



# Predicting School Belonging through School Liking and Early Parental Involvement

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## INTRODUCTION

- ❖ Sense of belonging is often viewed as a fundamental need and is associated with a number of outcomes such as psychological well-being. A variation of this idea is school belonging – an aspect of belonging based on a student’s sense of connectiveness with school which is predicated on social support (e.g., respect and acceptance from parents, teachers, and classmates) and school involvement (e.g., participation in school clubs, sports, etc.; Dukynaite & Dudaitė, 2017; Shaw, 2019).
- ❖ Recent research has found that school belonging is an important factor in academic achievement and academic functioning. Furthermore, school belonging was a strong predictor in internalizing and externalizing behaviors in adolescents, most notably depression and truancy. Overall, elementary school students who reported higher school belonging, compared to students who reported low, tended to also be more likely to report less emotional and behavioral problems and higher academic achievement (Arslan, 2019).
- ❖ One notable predictor of school belonging is family involvement, especially early parent-child interactions. An oft-researched example of this interaction is the effects of parents reading to their children at an early age which can have a major impact on a child’s literacy development (Crosby et al., 2015).
- ❖ Prior research has mentioned a link between parent-child interactions prior to the start of school and school belonging; however, further research is needed to clearly define the relationship.
- ❖ Additionally, long-term orientation has been found to be a strong indicator of academic performance and liking (Fang et al., 2016).

## Present Study

- ❖ The current research examines the relationship between parent-child interactions prior to the start of school and school belonging.
- ❖ It is hypothesized that students’ liking of mathematics would act as a mediator in this relationship.
- ❖ Fourth grade students from three countries were chosen in order to examine countries with different degrees of long-term orientation.

## METHOD

- ❖ **Participants**
  - ❖ The present study utilized data collected from the Trends and International Mathematics and Science Study (TIMSS; 2015).
  - ❖ TIMSS includes data collected from school-aged children around the world.
  - ❖ Long-term orientation rank (LTO-R) was established using Hofstede Insights.
  - ❖ The current study focuses on data drawn from fourth grade participants located in the following countries:
    - ❖ Canada ( $n = 9,855$ ; female = 50.8%; male = 49.1%; LTO-R = 3)
    - ❖ France ( $n = 4,270$ ; female = 50.7%; male = 49.3%; LTO-R = 2)
    - ❖ South Korea ( $n = 5,448$ ; female = 48.8%; male = 51.2%; LTO-R = 1)
- ❖ **Procedures and Measures**
  - ❖ Participants completed surveys that pertained to variables such as school belonging (the connectedness the participants feel toward their respective schools), family involvement (prior parent-child interactions in the participants’ early learning), and liking of math (see table 1).
- ❖ **Data Analysis**
  - ❖ Demographic and reliability analyses were conducted in IBM SPSS version 27.
  - ❖ IBM Amos was used to conduct a series of structural equation models examining the mediating ability of the participants’ liking of mathematics to the relationship of parent-child interactions (prior to the start of schooling) and school belonging.

## Results

Table 1.

Information for items used.

Variable	Example Item	Higher Scores Indicate	Alpha
Prior Family Involvement (16 items)	<i>Before your child began primary/elementary school, how often did you or someone else in your home do the following activities (read books, sing songs, etc.) with him or her?</i>	More early-age parental involvement	.877
Math Liking (9 items)	<i>I enjoy mathematics.</i>	More favorable view of mathematics	.680
School Belonging (7 items)	<i>I feel safe when I am at school.</i>	Higher level of school belongingness	.790

### ❖ Omnibus Model Fit:

- ❖  $X^2 (450) = 14218.663$ ,  $p < .001$ ; GFI = .955; CFI = .948; RMSEA = .04.

### ❖ Canada Model Fit:

- ❖  $X^2 (450) = 7705.964$ ,  $p < .001$ ; GFI = .952; CFI = .948; RMSEA = .04.

### ❖ France Model Fit:

- ❖  $X^2 (450) = 3346.424$ ,  $p < .001$ ; GFI = .952; CFI = .936; RMSEA = .04.

### ❖ Korea Model Fit:

- ❖  $X^2 (450) = 5011.020$ ,  $p < .001$ ; GFI = .942; CFI = .946; RMSEA = .04.

### ❖ Invariance Analysis

- ❖ When assuming the unconstrained model is correct, high levels of misfit were found suggesting the models differ significantly.
- ❖ Measurement model:  $\chi^2 (58) = 1709.690$ ,  $p < .001$ ; NFI = .006; TLI = .004.
- ❖ Structural Model:  $\chi^2 (64) = 1732.026$ ,  $p < .001$ ; NFI = .006; TLI = .004.

Figure 1.

Example structural equation model for the full sample with significant standardized weights.

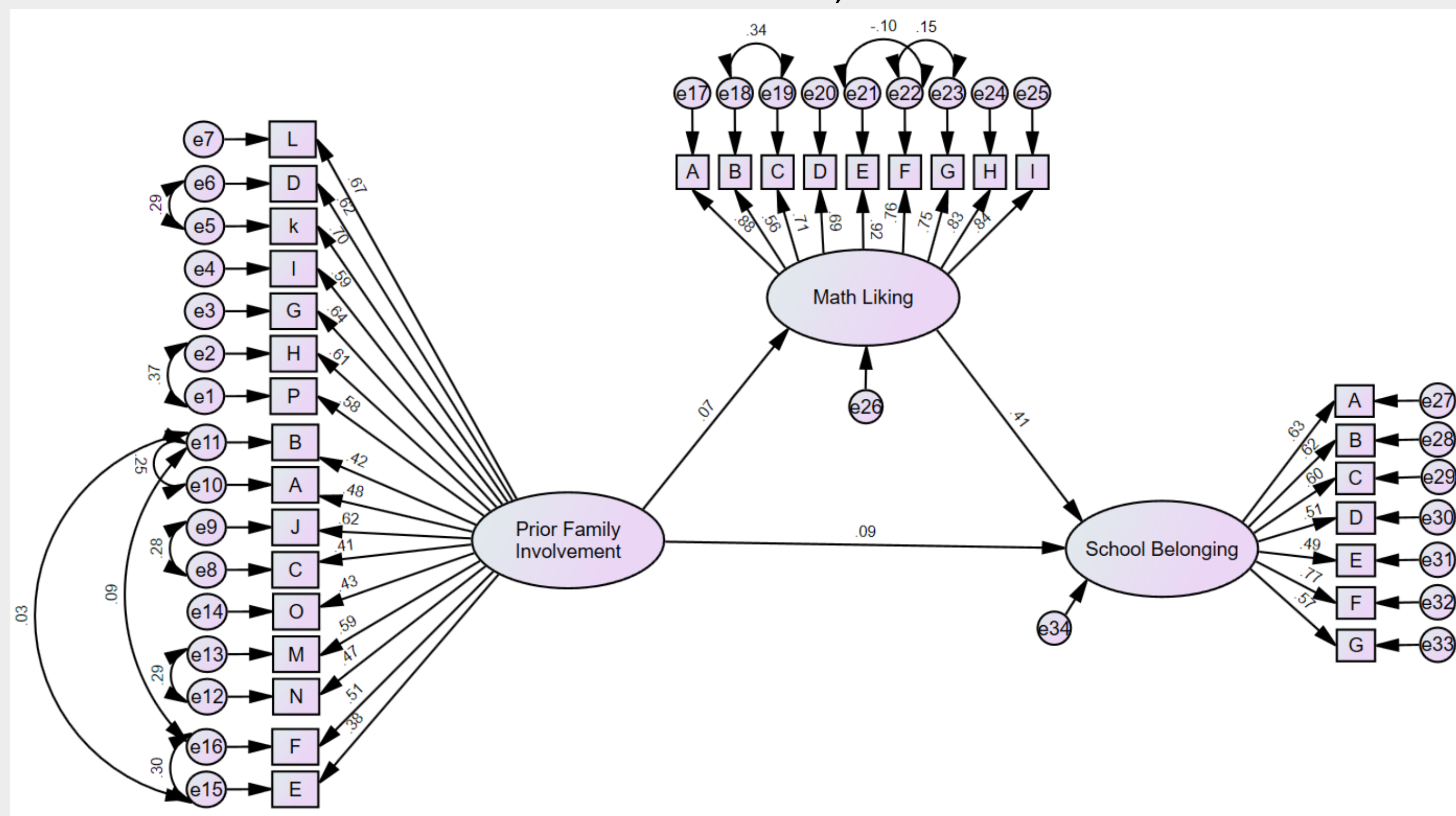


Table 2.

Standardized regression weight and mediation results for each structural equation model.

IV (n)	Full Model IV → M	Full Model M → DV	Full Model IV → DV	Un-mediated IV → DV	Freedman-Schatzkin (df)	Aroian	% Mediated
Full (19,573)	0.070	0.413	0.086	0.115	45.427 (19,571)***	8.479***	25.14%
Canada (9,855)	0.055	0.424	0.075	0.098	19.995 (9,853)***	4.828***	23.80%
France (4,270)	0.044	0.408	0.043	0.061	13.972 (4268)***	2.535*	29.43%
Korea (5,448)	0.136	0.396	0.067	0.121	23.95 (5,446)***	8.63***	44.51%

Note. \* $p > .05$ ; \*\* $p > .01$ ; \*\*\* $p > .001$

## Discussion

- ❖ The results of the overall model demonstrates that liking of mathematics significantly mediates the relationship between parental involvement and school belonging. This finding supports our hypothesis.
- ❖ These findings from the full model are also consistent when examining the model across the three countries. However, the amount of mediation math liking contributes to each model varies across countries.
- ❖ However, the invariance analysis suggests that both the structural model and measurement model differ significantly across the countries. As a result, the path between the latent variables differed across the three countries. Additionally, how each individual item loaded onto the construct was inconsistent.
- ❖ In Canada, math liking mediated the relationship between school belonging and parental involvement at 24%. In France, math liking mediated the relationship at 29% and in Korea at 45%.
- ❖ These findings are consistent with past literature which has shown support for the relationship among school belonging, school liking, and parental involvement. For example, the relationship between school liking and school belonging was found in young students from Japan (Honma & Uchiyama, 2014) and the mediated role of parental involvement between school belonging and academia was found with Latinx students (Kuperminc, Darnell, & Alvarez-Jimenez, 2008).
- ❖ Findings from the present study shows further support of these variables and their relationships with other cultural contexts: Canada, France, and Korea.

## Limitations and Future Directions

- ❖ The present study utilizes a public use dataset that includes a set of pre-existing variables. As such, we were somewhat limited in the variables that were included in this study.
- ❖ Additionally, the present study examines a cross-sectional dataset. Future studies may consider a longitudinal design that tracks student experiences and attitudes with these constructs over time. Doing so would allow researchers to determine the causality of family involvement on academic liking and school belonging.

## Conclusion

- ❖ Findings support the present study’s hypotheses that students’ liking of mathematics would serve as a mediator in the relationship between prior family involvement and school belonging.
- ❖ Additionally, through comparisons, results showed that South Korea, the nation with the highest rating of long-term orientation, yielded the highest mediation of student liking of mathematics.
- ❖ Although differences were found across the three nations, additional research is needed to address the issue of measurement invariance as well as any changes over time.

## Contact Information

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