the paragraphs below, I will review additional supporting evidence that demonstrates the differing function of the two familism constructs.

When family cohesion is operationalized as a unique construct it is found to be positively related to a variety of developmental outcomes, and it functions as both a mediator and moderator. In a diverse sample of children of immigrants, family cohesion moderated the positive relationship between enculturation and parent-adolescent conflict with higher levels of family cohesion reducing the relationship between enculturation and parent-adolescent conflict (Kim, 2015). Family cohesion mediates the positive relationship between bilingualism and reading achievement (Ramos Salazar et al., 2022). There is also evidence that family cohesion

functions differently depending on the national identity of respondents. Family cohesion is positively associated with self-esteem for Mexican, Cuban, Nicaraguan, and Colombian second generation children (Li & Warner, 2015). For only Mexican and Cuban children, family cohesion moderated the negative relationship between parent-adolescent conflict and self-esteem with higher levels of family cohesion reducing the negative relationship between parent-adolescent conflict and self-esteem (Li & Warner, 2015).

When family obligation is operationalized as a unique construct, some research suggests it may function as a risk enhancer. For example, when it is used to moderate the relationship between parent-adolescent conflict and depressive symptoms, it acts as both a buffer and risk enhancer depending on levels of conflict (Li, 2014). When parent-adolescent conflict and family obligation are high, depressive symptoms are lower in frequency, and when parent-adolescent conflict is low and family obligation is high, depressive symptoms are higher in frequency. Thus, family obligation may function as a risk enhancer for developmental outcomes in contrast to the buffer effect of family cohesion.

Social Positions

In accordance with the Integrative Model, the social positions of the Latine identity combined with immigrant generation and sex will set up alternative developmental trajectories. Both immigrant generation and sex/gender identities have differing associations with school-based discrimination, attitudinal familism, and academic achievement. Thus, it is essential to consider the intersection of the Latine identity with other salient social positions, as the population is not a monolith. Immigrant generation and gender both vary within the Latine population. Immigrant generation is a limited proxy measure of acculturation as seen by differential endorsement of attitudinal familism values and other attributes between foreign-born

13

and US-born second generation children (Remennick, 2015; Ying & Han, 2007). This study acknowledges the limitation of biological sex as a proxy of gender differences; however, social gender roles are pervasive within Latine family expectations for their children such as women/girls doing housework and cooking while men/boys support the family financially, thus sex differences will be used as a proxy for gender (Miville et al., 2017). The following sections will highlight differences in school-based discrimination, attitudinal familism and academic outcomes (e.g., college-aligned actions, GPA) dependent upon immigrant generation and gender.

Immigrant generation

Differences in immigrant generation are associated with higher academic achievement for earlier immigrant generations. The literature investigating these divergences in achievement outcomes supports the immigrant paradox – for educational outcomes, earlier generation youth having more positive developmental outcomes than youth of later generations (Aretakis et al., 2015). Substantial evidence for the immigrant paradox is found in a meta-analysis comparing data from 53 studies which found significant heterogeneity in academic achievement (e.g., school grade and standardized test scores) when comparing immigrant generation (Duong et al., 2016). Heterogeneity is evident within a variety of academic and educational outcomes for Latine youth and young adults. In a sample of Hispanic college students, there was a smaller proportion of first generation youth had high GPA and college entrance exams scores, reflective of college-aligned actions, relative to second and third generation youth. Additionally, the four-year college-going rate was lowest in high schools attended by first generation Hispanic students (Ryan & Ream, 2016). There are also significant differences by generation in rates of high school completion among Latine adults with the highest rates of completion noted for the third-plus generation group compared to first and second generation (Diaz-Strong & Ybarra, 2016). A

14

two-cohort longitudinal study of Hispanic youth was conducted where cohort A represented recently immigrated youth and cohort B represented youth who lived in US for a longer time (May & Witherspoon, 2019). Within cohort B, there was a greater increase in educational expectations for first generation adolescents compared to second and third generation adolescents. Although cohort A had higher educational attainment than cohort B, cohort A had higher rates of discrepancy between educational expectations and attainment, that is, cohort A attained less education than expected compared to education discrepancy for cohort B.

Empirical evidence supporting the immigrant paradox is found not only for academic and educational outcomes of Latine children, but also for their educational values. Latino high school students who are first and second generation had significantly higher endorsement of educational values and school effort than third generation students (Aretakis et al., 2015). Furthermore, second and third generation Latino high school students were significantly less likely to value education compared to first generation students. Of note, Latino students of all generations who had high endorsement of familism were overall more likely to value education and to be rated high in school effort. High endorsement of family obligation, however, was related only to increased likelihood of valuing education.

It is likely that the cause(s) of the immigrant paradox will continue to elude researchers, as the immigrant population is diverse in their educational aspirations, expectations, and perceptions of familism (Bahena, 2020). Family obligation is descriptively stronger for first generation Latinx students compared to second and third generation students when they are deciding where to attend college (Ryan & Ream, 2016). First generation children are more familistic than second generation children, and both first and second generation children who have less acculturated parents are more familistic (Ying & Han, 2007).

Gender Differences

Differences in gender are found for family values, function of discrimination, and college-aligned academic outcomes. Within the Latine family, girls are expected to help with household chores, and boys are expected to provide economic contributions (Manzano-Sanchez et al., 2019; Miville et al., 2017). After controlling for educational endowments (e.g., GPA, standardized test scores), Latina high school students are significantly less likely than Latino students to apply to a high number of colleges and be selective in college attendance (Hurtado et al., 2020). For Mexican high school girls, but not boys, perception of school-based discrimination was related to lower educational attainment (Wheeler et al., 2020). Perceived discrimination was positively associated with externalizing problems for Latino adolescents, but not for Latina adolescents (Ponting et al., 2018). Instead, for Latina adolescents, perceived discrimination was only associated with externalizing problems after family factors (i.e., family conflict and familism) were included in analysis.

Present Study

Previous literature demonstrates that school-based discrimination and *familismo* can impact academic achievement for Latine populations. Common barriers to higher education expressed by Latine students and community members are family responsibilities (e.g., household finances and duties) and systemic barriers, such as lack of support from school staff and discrimination (Manzano-Sanchez et al., 2019). As such, this study seeks to investigate the degree to which school-based discrimination and *familismo* – as measured by family cohesion and family obligation – impact Latine adolescents' HSGPA scores. Furthermore, the study will explore the possible interactions between school-based discrimination, family cohesion, and

family obligation. This will provide insight into the strength of impact these factors have on academic achievement as well as how these factors interact to affect HSGPA scores.

Since discrimination and *familismo* have varying degrees of impact depending upon additional social identities held by Latine individuals, this study also sought to assess the strength and directions of the aforementioned relationships for four different subgroups. These subgroups were created by combining two social identities known to influence the target variables for this study – immigrant generation status (first and second generation) and sex (male and female). Through examining the main and interaction effects between school-based discrimination and *familismo* for the four subgroups within the Latine population, this study will provide a more nuanced understanding of how differing social identities within the Latine population can shift developmental pathways.

Methods

Study Design

To address the proposed research questions, a secondary data analysis was conducted using data collected from the Children of Immigrants Longitudinal Study (CILS). The CILS study was jointly directed by Alejandro Portes and Ruben Rumbaut with the purpose of capturing how second generation children of immigrants adapt to life in the U.S. The original investigators combed the targeted cities (Miami, Ft. Lauderdale, and San Diego) to include schools that had high concentrations of immigrant families as well as high concentrations of domestic-born families. Through cooperation with selected schools, the original investigators recruited students with at least one foreign-born parent.

The respondents were enrolled in both public and private schools located in areas that are representative of diverse immigrant populations: Miami and Fort Lauderdale, Florida and San

Diego, California. They were first surveyed in 1992 (wave 1) while they were in 8th or 9th grade ($N = 5,262$) through questionnaires provided by the researchers. The first follow-up by researchers occurred in-person during 1994 to 1995 (wave 2) when the majority of respondents were completing their last years of high school ($N = 4,288$). In addition to the first follow-up survey, half of the total parents (selected on a random basis) were also surveyed at this time ($N = 2,442$) through students bringing home questionnaires for parents to complete. Finally, the second follow-up survey was conducted roughly between 2001-2003 (wave 3) when respondents reached young adulthood (average age = 24; $N = 3,613$) via multiple outreach methods including telephone calls, emails, and letters.

Data used in this analysis was from the first two waves of the CILS data collection. Only responses from the adolescents will be used given the limited amount of parent data available (half the sample). Demographic, social position, and self-reported Latin American national identity variables were taken from the first wave. school-based discrimination, familism measures, HSGPA, and whether the adolescent was interviewed at wave 2 were taken from the second wave.

Participants

This study used two inclusion criteria: interview at wave 2 completed and reported Latin American national identity. Only respondents that were interviewed for the second wave ($N = 4288$; see Figure 3) and who self-reported their national identity to be from a Latin American country were included ($N = 2,391$; see Figure 3). The national identities of this sample included: Argentina, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Venezuela, and Other South America.

Demographics

Demographic information will be provided on the following variables for the total sample, and for male and female respondents within each generation group: self-reported national identity, age, school type, and first interview site.

Respondents answered an open-ended question, "*What is your national origin?*" This was coded into categorical data with 16 Latin American countries identified. The majority of respondents self-identified with the national identities of Cuba (40%) and Mexico (25%) with Nicaragua (12%), Colombia (8%), and other Central and South American countries (15%) being underrepresented in the sample. Respondents answered, "*How old are you?*" and then, age was entered as a continuous variable (range: 12 to 17). The average age of respondents was 14 years old (46%). The school type and interview site were both coded as categorical data based on school information collected by the original investigators. School type attended was coded as being either Suburban (0) or Inner city (1). The first interview site was coded as Miami (1), Ft. Lauderdale (3), or San Diego (4), with most respondents coming from schools in Miami and San Diego. The majority of respondents first interviewed in Miami (70.8%) at the average age of 14 years old (45.6%) and attended schools located in the suburbs (62.0%). See Table 1 for demographic information by the four subgroups of interest.

Measures

Outcome Variable: Grade Point Average

Respondents' grade point average was collected by research personnel from school records in 1995 (11th and 12th grade) and weighted for honors or AP courses (ranging from 0 to 5).

Predictor Variables

School-based Discrimination. The CILS used seven questions to assess discrimination. First, respondents could check off either yes or no to the following question: "*Have you ever felt discriminated against?*" This was coded into binary data (1 = *yes*, 0 = *no*). Then, respondents that answered yes were prompted to check off a box next to a series of options following the question "*and by whom did you feel discriminated? Check all that apply.*" There was a total of seven options for respondents to check off: (1) teachers, (2) students, (3) counselors, (4) White Americans in general, (5) Latinos in general, (6) Black Americans in general or (7) other, with a fill in the blank option. All seven options were coded as yes (1) if respondents marked an option and no (0) if an option was not checked.

A subset of these seven questions was used to measure school-based discrimination, which refers to any report of experiencing non-specific discrimination within an educational environment (e.g., class, school-related activities) from school related personnel such as teachers or counselors, and by peers. This analysis will use responses from the initial question and three options from the follow-up question – teachers, counselors, and peers. Given the binary nature of responses, this variable will be coded into a dichotomous variable: no school-based discrimination reported (0) versus yes school-based discrimination from any combination of school personnel or peers reported (1).

Attitudinal Familism. This used the Family Cohesion Scale and Familism Index created by the original investigators to assess attitudinal familism. These scales represent two subdimensions found in different familism measures – family cohesion and family obligation, respectively (Portes & Rumbaut, 2001).

Family Cohesion. The Family Cohesion Scale consists of three statements respondents rated using a 5-point Likert-scale (1 = *never* to 5 = *always*) to measure the perceived sense of togetherness and interconnectedness among family members (see Appendix A). An example statement is, "*If someone has the chance to help a person get a job, it is always better to choose a relative rather than a friend.*" This was coded by the original investigators into an average of the three scores. Higher composite scores indicate higher cohesion among child and family members (ranging from 1 to 5). This scale had a high internal consistency reliability (α = .85).

Family Obligation. The Familism Index consists of three statements respondents rated using a 4-point Likert-scale (1 = *agree a lot* to 4 = *disagree a lot*) that was used to measure the perceived sense of submission to family members (see Appendix A). An example statement is, "*When looking for a job a person should find a job near his/her parents even if it means losing a better job somewhere else.*" This was coded by the original investigators into an average of the three scores. Higher scores indicate higher obligation among child and family members (ranging from 1 to 4). This scale had a moderate internal consistency reliability (α = .57).

Immigrant Generation. Respondents answered the open-ended question, *"In what country were you born?"* This was coded by the original investigators as a categorical variable with over 100 categories. Birth country was recoded into the dichotomous variable of immigrant generation with foreign-born students representing first generation (1) and US-born students representing second generation (0).

Sex. Respondents checked their biological sex, which was coded as a dichotomous variable (1 = *male*, 2 = *female*).

Covariate Variable: Socioeconomic Status

As research continues to link socioeconomic status (SES) to academic achievement and career aspirations, a proxy for SES was used as a covariate to understand to what degree do the variables of interest affect HSGPA above and beyond this well-established social determinant (American Psychological Association, 2022). The Socio-Economic Index (SEI) was computed by the original investigators using three variables – an average score composed of both the mother's and father's education, occupational SEI scores, and family home ownership (Portes & Rumbaut, 2001). The SEI is a unit-weighted standardized scale ranging from -2 to +2 with higher scores indicating higher socioeconomic resources for the child (Portes & Rumbaut, 2001).

Analysis

This study used *Mplus* version 8.9 to run a hierarchical multiple regression (HMR) and a multiple group path analysis to address the research questions. Preliminary analyses were completed using IBM SPSS version 28 to evaluate patterns of missing data and ensure the data met the assumptions of regression analysis for each subgroup.

The first two steps of the hierarchical multiple regression model analysis addressed the first two research questions: a) *To what degree does school-based discrimination affect HSGPA?* And b) *To what degree do family cohesion and family obligation independently affect HSGPA?* School-based discrimination was entered into Step 1 in the model, and family cohesion and family obligation were entered into Step 2 of the model.

The third and fourth steps of the model addressed the third and fourth research questions: c) *To what degree is the relationship between school-based discrimination and HSGPA dependent upon levels of family cohesion and family obligation independently?* and d) *To what degree is the relationship between school-based discrimination and HSGPA dependent upon the*

22

interaction between levels of family cohesion and family obligation? Any continuous predictor variable entered into an interaction term was mean centered before calculating the product between the variables to create the interaction terms to include in the analysis. Three two-way interactions were entered into Step 3 of the model: school-based discrimination x family cohesion, school-based discrimination x family obligation, and family cohesion x family obligation. One three-way interaction was entered into Step 4 of the model: school-based discrimination, family cohesion, and family obligation (D x FC x FO).

The HMR model was tested for differences between four subgroups using a multiple group analysis with *Mplus* version 8.9 (Muthén & Muthén, 2017). A baseline model was estimated before conducting the multiple group analysis. In this model, the structural coefficients were constrained to equality across the four subgroups: first generation girls, first generation boys, second generation girls, and second generation boys. The multigroup analysis answered the question *d) To what degree do the HMR relationships differ between the subgroups?*

Both the HMR and multigroup models included a fixed effect for school location (San Diego, Miami, or Fort Lauderdale) and school type (suburban vs inner city) to account for any differences of physical environment. The school location was coded into a dummy variable for analysis with San Diego, California as the reference group, and Miami and Fort Lauderdale combined into the category Florida.

<center>**Results**</center>

Data Screening and Cleaning

Thirty nine cases had missing data for the outcome variable, GPA, and were deleted before analysis, leaving a total of 2,352 cases for analysis (see Figure 3). All predictor variables, except for school-based discrimination had less than 5% missingness. School-based

<center>23</center>

discrimination had over 5% of the data missing across all subgroups (41.7% to 47.7%). For the second generation male and first generation female subgroups, the pattern of missingness was missing completely at random (Little's MCAR test $X^2 = 6.83$, $p = .233$; Little's MCAR test $X^2 = 9.49$, $p = .091$, respectively). For both the first generation male and second generation female groups, the pattern of missingness was missing at random (Little's MCAR test $X^2 = 11.00$, $p = .051$; Little's MCAR test $X^2 = 13.77$, $p = .017$, respectively). Missing data for school-based discrimination was unrelated to the outcome variable.

Any missing data for all predictor variables were imputed (50 replications) using the default MCMC algorithm in *Mplus* version 8.9 (Muthén, L. & Muthén, 2017). To address the high degree of missingness for the school-based discrimination variable, all analyses were conducted with and without imputation to evaluate the sensitivity of the results to missingness and imputation. See Table 2 for all descriptive statistics by total sample and subgroups before and after imputation. The multiple imputation technique used did not change any measures of central tendency, rather it decreased the standard error for all variables included in analysis. Data screening checked for outliers, means and standards deviations, skewness, and kurtosis as well as normality, linearity, homoscedasticity, and multicollinearity. All continuous variables met the assumptions of normality, linearity, homoscedasticity, and multicollinearity. Family cohesion and family obligation had a weak correlation of 0.14. There were no extreme values for any variables.

Hierarchical Multiple Regression

      The unstandardized and standardized regression coefficients (β) with standard error (*SE*), R^2 and ΔR^2 values for each step of the model are shown in Table 3.[3] The first step, including fixed effects and the main effect of parents' SES index, accounted for 4% ($R^2 = 0.04$) of the variance explaining HSGPA, χ^2 (7) = 69.05, p = 2.30, AIC = 6004.55, BIC_{adj} = 6017.48, RMSEA = 0.06, CFI = 0.61 . The second step found that the main effect of school-based discrimination accounted for an additional 1% ($\Delta R^2 = 0.01$) of the variance explaining HSGPA, χ^2 (6) = 42.07, p = 1.78, AIC = 5979.98, BIC_{adj} = 5995.49, RMSEA = 0.05, CFI = 0.77. The third step resulted in family cohesion and family obligation accounting for an additional 2% ($\Delta R^2 = 0.02$) of the variance explaining HSGPA, χ^2 (4) = 5.36, p = 0.25, AIC = 5947.99, BIC_{adj} = 5968.68, RMSEA = 0.01, CFI = 0.99. The fourth and fifth steps found the interaction terms (i.e., DxC, DxO, CxO, DxCxO) did not contribute any additional variance ($\Delta R^2 = 0.00$) in explaining HSGPA (χ^2 (1) = 0.80, p = 0.37, AIC = 5949.57, BIC_{adj} = 5978.02, RMSEA = 0.01, CFI = 1.00; χ^2 (0) = 0.00, p = 0.00, AIC = 5950.77, BIC_{adj} = 5981.80, RMSEA = 0.00, CFI = 1.00, respectively).

      The fixed effect of school location was substantially predictive of HSGPA, whereas the fixed effect of school type did not significantly impact HSGPA (see Table 3). When respondents' school location was California instead of Florida, HSGPA was 0.26 grade points higher (b = 0.26 [0.19, 0.33], z = 6.04, $p < .001$, β = 0.13). The main effect of parents' SES index was similar in direction, with a slightly stronger effect. For every one unit increase in SES, HSGPA increased by 0.23 points (b = 0.23 [0.18, 0.27], z = 8.17, $p < .001$, β = 0.19). The main

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[3] The imputed results did not affect strength or direction of relationships for all models, thus only the imputed results will be reported for concise reporting.

effect of school-based discrimination also significantly impacted HSGPA. For respondents who reported experiencing some form of school-based discrimination, HSGPA was lower by 0.18 points compared to respondents who did not report any experience of school-based discrimination ($b = 0.18$ [-0.28, -0.10], $z = -3.62$, $p < .001$, $\beta = -0.10$).

Interestingly, the two dimensions of *familismo* had differing directions of impact on HSGPA with family obligation having a slightly stronger effect on the outcome compared to cohesion. As family cohesion increased, HSGPA increased by 0.06 points ($b = 0.06$ [0.01, 0.10], $z = 2.00$, $p = .045$, $\beta = 0.06$); in contrast, as family obligation increased, HSGPA decreased by 0.16 points ($b = 0.16$ [-0.25, -0.08], $z = -3.43$, $p = .001$, $\beta = -0.12$). Unexpectedly, none of the two-way or three-way interactions significantly impacted HSGPA in addition to the minimal variance contribution and small effect sizes.

Multiple Group Analysis

There were no differences between the four subgroups for the strength, direction, or significance of any of the main effects and interaction effects (see Table 4). The pattern of all relationships analyzed in the HMR remained the same across the four subgroups.

Discussion

Latine youth in the United States face educational disparities ranging from underrepresentation in higher education (Budiman, 2020; Mora, 2022) to higher rates of discipline in secondary education in comparison to White students (Gage et al., 2021). Thus, it is vital for researchers, educators, and policy makers to understand the complexities of the factors that hinder and/or promote academic success for Latine students. Discrimination and social support, specifically familial social support for adolescents, are salient factors frequently investigated in relation to Latine youth's educational experiences (DeGarmo & Martinez, 2006).

The results of this study show that both school-based discrimination and family obligation had a significant negative association with HSGPA above and beyond SES. In contrast, family cohesion had a significant positive association with HSGPA above and beyond SES. Of note, SES maintained a significant positive association with HSGPA after the predictors of interest were entered into the model. Unexpectedly, there were no significant interactions between any of the predictors.

Discrimination is an established risk factor to both good health and academic success for Latine youth. Higher reports of perceived racial/ethnic discrimination are associated with increased internalizing symptoms, decreased academic achievement and engagement, and increased risky behavior among racial/ethnic minority adolescents (Ayón et al., 2010; Benner et al., 2018). Additionally, in comparison to White students, Hispanic and Asian students, but not Pacific Islander, Black, American Indian, Alaskan Native, or Native Hawaiian, Biracial or Multiracial students, who had experienced discrimination were more likely to report that experiences of discrimination negatively affected their academics (Stevens et al., 2018). The results of this study support other findings that demonstrate the negative effects of discrimination on academic achievement for students of color (Perreira et al., 2010; Stone & Han, 2005). Moreover, this study contributes to the growing literature that examines how and to what degree discrimination specific to the school environment hinders academic achievement (Banerjee et al., 2018; Benner & Graham, 2011; Brown & Chu, 2012; Del Toro & Wang, 2023; Wheeler et al., 2020; Ying & Han, 2007). Specifically, this study revealed that self-reported experiences of school-based discrimination (i.e., from peers, teachers, and/or counselors) were associated with lower HSGPA for Latine youth.

In contrast to discrimination, attitudinal familism (i.e., *familismo*) has been researched as protective against risk factors. Higher reports of *familismo* by Latine youth are associated with a decrease in internalizing symptoms (Ayón et al., 2010), increased cognitive and emotional engagement in school (Rivas-Drake & Marchand, 2016), and higher academic motivation (Stein et al., 2020). Results from this study demonstrated there is more complexity within the construct of *familismo* when understanding the impacts on HSGPA for Latine students. In this study, family cohesion functioned as a protective factor, whereas family obligation was a risk factor. This evidence aligns with other evidence that *familismo* subdimensions have differing impacts on academic outcomes for Latine adolescents (Toyokawa & Toyokawa, 2019). Thus, the complexity of *familismo* needs to be further investigated with efforts to develop adequate measures of family dynamics within the Latine population. This is imperative given the range of measurement of and theory regarding *familismo*. Some studies measure *familismo* using questions regarding family obligation (Li, 2014; Ying & Han, 2007), while other studies analyze global scales of *familismo* (Rivas-Drake & Marchand, 2016; Stein et al., 2015, 2020) among other family dynamic constructs, such as family resilience (Ramos et al., 2022). As such, the variability in measurement could account for differences in strength and direction of impact family attitudes and beliefs have on academic success.

Unexpectedly, neither family cohesion nor family obligation interacted with school-based discrimination. The lack of interaction could reflect the inadequacy of the measures of family cohesion and family obligation to capture important aspects of family dynamics that have a greater impact on the effects of discrimination. For instance, family ethnic socialization for Latine adolescents is related to higher GPA scores through an increase in proactive coping with discrimination and self-efficacy (McDermott et al., 2018). Parental microprotections (i.e.,

parental warmth, cultural socialization, and preparation for bias), family emotional support, and supportive family environment are additional constructs found to buffer negative effects of discrimination on depressive symptoms (Dotterer & James, 2018), allostatic load (Brody et al., 2014), and likelihood of greater epigenetic aging (Brody et al., 2016). These other measurements of unique family constructs, which related more closely to discrimination experiences, are worthy of future investigation.

Biological sex and immigrant generational differences are implicated as key forces found in many developmental pathways for Latine adolescents. However, this study found no differences in any estimated pathways across the four subgroups of first generation girls, first generation boys, second generation girls, and second generation boys. This outcome reflects shortcomings of biological sex and immigrant generational status as influential measures related to discrimination and *familismo*. It is common in developmental research to use sex in place of gender identity when analyzing developmental pathways. However, this study demonstrates sex is insufficient in capturing the gender roles and expectations within the Latine family that would influence family values and affiliation. Immigrant generation status is a common proxy variable meant to capture acculturation. Again, this study highlights that a simple dichotomous label of first generation versus second generation fails to capture the complex, dynamic experience of immigrants. Immigrant generations do not capture years lived in a country, affiliation with mainstream culture, and other social identities related to the immigrant experience, such as refugee status or being undocumented in the US.

These results highlight the need to retain complex pathway models when examining the academic achievement of Latine adolescents. This study adapted the Integrative Model to include variables limited in measurement that capture only some factors from the original model.

29

The lack of support for a moderation model between family values and discrimination discovered in this study and other empirical research may reflect the weakness in utilizing a simplistic model, such as the one used in the present study, for complex relationships (Ayón et al., 2010; Lazarevic et al., 2021). There is evidence that the relationship between discrimination (i.e., stress and perceived likelihood) and academic success (i.e., GPA and academic motivation) for Latino middle school students is mediated by school belongingness (Roche & Kuperminc, 2012) in addition to a positive school climate (Perreira et al., 2010). It would be productive to further explore mediational models that include specific, school-context factors like school belongingness, experiences with teachers, and interactions with peers.

Limitations

The secondary data set was limited by having a high missingness of data, specifically for the discrimination variable; however, this was addressed by using the default MCMC algorithm in *Mplus* version 8.9 per best practices (Muthén, L. & Muthén, 2017). Nonetheless, future researchers should consider methods to increase responses, such as designing questions about discrimination to be clear, concise, and to include examples.

As aforementioned, the measurements of the predictors of interest in this study were inadequate. All predictor variables were taken with unstandardized measures. The main predictor, school-based discrimination, was a binary variable, which is inherently prone to measurement error. The scales for both family cohesion and obligation were developed by the CILS original investigators during data collection instead of taken from an established, standardized measure of *familismo*. The inadequate measures may have increased the measurement error across all predictors. The increase in measurement error possibly led to attenuated interaction effects, which may also explain the null findings for all interaction effects.

Although social and political discourse in regard to discrimination within the school system has changed from the time the secondary data set was collected, the results remain relevant and pertinent to this day. There continues to be disparities in the education system within the US for students of color, ranging from disparities in suspension rates to underrepresentation in higher education and gifted classrooms (Kostyo et al., 2018). Therefore, investigating manifestations of discrimination within the school context and how this impacts hard academic outcomes such as GPA and standardized test scores remains relevant to discover target areas for future policy consideration.

Future Directions/Implications

The current study, although limited in generalizability and current relevance, nonetheless supports the continued research efforts exploring the role of discrimination in the educational experiences for Latine students. Moreover, the study highlights the need for more accurate and specific measurements for both discrimination and *familismo*. In a recent meta-analysis, over 79 unique measures of racial/ethnic discrimination were reviewed (Benner et al., 2022); discrimination scales in general can range from assessing everyday encounters with to major experiences of discrimination (Williams, 2016). Throughout the literature used in this study, school-based discrimination was titled as general perceived discrimination or racial/ethnic discrimination with no explicit link to school settings in the majority of studies. To continue productive research efforts, the measurements of discrimination need to be clear about the source, context, and type of discrimination to assist in collaborative efforts and understanding exactly when, where, and what types of discrimination negatively impact developmental outcomes. In a similar sense, researchers should be specific in what family value, dynamic, or

belief is measured within study designs to further address what aspects of family are truly protective versus being a risk factor.

Even though the current study found no differences across subgroups, the findings of the current study addresses continued efforts to break down stereotypes and monolithic narratives surrounding the Latine population. Future research should explore the impact of gender identity and gendered expectations of children within families on discrimination and family dynamics. Moreover, differences across national identity and self-reported biculturalism are avenues future researchers should examine to discover potential nuances in developmental pathways for the Latine population. For example, family cohesion moderated the negative relationship between parent-adolescent conflict and self-esteem for only Mexican and Cuban adolescents, but not Nicaraguan or Colombian adolescents (Li & Warner, 2015). The Latine population in the US is made of diverse individuals representing numerous countries and cultures; research needs to address this diversity through methods and measurement to adequately explore the unique pathways of development for diverse populations.

Finally, the results from this study have implications for secondary education policies and practices within classrooms. Experiences with discrimination from both teachers and peers is related to lower HSGPA. Secondary schools should take these results, among others, into consideration when developing training programs for teachers. Teachers within secondary education should also consider these results when reflecting on their own classroom policies, how they interact with students, biases they may hold when grading or calling on students, and how they represent information about culture and stereotypes. These micro level interactions between teachers and students are worthy of continued attention in developmental research.

Conclusion

School-based discrimination and family obligation are both risk factors for Latine adolescents' academic achievement (i.e., HSGPA). However, both discrimination and family obligation had small effects on HSGPA. The small effects may be related to other factors to be explored such as different forms of school-based discrimination – explicit (e.g., stereotypes endorsed in the classroom) versus implicit (e.g., school discipline referrals) discrimination behaviors. In addition, further exploration into what family obligation looks like day to day for Latine adolescents, such as maintaining a job to financially support the family or assisting with household childcare. Although family cohesion did not buffer against discrimination, it was associated with higher HSGPA. Thus, other positive family behaviors should be investigated, such as family ethnic socialization and family resilience. Theoretical approaches to investigating developmental pathways for educational outcomes should remain complex and incorporate different environmental factors that impact educational experiences for Latine students within the K-12 and higher educational systems. Researchers should continue to explore the variety of environmental factors, such as social determinants and family dynamics, that impact Latine students' academic success.

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Table 1

Frequencies and Percentages of National Identity, Age, First Interview Site, and School Type by

Generation Status and Sex of Latine Students

	Total Sample (N = 2,352)	First Generation (n = 1,033)		Second Generation (n = 1,358)	
		Female (n = 546)	Male (n = 477)	Female (n = 650)	Male (n = 679)
	n (%)	n (%)	n (%)	n (%)	n (%)
National origin					
Cuba	944 (40.1%)	150 (27.5%)	125 (26.2%)	311 (47.8%)	358 (52.7%)
Mexico	598 (25.4%)	120 (22.0%)	109 (22.9%)	177 (27.2%)	192 (28.3%)
Nicaragua	278 (11.8%)	135 (24.7%)	124 (26.0%)	12 (1.8%)	7 (1.0%)
Colombia	179 (7.6%)	43 (7.9%)	42 (8.8%)	49 (7.5%)	45 (6.6%)
Other Central and South America	353 (15.0%)	98 (17.9%)	77 (16.1%)	101 (15.5%)	50 (11.3%)
Age					
12 - 13	510 (21.7%)	74 (13.6%)	72 (15.1%)	189 (29.1%)	175 (25.7%)
14	1073 (45.6%)	255 (46.7%)	195 (40.9%)	290 (44.6%)	333 (49.0%)
15	622 (26.4%)	169 (31.0%)	162 (34.0%)	149 (22.9%)	142 (20.9%)
16 - 17	146 (6.2%)	48 (8.8%)	48 (10.1%)	22 (3.4%)	28 (4.1%)
First Interview Site					
Miami	1666 (70.8%)	399 (73.1%)	354 (74.2%)	444 (68.3%)	469 (69.1%)
Ft. Lauderdale	57 (2.4%)	16 (2.9%)	98 (1.7%)	17 (2.6%)	16 (2.4%)
San Diego	629 (26.7%)	131 (24.0%)	115 (24.1%)	189 (29.1%)	194 (28.6%)
School Type					
Suburban	1458 (62.0%)	310 (56.8%)	265 (55.6%)	423 (65.1%)	460 (67.7%)
Inner city	894 (38.0%)	236 (43.2%)	212 (44.4%)	227 (34.9%)	219 (32.3%)

Note. Descriptive statistics reported after data inclusion criteria and deletion of cases missing high school grade point average scores.

Table 2

Descriptive Statistics for Variables Used in Statistical Analyses for Total Sample and by Sex for First and Second Generation Latine

Students Before and After Multiple Imputation

	Total Sample		First Generation				Second Generation			
			Female		Male		Female		Male	
	Before MI	After MI	Before MI	After MI	Before MI	After MI	Before MI	After MI	Before MI	After MI
	n (%) or M (SD)	% or M (SE)	n (%) or M (SD)	% or M (SE)	n (%) or M (SD)	% or M (SE)	n (%) or M (SD)	% or M (SE)	n (%) or M (SD)	% or M (SE)
High school GPA	2.30 (0.88)	2.30 (0.78)	2.41 (0.83)	2.41 (0.68)	2.15 (0.88)	2.15 (0.78)	2.40 (0.84)	2.40 (0.71)	2.22 (0.94)	2.22 (0.89)
Parent SES Index	-0.07 (0.74)	-0.07 (0.56)	-0.22 (0.72)	-0.22 (0.52)	-0.14 (0.73)	-0.14 (0.54)	-0.07 (0.70)	-0.07 (0.49)	0.10 (0.76)	0.10 (0.58)
School-based Discrimination										
Yes	525 (40.8%)	40.8%	116 (40.6%)	40.6%	95 (36.3%)	36.3%	151 (44.5%)	44.5%	163 (40.9%)	40.9%
Familismo										
Family Cohesion	3.70 (0.99)	3.70 (0.98)	3.80 (0.98)	3.80 (0.97)	3.81 (0.93)	3.81 (0.87)	3.60 (1.03)	3.60 (1.05)	3.65 (0.99)	3.65 (0.97)
Family Obligation	1.80 (0.60)	1.84 (0.37)	1.86 (0.65)	1.86 (0.42)	1.92 (0.65)	1.83 (0.33)	1.76 (0.56)	1.76 (0.31)	1.83 (0.58)	1.83 (0.33)

Table 3

Unstandardized and Standardized Regression Coefficients, Standard Errors, z-values, R^2, ΔR^2, χ^2, and Model Fit Indices for

Hypothesized Predictors of High School Grade Point Average for the Total Sample of Latine First and Second Generation Students

	b	β (SE)	z-value	p-value	R^2	ΔR^2	χ^2	df	AIC	BIC$_{adj}$	RMSEA/SRMR	CFI/TLI
Step 1					0.04*	-	69.05	7	6004.55	6017.48	0.06/0.05	0.61/0.49
School Location	0.26 [0.19, 0.33]	0.13 (0.02)	6.04	< .001								
School Type	-0.06 [-0.13, 0.01]	-0.03 (0.02)	-1.41	0.159								
SES	0.23 [0.18, 0.27]	0.19 (0.02)	8.17	< .001								
Step 2: *School-based Discrimination (D)*	-0.18 [-0.28, -0.10]	-0.10 (0.03)	-3.62	< .001	0.05*	0.01	42.07	6	5979.98	5995.49	0.05/0.04	0.77/0.62
Step 3					0.07*	0.02	5.36	4	5947.99	5968.68	0.01/0.01	0.99/0.98
Family Cohesion (FC)	0.06 [0.01, 0.10]	0.06 (0.03)	2.00	0.045								
Family Obligation (FO)	-0.16 [-0.25, -0.08]	-0.12 (0.03)	-3.43	0.001								
Step 4					0.07*	0.00	0.80	1	5949.57	5978.02	0.01/0.00	1.00/1.01
D x FC	0.03 [-0.07, 0.11]	0.02 (0.03)	0.65	0.518								
D x FO	0.02 [-0.15, -.16]	0.01 (0.03)	0.26	0.797								
FC x FO	0.03 [-0.05, 0.10]	0.02 (0.03)	0.74	0.457								
Step 5: *D x FC x FO*	0.00 [-0.15, 0.13]	0.01 (0.03)	0.02	0.983	0.07*	0.00	0.00	0	5950.77	5981.80	0.00/0.00	1.00/1.00

* $p < .001$.

Table 4

Unstandardized and Standardized Regression Coefficients, Standard Errors, z-values, and Model Fit Indices for Hypothesized

Predictors of High School Grade Point Average for Across Subgroups of the Total Sample and Pooled Sample of Latine Students

	Pooled Sample				First Generation Female				First Generation Male				Second Generation Female				Second Generation Male			
	b	β (SE)	z-value	p-value	b	β (SE)	z-value	p-value	b	β (SE)	z-value	p-value	b	β (SE)	z-value	p-value	b	β (SE)	z-value	p-value
Step 1																				
School Location	0.26 [0.11, 0.19]	0.13 (0.02)	6.04	<.001	0.29 [0.11, 0.19]	0.15 (0.02)	6.51	<.001	0.29 [0.10, 0.18]	0.14 (0.02)	6.52	<.001	0.29 [0.17, 0.19]	0.16 (0.02)	6.52	<.001	0.29 [0.11, 0.17]	0.14 (0.02)	6.65	<.001
School Type	-0.06 [-0.13, 0.01]	-0.03 (0.02)	-1.41	0.159	-0.05 [-0.07, 0.01]	-0.03 (0.02)	-1.18	.239	-0.05 [-0.06, 0.01]	-0.03 (0.02)	-1.18	.239	-0.05 [-0.06, 0.10]	-0.03 (0.02)	-1.18	.239	-0.05 [-0.05, 0.01]	-0.02 (0.02)	-1.17	.240
SES	0.23 [0.18, 0.27]	0.19 (0.02)	8.17	<.001	0.25 [0.18, 0.26]	0.22 (0.03)	8.61	<.001	0.25 [0.17, 0.25]	0.21 (0.02)	8.64	<.001	0.25 [0.17, 0.25]	0.21 (0.02)	8.66	<.001	0.25 [0.17, 0.25]	0.21 (0.03)	8.83	<.001
Step 2: *School-based Discrimination (D)*	-0.18 [-0.28, -0.10]	-0.10 (0.03)	-3.62	<.001	-0.16 [-0.15, -0.05]	-0.10 (0.03)	-3.17	.002	-0.16 [-0.14, -0.04]	-0.09 (0.03)	-3.16	.002	-0.16 [-0.15, -0.05]	-0.10 (0.03)	-3.16	.002	-0.16 [-0.13, -0.04]	-0.09 (0.03)	-3.14	.002
Step 3																				
Family Cohesion (FC)	0.06 [0.01, 0.10]	0.06 (0.03)	2.00	0.045	0.05 [0.01, 0.16]	0.06 (0.03)	1.95	.052	0.05 [0.01, 0.10]	0.06 (0.03)	1.94	.052	0.05 [0.01, 0.19]	0.06 (0.03)	1.93	.053	0.05 [0.01, 0.10]	0.06 (0.03)	1.94	.053
Family Obligation (FO)	-0.16 [-0.25, -0.08]	-0.12 (0.03)	-3.43	0.001	-0.13 [-0.16, -0.04]	-0.10 (0,03)	-2.91	.004	-0.13 [-0.15, -0.04]	-0.09 (0.03)	-2.95	.003	-0.13 [-0.13, -0.04]	-0.08 (0.03)	-2.91	.004	0.13 [-0.12, -0.03]	-0.08 (0.03)	-2.91	.004
Step 4																				
D x FC	0.03 [-0.07, 0.11]	0.02 (0.03)	0.65	0.518	0.03 [-0.04, 0.09]	0.03 (0.04)	0.64	.519	0.03 [-0.03, 0.07]	0.0 (0.03)	0.64	.520	0.03 [-0.04, 0.09]	0.03 (0.04)	0.64	.520	0.03 [-0.04, 0.08]	0.02 (0.04)	0.64	.519
D x FO	0.02 [-0.15, -0.16]	0.01 (0.03)	0.26	0.797	-0.01 [-0.07, 0.06]	-0.01 (0.04)	-0.16	.875	-0.01 [-0.06, 0.05]	-0.01 (0.03)	0.16	.872	-0.01 [-0.06, 0.05]	-0.01 (0.03)	-0.16	.873	-0.01 [-0.05, 0.04]	-0.04 (0.03)	0.16	.877
FC x FO	0.03 [-0.05, 0.10]	0.02 (0.03)	0.74	0.457	0.02 [-0.04, 0.07]	0.01 (0.03)	0.37	.708	0.01 [-0.04, 0.06]	0.01 (0.03)	0.38	.708	0.02 [-0.04, 0.06]	0.01 (0.03)	0.37	.708	0.02 [-0.04, 0.06]	0.01 (0.03)	0.38	.708
Step 5: *D x FC x FO*	0.00 [-0.15, 0.13]	0.01 (0.03)	0.02	0.983	0.04 [-0.04, 0.09]	0.02 (0.04)	0.57	.571	0.04 [-0.04, 0.07]	0.02 (0.03)	0.56	.576	0.04 [-0.04, 0.08]	0.2 (0.04)	0.56	.574	0.04 [-0.03, 0.06]	0.02 (0.03)	0.56	.574
AIC	6004.55												5904.61							
BIC$_{adj}$	6017.48												5951.16							
RMSEA/SRMR	0.06/0.05												0.03/0.04							
CFI/TLI	0.61/0.49												0.89/0.85							
N	2,352				546				477				650				679			

Figure 1

The Integrative Model for the Study of Developmental Competencies in Minority Children
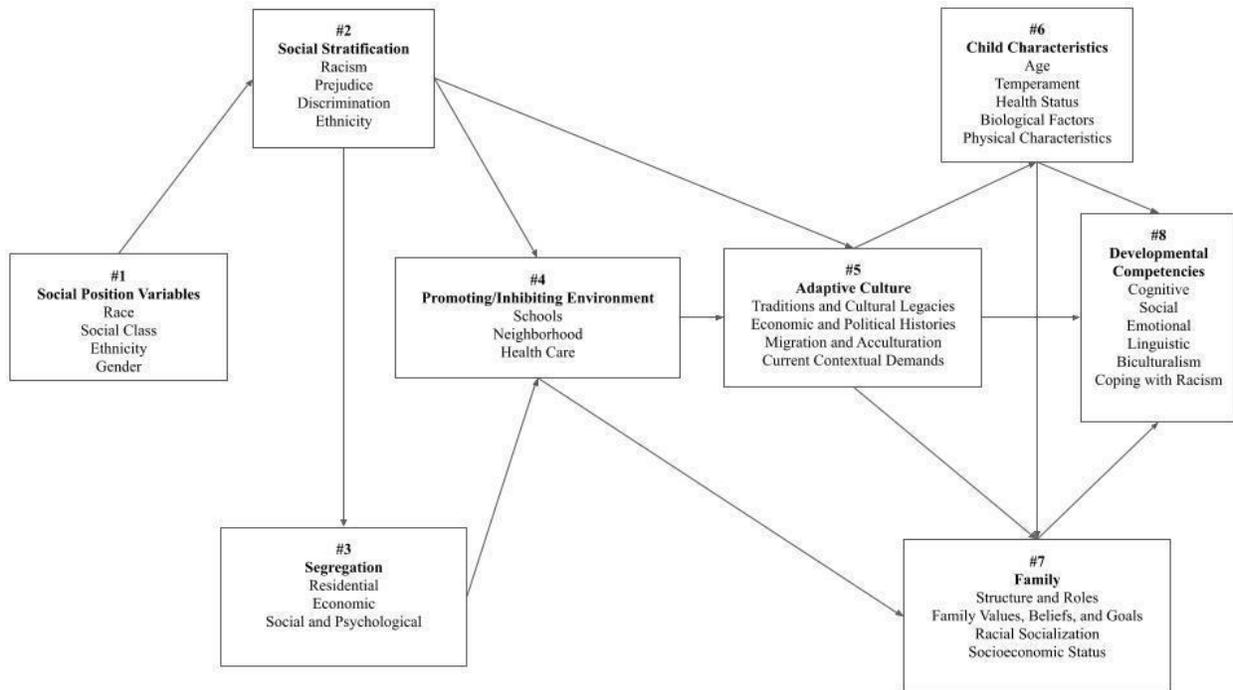
Figure 2

Proposed Adaptation of The Integrative Model: The Social Risks and Protections for Education
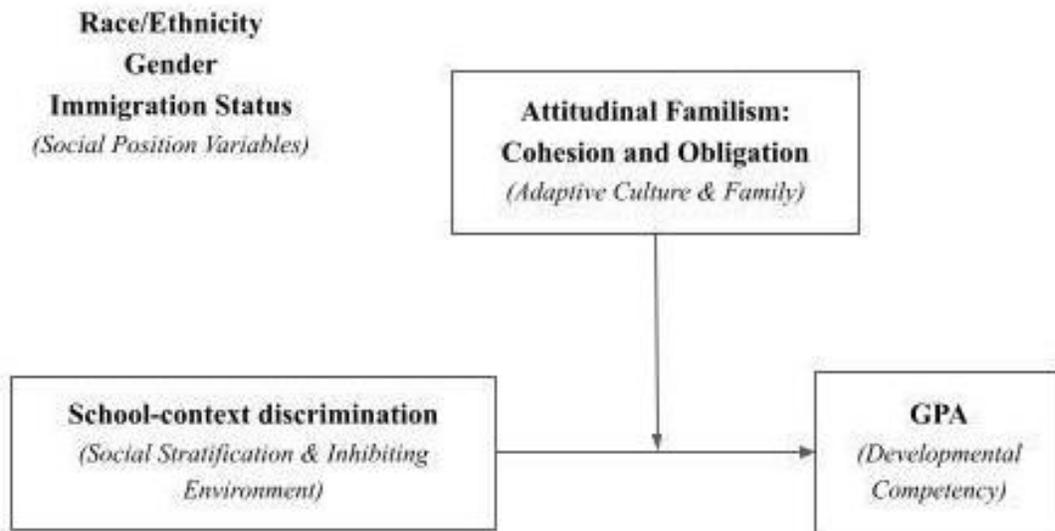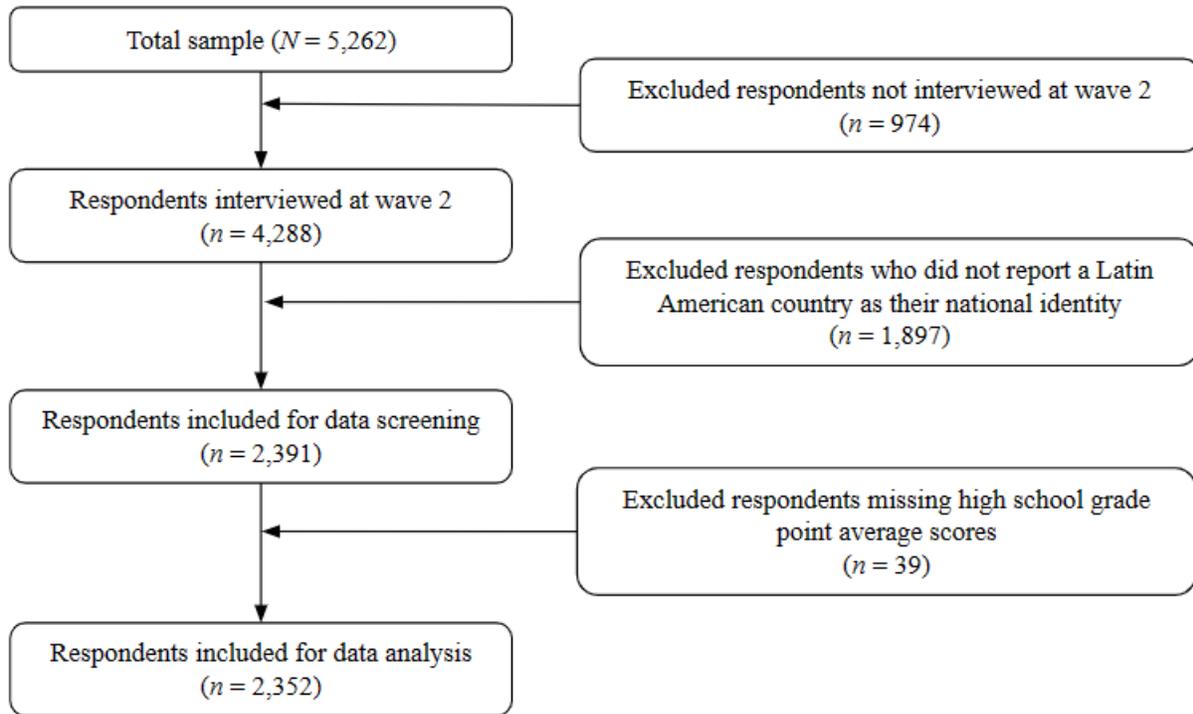
Competencies Model

Figure 3

Consort Table Reviewing Exclusion Criteria for Selecting Target Sample from Children of

Immigrants Longitudinal Study Data Set

Questions from the Family Cohesion Scale

How often is each of the following true about your immediate family (the people you live with)?

[Respond to each statement on a 5-point Likert scale (1 = *never*, 5 = *always*)]

1. Family members like to spend free time with each other.

2. Family members feel very close to each other.

3. Family togetherness is very important.

Questions from the Familism Index

Please indicate how you feel about the following statements:

[Respond to each statement on a 4-point Likert scale (1 = *agree a lot*, 4 = *disagree a lot*)]

1. If someone has the chance to help a person get a job, it is always better to choose a relative rather than a friend.

2. When someone has a serious problem only relatives can help.

3. When looking for a job a person should find a job near his/her parents even if it means losing a better job somewhere else.

MPlus Syntax - Hierarchical Multiple Regression (analyzed with and without data imputation syntax)

DATA IMPUTATION:

IMPUTE SES DISCRIM (c) FC FO DxC DxO CxO DxCxO; NDATASET = 50 ; SAVE impute*.dat ;

DEFINE:

CENTER FC FO (GRANDMEAN); DxC = DISCRIM*FC; DxO = DISCRIM*FO; CxO = FC*FO; DxCxO = DISCRIM*FC*FO;

ANALYSIS:

TYPE IS GENERAL; ESTIMATOR IS MLR;

MODEL (STEP 1):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON DISCRIM @ 0; GPA ON FC @ 0; GPA ON FO @ 0; GPA ON DxC @ 0; GPA ON DxO @ 0; GPA ON CxO @ 0; GPA ON DxCxO @ 0;

MODEL (STEP 2):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON DISCRIM (a4); GPA ON FC @ 0; GPA ON FO @ 0; GPA ON DxC @ 0; GPA ON DxO @ 0; GPA ON CxO @ 0; GPA ON DxCxO @ 0;

MODEL (STEP 3):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON DISCRIM (a4); GPA ON FC (a5); GPA ON FO (a6); GPA ON DxC @ 0; GPA ON DxO @ 0; GPA ON CxO @ 0; GPA ON DxCxO @ 0;

MODEL (STEP 4):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON

DISCRIM (a4); GPA ON FC (a5); GPA ON FO (a6); GPA ON DxC (a7); GPA ON DxO

(a8); GPA ON CxO (a9); GPA ON DxCxO @ 0;

MODEL (STEP 5):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON

DISCRIM (a4); GPA ON FC (a5); GPA ON FO (a6); GPA ON DxC (a7); GPA ON DxO

(a8); GPA ON CxO (a9); GPA ON DxCxO (a10);

MPlus Syntax - Hierarchical Multiple Regression Multigroup Analysis (analyzed with and

without data imputation syntax)

GROUPING IS SUBGROUPS

(1 = 2GM 2 = 1GM 3 = 2GF 4 = 1GF) ;

DATA IMPUTATION:

IMPUTE SES DISCRIM (c) FC FO DxC DxO CxO DxCxO; NDATASET = 50 ; SAVE

impute*.dat ;

DEFINE:

CENTER FC FO (GRANDMEAN); DxC = DISCRIM*FC; DxO = DISCRIM*FO; CxO

= FC*FO; DxCxO = DISCRIM*FC*FO;

ANALYSIS:

TYPE IS GENERAL; ESTIMATOR IS MLR;

MODEL (STEP 1):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON

DISCRIM @ 0; GPA ON FC @ 0; GPA ON FO @ 0; GPA ON DxC @ 0; GPA ON

DxO @ 0; GPA ON CxO @ 0; GPA ON DxCxO @ 0;

MODEL 2GM (STEP 1):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON

DISCRIM @ 0; GPA ON FC @ 0; GPA ON FO @ 0;GPA ON DxC @ 0; GPA ON DxO

@ 0; GPA ON CxO @ 0; GPA ON DxCxO @ 0;

MODEL 1GM (STEP 1):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON

DISCRIM @ 0; GPA ON FC @ 0; GPA ON FO @ 0; GPA ON DxC @ 0; GPA ON

DxO @ 0; GPA ON CxO @ 0; GPA ON DxCxO @ 0;

MODEL 2GF (STEP 1):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON

DISCRIM @ 0; GPA ON FC @ 0; GPA ON FO @ 0; GPA ON DxC @ 0; GPA ON

DxO @ 0; GPA ON CxO @ 0; GPA ON DxCxO @ 0;

MODEL 1GF (STEP 1):

GPA ON SES (a1); GPA ON INTSITE (a2); GPA ON SCHTYPE (a3); GPA ON

DISCRIM @ 0; GPA ON FC @ 0; GPA ON FO @ 0; GPA ON DxC @ 0; GPA ON

DxO @ 0; GPA ON CxO @ 0; GPA ON DxCxO @ 0;

** multigroup split syntax was repeated for all five steps in the HMR with repeated syntax from

above section