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Permalink

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Journal

International Journal of School and Educational Psychology, 9(2)

ISSN

2168-3603

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Furlong, MJ
et al.

Publication Date

2021

DOI

10.1080/21683603.2019.1677539

Peer reviewed

Pre-Publication Copy

Association between Social-Emotional Strengths and School Membership:

A Cross-Cultural Comparison

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Abstract

This study examined associations among a concurrent set of social-emotional strengths and school membership across United States ($N = 1,009$) and Chinese ($N = 747$) students aged 9 to 11 years old. Results identified significant positive relations of school membership with four social-emotional strengths (i.e., gratitude, optimism, zest, and persistence) and a higher-order latent variable (covitality) in both countries, with optimism having the strongest association in both countries. Cross-culturally, U.S. students showed a stronger gratitude association with school membership whereas Chinese students had stronger zest and persistence associations with school membership. Implications for promoting school membership across cultural contexts are discussed.

Keywords: social-emotional strengths, school membership, cross-cultural, positive psychology, covitality

Association between Social-Emotional Strengths and School Membership:
A Cross-Cultural Comparison

There is interest among researchers and practitioners to better understand how to foster students' early and ongoing sense of school membership due to its strong linkages to positive school outcomes (Centers for Disease Control & Prevention [CDC], 2009). Although many studies have focused on risk factors that diminish students' sense of school membership (e.g., McMahon, Parnes, Keys & Viola, 2008; Shochet, Smith, Furlong, & Homel, 2011), fewer studies have investigated factors that promote a stronger sense of school membership. Moreover, despite the cross-cultural variability of school membership observed among countries worldwide (e.g., Chiu, Chow, McBride, & Mol, 2016), few studies have examined the association between school membership and its promotive factors in cross-cultural contexts. To advance cross-cultural understanding of school membership and strength-based factors that contribute to it, this study examined how a hierarchical set of social-emotional strengths is associated with school membership among Chinese and U.S. elementary school students. The current study is an initial step to explore the cross-cultural association of school membership with social-emotional strengths.

School Membership

Students' sense of school membership refers to the degree to which students "feel personally accepted, respected, included, and supported by others in the school social environment" (Goodenow, 1993, p. 80). Researchers generally agree that the constructs of school membership, school connectedness, and school belonging share similarities, as they describe students' affective and cognitive connections to the school as an institution and with school personnel (Allen, Kern, Vella-Brodrick, Hattie, & Waters, 2018). These terms have been used

interchangeably in previous studies (e.g., Furlong, Froh, Muller, & Gonzalez, 2014) and share three common dimensions: (a) students' interpersonal relationships and experiences with others in school, (b) general feelings about school, and (c) teacher-student relationships (Allen et al., 2018).

Previous studies support the benefits of school membership for students across cultural contexts. Among U.S. findings, school membership is linked to an array of beneficial student outcomes: better academic performance (lower dropout rates [CDC, 2009] and course grades [Goodenow, 1993]), higher prosocial behaviors (Solomon, Battistich, Kim, & Watson, 1996), and fewer problematic behaviors and mental health problems (CDC, 2009). Among Chinese students, there are similar findings; for example, school membership is correlated with better academic performance (Fong Lam, Chen, Zhang, & Liang, 2015), fewer depressive symptoms (Jia et al., 2009), and less delinquent behavior (Zhang & Messner, 1996). The positive outcomes of school membership are documented in both U.S. and Chinese contexts. However, few investigations have examined the precursors of school membership (Allen et al., 2018) during the formative primary school years, when students begin to develop their identity as a part of the school community, which in turn shapes their life-long notion of community citizenship (Lerner et al., 2018).

Prior studies have focused on risk factors that diminish school membership, and multiple factors have been linked with a weak sense of school membership: low academic performance, problematic and antisocial behaviors (Maddox & Prinz, 2003), aggressiveness (Blankemeyer, Flannery & Vazsonyi, 2002), depression and anxiety (McMahon et al., 2008), and negative affect (Shochet et al., 2011). Identified school contextual risk factors that influence school membership include school location and total enrollment (Anderman, 2002; Slaten, Ferguson, Allen,

Brodrick, & Waters, 2016b). Less attention has been given to the identification of factors that promote school membership, especially students' social-emotional strengths. A recent meta-analysis reported that positive intrapersonal qualities (e.g., healthy coping skills, positive emotions, psychological adjustment, and self-esteem) had a stronger association with school membership than school contextual and interpersonal factors (Allen et al., 2018). Moreover, positive psychological traits were the strongest predictors of healthy social relationships (e.g., Park, Peterson, & Seligman, 2004), a crucial component of school membership (Goodenow, 1993).

Despite the identified links between social-emotional strengths and school membership, the influence of social-emotional strengths on school membership has been understudied. In our review, only one study examined the relations between a combined set of social-emotional strengths (covitality) and the development of school membership; however, this study did not examine the individual contribution of each positive trait to school membership (Wilkins, Boman, & Mergler, 2015). A few other studies have examined how single positive assets (e.g., gratitude) are related to school membership (Chong, Huan, Yeo, & Ang, 2006), but they did not systematically examine the relations of different social-emotional strengths with school membership. Most importantly, few studies have investigated the promotion of school membership from a strength-based perspective, and no research has compared cultural similarities/differences between the U.S. and Chinese primary school children. Given the near absence of school membership research in China and other Asian countries, the cross-cultural perspective taken in this study represents an initial step to understand better how culture plays a part in these associations. This cross-cultural understanding also supports the needs of the increasingly ethnic diverse U.S. school context in which the percentage of Asian students is

increasing (Musu-Gillette et al., 2016).

Social-emotional Strengths and Cross-Cultural Differences

Covitality has been conceptualized as “the synergist effect of positive mental health resulting from the interplay among multiple positive-psychological building blocks” (Furlong, You, Renshaw, Smith, & O’Malley, 2013b, p.1013). For primary school-age children, the framework consists of four coexisting and interactive social-emotional strengths (i.e., gratitude, optimism, zest, and persistence) under the higher latent factor, covitality (Furlong et al., 2013b). Among all the character strengths, findings from positive psychology research have shown that gratitude, zest, and optimism are highly related to youths’ mental health, developmental and school outcomes representing a triadic positive orientation towards life in the past, present, future (e.g., Furlong, Gilman, & Huebner, 2009; Park & Peterson 2006). Persistence is added in the covitality framework for elementary children because persistence is vital to academic success (Furlong, You, Renshaw, O’Malley, & Rebelez, 2013a). Additionally, these four social-emotional strengths are extensively applied in various positive education research and practices. For example, the Knowledge is Power Program (KIPP) employed in more than 200 U.S. schools focuses on fostering seven strengths, which include gratitude, zest, and optimism, and grit (a component of which is persistence; Henig, 2008). Another class-wide positive psychology intervention (Suldo et al., 2015) aims to promote primary school students’ gratitude and optimism. Based on previous positive psychology research and current applied positive education research, there is substantial rationale to further examine the relations of gratitude, zest, optimism, and persistence with children’s educational experiences and outcomes. The present study is grounded in the covitality framework to understand the link between social-emotional strengths and school membership further; as such, we provide a brief review of the

four social-emotional strengths used in the present study.

Gratitude is the appreciation of good things that happen and feeling thankful towards those responsible (Furlong et al., 2013a). Research has produced convincing evidence in support of the benefits of gratitude for youth, including social support, positive affect, positive teacher-student relationships, life satisfaction, better mental health, and the development of interpersonal connections (Froh, Miller, & Snyder, 2007; Froh et al., 2011; Renshaw & Olinger Steeves, 2016). In China, gratitude studies have illustrated the bivariate associations of gratitude with more prosocial behaviors, higher life satisfaction, increased positive affect, and fewer suicidal thoughts among middle and elementary school students (Li, Zhang, Li, Li, & Ye, 2012; Tian, Du, & Huebner, 2015). Some have suggested that the Southeast Asian conceptualization of gratitude elicits both positive emotions and negative emotions, such as indebtedness and guilt (Coulmas, 1981; Kumatoridani, 1999; Naito & Washizu, 2015), whereas available empirical research has found that the benefits of gratitude on social bonding and psychological well-being are comparable in Chinese and U.S. studies (e.g., Renshaw & Olinger Steeves, 2016; Tian et al., 2015). Although developmental differences are recognized in gratitude because feeling grateful requires specific social-cognitive determinants (e.g., seeing others' intention and taking others' perspective; Froh, Kashdan, Ozimkowski, & Miller, 2009), existing findings generally indicated that the benefits of gratitude for children and youth are similar to those found for adults (e.g., Froh et al., 2009, 2011).

Optimism describes a person's generalized expectations for positive outcomes (Peterson & Seligman, 2004). In U.S. youth, one comprehensive review found that optimism is positively associated with academic achievement, prosocial behaviors, psychological adjustment, and subjective well-being (Furlong et al., 2009). Similar to U.S. findings, studies using Chinese

adolescent samples showed positive influences of optimism, including its protective function on students' well-being (Chen et al., 2016; Niu et al., 2018), and negative relation with depression (Kwok & Gu, 2017). Few studies have examined optimism across Chinese and U.S. children, whereas some cultural differences of optimism were observed between Chinese and Canadian children and between Chinese and U.S. adults (Ji, 2008). Among the cross-cultural studies using adult samples, Lee and Seligman (1997) found that Chinese respondents were less optimistic than U.S. respondents; however, Ji and colleagues (2004) reported that Chinese endorsed more optimistic responses than Canadians when facing adverse events. Ji (2008) suggested that Chinese tended to believe events changed cyclically whereas Americans tend to believe life changed linearly. These findings imply that differences between social-emotional strengths and school membership might be observed because of the non-isomorphic cultural concepts of optimism in China and the United States.

Zest refers to approaching life with anticipation, vigor, and energy (Furlong et al., 2013a). Research on zest is understudied in comparison to research on optimism, but zest is suggested to be more common in youth than adults (Park et al., 2004). Existing studies of zest among youth consistently revealed that zest is positively related to life satisfaction and negatively related to internalizing problems (Park & Peterson, 2006; Weber & Ruch, 2012). For studies using young adults, zest is linked to various positive life outcomes, including better interpersonal relationships and physical health (Peterson & Seligman 2004). Even fewer studies reported on zest in non-U.S. populations. We found one study using an Asian sample, and it indicated that zest was correlated with happiness and life satisfaction for Japanese young adults (Shimai, Otake, Park, Peterson, & Seligman 2006). Other available research generally demonstrates that zest is related to positive life outcomes across cultures (e.g., Shimai et al., 2006; Weber & Ruch,

2012); however, little is known about the influence of zest among children.

Persistence describes one's endurance in accomplishing goals or tasks regardless of the time frame of goals (Duckworth, Peterson, Matthews, & Kelly, 2007). Similar to zest, persistence has been under-studied. Persistence is recognized by parents and teachers as a key to children's academic achievement (Tough, 2012). Persistence was positively associated with academic performance and academic self-efficacy among 12-year-old students (Weber & Ruch, 2012). Research in persistence is even more limited to Chinese elementary students. Among available findings with Chinese students, persistence was positively associated with academic achievement for students aged from 11 to 16 years (Ho & Hau, 2008). Regarding cultural context, Chinese culture highly values persistence, particularly in academic endeavors (Hess, Chang, & McDevitt, 1987). Other than academic performance, available research provides little information about the relation of persistence with other educational outcomes among elementary students in both U.S. and Chinese schools (Ho & Hau, 2008; Weber & Ruch, 2012).

Association Between Social-emotional Strengths and School Membership

Research grounded in the broaden-and-build theory proposes that the experience of positive emotions produces a virtuous upward cycle that leads to more positive emotions (Low, King, & Caleon, 2016). This theoretical perspective has been employed to explain the association between social-emotional strengths and school membership (Furlong et al., 2014). Ample research shows the embedded nature of positive assets and positive emotions (Rego, Sousa, Marques, & Cunha, 2012). A path model, named "engine model of well-being" (EMWB) proposed by Weber et al. (2016) incorporated the broaden-and-build theory to explain mechanisms linking social-emotional strengths and school membership. EMWB proposes a process in which character strengths act as inputs that provoke behaviors, thoughts, and feelings,

which in turn raise school-related positive affect. The increase of positive affect improves students' motivation, interest, and engagement at school, which leads to positive school functioning (Weber et al., 2016). Compelling conceptual rationales also have been offered that link positive affect and school membership via social-emotional strengths. For example, positive emotions expand the range of possible future actions, increase learning opportunities (Fredrickson, 1998), foster students' participation in school activities, fortify students' relationships with teachers, and build coping skills (Reschly, Huebner, Appleton, & Antaramian, 2008). From this perspective, positive affect mediates the relation between school membership and social-emotional strengths (Weber et al., 2016).

In addition, we proposed using the triadic reciprocal causation derived from social cognitive theory to explain the dynamics links between school membership and positive social-emotional strengths. Triadic reciprocal causation refers to the mutual influence among individual, behavioral, and contextual factors (Bandura, 1989). Individual factors (i.e., social-emotional strengths) affect how students select and create situations based on their preferences and competencies (Bandura, 1989). Different environmental conditions lead to various emotional and cognitive experiences (Bandura, 1989). Notably, previous studies have demonstrated that social-emotional strengths can lead to benefit appraisal (Wood, Maltby, Stewart, Linley, & Joseph, 2008), prosocial behaviors (Emmons & McCullough, 2003), and positive affect (Weber et al., 2016), which potentially increase students' sense of school membership. Inversely, positive school contexts reciprocally alter individual determinants (i.e., strengthening character strength; Bandura, 1989; Park et al., 2004). In sum, the broaden-and-build theory and the triadic reciprocal causation are complementary in explaining the dynamics of the relations between social-emotional strengths and school membership.

Despite this strong theoretical foundation, only a few studies have explicitly addressed the associations between social-emotional strengths and school membership. Wilkins et al. (2015) found that covitality was positively associated with school engagement among Australian elementary students. In the psychometric development of school membership scale, the four positive assets in covitality were considered as convergent validity indicators (Furlong et al., 2013a; Wagle et al., 2018), explicitly examining the relations between social-emotional strengths and school membership. Moreover, the evidence of a positive association between school membership and social-emotional strengths can also be inferred from the fostering role of social-emotional strengths on social relationships (e.g., Froh et al., 2007; Peterson & Seligman, 2004). For instance, research has shown that: (a) gratitude was closely related to positive teacher-student bonding (Furlong et al., 2013b); (b) zest was a significant predictor of positive social relationships (Peterson & Seligman, 2004); and (c) optimism was associated with a stronger sense of interpersonal support (Karademas, 2006). These findings reveal the positive linkages of school membership with social-emotional strengths among U.S. students; however, these studies have not examined these relations from a cross-cultural perspective.

Research on relations between covitality and school membership is absent in China. Nevertheless, the beneficial relation between social-emotional strengths and school membership can be inferred from studies conducted in other Asian educational contexts. Using a sample of adolescents in Singapore, Chong et al. (2006) found that optimism was a mediator between the association of positive relationships with school and adolescents' well-being. One study reported a positive association of social-emotional strengths with mental health, life satisfaction, and academic performance in Korean primary students (Kim, Dowdy, Furlong, & You, 2019). Wang et al. (2014) denoted the positive role of teacher support in student happiness and life satisfaction

based on an investigation of secondary students in Shanghai. Despite the limited amount of evidence, the research in China appears to support the fostering role of social-emotional strengths on school membership.

Purpose of the Present Study

To advance cross-cultural understanding of school membership and its strength-based predictors, the two main purposes of this study are to examine the concurrent associations between social-emotional strengths and school membership in the U.S. and Chinese contexts and the cross-cultural differences in these associations. To achieve these two purposes, the establishment of factor structure and measurement invariance of the social-emotional and school membership measurements was a necessary first step, which also provided researchers with evidence supporting the psychometric properties of the two measures for cross-cultural research in the U.S. and China. Thus, we first examined the factorial structure of the social-emotional measures using U.S. sample and measurement invariance of the school membership and social-emotional strengths measurements across countries. Then, the concurrent associations between social-emotional strengths and school membership within and across the U.S. and Chinese contexts were examined.

Method

Participants and Procedures

The sample included both Chinese and U.S. students between the ages of 9 and 11 years old. The participating schools were a convenience sample based on the researchers' ongoing collaborative connections with school staff. For Chinese sample, school geographic locations and demographics were taken into consideration to confirm that the sample was a balanced representation of suburban and urban schools. For U.S. sample, participating schools generally

showed interest in being better informed about students' positive assets. Cases with missing information about gender or age were omitted, resulting in the exclusion of six Chinese students and two U.S. students.

Chinese sample. The five participating public schools were located in urban or suburban areas of Hunan Province of China, which has a population over 60 million. The schools were invited by a local university to participate in the study voluntarily and were provided information about their students' mental health needs as an incentive. These schools were located in urban (69.3%) and suburban (30.7%) areas with random sampling employed to select the 1,009 students who complete the study survey. Males comprised 57.5% of the sample. By age, 22.3% of the participants were nine-years-old, 38.6% were ten-years-old, and 39.1% was eleven-years-old. The percentage of surveyed students among the total students at these schools ranged from 56.5% to 67.6%. As school administrators estimated, 99% of the students were Han Chinese (race/ethnicity was not asked in the survey).

United States sample. All schools were located in suburban and urban areas in central California. All schools were public schools and participated in the study voluntarily. The final sample of 747 students was drawn from seven schools. This sample consisted of 51.1% females. By age, 22.5% of the participants were nine-years-old, 39.9% were ten-years-old, and 37.6% were eleven-years-old. The percentage of surveyed students among the total students in Grades 4 to 6 at these schools ranged from 97.4% to 27.8% across the seven schools. The racial/ethnic composition, as reported by the students, was 41.2% White, 2.7% African American, 22.4% Hispanic, 5.6% Asian, 8.2% Native American, 1.2% Pacific Islander, and 14.7% other self-designation (4.0% missing).

Survey Procedures

In both countries, the self-report survey was completed between 2016 and 2017. Teachers explained the purpose of the survey, confidentiality, and read the directions and survey items to students who had reading difficulties. The administration time of the survey was approximately 20 minutes. In China, a paper version of the survey was administered. In the United States, students completed an online format. The items in the measurements were modified from a statement format to a question format to be more developmentally appropriate for elementary students. All measures and administration procedures were approved by the Office of Research at the Chinese and the U.S. researchers' universities.

Measures

The Social Emotional Health Survey-Primary (SEHS-P). A SEHS-P was used to assess students' social-emotional strengths (Furlong et al., 2013a; Wang, Yang, Jiang, & Furlong, 2016; Xie et al., 2018). The SEHS-P employed for analysis included 14 items measuring gratitude (three items, e.g., Do you feel thankful to go to your school?), optimism (three items, e.g., Do you expect that you will feel happy during class time?), zest (four items, e.g., Do you get really excited about your schoolwork?), and persistence (four items, e.g., Do you finish all of your class assignments?), which summed to provide an overall covitality factor. A 6-point response scale was used (1 = *no, never*, 2 = *no, almost never*, 3 = *yes, sometimes*, 4 = *yes, often*, 5 = *yes, very often*, and 6 = *yes, always*). Confirmatory factor analyses and measurement invariance tests within and across the U.S. and China samples demonstrated a second-order model with the higher-order factor of covitality and four lower-order factors: gratitude, optimism, zest, and persistence. Configural and metric invariance was achieved across the Chinese and U.S. samples. Cronbach's alpha (α) coefficients of internal consistency for the four subscales was examined, ranging from .65 to .85 in the U.S. sample, and from .60 to .76 in

the Chinese sample. For the total covitality score, the internal consistency reliability alphas were .89 for the U.S. sample and .85 for the Chinese sample.

The Psychological Sense of School Membership Scale (PSSM). A Goodenow's PSSM was utilized to assess students' sense of acceptance and connectedness at school (Goodenow, 1993). Items were presented using a question format (e.g., Do you feel like you are a real part of your school?), which allowed for the use of a frequency of occurrence response format (1 = *no, never*, 2 = *no, almost never*, 3 = *yes, sometimes*, 4 = *yes, often*, 5 = *yes, very often*, and 6 = *yes, always*). The nine-item PSSM was previously found to be best supported by a unidimensional school membership factor in Chinese and U.S. samples as shown by the study of Wagle et al. (2018). Measurement invariance was achieved at configural, metric, and partial scalar levels based on the U.S. and Chinese samples in the present study. Cronbach's alpha (α) coefficients of internal consistency for the unidimensional PSSM was .87 for the U.S. sample, and .85 for the Chinese sample.

Statistical Analysis

Before examining cross-cultural comparisons of the relations between school membership and social-emotional strengths, measurement invariance was tested for the SEHS-P and PSSM across the U.S. and Chinese students. Data were analyzed using confirmatory factor analysis (CFA) and structural equation modeling (SEM) with maximum likelihood robust (MLR) using Mplus 7.31 (Muthén & Muthén, 1998–2015). Unlike the PSSM, which has been examined for use in the U.S. and China before (Xie et al., 2018), the SEHS-P has not been examined for use among U.S. elementary students; thus, confirmatory factor analysis (CFA) was conducted to confirm the factor structure of the SEHS-P. After the establishment of the factor structure of the SEHS-P, a series of invariance testing was administrated to confirm measurement invariance of

the SEHS-P across gender and age groups. Detailed procedures for the analysis of psychometric properties are provided in online supplementary materials.

Since chi-square fit statistics (χ^2) are sensitive to sample size and violation of normality assumption, the Satorra-Bentler scaled statistics ($S-B\chi^2$), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR) were employed to assess model fit. According to Hu and Bentler (1999), acceptable model fit statistics are when $CFI \geq .90$, $RMSEA \leq .08$, and $SRMR \leq .08$. For testing measurement invariance, the difference of $S-B\chi^2$ between two nested models was used (Asparouhov & Muthén, 2010). Given that the chi-square difference test is easily affected by large sample and nonnormality, the change of CFI less than .01 was employed as an indicator of equivalence between nested model (Cheung & Rensvold, 2002).

On the ground of items' factor loading invariance across countries on both scales, we tested the linkages between the focal variables by simultaneously estimating five sets of regression relations for the U.S. sample and five sets for the Chinese samples. This procedure yielded estimates of direct relations of school membership with covitality and each social-emotional strength respectively. Gender and age were controlled in the analysis due to the influence of gender and age on school membership (e.g., Slaten et al., 2016b). Finally, Wald tests with parameter constraints were conducted to assess whether each pair of regression coefficients for the U.S. and Chinese samples was significantly different in multiple group analysis.

Results

Factorial Structure and Measurement Invariance of SEHS-P and PSSM

Results of CFA analyses suggested that a 14-item SEHS-P was best supported by a second-order model with the higher-order factor of covitality and four lower-order factors using

the full U.S. sample, $\chi^2 = 268.35$, $df = 73$, $p < .001$; CFI = .939; SRMR = .044; RMSEA = .060, 90 % CI [.052, .068]. Invariance at configural, metric, and scalar level was confirmed across gender and age groups, with CFI < .01 between the nested models (see Table 1). For assessing measurement equivalence across countries, configural invariance was achieved, $\chi^2 = 434.51$, $df = 146$, $p < .001$; CFI = .942; SRMR = .037; RMSEA = .047, 90 % CI [.042, .053]. For metric invariance, differences of measurement invariance test statistics between the metric invariance and configural invariance models supported that first-order and second-order factor loadings are equivalent between the American and Chinese full samples, $\Delta S-B\chi^2 = 10.12$ ($\Delta df = 3$), $p < .01$, $\Delta CFI = .001$. For scalar invariance, differences of measurement invariance test statistics between the scalar invariance and metric invariance models suggested that scalar invariance was not achieved across the U.S. and Chinese samples, $\Delta S-B\chi^2 = 544.19$ ($\Delta df = 3$), $p < .001$, $\Delta CFI = .38$. The results reflected the intercepts of first-order factor and measured variables were not invariant, indicating that we could not compare the latent mean differences of the four social-emotional strengths and covitality between the two cultural groups. The results of SEHS-P measurement invariance across countries were shown in Table 2.

For the PSSM, a series of CFAs supported the three hierarchical levels of measurement invariance across countries for the nine-item unidimensional model. The results confirmed configural invariance, $\chi^2 = 249.41$, $df = 54$, $p < .001$; CFI = .950; SRMR = .035; RMSEA = .064, 90 % CI [.056, .072]. Metric and scalar invariance was also achieved with the difference of CFI ranging from .004 to .009 (see Table 3). After confirming equivalence of both scales at the factor loading level, we could compare the associations between the PSSM and SEHS-P across U.S. and Chinese elementary students. The detailed results of the factor structure and measurement invariance of the SEHS-P and PSSM are presented in Appendix A in online supplementary

materials.

Associations Between Covitality and School Membership by Country

To examine the associations of school membership with covitality (Model 1) and the four social-emotional strengths (Models 2-5 for gratitude, optimism, zest, and persistence), five respective models were tested as shown in Table 4 and 5. Age and gender effects were controlled. Table 4 displays the model fit indices of the tested models, indicating that all models had acceptable model fit. Regarding the associations between social-emotional strengths and school membership, Table 5 shows the unstandardized and standardized regression coefficient estimates by countries.

In particular, for the U.S. students, covitality was significantly associated with self-reported school membership ($\beta = .73$), with acceptable model fit, $\chi^2 = 807.55$ ($df = 269$), $p < .001$; CFI = .907, RMSEA = .052, SRMR = .057. For the Chinese students, a significant positive association was also found between perceptions of school membership and covitality ($\beta = .75$), with acceptable model fit, $\chi^2 = 774.49$ ($df = 269$), $p < .001$; CFI = .910, RMSEA = .043, SRMR = .050. Regarding the four subscales, each social-emotional strength was significantly related to school membership in both samples. For the U.S. students, optimism ($\beta = .85$) had the strongest association with school membership, followed by gratitude ($\beta = .68$), zest ($\beta = .46$) and persistence ($\beta = .44$). In Chinese sample, optimism also had the strongest relation to school membership ($\beta = .76$) and the other three subfactors had a similar degree of association with school membership ($\beta = .58$ for gratitude, $\beta = .58$ for zest, and $\beta = .60$ for persistence). Total R^2 estimate refers to the amount of variance of school membership explained by the model. The model in which optimism predicted optimism predict school membership explained the largest variation of school membership in both countries: 72% for the U.S. sample and 59% for the

Chinese students. Table 4 displays the total R^2 for all the tested models.

Cross-cultural Differences

Table 5 shows the results of comparisons of each pair of path coefficients between the Chinese and U.S. samples (the visual presentation of the path models is available in Online Supplemental Figure 1). Upon controlling for the effects of gender and age, the associations between covitality and student membership did not vary significantly across the Chinese and U.S. samples, Wald $\chi^2(1) = 1.39, p > .05$. When the four social-emotional strengths' associations with school membership were examined across countries, zest, persistence, and gratitude, respectively, differed significantly indicating an effect of cultural context. U.S. students had a significantly stronger association between gratitude and school membership, Wald $\chi^2(1) = 7.51, p < .05$, whereas the strength of association for zest and persistence with school membership was significantly stronger for Chinese students, Wald $\chi^2(1) = 13.33, p < .001$ for zest; Wald $\chi^2(1) = 6.44, p < .05$ for persistence. The effect size of the cross-cultural differences (ranging from .10 to .16) is the difference of each pair of standardized coefficients across countries (see Table 5; N. Dong, personal communication, November 11, 2018).

Discussion

This study examined cross-cultural differences of the association between social-emotional strengths and school membership among Chinese and U.S. students. Results of path analyses showed that school membership was significantly associated with covitality and the four social-emotional strengths (i.e., gratitude, optimism, persistence, and zest) in both China and the United States. The strength of association of school membership with gratitude, optimism, and zest varied across countries.

The present study found that covitality and the four social-emotional strengths all had

strong and positive associations with school membership in both Chinese and U.S. samples. In comparison to covitality, gender and age effects on school membership were nonsignificant in the U.S. sample, and although statistically significant in the Chinese sample, the strength of associations was small. These findings highlight the salient influence of social-emotional strengths on students' sense of school membership across two countries. It extends Wilkins et al. (2015) findings on school membership's positive correlation with covitality to the Chinese educational context and increases the generalizability of the findings by extending the cross-cultural context across the U.S. and Chinese students.

Gratitude, optimism, zest, and persistence were each positively related to school membership across two countries, which aligns with previous findings about the outcomes and correlates of positive psychological assets (Furlong et al., 2013a; Froh et al., 2011; Peterson & Seligman, 2004; Shimada, Hess, & Nelson, 2013). The aforementioned broaden-and-build theory and social cognitive theories might explain these significant relations, in that have received empirical evidence suggests that students' positive affect mediates the relations of school engagement with social-emotional strengths (Weber et al., 2016). As shown in the study conducted by Shimada et al. (2013), a set of positive attributes (e.g., optimism and empathy), which are similar to the four social-emotional strengths examined in the present study, had robust and positive associations with school bonding among Japanese students. Shimada et al. suggested that these positive attributes were important cognitive beliefs and social behaviors, that fostered interpersonal relationships and a sense of belonging. Additionally, favorable perception of school experiences could elicit more prosocial behaviors and increase positive school-related experiences and relationships with others, resulting in higher levels of school membership. Although all the associations were in the same direction in our findings, optimism

displayed the strongest association with school membership amongst the four social-emotional strengths in both countries, which may be explained by the extensive influence of optimism on students in psychological functioning (Furlong et al., 2009; Cassidy, 2000), social support (Karademas, 2006), and academic performance (Wu, Hoy, & Tarter, 2013). An alternative explanation to the strong association between optimism and school membership is that there are similarities between these two constructs. The optimism items capture students' general expectation for future school experiences and should be largely based on their current experiences with peers and teachers, which was conceptualized by school membership.

Results showed that three of the four subfactors of covitality (i.e., gratitude, zest, and persistence) demonstrated significant cultural differences in their association with school membership. Gratitude was found to have a stronger association with school membership in the U.S. than in China, which may be influenced by how gratitude is conceptualized across cultures. Gratitude is linked to indebtedness and regret in some Southeast Asian cultures (Naito & Washizu, 2015) because of the expectation "to repay" interpersonal benefits conveyed in Buddhist philosophies (Naito & Washizu, 2015), which are influential in Southeast Asian cultures, including China (Fan, 2000; Naito & Washizu, 2015). Naito and Sakata (2010) found that among Japanese, indebtedness was positively associated with an obligation to help rather than a more voluntary desire to altruistically help others. Korean and Japanese individuals also tended to use an apology to express their gratitude (Kumatoridani, 1999). In contrast, U.S. individuals were less likely to associate gratitude with negative emotions compared to people from the United Kingdom (Morgan, Gulliford, & Kristjánsson, 2014). When comparing the relation of positive outcomes and gratitude between Asian and U.S. samples, Lee, Choi, and Lyubomirsky (2013) found a stronger influence for a gratitude intervention on subjective well-

being in U.S. than Korean individuals; these authors attributed this to the blended feelings of thankfulness and obligation associated with the receipt of benefits in Korea. A similar dynamic may account for the weaker relation of gratitude with school membership among Chinese children in the present study.

Zest and persistence were found to have stronger associations with school membership in China than in the United States. The academic-focused culture in Chinese schools may account for these stronger associations (Hui, Sun, Chow, & Chu, 2011). By measurement design, three of the four zest items ask about students' enthusiasm about studying, and the fourth item queries students' general motivation towards school; as such, zest, as measured in this study, was an academic-focused subscale. The linkage between persistence and academic performance is well-documented. Given the high value of academic study in Chinese culture (Chen, Rubin, & Li, 1997), it is reasonable that zest and persistence were highly related to school membership among Chinese students. In the Chinese school context, academic accomplishment is more likely to promote peer relationships, whereas academic failure might lead to peer victimization (Chen et al., 1997; Schwartz, Chang, & Farver, 2001). In the Slaten et al. study (2016a), Asian students reported that academic success helped them develop bonding to school. In contrast, although past studies have exhibited a significant relation between school membership and academic achievement among Western culture students (Goodenow, 1993; Wentzel & Asher, 1995), the connection between academic success and peer relationship was not definitive. Wentzel and Asher (1995) found that students who displayed prosocial behaviors and high academic motivation were less welcomed by peers. Goodenow and Grady (1993) discovered academically motivated students did not have a stronger belief of being valued and supported at school. These findings suggest that the impact of academic success on interpersonal relationships and school

bonding among U.S. students may not be as direct and robust as Chinese students. The high value of academic success in China makes students who perform well academically feel particularly accepted and valued by others, offering an explanation for the strong relations of school membership with zest and persistence found for the Chinese students. This finding suggests that the academic component may play a more significant role in the formation of school membership for Chinese students.

Practical Implications

In the present study, the significant and robust associations between positive social-emotional strengths and school membership found across both countries suggest that fostering an integrated set of social-emotional assets offers an effective strategy to promote the sense of school membership among children from diverse cultural and linguistic backgrounds. Moreover, the cross-cultural differences found in the present study highlight the need for considering how cultural values and contexts might interact with the specific psychological assets targeted in social-emotional learning (SEL) programs. For instance, teachers should understand how students interpret, understand, and express gratitude first in order to advance the culture sensitivity of the SEL instructions. Existing school-wide SEL interventions, such as the Knowledge in Power Program (KIPP), which usually target promoting academic achievement and well-being could be adapted to focus specifically on the school context with the explicit goal of increasing sense of school membership. SEL activities to promote gratitude, such as writing letters expressing their gratitude about various aspects of their school or school personnel, could be utilized to foster students' grateful attitude towards school experiences. Such an approach is suggested and recognized by researchers (e.g., Suldo, 2016). SEL programs and practices could also be adapted for elementary school students to foster social-emotional strengths that mediate a

sense of belonging to school (Greenberg et al., 2003). Examples of such SEL practices include: (a) using school-related scenarios that allow students to practice applying a particular social-emotional strength to solve everyday problems (Oyserman, Terry, & Bybee, 2002; Proctor et al., 2011) and (b) praising students' continuous effort and using games/role-play activities to promote positive thoughts and self-image (Beets et al., 2009; Washburn et al., 2011). Finally, given the strong connection between school membership and the positive assets examined in this study, school membership could also be used as a proximal outcome to evaluate the effectiveness of SEL interventions in addition to distal outcomes, such as academic achievement.

Conclusion

The current study extends the theoretical understanding of school membership in terms of how students' positive personal assets are related to school membership using the covitality framework. Findings suggest the positive associations of school membership with social-emotional strengths generalize across U.S. and Chinese students. However, the variation of the magnitude of association is an indication of possible different emphases of the relations between school membership and positive assets for U.S and Chinese students. The potential cultural differences in the conceptualization of social-emotional strengths suggest that strength-based interventions and positive assets should be examined in a culturally sensitive way. For educators and intervention researchers, cultural elements should be taken into consideration when designing strength-based interventions targeting school membership.

Limitations and Future Directions

There are several limitations in the study that need to be recognized. First, all the measures used in the study were self-report, behold to potential personal bias and social desirability effects (Van de Mortel, 2008). To fully capture school membership as a context and

person interactive construct (Goodenow, 1993), a future study may consider collecting information about contextual factors and observations from parents, peers, and teachers in an effort to examine students' perception of school membership from multiple perspectives. Second, students in this study were recruited from the schools located in the western U.S. and South China as convenience samples. In particular, participating schools in U.S. sample were particularly interested in learning students' social-emotional strength. Such characteristics of the participating limit the generalizability of the findings. Future studies may consider evaluating the associations between strengths and school membership in other Chinese and U.S. samples, and other cultural contexts. Third, we acknowledged that some individual characteristics (e.g., reading comprehension ability and ethnicity) and contextual factors (e.g., family background and class size) were not controlled in this study which might influence the associations among the studied variables. Contextual and individual factors should be taken into account for the associations in the future study.

Future research is needed to examine the effectiveness of strength-based interventions on school membership promotion generally. Few intervention studies have evaluated strategies to enhance school membership or school-membership related variables through a strength-based perspective (e.g., positive affect, prosocial behaviors; Slaten et al., 2016b). Among the available studies, a majority focused on gratitude, and a few have focused on optimism (e.g., Callaghan, 2015; Froh, Sefick, & Emmons, 2008). Available strength interventions usually adopt a holistic approach targeting students' overall development (Furlong et al., 2009), rather than focusing exclusively on promoting school membership. Therefore, interventions employing a combined set of positive traits targeting school membership is absent. In studying how positive traits are associated with school membership, this study sought to aid intervention researchers on school

membership promotion with the emphasis of cultural elements. Additional study is required to provide evidence for strength-based interventions in enhancing school membership with the consideration of a broader perspective, including implementation fidelity and cultural contexts (Durlak et al., 2011). In addition to the four social-emotional strengths assessed in this study, the relations of school membership with other strengths (e.g., self-regulation and self-efficacy) should also be examined in the future. Besides, given the cultural variation found in the magnitude of associations between some social-emotional strengths (i.e., gratitude, zest, and persistence) and school membership, future research should examine the conceptualization of these positive traits among children in U.S. and Chinese contexts to further explicate the cultural similarities and differences.

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Table 1

Fit Statistics for Confirmatory Factor Analysis of Second-order Model of SEHS-P Testing Measurement Invariance by Gender and Age (United States Sample)

Invariance Comparison	χ^2	<i>df</i>	SRMR	RMSEA 90% [CI]	CFI	Model Comparison	$\Delta S-B\chi^2$	Δdf	ΔCFI
<i>Across Gender</i>									
Model 1: configural invariance	366.08***	146	.051	.064 [.055, .072]	.933				
Model 2: first-order factor loadings invariant	378.50***	156	.057	.062 [.054, .070]	.933	2 vs. 1	12.35	10	.000
Model 3: first- and second-order factor loadings invariant	388.89***	159	.065	.062 [.054, .070]	.930	3 vs. 2	12.33**	3	-.003
Model 4: first- and second-order factor loadings and intercepts of measured variables invariant	411.27***	168	.068	.062 [.055, .070]	.926	4 vs. 3	22.34**	9	-.004
Model 5: first- and second-order factor loadings, and intercepts of measured variables and first-order factors invariant	428.64***	171	.073	.064 [.056, .071]	.921	5 vs. 4	20.01***	3	-.005
<i>Across Age Groups</i>									
Model 1: configural invariance	428.51***	219	.053	.062 [.053, .071]	.937				
Model 2: first-order factor loadings invariant	444.84***	239	.062	.059 [.050, .067]	.938	2 vs. 1	21.88	20	-.001
Model 3: first- and second-order factor loadings invariant	448.92***	245	.063	.058 [.049, .066]	.939	3 vs. 2	5.51	6	.001
Model 4: first- and second-order factor loadings and intercepts of measured variables invariant	483.48***	265	.069	.058 [.049, .066]	.934	4 vs. 3	36.69	20	-.005
Model 5: first- and second-order factor loadings, and intercepts of measured variables and first-order factors invariant	493.13***	271	.069	.057 [.049, .065]	.933	5 vs. 4	15.17	6	-.001

** $p < .01$. *** $p < .001$.

Table 2

Fit Statistics for Confirmatory Factor Analysis of Second-order Model of SEHS-P Testing Measurement Invariance by Country (United States and Chinese Samples)

Invariance comparison	χ^2	df	SRMR	RMSEA 90% [CI]	CFI	Model Comparison	$\Delta S-B\chi^2$	Δdf	ΔCFI
<i>Across Country</i>									
Model 1: configural invariance	434.51***	146	.037	.047 [.042, .053]	.942	—	—	—	—
Model 2: first-order factor loadings invariant	450.87***	156	.045	.046 [.041, .051]	.941	2 vs. 1	56.57***	10	-.001
Model 3: first- and second-order factor loadings invariant	457.41***	159	.048	.046 [.041, .051]	.940	3 vs. 2	10.12**	3	-.001
Model 4: first- and second-order factor loadings and intercepts of measured variables invariant	640.01***	169	.060	.056 [.052, .061]	.906	4 vs. 3	291.94***	10	-.34
Model 5: first- and second-order factor loadings, and intercepts of measured variables and first-order factors invariant	832.34***	172	.073	.066 [.062, .071]	.868	5 vs. 4	544.19***	3	-.38

** $p < .01$. *** $p < .001$.

Table 3

Fit Statistics for Confirmatory Factor Analysis of Unidimensional Model of PSSM Testing Measurement Invariance across Nation (United States and Chinese Samples)

Comparison by Country	χ^2	df	SRMR	RMSEA 90% [CI]	CFI	Model Comparison	$\Delta S-B\chi^2$	Δdf	ΔCFI
Model 1: configural invariance	249.41***	54	.035	.064 [.056, .072]	.950	—	—	—	—
Model 2: factor loadings invariant	267.85***	62	.083	.062 [.054, .069]	.946	2 vs. 1	47.75***	8	-.004
Model 3: factor loadings and intercepts of measured variables invariant	308.52***	65	.056	.065 [.058, .073]	.937	3 vs. 2	47.33***	3	-.009

*** $p < .001$.

Table 4

Model Fit Statistics and R² Values of the Hypothesized Path Model for Chinese and United States Students

Model	Nation	χ^2	<i>df</i>	CFI	SRMR	RMSEA 90% [CI]	<i>R</i> ²
Model 1:	U.S.	807.55***	269	.907	.057	.052 [.048, .056]	.53***
Covitality → School membership	China	774.49***	269	.910	.050	.043 [.040, .047]	.57***
Model 2:	U.S.	197.79***	73	.950	.044	.048 [.040, .056]	.46***
Gratitude → School membership	China	256.83***	73	.908	.050	.050 [.043, .057]	.34***
Model 3:	U.S.	203.43***	75	.948	.035	.048 [.040, .056]	.72***
Optimism → School membership	China	262.20***	75	.936	.038	.050 [.043, .056]	.59***
Model 4:	U.S.	263.00***	88	.946	.049	.052 [.044, .059]	.21***
Zest → School membership	China	321.72***	88	.933	.043	.051 [.045, .057]	.35***
Model 5:	U.S.	276.38***	88	.931	.043	.054 [.046, .061]	.19***
Persistence → School membership	China	317.86***	88	.938	.045	.051 [.045, .057]	.36***

Note. Gender and age were controlled in each model. The sample sizes for China and United States were 1,009 and 747, respectively.

*** $p < .001$.

Table 5

Coefficients for the Relations Between Covitality and School Membership, and Comparisons of Coefficients between United States and Chinese Samples

Model		Full United States sample		Full Chinese sample		Wald	Effect
		School membership coefficients (SE)		School membership coefficients (SE)		χ^2	size
		β	B	β	B		
Model 1: Second-order	Covitality	.73 (.03)***	.97 (.08) ***	.75 (.03)***	.87 (.06) ***	1.39	.02
	Gender <small>(reference group = female)</small>	.04 (.03)	-.10 (.07)	-.06 (.03)	-.11 (.06)*		
	Age	.01 (.03)	.01 (.05)	-.07 (.03)	.10 (.04)***		
Model 2: Gratitude	Gratitude	.68 (.04)***	.78 (.07)***	.58 (.03)***	.51 (.04)***	7.51*	.10
	Gender <small>(reference group = female)</small>	.06 (.03)	.13 (.08)	-.07 (.03)*	-.13 (.06)*		
	Age	.01 (.03)	-.01 (.05)	-.07 (.03)*	.09 (.04)*		
Model 3: Optimism	Optimism	.85 (.03)***	1.29 (.12)***	.76 (.03)***	.89 (.09)***	0.01	.09
	Gender <small>(reference group = female)</small>	-.03 (.03)	-.07 (.07)	-.11 (.03)***	-.23 (.06)***		
	Age	.01 (.03)	.02 (.04)	.05 (.03)	.06 (.04)		
Model 4: Zest	Zest	.46 (.04)***	.59 (.06)***	.58 (.03)***	.69 (.06)***	13.33***	.12
	Gender <small>(reference group = female)</small>	.04 (.04)	.09 (.08)	-.11 (.03)***	-.21 (.06)***		
	Age	-.00 (.04)	-.01 (.05)	.05 (.03)	.07 (.04)		
Model 5: Persistence	Persistence	.44 (.04)***	.69 (.09)***	.60 (.03)***	.73 (.06)***	6.44*	.16
	Gender <small>(reference group = female)</small>	-.01 (.04)	-.01 (.08)	-.11 (.03)***	-.22 (.06)***		
	Age	-.03 (.04)	-.05 (.06)	.04 (.03)	.06 (.04)		

Note. Wald χ^2 tests were conducted to determine whether coefficients for the United States and China were significantly different. For all Wald χ^2 tests,

$df = 1$. B = unstandardized beta. β = standardized beta. SE = standard error.

* $p < .05$. *** $p < .001$.