The Influence of Individual, Family-Related, and Structural Factors on Latino Students' Academic Performance: Ethnic and Age Variation

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Abstract

The current study utilizes a large survey that includes information about the beliefs and attitudes of Mexican American/Chicano/Chicana and Puerto Rican/Other Latin American adolescents in the sixth, ninth, and twelfth grades. Through the use of structural equation modeling multi-group analyses with pairwise test of path coefficients, the individual (beliefs, attitudes, and behaviors), family-related (family and peers), and structural-level (school and community) factors of 7,880 (25% Puerto Rican/Other) Latino students were found to be related to levels of academic performance as measured by grade point average (GPA). Specifically, individual factors were found to be positively related to the students' GPA. Family-related factors were related to GPA but only for sixth-grade students. School support was positively related to the GPA of sixth-grade Latino students and negatively to the GPA of high school Latino students. Finally, community support was positively related to GPA for the Puerto Rican/Other Latin American high school group only.

INTRODUCTION

Latino youth are the fastest growing population in the United States and are frequently attributed with the lowest educational outcomes. Youth development researchers have largely employed deficit-based approaches to study Latino youth, examining at length negative characteristics, such as alcohol and drug use, gang involvement, school dropout and low achievement, and early pregnancy, among others. The current study utilizes a recent large

survey that includes information about the beliefs and attitudes of Mexican American/Chicano/Chicana and Puerto Rican/Other Latin American adolescents, providing an opportunity to examine the potential effects that individual, family-related, and structural-level factors have on the educational success of Latino youth.

Currently, the three largest Latino subgroups in the United States are Mexican Americans, Puerto Ricans, and Cuban Americans, but the number of other immigrants from Central and South America has been rapidly increasing over the last two decades (U.S. Census Bureau, 2010). These subgroups are concentrated in different parts of the United States, their economic circumstances vary, and the timing and causes of their immigration differ substantially (Brown, Santiago, & Lopez, 2003). Latino subgroups also differ from one another on a number of demographic characteristics (e.g., socioeconomic status, college degree attainment; Motel & Patten, 2012). These differences stem from differing ecological niches and cultural traditions due to their unique historical blend of indigenous and imported cultures and political histories (Roosa, Morgan-Lopez, Cree, & Specter, 2002). As demographically diverse as the Latino population is, so are the many strengths and needs of these different Latino subgroups (Brown, Santiago, & Lopez, 2003). Unfortunately, most research studies compare small, convenient samples of Latinos with non-Latino Whites, confounding culture and history and leading to biased, culturally inappropriate results (Roosa, Morgan-Lopez, Cree, & Specter, 2002). The database employed in this study contains background and health information on adolescents in two of these subgroups, as well as individual responses to an array of questions that examine the beliefs, attitudes, and behaviors that these adolescents hold regarding their peers, families, communities, and school environments, which allows for a more culturally appropriate

comparison. Specifically, the sizable database will help us answer the following primary question:

> How do individual (beliefs, attitudes, and behaviors), family-related (family and peers), and structural-level (school and community) factors relate to levels of academic performance for both Mexican American/Chicano/Chicana and Puerto Rican/Other Latin American subgroups?

BACKGROUND

The Latino population is the largest ethnic minority group in the United States. The term *Latino* is used in this article to refer to a group of Americans who share a language and common cultural origins but who come from diverse Latin American countries and backgrounds with distinctive histories and socioeconomic and political experiences (Brown, Santiago, & Lopez, 2003). According to the U.S. Census Bureau (2010), Latinos represent 15.3 percent of the current population. The U.S. Census Bureau (2010) projects that by the year 2015, Latino youths between the ages of 10 and 20 years will comprise 16.7 percent of the Latino population and 21.8 percent of the total youth population; in other words, one out of five youths from ages 10 to 20 will be of Latino origin. Eamon and Mulder (2005) indicated that Latino youths fare worse than Caucasian youths in several indicators of wellbeing, especially in academic achievement and educational attainment. Furthermore, Latino youths are more likely to face influential developmental risks, such as being born to teenage mothers, attending low-quality and/or segregated schools, and residing in disadvantaged neighborhoods (Eamon & Mulder, 2005). These various factors are highly associated with poor academic achievement, low educational attainment, and the detrimental decision of many Latino youths to leave school

indefinitely (Vélez & Saenz, 2001). Additionally, social science researchers ahve provided large amounts of information about individual (i.e., behaviors/attitudes), family-related (i.e., family structure/social capital), and structural (i.e., school and community practices) attributes that are associated with the educational outcomes of Latinos (Vélez & Saenz, 2001). On the other hand, minimal research has been conducted focusing on the factors that influence Latino students to thrive and succeed (Rodriguez, Morrobel, & Villarruel, 2003).

In line with the recent burgeoning movement in positive ethnic youth developmental research (Benson, Scales, Hamilton, & Sesma, 2006; Cabrera & Rodriguez, 2011; McLoyd, 1998; Rodriguez & Morrobel, 2004; Sesma & Roehlkepartain, 2003; Spencer, 1995), the current study utilized Okagaki's (2001) comprehensive Triarchic Model of minority children's school achievement, a model consistent with Bronfenbrenner's ecological model, that focuses on the roles of the student (individual factors), family and friends (family-related factors), and the community and school (structural-level factors), in order to understand the variation in the school achievement of minority students. The goal is to further understand the impact that these three structures have in the academic performance and educational resilience of Latino youths. The need to increase the educational resilience of Latino youths has been highlighted and is considered necessary (Cabrera & Rodriguez, 2011; Bordes, 2009). Bordes (2009) emphasized the importance of academic performance and educational resilience for Latino students: Latino students who had higher high school graduate point averages (GPA) graduate from college, whereas those who had lower high school GPAs dropped out of college. Furthermore, high GPA is associated with life success, wellbeing, and increased academic attainment, employment rates, and employment success (Hogan, Parker, Wiener, Watters, Wood, & Oke, 2010).

The Triarchic Model and Its Relation to Academic Performance

In the Triarchic Model of School Achievement (Okagaki, 2001), the characteristics of the student, the family and peers, and the perceived function of the school and community are considered factors that notably contribute to a student's school achievement. Okagaki (2001) further indicated that focusing on only one structure provides limited understanding of the complex environments that contribute to school performance. However, Okagaki did not indicate which factor has or might have a greater benefit over the others, but conjectured that there ought to be differences in how each Latino subgroup's individual, family-related, and structural-level factors are associated with academic achievement.

Individual Factors

Expectations and beliefs. Okagaki (2001) explained that the limited research on Latino adolescents indicates that Latino students who are doing well in school believe that education serves an important function in life. Moreover, Latino students who hold the belief that school is beneficial for them have stronger motivations for academic achievement (Okagaki, 2001). Similarly, Vélez and Saenz (2001) indicated that the orientations of Latino students toward future expectations for college are related to school persistence. Together, these suggest that Latino students who highly value school and those who have positive school goals ought to perform better academically, controlling for the interactions with family-related and structural-level factors, because they believe education serves a purpose in their lives.

Family-related Factors

Peers, parents, and family. Family is a critical positive influence in an individual's social network. Parent involvement has been shown to be beneficial in improving academic effort, grades, and attendance (attendance has been found to be positively related to GPA; r =

.64; Steward, Steward, Blair, Jo, & Hill, 2008) (Cutrona, Cole, Colangelo, Assouline, & Russell, 1994; Gonzales, Cauce, Friedman, & Mason, 1996; Hawkins, Catalano, & Miller, 1992). The family is also the main agent of socialization regarding educational goals and attainment; children whose parents communicate educational goals and convey high aspirations that their children will graduate from college, report better grades and are less likely to drop out of high school (Heard, 2007). Lastly, parents who frequently have dinner with their children and who maintain close ties with their children's friends and friends' parents also have children who report better grades (Heard, 2007).

Even though the family plays a critical role in an individual's life, it can also have immediate and urgent economic, physical, and emotional needs, which may supersede the priority of academic success (Steward et al., 2008), especially in Latino homes. *Familismo*, defined as "a strong identification with an attachment to nuclear and extended families, and strong feelings of loyalty, reciprocity, and solidarity among [family] members" (Marin, 1993, p. 152), is a strong feature of Latino culture. *Familismo* may lead Latino youth to serve as the primary and/or secondary caregivers of siblings, parents, and/or grandparents, and sometimes it may also lead Latino youth to assume primary household responsibilities. Adult figures may be in direct competition for the attention of students to academic success (Steward et al., 2008).

The support of friends and peers also plays a big role in the attitudes of adolescents, including their orientation towards school (Isakson & Jarvis, 1999), and has been found to have both a positive (Hogan et al., 2010; Gonzales et al., 1996; Cutrona et al., 1994; Felner, Ginter, & Primavera, 1982) and a negative (Isakson & Jarvis, 1999) impact on GPA. Peers provide support as adolescents face new challenges in their young lives, and such peers sometimes serve as role models in meeting responsibilities (Isakson & Jarvis, 1999). Felner, Ginter, and Primavera

(1982) found the level of social support from peers to be positively related to school adjustment, GPA, attendance, positive self-concept, and perceived school climate. Unfortunately, greater peer support has been found to be negatively related to depression and anxiety (Hirsch & DuBois, 1992).

Lastly, Jarama Alvan, Belgrave, and Zea (1996) found that, for Latino adolescents, emotional support from family and friends was a critical factor for school success. The academic values of friends, as well as those of the family, also have an influence on school engagement and achievement (Bouchey & Harter, 2005; Shannon, 2006). However, Isakson and Jarvis (1999) were unable to replicate this relationship. Family and peer support provides the necessary encouragement, assistance, and resources to facilitate a student's academic development and performance. Both types of support should be positively related to GPA.

Structural-level Factors

School support. The educational and community environments are as influential to school achievement and positive development (Gillock & Reyes, 1999; Gonzales et al., 1996; Rodgers & Rose, 2011; Griffith, 2002; Malecki & Demaray, 2006; McMahon, Singh, Garner, & Benhorin, 2004) as are the individual and familial ecosystems described above. Vélez and Saenz (2001) stated that the behaviors, attitudes, and school performance of adolescents are products of the student-teacher relationships and of the neighborhoods to which such adolescents belong. Researchers have found that positive school climates and positive school attachments are associated with higher engagement, motivation to learn, school feelings, and future school plans (Cabrera & Rodriguez, 2011; Flanagan, Cumsille, Gill, & Gallay, 2007), although variation within and across schools has been noted (Wood, Lawrenz, Huffmna, & Schultz, 2003).

School environments can provide the social support that contributes to successful academic adjustment (Eamon & Mulder, 2005; Jarama Alvan et al., 1996). On the other hand, perceptions of non-inclusive school environments have been found to be negatively correlated with school engagement and achievement (Flanagan et al., 2007). It should come as no surprise then that adolescents who feel that they are not accepted because of their ethnic group memberships do not do well in school or in the community. For instance, it has been shown that school personnel hold cultural stereotypes that have directly hindered the academic success of Latino youth (Bouchey & Harter, 2005; Gonzales, Knight, Birman, & Sirolli, 2004).

Community support. The community is the significant delivery system for positive youth development. Unfortunately, however, a high percentage of Latino youths live in poverty compared with non-Latino Whites and African Americans (U.S. Census Bureau, 2010). Due to this factor, Latino youths are more likely to attend low-quality and/or segregated schools and to reside in disadvantaged neighborhoods and communities (Eamon & Mulder, 2005). These negative factors are highly associated with poor academic achievement and low educational attainment. Conversely, high perceived community support is significantly positively correlated with the feelings of Latino youths about attending middle school and high school and with their feelings about future school plans (Cabrera & Rodriguez, 2011), reinforcing the importance of community support in the Latino youth population. Community support has the potential to be an assuaging tool for school and academic failure. Furthermore, it has been noted that the perception of available support provides a safety net that permits active participation, exploration, and experimentation in a wide range of life experiences, resulting in the acquisition of coping strategies, skills, and self-confidence (Sarason, Pierce, & Sarason, 1990, as cited in Cutrona et al., 1994).

CURRENT STUDY

Drawing on the Triarchic Model put forth by Okagaki (2001), we examined the relationships and associations between Latino youths' individual, family-related, and structural-level factors and their association with academic performance. By looking at all three factors, we hypothesized that Latino youths with higher GPAs will have (a) positive future school aspirations and college plans, as well as positive feelings about attending school; (b) parents and peers who support their academic endeavors; and (c) high school and community support. Furthermore, we included all factors to be analyzed at the same time, and compared each factor's associations with academic achievement across two Latino subgroups. All factors were predicted to be positively associated with GPA. However, due to the differences in ecological niches in which these two Latino subgroups live, differences in strength and/or direction in associations were expected. Our predictions were based on past research literatures that have paved the way for the current study.

METHODS

The current study entails a secondary analysis of the 2010 Minnesota Student Survey (MSS) database. The MSS is administered every three years, most recently in 2010. During each administration year, all operating public school districts are invited to participate. In 2010, a total of 130,908 students from grades 6, 9, and 12 participated. Some items were deemed inappropriate for students in the sixth grade and thus were not asked on the sixth-grade form. Results of the MSS are provided by public school students in Minnesota via local public school districts and are managed by the MSS Interagency Team, including the Minnesota Departments of Education, Health, Human Services, Public Safety, and Corrections.

Sample

For the current analyses, the sample includes 8,454 participants (48.4% male), of whom 6,198 described themselves as Mexican American/Chicano/Chicana, 2,256 as Puerto Rican or other Latin American, and 574 as both. The ages of the sixth-grade Latino students ranged from 10 to 14 years old, the ninth-grade students ranged from 13 to 17 years old, and the twelfth-grade students ranged from 16 to 19 years old. Although participation was voluntary, the proportion of the sample size for the Latino students (6.02%) in this dataset was close to the total Latino sixth-, ninth-, and twelfth-grade students represented in the Minnesota student population (i.e., 5.62%; Minnesota Department of Education, 2010).

Analysis

Confirmatory factor analysis (CFA) and structural equation modeling (SEM). For the creation of the individual, family-related, and structural-level factor latent variables, the following methodology was utilized. Five scales were defined, and items matching the definition of each scale were identified (see Appendix). The direction of the items was checked so that each item was connotatively consistent. The factor structures, based on factors expected from theory and prior research, were assessed through CFA. To complete the CFA for each measure, MPLUS 5.2 (Muthén & Muthén, 2007) was used. Once the scales were refined, two models were created for these data. Due to missing individual factor information for sixth graders, the first model excluded the individual-factor latent variable and all ninth- and twelfth-grade information. Thus, the first model (Figure 1) estimates all but one latent variable, controlling for gender and social economic status (SES; as measured by a dichotomous variable: 0 = does not receive free or reduced-price lunch; 1 = receives free or reduced-price lunch), for the sixth-grade Latino students only. The second model included all the latent variables,

controlling for gender, SES, and grade. However, since the individual factor information was missing for sixth graders, the second model dropped all sixth-grade information from the analyses (Figures 2 and 3) and includes 9th and 12th grade students only. For this model, the two subgroups of Latino students were examined separately.

Model fit. SEM fit is estimated using multiple indices. Multiple indices can be used together in determining the extent to which each model fits the data. Several indices are available from the AMOS software (Version 19.0; SPSS, 2009), including the Tucker and Lewis index (TLI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). A rule of thumb that a TLI or CFI value of .90 implies good fit has been used by earlier convention, although cut-off criteria at .95 levels have been recommended (Hu & Bentler, 1999). RMSEA values below or equal to .06 imply a good model fit (Hu & Bentler, 1999), while values below or equal to .08 imply an adequate fit, although more conventional cutoff values fall below or equal to .05 (Schumacker & Lomax, 2004).

RESULTS

The MSS database included a total of 8,454 participants (48.4% male) who described themselves as Mexican American/Chicano/Chicana and/or Puerto Rican/Other Latin American; 574 participants described themselves as both. The data from the 574 participants who described themselves as both were not analyzed, because we could not justify placing them in one group over the other. Table 1 contains the scale descriptive statistics (means and standard deviations) by grade and gender, and by students of Mexican descent compared with other Latino students.

Measures

The latent individual factor (IF) was estimated by regressing both feelings about school and school plans on a latent individual factor. The latent peer support factor (PS) was estimated by regressing feelings about friends' support on a latent peer support factor. The latent family support factor (FS) was estimated by regressing both feelings about parents' and other adult relatives' support on a latent family support factor. The latent school support factor (SS) was estimated by regressing feelings about teachers' support, respect, and interest on a latent school support. The latent community support factor (CS) was estimated by regressing feelings about religious/spiritual leaders' and community adults' support on a latent community support factor. Their respective error terms were estimated as well. Latent factors were defined by setting the loading of one item per factor to one and allowing the software to estimate both latent factor variances and loadings. For the latent peer support factor, the loading was set to one and the residual variance was set to zero because only one indicator was used (Maruyama, 1998). Figures 1 to 3 includes the magnitudes of all the loadings for both models. Table 2 contains their correlations.

Evaluations of Models

The first model tested the effects of peer support, family support, school support, and community support on GPA, controlling for gender and SES, using an SEM multi-group analysis with pairwise tests of path coefficients. All four effects from the Mexican American/Chicano/Chicana group were not statistically different from the effects of the Puerto Rican/Other Latin American group. In other words, there was evidence to suggest that the paths were equal across the two groups. Thus, the groups were collapsed and analyzed together. In this collapsed model, peer support had a significant effect on GPA ($\beta = .090$, $p < .001$), family support did not have a significant effect on GPA ($\beta = .070$, $p = .251$), school support had a

significant effect on GPA (β = .196, $p < .001$), and community support did not have a significant effect on GPA (β = -.049, $p = .396$). Table 3 and Figure 1 contain the standardized solutions. The model assessed had an adequate model fit (TLI = .855, CFI = .921, RMSEA = .061).

The second model had a good model fit (TLI = .836, CFI = .900, RMSEA = .047). The model tested the effects of IF, PS, FS, SS, and CS on GPA, controlling for gender, SES, and grade, using an SEM multi-group analysis with pairwise test of path coefficients. The community support effects from the groups were statistically different from each other, suggesting that the paths were not equal across the two groups. Thus, the groups were analyzed separately. For the Mexican American/Chicano/Chicana group, the individual factors had a significant effect on GPA (β = .951, $p < .001$), peer support did not have significant effect on GPA (β = .021, $p = .387$), and family support was not statistically significant (β = -.040, $p = .331$). An interesting finding in this model was that school support had a significant effect on GPA as in the first model, but in the opposite direction (β = -.118, $p < .050$). Lastly, community support did not have a significant effect on GPA (β = -.030, $p = .522$). For the Puerto Rican/Other Latin American group, the individual factors also had a significant effect on GPA (β = 1.048, $p < .001$), peer support continued to not have a significant effect on GPA (β = .038, $p = .259$), and family support was not a significant predictor of GPA (β = -.109, $p = .119$). School support had a significant effect on GPA, similar in direction to the model for the Mexican American/Chicano/Chicana group (β = -.373, $p < .010$). However, community support was a significant predictor of GPA for this Latino subgroup (β = .166, $p < .050$). Table 3 and Figures 2 and 3 contain all standardized solutions.

DISCUSSION

SEM was used to test two models that investigated the effects of Latino students' individual (as measured by the latent individual variable), family-related (as measured by both the peer support and family support latent variables), and structural-level (as measured by both the school support and community support latent variables) factors on these students' academic performance (as measured by GPA). The first model included only sixth-grade without the individual factor latent variable , whereas the second model included ninth- and twelfth-grade information only and all the latent variables.

The effect of the individual factor latent variable for the second model was statistically significant for both Latino subgroups, indicating that Latino students with higher future school plans and those with higher positive feelings about attending school are more likely to have higher GPAs, controlling for gender, grade, and SES. The effect was slightly larger for the Puerto Rican/Other Latin American group but not statistically significantly different. For the family-related factors, the effect of peer support was statistically significant in the first model, meaning that higher perceived peer support is associated with higher GPAs, controlling for gender and SES for sixth graders. This effect was not significant in the second model for either Latino subgroup of ninth and twelfth graders. This indicates that peer support is an important factor for academic achievement for sixth-grade Latino students in these data, but not for high school Latino students. Family support was not a significant predictor in either model. Thus, it seems as though adult figures in the lives of these Latino students may be both a hindrance and a benefit to their academic success. *Familismo*, as defined earlier, tends to put Latino youths in roles that might hinder academic success, while the support that family members provide might attenuate those negative effects. A comparison of Latino family support effects with those of

other ethnic groups (i.e., more individualistic groups) might provide evidence of this conjecture. With regard to the structural-level factors, school support was statistically significant for both models, but in opposite directions. For the sixth-grade Latino students, school support is associated with higher GPAs, while for the ninth- and twelfth-grade Latino students, the path coefficient indicates that higher perceived school support is associated with lower GPAs, controlling for gender, grade, and SES. Lastly, another important finding was the effect of community support on both models and both Latino subgroups. Community support was not a significant predictor of GPA in the first model or in the Mexican American/Chicano/Chicana group in the second model. However, it was statistically significant for the Puerto Rican/Other Latin American subgroup. Perceived community support for this subgroup is a significant factor in predicting school performance. This notable difference could be explained by rates of everyday discrimination that vary by cultural characteristics across different Latino subgroups. For example, Perez, Foruna, and Alegria (2008) found that Mexican Americans are significantly more likely to report perceived discrimination compared with Cuban Americans. This could suggest that community members perceive Puerto Rican/Other Latin American students more favorably than they do Mexican Americans/Chicanos/Chicanas, and thus act differently towards each group; nonetheless, mean perceived community support raw scores in the data did not differ between these subgroups.

In the body of empirical research in youth development, little has focused on Latino adolescents, even though Latinos are the largest ethnic minority in the USA. Even less research encompasses an asset orientation (Rodriguez & Morrobel, 2004), with an overwhelming focus on risky behavior. By utilizing Okagaki's (2001) Triarchic Model, we have highlighted key factors that relate to Latino academic performance. The current study shows that individual, family-

related, and structural-level factors have both positive and negative statistically significant effects on Latino students' GPAs. Again, high GPA has been shown to be a predictor of life success, wellbeing, and increased academic attainment, employment rates, and employment success.

In summary, positive future scholastic aspirations and positive school feelings have a large and consistent effect on the academic performance of Latino students in comparison with other factors. This highlights the potential impact of establishing positive school beliefs in earlier school years as a malleable factor.

Secondly, peer support has an effect on the academic performance of sixth-grade Latino students as well; those who have higher perceived peer support do better in school (as measured by their GPA). This effect, however, is attenuated when looking at the ninth- and twelfth-grade student data; there seems to be a slight overall downward shift in perceived peer support when students are in high school, particularly for the Mexican American/Chicano/Chicana subgroup. As another potential malleable factor, by strengthening and increasing sixth-grade Latino students' positive friendships with students who support school, programs designed to improve the academic achievement of Latino students could focus on building healthy relationships.

Thirdly, although the analyses suggest that school support is a negative predictor of GPA for high school Latino students, school support was positively statistically significant for sixth-grade Latino students; those students with higher perceived school support have higher GPAs. This discrepancy from theory and class differences needs to be further evaluated. Lastly, community support was not a significant predictor of school achievement for either the sixth-grade Latino students or the ninth- or twelfth-grade Mexican American/Chicano/Chicana group, but it was statistically significant for the Puerto Rican/Other Latin American group for both the

ninth- and twelfth-grade students. This evidence suggests that this latter group is benefiting from community support more so than the former groups. It also suggests that community support accounts for some of the .26 and .20 point differences in GPA between the Latino subgroups from the ninth and twelfth grade, respectively.

There are several limitations to the current analyses. Foremost of these is in the limited measurement of the constructs (factors) included in the study. Even though background information and research studies were utilized to identify items that could map onto the latent variables described, the MSS was not developed with this intention and the measured constructs were limited based on the items available in the MSS. Consequently, the interpretations made from the data may not be ideal. Also of note is the difference in sample sizes between the ninth- and twelfth-grade students. The sample size for the twelfth graders was almost half (53.73%) of that from the ninth-grade group. Dropout rates most likely explain this sample size difference, but this information was not available. So considering twelfth-grade students, these are likely the more successful and motivated students.The question that arises now is how to transform these results into useful policy and/or youth program design. It is recommended that the association effects of these latent variables be replicated with future data, especially on data that will be collected in 2013 by the state of Minnesota. The findings of this study, especially if replicated, ought to direct researchers to look at as many Latino subgroups separately when working on research studies. Combining Latino subgroups might not be a good idea as these subgroups are different in many aspects.

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Table 1
Grade Point Average Means (SD), Model Latent Variable Means (SD), and Sample Sizes by Latino Group

	Latino Group			
	Mexican American/ Chicano/Chicana		Puerto Rican/Other Latin American	
Sixth	2.69	(0.95)	2.85	(0.88)
Ninth	2.36	(1.01)	2.62	(0.96)
Twelfth	2.60	(0.86)	2.80	(0.84)
Male	2.42	(0.98)	2.61	(0.95)
Female	2.66	(0.95)	2.86	(0.86)
Model 1				
Family-related Factors				
Peer Support	3.98	(1.10)	3.94	(1.09)
Family Support	4.66	(0.70)	4.64	(0.74)
Structural-level Factors				
School Support	3.84	(0.91)	3.76	(0.97)
Community Support	3.41	(1.16)	3.44	(1.16)
Model 2				
Individual Factors	3.62	(0.86)	3.78	(0.85)
Family-related Factors				
Peer Support	3.89	(1.08)	3.95	(1.13)
Family Support	4.41	(0.92)	4.33	(1.00)
Structural-level Factors				
School Support	3.35	(0.89)	3.38	(0.91)
Community Support	2.96	(1.20)	2.96	(1.22)
N	5911		1969	

Note: Individual Factors only include data from ninth and twelfth grades. All factors range from 1 to 5.

Table 2
Correlations between Latent Variables

	IF	PS	FS	SS	CS
Model 1					
Peer Support (PS)	-	-	.26	.38	.46
Family Support (FS)	-	.39	-	.42	.56
School Support (SS)	-	.39	.52	-	.74
Community Support (CS)	-	.55	.57	.72	-
Model 2					
Individual Factors (IF)	-	.31	.49[a]	.63	.42
Peer Support (PS)	.27	-	.49[a]	.52	.51
Family Support (FS)	.37	.46	-	.55[a]	.58[a]
School Support (SS)	.58	.49	.50	-	.75
Community Support (CS)	.47	.50	.56	.75	-

Note: Correlations for Mexican American/Chicano/Chicana are presented below the diagonal, and correlations for Puerto Rican/Other Latin American are presented above the diagonal. All correlations are significant, *p*s < .001. *a* = correlations are significantly different between the Latino groups within each model.

Table 3

Unstandardized, Standardized, and Significance Levels for Models 1 and 2 (Standard Errors)

	Model 1			Model 2					
	Combined			Mexican American/Chicano/Chicana			Puerto Rican/Other		
	Unstandardized	Standardized	*p*	Unstandardized	Standardized	*p*	Unstandardized	Standardized	*p*
IF	-	-		.95(.08)	.67	<.001	1.05(.16)	.76	<.001
PS	.09(.02)	.11	<.001	.02(.02)	.02	.33	.04(.03)	.05	.26
FS	.07(.06)	.04	.25	-.04(.04)	-.03	.33	-.11(.07)	-.10	.12
SS	.20(.05)	.15	<.001	-.19(.07)	-.13	<.05	-.37(.14)	-.30	<.01
CS	-.05(.06)	-.05	.40	-.03(.05)	-.03	.52	.17(.08)	.19	<.05

Note: N = 3,228 for Model 1 with sixth grade data only; N = 3,367 for the Mexican American/Chicano/Chicana group and N = 1,285 for the Puerto Rican/Other Latin American group in Model 2 with ninth and twelfth data only.

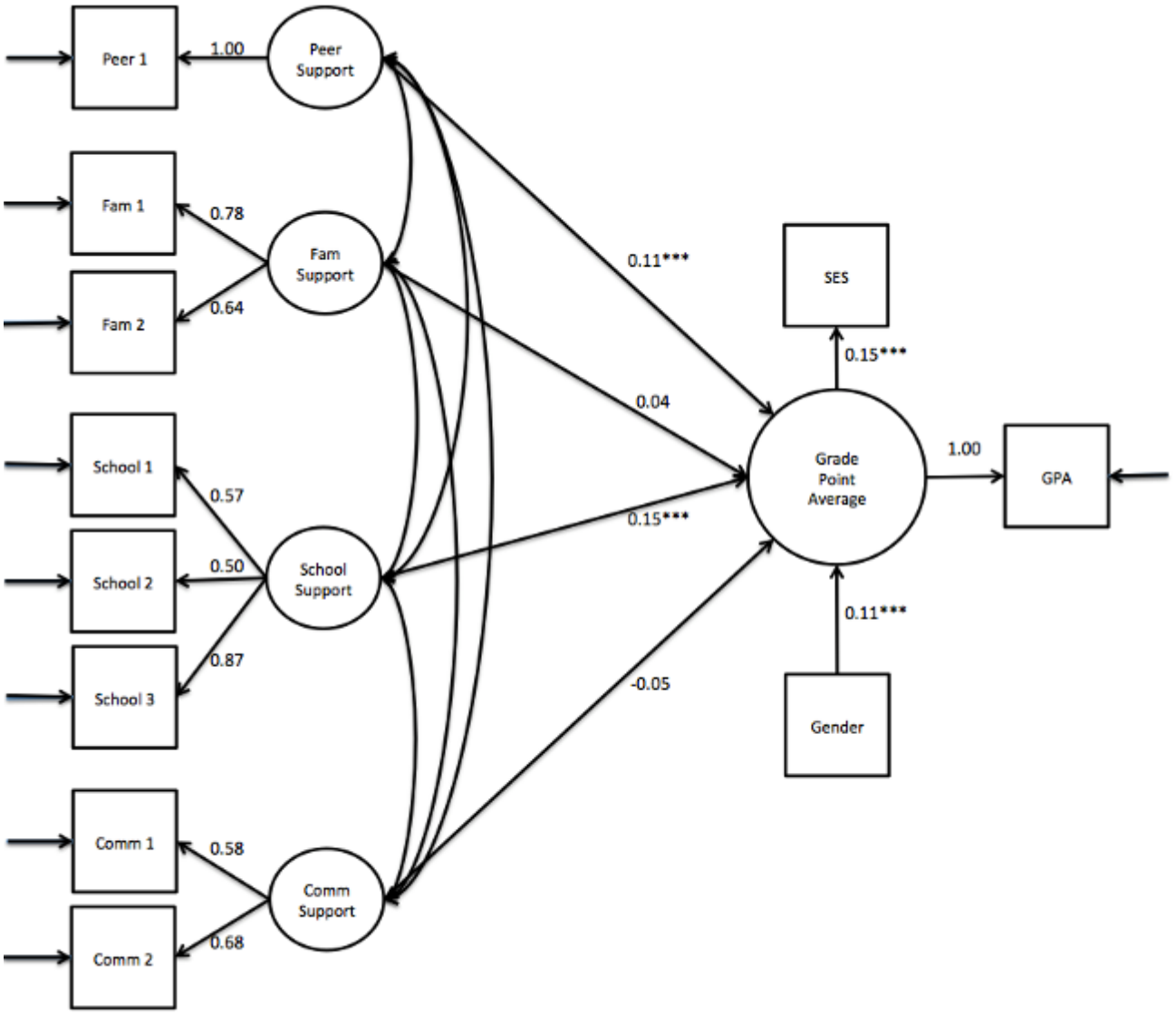

Figure 1. Structural equation model of familial and structural factors on grade point average for 6th grade Latino students only.

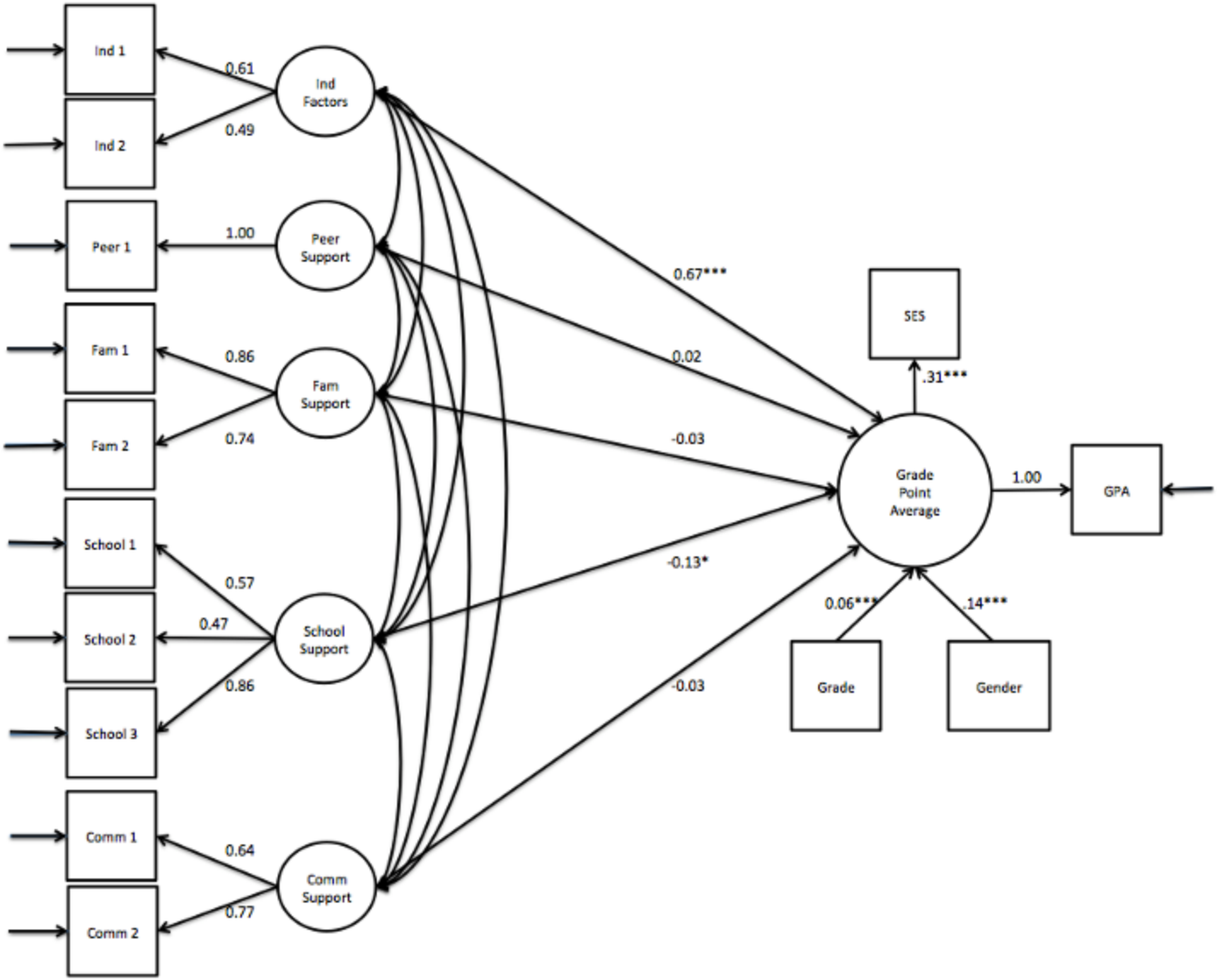

Figure 2. Structural equation model of individual, familial, and structural factors on grade point average for 9th and 12th grade Mexican American/Chicano/Chicana students.

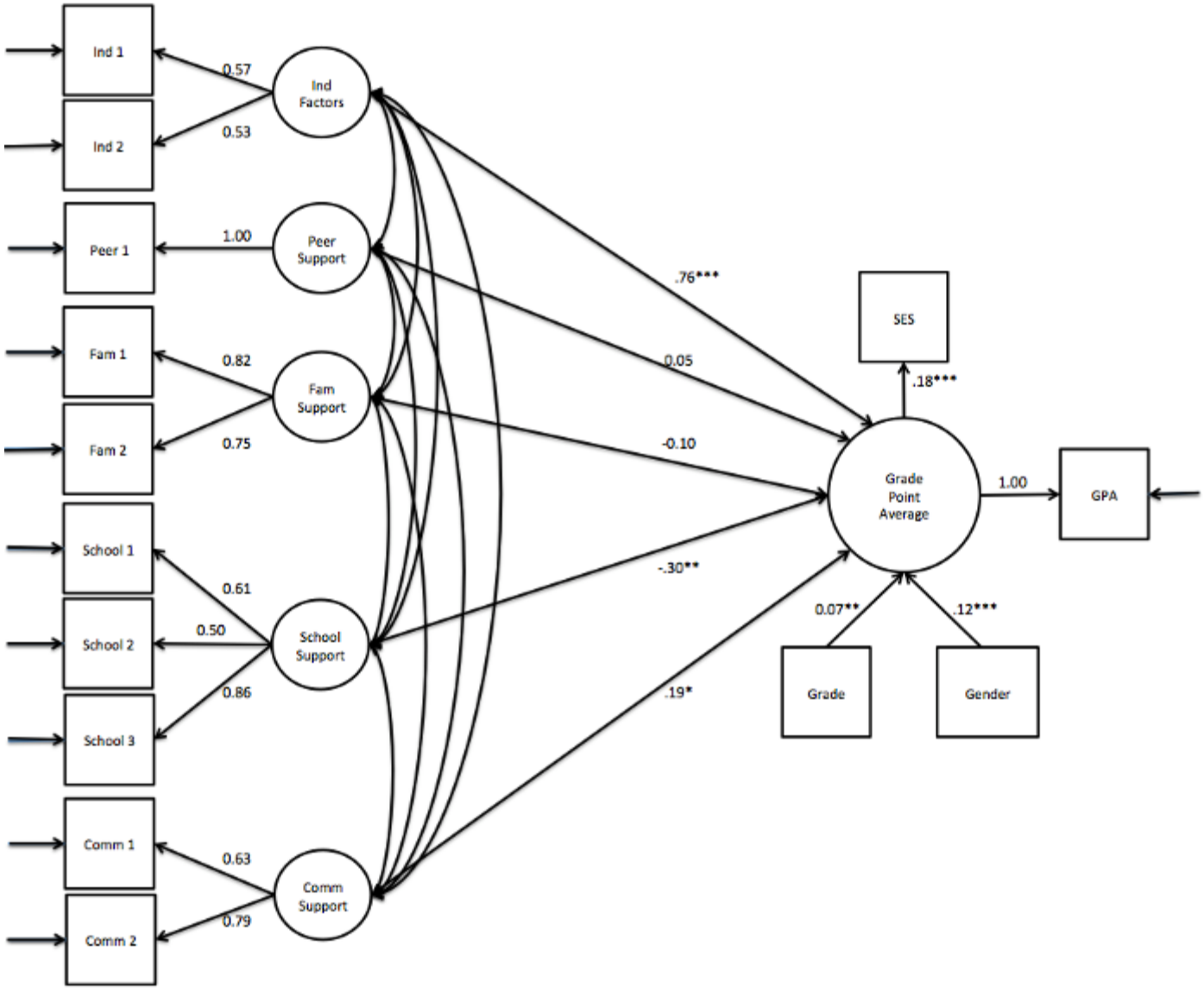

Figure 3. Structural equation model of individual, familial, and structural factors on grade point average for 9th and 12th grade Puerto Rican/Other Latin American students.

Appendix

Scale and Items from the 2010 Minnesota Student Survey (MSS)

Individual Factor

1. How do you feel about going to school?
   I hate school.
   I don't like school very much.
   I like school a little.
   I like school quite a bit.
   I like school very much.
2. Which of these best describes your school plans?
   I would like to quit school as soon as I can.
   I plan to finish high school but don't think I'll go to college.
   I'd like to go to some kind of trade school or vocational school after high school.
   I'd like to go to college after high school.
   I'd like to go to college and then go on after college to graduate or professional school.

Family-related Factors

Peer Support

1. How much do you feel...friends care about you?*

Family Support

1. How much do you feel...your parents care about you?*
2. How much do you feel...other adult relatives care about you?*

Structural-level Factors

School Support

1. How many of your teachers...are interested in you as a person?**
2. How many of your teachers...show respect for the students?**
3. How much do you feel...teachers or other adults at school care about you?*

Community Support

1. How much do you feel...religious or spiritual leaders care about you?*
2. How much do you feel...other adults in your community care about you?*

* = Five-point rating scale item: 1 = Not at all; 2 = A little; 3 = Some; 4 = Quite a bit; 5 = Very much

****** = Five-point rating scale item: 1 = None; 2 = A few; 3 = Some; 4 = Most; 5 = All