

Validity Evidence for the use of a Motivation Inventory with Middle School Students

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Abstract

The MUSIC Model of Academic Motivation Inventory (MMAMI; Jones & Skaggs, 2012) was developed to measure undergraduate students' motivation-related perceptions of college courses. The **purpose of this study** was to investigate the validity of a similar, but shorter, inventory to measure upper-elementary and middle school students' motivation-related perceptions about their science class. We surveyed 334 students from two schools in grades 5, 6, and 7 and conducted an exploratory factor analysis which revealed 18 items that adequately represented the five-factor structure of the MUSIC model. This five-factor structure and associated measurement model was then cross-validated using a sample of 331 students from two schools in grades 5, 6, and 7 who were surveyed several months later. Confirmatory factor analysis revealed that the five-factor MUSIC model and associated 18 items adequately fit the data. These studies provide empirical evidence to support the validity of the factor structure of the MUSIC Model of Academic Motivation for this population.



Theory

MUSIC Model of Academic Motivation

The MUSIC Model of Academic Motivation (Jones, 2009) describes five instructional components that are needed to motivate students: **eM**powerment, **U**sefulness, **S**uccess, **I**nterest, and **C**aring. These components have been validated empirically (Jones & Wilkins, 2013).

| MUSIC component | Definitions The degree to which a student perceives that: | Related constructs |
|-----------------|--|---|
| eMpowerment | he or she has control of his or her learning environment in the course the coursework is useful to his or her future | <i>Autonomy</i> (Deci & Ryan, 1991) |
| Usefulness | he or she can succeed at the coursework | <i>Utility value</i> (Wigfield & Eccles, 2000), <i>instrumentality</i> |
| Success | the instructional methods and coursework are interesting or enjoyable | <i>Competence</i> (Elliot & Dweck, 2005), <i>self-efficacy</i> , <i>expectancy for success</i> |
| Interest | the instructor cares about whether the student succeeds in the coursework and cares about the student's well-being | <i>Situational interest</i> (Hidi & Renninger, 2006), <i>intrinsic motivation</i> , <i>intrinsic interest value</i> , <i>flow</i> |
| Caring | | <i>Caring</i> (Noddings, 1992), <i>belongingness</i> , <i>relatedness</i> , <i>attachment</i> |

These items ask you about your current **SCIENCE CLASS** and **SCIENCE TEACHER**. Please select one of the numbers from 1 to 6 below and write it in the space next to each question.

| 1 | 2 | 3 | 4 | 5 | 6 |
|-------------------|----------|-------------------|----------------|-------|----------------|
| Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly agree |

- Empowerment**
- _____ 1. I have choices in what I am allowed to do in science class.
 _____ 2. I have options in how to achieve the goals in science class.
 _____ 3. I have control over how I learn the content in science class.
 _____ 4. I have the freedom to complete my science class work in my own way.
- Usefulness**
- _____ 5. In general, science class work is useful to me.
 _____ 6. The knowledge I gain in science class is important for my future.
 _____ 7. I find science class work to be relevant to my future
- Success**
- _____ 8. I am capable of getting a high grade in science class.
 _____ 9. During science class, I feel that I can be successful on the class work.
 _____ 10. I am confident that I can succeed in science class work.
 _____ 11. I feel that I can be successful in meeting the academic challenges in science class.
- Interest**
- _____ 12. The science class work is interesting to me.
 _____ 13. I enjoy completing science class work.
 _____ 14. The science class work holds my attention.
- Caring**
- _____ 15. My science teacher cares about how well I do in science class.
 _____ 16. My science teacher is willing to assist me if I need help in science class.
 _____ 17. My science teacher is friendly.
 _____ 18. My science teacher is respectful of me.

Methodology

Participants

- Students from two schools in rural Virginia
- Sample 1: 334 students in grades 5, 6, and 7
- Sample 2: 331 students in grades 5, 6, and 7 (Samples are not the same or exclusive.)



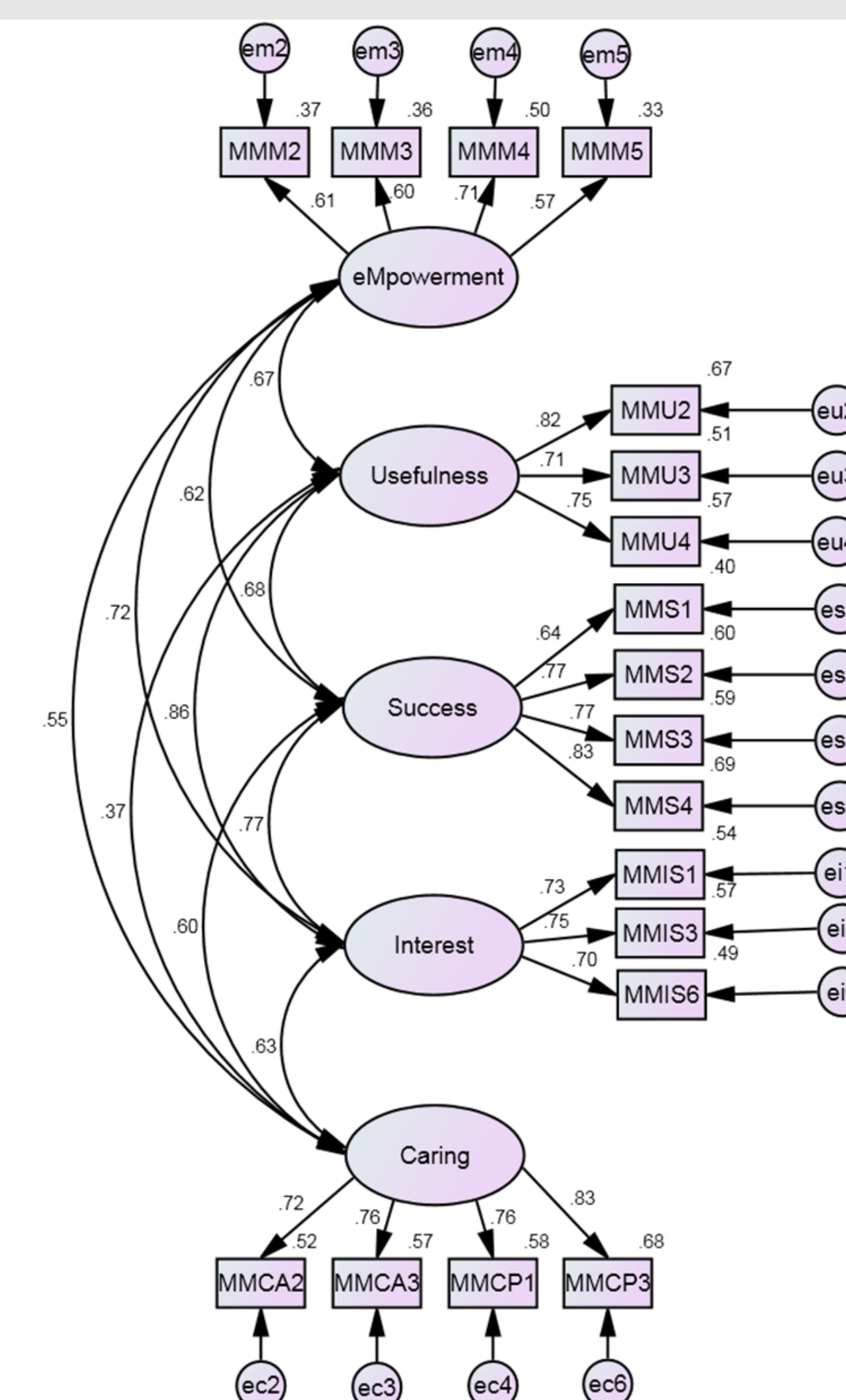
Findings

Exploratory Factor Analysis

- We reduced the number of items in the MMAMI (Jones & Skaggs, 2012) from 26 to 18: 4 empowerment items, 3 usefulness items, 4 success items, 3 interest items, and 4 caring items.

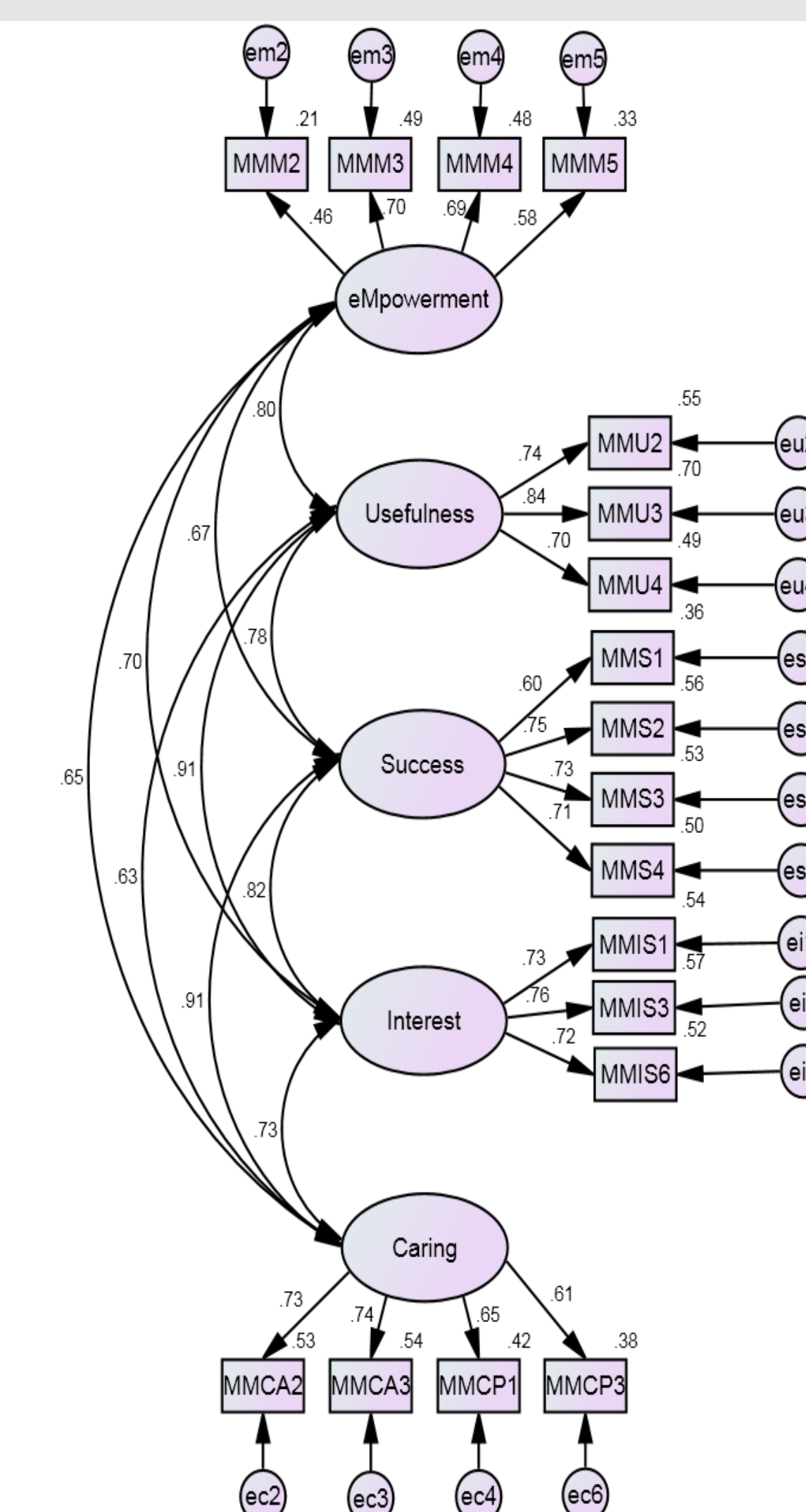
Confirmatory Factor Analysis

Sample 1



Chi-squared = 314.1 ($p < .001$)
 CFI = .93, SRMR = .052,
 RMSEA = .067

Sample 2



Chi-squared = 315.4 ($p < .001$)
 CFI = .93, SRMR = .049,
 RMSEA = .068

References

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