

The Mediating Effect that Degree of Urbanization Exerts on the Academic Performance of Taiwanese High School Students and the Educational Aspirations of Their Family Members

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Abstract

This study explores how the degree of urbanization can serve as a mediating variable for the academic performance of senior high school students and the educational aspirations directed at them by family members. Participants were recruited from one high school from Miaoli City, which is urban, and another high school in Taitung County, which is rural. Questionnaires were disseminated among participants, with 685 completed copies returned. The return rate was 71.65%. Results revealed that the degree of urbanization serves a full mediating effect between Taiwanese senior high school student academic performance and the educational aspirations directed at them by their family members. Future researchers might broaden the scope of this research by examining more variables and exploring the interrelationships between them using the Wisconsin model.

Keywords: degree of urbanization, academic performance, significant others' educational aspirations, mediating variable

1. Introduction

The Wisconsin model presented by Sewell et al. (1969) describes how one's academic performance has a significant influence on what family members think of this person. That is, a student's increased academic success will very likely enhance family member's educational aspirations for that person (Sewell et al., 1970). This might be a reasonable expectation from the family member's perspective. In Taiwan, however, most parents have high expectations of their offspring irrespective of that child's academic achievements. Wu (1999) made a comparison of how pupils behave and perform in the primary schools of Taipei City and Taitung County, and concluded that geographic area exerts a direct influence on academic performance. In other words, level of urbanization is presumed to be a factor that accounts for the academic performance of an elementary school student. Before the year 2014, Taiwan's students needed to take the "Basic Competence Test for Junior High School Students" before enrolling in a senior high school. Those who got higher scores often chose a school that was located in a highly urbanized area, thus resulting in a positive correlation between higher academic achievement and a school's degree of urbanization.

Parents who live in urban areas have higher educational aspirations than their counterparts in remote areas (Chou, 2006; Yang, 1995), whereas students with higher socio-economic status usually have higher educational attainment (Lee & Hwang, 2011; Ma, 1985; Sewell et al., 1969; Sewell et al., 1970; Teachman, 1987). Those who perform better academically tend to receive higher educational aspirations from their family members (Sewell et al., 1969; Sewell et al., 1970). Students in Taiwan who attend schools in urban areas generally come from better socio-economic backgrounds, and prove to be high achievers at school, which in turn leads to higher educational expectations from the significant people in their lives. Therefore the present study attempts to use the degree of urbanization as a mediating factor, in order to examine how urbanization plays an intervening role when one's educational attainment interacts with expectations. The goal is to reveal the real impact of academic performance on the educational aspirations that come from family members.

2. Methodology

This study selected research participants from two vocational schools: one in Taitung County, and the other in Miaoli City. The survey was conducted in December 2010, using the Significant Others' Educational Aspirations Scale (Chou, 2009). A total of 956 questionnaires were distributed among the participants. A total of 867 copies were returned, of which 685 copies were completed. The effective return rate was 71.65%. The author employed the mediated-effects model developed by Baron & Kenny (1986) and regression analysis to verify the mediating effect of urbanization on academic achievement and the educational aspirations of family members.

3. Results and Discussions

3.1 Results

In Table 1, a regression analysis of route #a reveals that the predictive power of academic performance over the degree of urbanization is shown as $r=.400$, $R^2=.160$, and $p<.001$. This indicates that academic achievement has a remarkable predictive power for level of urbanization (explanatory power: 16%). Hence route #a is established.

The regression analysis of route #b reveals that the predictive power of urbanization on the educational aspirations of family members is shown as $r=.366$, $R^2=.134$, and $p<.001$. This evinces the remarkable predictive power of urbanization on the educational aspirations of family members (explanatory power: 13.4%). The senior high school students living in highly urban areas ($\beta=.366$, $p<.001$) tend to have remarkably higher educational expectations from their families. Hence route #b is established.

The regression analysis of route #c indicates that academic performance has significant predictive power for the educational aspirations of family members ($r=.142$, $R^2=.020$, $p<.001$). This suggests that academic achievement has remarkable predictive power for the educational aspirations of family members (explanatory power: 2%). When the degree of urbanization factor was added into route #c, it demonstrated a remarkable predictive power over the educational aspirations of family members ($r=.366$, $R^2=.134$, $p<.001$) with an explanatory power at 13.4%. Academic performance was previously presumed to hold a strong predictive power over the educational expectations of family members, but it instead displays a neutral effect ($\beta=-.005$, $p>.05$) once the degree of urbanization was taken into consideration. Therefore it is safe to assume that the degree of urbanization exerts a full mediating effect on the relationship between Taiwanese senior high school students' academic achievement and the educational aspirations of their family members.

Table 1A regression analysis of the mediating effect of urbanization on academic performance and the educational aspirations of family members

	Degree of urbanization		educational aspirations					
	Route #a		Route #b		Route #c		Route #c (after medicating variable was added)	
Variable	b	(β)	b	(β)	b	(β)	b	(β)
Academic performance	.011** *	(.400)			.070***	(.142)	-.002	(-.005)
Degree of urbanization			6.531***	(.366)			6.567***	(.368)
Constant	.891***		31.518***		37.471***		31.620***	
R square	.160		.134		.020		.134	
N	685		685		685		685	
R	.400		.366		.142		.366	
F	130.323***		105.403***		14.143***		52.784***	

*** $p<.001$

3.2 Discussion

The current study employed the mediated-effects model presented by Baron & Kenny (1986) to explore whether the degree of urbanization (where a school is situated) plays an intervening role in the relationship between academic achievement and the educational expectations from family members. The research results revealed that the degree of urbanization actually serves as a mediating variable between a Taiwanese senior high student's academic attainment and her/his family members' educational aspirations. In general, students who perform well attend schools located in highly urbanized areas.

This suggests that higher-ranking schools in urban areas are favored by Taiwanese students. Those with worse performance at school have fewer choices and can only attend schools in less urban areas. Although there exists a positive correlation between academic achievement and the educational aspirations of family members, which supports the conception of the Wisconsin model, the addition of a “degree of urbanization” variable offsets the abovementioned effect.

4. Conclusion

Results indicate that the urbanization level of a senior high school exerts a full mediating effect on the relationship between academic performance and the educational aspirations of family members. When the degree of urbanization variable was added into the Wisconsin model, the senior high students’ academic achievements held little impact on the educational aspirations directed at them by family members. It follows that when the school’s degree of urbanization is excluded from the whole picture, the impact of a senior high student’s academic attainment on significant others’ educational expectations is overrated.

5. Recommendations

As the author only selected two senior high schools (one in eastern Taiwan, one in western Taiwan) for this survey, it is advised that future researchers broaden the scope of study so as to increase the generalizability of results. If senior high schools in different districts across Taiwan can be randomly sampled for research, an increasing number of representative and generalizable research results can be collected. Secondly, due to time and manpower constraints, this study only selected a few variables for analysis. It is recommended that future researchers increase the number of variables in order to fully explore the interrelationships among all variables in the Wisconsin model, thereby contributing to a better understanding of the educational scenarios in Taiwan. For example, Chen & Hwang (2011) added a “cram schooling” variable (after-school learning activities) into the Wisconsin model, only to discover that the effect of after-school classes had previously been overrated.

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