Replicating Factor Analyses Across Years: Aspiration Results for Rural Middle School Students

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Abstract

A cross validation study was conducted using data from white, rural seventh graders to investigate the stability of the construct validity of a model of eight conditions that are purported to support adolescent academic aspirations. A factor analytic study examined GEAR-UP survey data from 4,365 students across two consecutive years. In contrast to the model proposed by the University of Maine, the results of this study supported a four-factor model that persisted across years and gender. These factors are Self-Efficacy, Teacher-Centric, Leadership, and Like School. While the factors were consistent, the weightings did vary by gender and by year with girls rating the Teacher-Centric factor as most important and boys rating Self-Efficacy first across time periods.

Replicating Factor Analyses Across Years:
Aspiration Results for Rural Middle School Students

Student aspirations extend far beyond individual dreams or ambitions. Aspirations encompass individual and family educational goals, career choices, and self-concept. Quaglia and Perry (1993) define aspirations as being composed of two components: inspiration and ambitions. “Ambitions represent an individual’s ability to look ahead and invest in the future. Inspiration can be described as the individual’s ability to invest the time, energy, and effort presently to reach their ambitions” (p. 2). According to Abu-Hilal (2002), these aspirations have more influence over achievement than do attitudes toward school subjects.

Four variables have been identified by various researchers on student aspirations as appearing to influence the nature of these aspirations. These variables are gender, income, race/ethnicity, and culture. Of these, gender effects have been less consistent (Mau, 1995; Mau & Bikos, 2000; Mau, Hitchcock, & Calvert, 1998; Ramos & Sanchez, 1995; Trusty, Robinson, Plata, & Ng, 2000; Van Hook, 1993; Wahl & Blackhurst, 2000). Van Hook (1993) studied rural early adolescents and found no differences by gender for academic self-concept or achievement but did find differences by race. Mau (1995) found differences in educational aspirations by gender and among various racial groups, with females holding higher educational aspirations than males and perceiving their parents to have higher aspirations across all racial groups. Trusty, Robinson, Plata, and Ng (2000) found gender to be the strongest predictor of choice of majors by college students, followed by eighth-grade performance and socioeconomic status.

While persisting across differences in the other variables, gender effects appear to be confounded by them. In order to have a clearer understanding of the effects of gender on student aspirations, both Mau and Bikos (2000) and Trusty, Robinson, Plata, and Ng (2000) suggested further studies on student aspirations that isolated gender effects from income, race/ethnicity, and culture.

Another concern regarding the study of student aspirations is that the forces mentioned earlier (gender, income, race/ethnicity, and culture) represent individual differences that are not amenable to change. In an attempt to approach the study of student aspirations from a different perspective, researchers at the University of Maine's National Center for Student Aspirations identified eight conditions that purport to support high levels of aspirations in youth: achievement, belonging, curiosity, empowerment, excitement, mentoring, risk taking, and self-confidence (Plucker & Quaglia, 1998). The authors state that these conditions "provide an interpretive template that frames how students can be viewed and how schools can positively support . . . the development of student aspirations" (p. 253). Further research at the university's College of Education and Human Development resulted in modifications to the eight factors related to student aspirations. These eight conditions, which "emphasize the importance of putting the students at the center of any school initiative or program" (University of Maine, 1999, p. 1), include:

- Belonging: "a relationship between two or more individuals characterized by a sense of connection, support, and community" (p. 19)
- Heroes: "people who children admire and imitate because of their personal talents" (p. 20)
- Sense of Accomplishment: In addition to academic success, "should recognize effort, perseverance, and citizenship as important signs of children's success" (p. 22)

- Fun and Excitement: “involves being interested in something, being emotionally involved, or having an intense experience or desire of some kind” (p. 23)
- Spirit of Adventure: “characterized as a child’s ability to take on positive, healthy challenges” (p. 24)
- Curiosity and Creativity: “characterized as inquisitiveness, eagerness, a strong desire to learn new or interesting things, and a desire to satisfy the mind with new discoveries” (p. 25)
- Leadership and Responsibility: “give children control and responsibility for their actions and words” (p. 26)
- Confidence to Take Action: “the extent to which children believe in themselves … [and] is related to self-regard, self-esteem, self-worth, and self-respect” (p. 27).

Unlike gender, income, race/ethnicity, and culture, the above conditions can be manipulated to create an environment conducive to increasing student aspirations. In an effort to reconcile these perspectives on the study of early adolescent student aspirations, the authors combined the two approaches. White, rural Appalachian early adolescents’ perceptions of the eight conditions that support aspirations were studied through the lens of gender (Wilson, Wilson, Cowley, Meehan, & O’Keefe, 2003/2004). A factor analysis was performed resulting in four factors: Teacher-Centric, Self-Efficacy, Leadership, and Like School. The Teacher-Centric factor includes items about the teacher’s attitude toward the student and the student’s belief about the level of support from the teacher. This factor primarily includes items from the belonging, heroes, and sense of accomplishment conditions reported by the University of Maine (1999). The Self-Efficacy factor contains items that describe the ability to identify a problem and take corrective action. The items include the confidence to take action and sense of accomplishment conditions in the literature (University of Maine, 1999). However, items in this factor also include characteristics of intellectual curiosity and excitement about learning. In the Leadership factor, the items are all related to effective leadership. They

include being excited about seeking the solution to problems and reflect the influence of both peers and teachers on leadership perceptions. The emphasis is on leadership attitudes rather than on skills. This factor has some similarity to the leadership and responsibility, curiosity and creativity, and spirit of adventure conditions described by the University of Maine. Ownership of learning and the resulting enjoyment characterize the Like School factor. The items in this factor primarily appeared in the fun and excitement condition as identified by the University of Maine.

Research Question

This study is an attempt to cross-validate the results of the previous study (Wilson et. al., 2003/2004) by surveying a different sample of the population to see if the four-factor model of conditions that support student aspirations holds and whether the gender-mediated perceptions noted before persisted.

Methods

Participants

The data for this study were collected as a part of baseline surveys administered to seventh graders beginning in two federally-funded Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) in West Virginia for two years. West Virginia has 55 counties. The Fairmont State College (FSC) GEAR UP grant included 29 participating middle schools in its nine-county, north central region, and the West Virginia Department of Education (WVDE) GEAR UP grant included 25 participating middle schools in its eight-county, south central region. Sample 1 included incoming seventh graders in the 2001-2002 school year and Sample 2 included incoming seventh graders in the 2002-2003 school year.

There was a total of 3,733 seventh graders in Sample 1 who returned usable surveys and there was a total of 3,682 seventh graders in Sample 2 who did the same. Sample 1 included 48.7% males and 51.3% females; Sample 2 included 49.0% males and 51.0% females. The large majority (over 71%) of each sample was 12 years old. Also, the vast majority of both samples (over 89%) reported themselves as white, which is slightly less than the statewide figure of 95% for adults (U.S. Census Bureau, n.d.). Over two-thirds of both samples attended schools designed as Johnson code "7" or rural as reported by the National Center for Education Statistics (n.d.). From these samples, only the responses from students who were white and attended rural schools were used for this study. Thus Sample 1 included 2,315 seventh graders; 47.7% were male and 52.3% were female. Sample 2 included 2,050 seventh graders, separated by gender as 48.8% male and 51.2% female.

Instruments

The instrument employed in this study was an augmented version of the "Conditions Affecting Aspirations" section of the *Students Speak: My Education and My Future* survey developed by University of Maine researchers and used in their statewide project (University of Maine, 2000a, 2000b). The original conditions of aspirations section included 28 items measuring the eight conditions of belonging, heroes, sense of accomplishment, fun and excitement, spirit of adventure, curiosity and creativity, leadership and responsibility, and confidence to take action. In the first year, 2000-2001, that AEL researchers used the 28 conditions affecting aspirations items in their baseline survey of FSC seventh graders, two subscales yielded unsatisfactory Cronbach alpha internal consistency reliability coefficients [spirit of adventure = .54 and

leadership and responsibility = .48] for the 2,414 usable surveys (Cowley, 2001). In effort to produce more satisfactory internal consistency reliability in those subscales in subsequent administrations to seventh graders, AEL staff added two items to the spirit of adventure subscale and three items to the leadership and responsibility subscale (Cowley, Finch, & Blake, 2002a; Cowley, Finch, & Blake, 2002b). Thus, the augmented instrument used in this study consisted of 33 items unevenly distributed across the eight condition subscales. Reverse-ordered items were restated for consistency of responses for the population surveyed (Wilson et. al., 2003/2004).

The response option for the 33 items was a 5-point Likert-style format. Students were asked to respond with a number from 1 to 5 representing a continuum of Strongly Disagree to Strongly Agree. Cronbach alpha internal consistency reliability coefficients were generated at the conditions subscale level for each sample. For Sample 1, the Cronbach alphas ranged from .65 (confidence to take action) to .78 (belonging). For Sample 2, the alpha reliabilities ranged from .67 (spirit of adventure and leadership) to .79 (belonging).

Procedures

The machine-scorable paper surveys were photocopied, collated, and shipped to the GEAR UP staff for distribution to their schools in the fall. Teachers administered the instruments during class time, placed them in an envelope, and mailed them back to AEL for processing. The majority of the schools returned their instruments in September and October of each year, but a few schools took until November or December to return their surveys. The response rates for all participants involved in the survey varied from

82% in 2001-2002 for both GEAR UP project samples combined to 78% in 2002-2003 for both samples combined.

For Sample 1, using SPSS statistical software, an unconstrained, exploratory factor analysis with Varimax rotation and Kaiser correction was performed using the 33 aspiration items from the student survey for white, rural Appalachian, seventh-grade students by gender. In order to be included in a factor, the item had to load at least at the .400 level (Wilson et. al., 2003/2004). In order to cross-validate the factors, an unconstrained exploratory factor analysis was again performed on Sample 2 and evaluated independently. These factors were generated using three methods: (1) by setting the eigenvalue of 1.00 with no delimiter on the number of factors for an exploratory approach, (2) by reviewing factor patterns in which the eigenvalue was allowed to be less than 1.00, and (3) by limiting the number of factors to four, given the findings from the first two methods. Based on the information generated using the above methods, four factors were created with items that loaded at least at the .400 level.

Results

The best-fit models from the factor analyses were determined to be four factor solutions for each gender. Other factor solutions either yielded fragmented factors or greater than acceptable disparities in the variance explained by each factor.

On the basis of these results, the best fit four factor model was selected. The resultant analyses yielded the same four factors across genders, with minor fluctuations in items and their respective loading values. The factors fell into two categories of internal and external locus of control. The two internal factors included Self-Efficacy and

Leadership; the two external factors included Teacher-Centric and Like School. For males, Self-Efficacy was the strongest factor. For females, the Teacher-Centric factor was the strongest. These factors are similar to those found in the 2001-2002 (Sample 1) analyses (Wilson et. al., 2003/2004).

In comparing the 2001-2002 (Sample 1) data to those from 2002-2003 (Sample 2), it was noted that for males the total variance subsumed by the model was 49.87% for Sample 1 and 51.76% for Sample 2. In a similar comparison for females, 48.57% was subsumed for Sample 1 while Sample 2 was noted at 51.20%. Specific variances for each factor are noted in Tables 1 through 4.

While the same four factors emerged for males across years, the order of the third and fourth factors switched from Sample 1 to Sample 2. In each sample, Self-Efficacy and Teacher-Centric were the highest loading factors, in order. In Sample 1, Leadership, with 12.63%, constituted the third factor and Like School, with 9.88%, was fourth. In Sample 2, these factors switched order with Like School, 11.60% of the variance, and Leadership, 10.25% of the variance, respectively. In both Sample 1 and Sample 2, it is clear that Self-Efficacy and Teacher-Centric are the dominate factors for males. In Sample 1, Self-Efficacy and Teacher-Centric constituted 13.69% and 13.67% of the variance, respectively. In Sample 2, these values were 15.36% for Self-Efficacy and 14.55% for Teacher-Centric.

Table 1: Pattern/Structure Coefficients for Boys' Sample 1 (20001-2002) (n = 1,105)

			Factors			
			I (SE) 13.69%	II (TC) 13.67%	III (L) 12.63%	IV (LS) 9.88%
Confid	88	Anyone can succeed if they work hard enough.	**.615**	.283	.170	.101
Accomp	70	I believe I can always improve.	**.613**	.296	.277	.033
Accomp	78	I put forth the necessary effort to reach a goal.	**.581**	.108	**.437**	.141
Confid	72	I am confident in my ability to do well.	**.565**	.181	**.477**	.037
Advent	82	I am eager to learn new things.	**.560**	.070	.251	.396
Advent	89	I have opportunities to decide what I learn about.	**.535**	.128	.082	.379
Leader	75	I accept responsibility for my actions.	**.519**	.182	.307	.163
Leader	87	Teachers expect me to be a good decision maker.	**.512**	.299	.119	.237
Curios	80	My courses help me understand what is happening ...	**.506**	.217	.154	.356
Belong	66	Teachers respect my thoughts.	.015	**.759**	.224	.237
Belong	65	Teachers care about my problems and feelings.	.077	**.737**	.176	.221
Accomp	69	Teachers care about my success in class.	.376	**.679**	.119	.090
Belong	74	Teachers value my opinions.	.192	**.609**	.190	.350
Heroes	77	Teachers help me to succeed.	**.439**	**.608**	.096	.177
Heroes	71	Teachers expect me to succeed.	**.467**	**.560**	.200	-.020
Advent	79	Teachers support me when I try something new.	.360	**.524**	.138	.328
Accomp	81	Teachers tell me I do a good job when I try my best.	**.426**	**.513**	.059	.240
Curios	90	Teachers encourage me to ask questions.	.369	**.466**	.071	.298
Leader	60	I am a good leader.	.162	.008	**.663**	.168
Leader	58	I can take control of situations.	.138	.095	**.643**	.005
Advent	59	I know what I want and I go after it.	.248	.100	**.621**	.046
Curios	67	I seek solutions to complex problems.	.062	.218	**.620**	.165
Advent	61	I can select the best way to solve a problem.	.143	.058	**.611**	.175
Leader	62	I do what I say I will.	.252	.039	**.568**	.061
Heroes	64	I am a positive role model to other students.	-.117	.187	**.564**	.354
Confid	73	I take action on causes I believe in.	.397	.187	**.471**	.088
Heroes	68	I have a strong caring relationship with an adult.	.144	.246	**.444**	.099
Fun/Exc	86	I am not usually bored in school.	.095	.068	.129	**.691**
Fun/Exc	83	Teachers make learning exciting.	.229	.368	.045	**.665**
Fun/Exc	63	I usually have fun in class.	.096	.222	.282	**.584**
Heroes	84	A teacher is a positive role model for me.	.224	.267	.175	**.568**
Curios	85	Teachers allow me to explore interesting topics.	.315	.352	.180	**.438**
Belong	76	I am proud of my school.	.266	.360	.124	**.433**

Table 2: Pattern/Structure Coefficients for Girls' Sample 1 (2001-2002) (n = 1,210)

			Factors			
			I (TC) 14.33%	II (L) 11.83%	III (LS) 11.81%	IV (SE) 10.60%
Belong	66	Teachers respect my thoughts.	**.756**	.266	.179	.075
Belong	65	Teachers care about my problems and feelings.	**.733**	.222	.239	-.033
Accomp	69	Teachers care about my success in class.	**.681**	.055	.129	.343
Belong	74	Teachers value my opinions.	**.661**	.241	.232	.135
Advent	79	Teachers support me when I try something new.	**.629**	.079	.334	.201
Accomp	81	Teachers tell me I do a good job when I try my best.	**.568**	.009	.328	.315
Heroes	77	Teachers help me to succeed.	**.560**	.056	.342	.334
Heroes	71	Teachers expect me to succeed.	**.513**	.195	.046	.458
Curios	90	Teachers encourage me to ask questions.	**.483**	-.001	.321	.303
Curios	80	My courses help me understand what is happening ...	.375	.203	.369	.254
Leader	87	Teachers expect me to be a good decision maker.	.369	.231	.358	.296
Advent	61	I can select the best way to solve a problem.	.127	**.686**	.135	.020
Leader	60	I am a good leader.	.069	**.650**	.169	.159
Curios	67	I seek solutions to complex problems.	.157	**.627**	.272	.048
Leader	58	I can take control of situations.	.071	**.618**	.073	.175
Leader	62	I do what I say I will.	.032	**.599**	-.008	.199
Advent	59	I know what I want and I go after it.	.064	**.588**	.021	.292
Heroes	64	I am a positive role model to other students.	.158	**.562**	.340	-.025
Heroes	68	I have a strong caring relationship with an adult.	.260	**.442**	.027	.189
Fun/Exc	86	I am not usually bored in school.	.136	.076	**.717**	.069
Fun/Exc	83	Teachers make learning exciting.	.350	.141	**.662**	.069
Fun/Exc	63	I usually have fun in class.	.141	.213	**.614**	.063
Curios	85	Teachers allow me to explore interesting topics.	.387	.133	**.568**	.178
Belong	76	I am proud of my school.	.229	.049	**.550**	.297
Advent	82	I am eager to learn new things.	.130	.204	**.482**	.410
Advent	89	I have opportunities to decide what I learn about.	.224	.113	**.472**	.238
Heroes	84	A teacher is a positive role model for me.	.292	.202	.383	.269
Confid	88	Anyone can succeed if they work hard enough.	.184	.087	.115	**.682**
Accomp	70	I believe I can always improve.	.321	.149	.194	**.605**
Confid	72	I am confident in my ability to do well.	.198	.353	.160	**.595**
Accomp	78	I put forth the necessary effort to reach a goal.	.180	.309	.307	**.593**
Leader	75	I accept responsibilty for my actions.	.111	.287	.224	**.512**
Confid	73	I take action on causes I believe in.	.178	.423	.111	**.451**

Table 3: Pattern/Structure Coefficients for Boys' Sample 2 (2002-2003) (n = 1,000)

			Factors			
			I (SE) 15.36%	II (TC) 14.55%	III (LS) 11.60%	IV (L) 10.25%
Accomp	70	I believe I can always improve.	**.704**	.235	.088	.164
Confid	88	Anyone can succeed if they work hard enough.	**.691**	.206	.167	.069
Confid	72	I am confident in my ability to do well.	**.642**	.211	.137	.331
Leader	75	I accept responsibilty for my actions.	**.638**	.123	.142	.281
Accomp	78	I put forth the necessary effort to reach a goal.	**.637**	.137	.118	.332
Advent	82	I am eager to learn new things.	**.552**	.143	**.433**	.161
Confid	73	I take action on causes I believe in.	**.524**	.137	.136	.378
Curios	90	Teachers encourage me to ask questions.	**.488**	.356	.302	.054
Heroes	68	I have a strong caring relationship with an adult.	**.425**	.143	.091	.237
Leader	87	Teachers expect me to be a good decision maker.	**.425**	.328	.348	.159
Advent	89	I have opportunities to decide what I learn about.	**.421**	.193	.358	.122
Belong	66	Teachers respect my thoughts.	.076	**.776**	.207	.212
Belong	65	Teachers care about my problems and feelings.	.077	**.714**	.209	.206
Belong	74	Teachers value my opinions.	.185	**.714**	.264	.170
Accomp	69	Teachers care about my success in class.	**.411**	**.669**	.143	.094
Advent	79	Teachers support me when I try something new.	.247	**.646**	.343	.126
Heroes	77	Teachers help me to succeed.	**.425**	**.610**	.258	.031
Heroes	71	Teachers expect me to succeed.	**.517**	**.539**	.024	.102
Accomp	81	Teachers tell me I do a good job when I try my best.	.383	**.517**	.214	.054
Belong	76	I am proud of my school.	.229	**.470**	**.408**	.126
Fun/Exc	83	Teachers make learning exciting.	.152	.343	**.708**	.033
Fun/Exc	86	I am not usually bored in school.	.069	.191	**.704**	.112
Fun/Exc	63	I usually have fun in class.	.148	.076	**.673**	.241
Curios	85	Teachers allow me to explore interesting topics.	.210	**.417**	**.568**	.088
Heroes	84	A teacher is a positive role model for me.	.225	.322	**.554**	.068
Curios	80	My courses help me understand what is happening ...	.381	.208	**.457**	.149
Advent	61	I can select the best way to solve a problem.	.124	.168	.232	**.685**
Leader	60	I am a good leader.	.138	.166	.120	**.672**
Leader	58	I can take control of situations.	.220	.078	-.059	**.648**
Leader	62	I do what I say I will.	.182	.100	.147	**.612**
Advent	59	I know what I want and I go after it.	.311	-.025	-.001	**.583**
Heroes	64	I am a positive role model to other students.	.033	.148	**.426**	**.528**
Curios	67	I seek solutions to complex problems.	.296	.285	.223	**.415**

Table 4: Pattern/Structure Coefficients for Girls' Sample 2 (2002-2003) (n = 1,050)

			Factors			
			I (TC) 14.30%	II (SE) 12.89%	III (L) 12.11%	IV (LS) 11.90%
Belong	66	Teachers respect my thoughts.	**.796**	.071	.203	.228
Belong	65	Teachers care about my problems and feelings.	**.755**	.137	.168	.259
Belong	74	Teachers value my opinions.	**.698**	.162	.214	.241
Accomp	69	Teachers care about my success in class.	**.675**	.365	.087	.213
Advent	79	Teachers support me when I try something new.	**.545**	.305	.102	.364
Heroes	77	Teachers help me to succeed.	**.532**	**.445**	.030	.361
Curios	90	Teachers encourage me to ask questions.	**.502**	.329	.118	.250
Heroes	71	Teachers expect me to succeed.	**.492**	**.469**	.187	.082
Curios	80	My courses help me understand what is happening ...	**.429**	.145	.201	.369
Accomp	81	Teachers tell me I do a good job when I try my best.	**.429**	**.421**	.042	.379
Confid	88	Anyone can succeed if they work hard enough.	.228	**.702**	.150	.130
Accomp	70	I believe I can always improve.	.259	**.686**	.217	.125
Accomp	78	I put forth the necessary effort to reach a goal.	.161	**.617**	.291	.290
Confid	72	I am confident in my ability to do well.	.286	**.549**	**.408**	.125
Advent	82	I am eager to learn new things.	.088	**.542**	.267	**.425**
Leader	75	I accept responsibilty for my actions.	.276	**.437**	.263	.221
Leader	87	Teachers expect me to be a good decision maker.	.374	.392	.220	.244
Advent	89	I have opportunities to decide what I learn about.	.237	.349	.221	.286
Leader	60	I am a good leader.	.109	.055	**.757**	.076
Advent	61	I can select the best way to solve a problem.	.197	.073	**.671**	.194
Leader	62	I do what I say I will.	.065	.176	**.611**	.089
Leader	58	I can take control of situations.	.070	.269	**.591**	.085
Heroes	64	I am a positive role model to other students.	.287	.052	**.546**	.299
Advent	59	I know what I want and I go after it.	-.039	.369	**.533**	.135
Curios	67	I seek solutions to complex problems.	.235	.203	**.532**	.229
Confid	73	I take action on causes I believe in.	.165	**.403**	**.476**	.173
Heroes	68	I have a strong caring relationship with an adult.	.109	**.416**	**.421**	-.056
Fun/Exc	83	Teachers make learning exciting.	.281	.149	.148	**.741**
Fun/Exc	86	I am not usually bored in school.	.207	.036	.125	**.701**
Curios	85	Teachers allow me to explore interesting topics.	.337	.194	.122	**.645**
Fun/Exc	63	I usually have fun in class.	.136	.132	.318	**.564**
Heroes	84	A teacher is a positive role model for me.	.248	.198	.205	**.537**
Belong	76	I am proud of my school.	.263	.318	.037	**.526**

For females in Sample 1, the factor order was Teacher-Centric (14.33% of the variance), Leadership (11.83% of the variance), Like School (11.81% of the variance), and Self-Efficacy (10.60% of the variance). While Teacher-Centric remains the primary factor with 14.30% of the variance in Sample 2, the remaining factors changed order to: Self-Efficacy (12.89%), Leadership (12.11%), and Like School (11.90%). Given that there is less than 1.3% difference in variances subsumed by the last three factors in Sample 1 and less than 1% differences in Sample 2, this changing of order effect is most likely due to sampling differences. It is clear that Teacher-Centric is the strongest factor across Samples 1 and 2 for females.

In comparing only the primary factors across Samples 1 and 2 for gender, the greatest difference appears to be the emphasis on Self-Efficacy in combination with Teacher-Centric for males and solely on Teacher-Centric for females. Tables 1 through 4 provide a review of each factor by gender by year.

In an overall view, it is noted that there was a high degree of consistency from Sample 1 to Sample 2 in that the same four factors emerged independent of gender. Differences in factor order were noted by gender. The four-factor model is clearly demonstrated by the cross validation from Sample 2 when compared to Sample 1.

Discussion

While the same factors emerged for both boys and girls, there was fluctuation in terms of the impact each factor had for boys and girls. The relative strength of each factor was not completely stable across the datasets across gender. For example, while the Self-Efficacy factor was strongest for boys across time periods, the Teacher-Centric factor was the strongest for girls. The Teacher-Centric factor was boys' second-

strongest area across both time periods. Further research is needed regarding the differences in perceptions across gender as related to early adolescents regarding these conditions.

The four factors that emerged from these replicatory factor analyses appear to be a more parsimonious representation of the conditions of aspirations than the eight articulated by the University of Maine (1999). Further, these four factors appear to be conceptually related to internal and external orientations. The findings from this study augment the research on rural seventh-grade students' aspirations and the environmental structures and internal decisions that motivate and drive students to make choices pertaining to their postsecondary education. Unlike the eight-condition model proposed by the University of Maine (1999), this study found that a best-fit four-factor model sufficed. These four factors persisted between genders and across two consecutive years of surveys completed by white, rural seventh graders.

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