



## Pieces of the immigrant paradox puzzle: measurement, level, and predictive differences in precursors to academic achievement



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### ARTICLE INFO

#### Article history:

Received 26 April 2013

Received in revised form 16 January 2014

Accepted 8 April 2014

#### Keywords:

Immigrant paradox

School engagement

School climate

Academic achievement

Measurement invariance

### ABSTRACT

The “immigrant paradox” indicates that the academic attitudes and outcomes of 1st-generation youth exceed those of the 2nd- and 3rd-generation. This paper examines a) whether unobserved measurement bias contributes to these generational differences, b) generational differences in levels of behavioral school engagement (BSE) and perceived supportive school relations (SSR), and c) to what extent BSE mediates the relations between SSR and academic achievement and whether these relations differ across generations. New York City Social and Academic Engagement Study (NYCASES) data were analyzed. Strong measurement invariance for BSE and SSR suggests that unobserved measurement bias does not contribute to the immigrant paradox. 1st generation youth evinced higher latent means for BSE and SSR than 2nd or 3rd-generation youth. 1st generation youth responded to SSR by exerting effort while 2nd and 3rd generation youth responded to SSR by complying with rules. Because effort engendered achievement more than compliance, this study identifies a mediating mechanism that contributes to the immigrant paradox.

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### 1. Introduction

A remarkable pattern has emerged in the immigration literature, wherein 1st-generation immigrants (born outside the U.S.) demonstrate stronger academic performance than 2nd (born in the U.S. to foreign-born parents) and 3rd (youth and parents U.S.-born) generation immigrant youth in the U.S. (Glick & White, 2003; Pong & Hao, 2007). 1st-generation youth also have more positive attitudes toward (Pong & Zeiser, 2012; Portes & Rumbaut, 2001; Suárez-Orozco & Suárez-Orozco, 1995) and are more engaged with school (Fuligni & Yoshikawa, 2004) than 2nd and 3rd-generation youth.

One would expect better academic outcomes and attitudes among 2nd and 3rd-generation youth, who have had more time to adjust to the myriad challenges posed by schooling in a new country and whose families have had more time to accrue the economic assets that engender academic engagement and pro-school attitudes (Crosnoe & López-Turley, 2011). The (paradoxically) stronger engagement and performance by 1st-generation immigrant youth has therefore been labeled the “immigrant paradox” (Cunningham, Ruben, & Narayan, 2008; Rumbaut, 2004). This pattern of generational differences in academic outcomes has been thoroughly documented (i.e., Crosnoe &

López-Turley, 2011; Cunningham et al., 2008; Kao & Tienda, 1995; Portes & Rumbaut, 2001; Rumbaut, 2004; Suárez-Orozco, Pimentel, & Martin, 2009). Although not the focus of this study, generational differences have been also observed in health outcomes. For example, 1st generation immigrant youth report better mental health than 2nd generation youth (Alegria et al., 2008) and engage in fewer risk behaviors (e.g., unprotected sex, substance use) than 2nd generation immigrant youth (Rumbaut, 1997, 2005).

Potentially missing pieces of the immigrant paradox puzzle are a) whether *measurement differences* may partially or fully account for generational differences in academic outcomes, b) whether different generations have different levels of school engagement and/or different perceptions of school supportiveness, and c) whether behavioral school engagement (BSE) mediates the relations between supportive school relations (SSR) and academic achievement, and whether these mediating processes differ across generations.

Different generations of youth acculturate to the U.S. in disparate ways and therefore may interpret or respond to academic measures in different ways (Pong & Zeiser, 2012). That is, consistent patterns of unobserved measurement bias (by generation) may explain the immigrant paradox, but have not been examined. In order to rule out this alternative explanation for the immigrant paradox (that measurement differences explain differences in academic outcomes), one must establish that academic measures are equivalent and unbiased across generations. We could identify *no study* that examined measurement differences in academic inputs to achievement across generations.

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Secondly, generations may be differentially engaged with school or have varying perceptions of how supportive their school is (Pong & Zeiser, 2012). BSE – attending school and completing one's homework – as well as SSR – perceptions that school personnel provide tangible and emotional support to students – serve as key inputs to academic achievement (Fredricks, Blumenfeld, & Paris, 2004; Wang, Willett, & Eccles, 2011). However, we do not know if generations have differing levels of BSE or SSR. To determine whether these key developmental precursors may contribute to the immigrant paradox, we examine differences between 1st, 2nd, and 3rd-generation youth in the *latent* means (more precise than comparisons between observed variable means, because they are less contaminated by measurement error – see Kline, 2010) for BSE and SSR.

Thirdly, whether BSE and SSR may exert differential impacts on achievement across generations is not known. It may be that all three generations have similar levels of BSE, but BSE plays a more powerful role in the achievement of the 1st-generation than the 2nd or 3rd-generation. 1st-generation youth may have a more optimistic view of schooling, due to the optimism more common among recent immigrants and to comparisons youth may make between schools in their home and host country (Pong & Zeiser, 2012). To address this issue, we examine the mediating process by which and compare the potentially disparate impacts that SSR and BSE play in predicting achievement across generations.

### 1.1. Developmental antecedents to academic achievement

Key developmental inputs to achievement include BSE and SSR (Fredricks et al., 2004; Suárez-Orozco et al., 2009; Wang et al., 2011). BSE refers to activities such as putting effort into assignments, paying attention in class, attending school regularly, complying with school rules, and other positive school behaviors (Fredricks et al., 2004). Decreased BSE is related to poor academic performance (Suárez-Orozco, Suárez-Orozco, & Todorova, 2008; Wang et al., 2011) and increased risk for drop out (Finn & Rock, 1997). BSE was observed to be a stronger predictor of academic performance than the other components of school engagement (Sirin & Rogers-Sirin, 2005).

SSR refer to students' perceptions that school personnel provide tangible and emotional support (Suárez-Orozco et al., 2009). These relationships determine young people's access to the socially valued information as well as the social supports that contribute to achievement (Bourdieu, 1986; Eccles & Roeser, 2011). Increasing attention has been focused on SSR in fostering academic success (Stanton-Salazar, 2004; Suárez-Orozco et al., 2008). SSR have been linked to higher academic achievement and more positive school behaviors (Fredricks et al., 2004; Osterman, 2000; Suárez-Orozco, Pimentel, & Martin, 2009). Immigrants with SSR are more likely to be academically engaged, attend school regularly, have higher motivation, and exert more effort (Suárez-Orozco et al., 2009). Estrangement with school personnel, on the other hand, has been associated with negative academic engagement and achievement (Osterman, 2000).

The literature has illuminated the general importance of SSR and BSE in fostering achievement (i.e., Eccles & Roeser, 2011; Fredricks et al., 2004; Wang et al., 2011) and to the broad patterns of the immigrant paradox (i.e., Crosnoe & López-Turley, 2011; Kao & Tienda, 1995; Portes & Rumbaut, 2001), yet has paid comparatively little attention to *generational differences* into how these key developmental processes foster achievement (Pong & Zeiser, 2012). Given the importance of arresting declines in achievement across generations, it is important to better-understand these 'developmental inputs' into achievement for immigrant youth.

Exceptions to the preceding critique include Suárez-Orozco et al. (2008), who found that SSR was one of the key predictors of BSE, which in turn explained achievement among 1st-generation immigrant youth, as well as Pong and Zeiser (2012), who found that 1st-generation youth had more positive attitudes toward schooling than 2nd and 3rd

generation youth, and that these positive school attitudes were predictive of generational achievement differences. We will expand this finding to examine 1st, 2nd, and 3rd-generation immigrants, with a focus on measurement invariance across generations – as well as whether the magnitude of these mediating processes differ across generations.

### 1.2. Research questions

The first research question tests whether *BSE and SSR measures are invariant across 1st, 2nd, and/or 3rd-generation immigrant youth*. Differing generations may have divergent conceptions of what engaging with school means, which may result in generational measurement bias in BSE. For example, 2nd and 3rd-generation youth are more acculturated and accustomed to U.S. schooling norms, such as participation and compliance with school rules. Measurement invariance (MI) testing will indicate whether the BSE and SSR measures are biased across generational groups. If the conditions for MI can be established, then more precise "apples to apples" comparisons between different generations can be made, because constructs mean the same thing and are measured in the same way across generations (Kline, 2010). This is important, in order to rule out the alternative explanation that the immigrant paradox can be partly or fully explained by unobserved measurement differences.

The second research question tests *latent mean differences in BSE and SSR across 1st, 2nd, and 3rd-generation immigrant youth*. This will test our hypothesis that 1st-generation youth perceive school to be more supportive and are more engaged with school than 2nd or 3rd-generation youth. We will also compare the BSE and SSR of 2nd and 3rd-generation youth, as these comparisons have been less frequent in the literature. This will help to identify developmental antecedents to observed generational differences in achievement.

The third research question examines *whether BSE mediates the relations between SSR and achievement as well as the magnitude of these mediating relations*. The literature suggests that a supportive school elicits BSE, in that students are more likely to exert effort and comply with school rules if they feel that school personnel care about them (Eccles & Roeser, 2011; Fredricks et al., 2004; Suárez-Orozco et al., 2009). In turn, students who exert effort and comply with school rules, or are behaviorally engaged with school, tend to demonstrate better achievement (Sirin & Rogers-Sirin, 2005; Wang et al., 2011). Therefore, we hypothesize that BSE mediates the impact of SSR on academic achievement. The following Fig. 1 depicts these hypothesized processes (note that BSE has been divided into two related factors, detailed further in the Results section).

The third research question will examine whether these developmental precursors play differential roles in academic achievement across generations. It may be that BSE plays a larger role in the academic achievement of 1st-generation than 2nd and 3rd-generation youth – or that SSR have less of a mediated impact on achievement for 2nd and 3rd-generation youth than for 1st-generation youth. Because immigrant females tend to academically outperform immigrant males (Crosnoe & López-Turley, 2011; Suárez-Orozco et al., 2009), we include gender as a covariate in estimating these relationships. We will also test for significant differences in how well BSE predicts achievement across generations, as well as whether the mediated effect of SSR on achievement differs across generations. All told, the combined insights from these research questions will yield a more fine-grained portrait of the specific processes by which SSR and BSE contribute to the achievement of immigrant youth.

## 2. Method

### 2.1. Sample

The New York City Social and Academic Engagement Study (NYCASES) surveyed urban high school adolescents regarding their

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