



ABSTRACT

INTRODUCTION

In our study, we hypothesized that in a sample of students who may or may not have taken statistics courses before, PAS will strongly correlate with intrinsic motivation and negatively predict anxiety; MEC will strongly correlate with extrinsic motivation and positively predict anxiety. We planned to use partial correlation to control for the overlap of PAS and MEC. We also hypothesized that intrinsic and extrinsic motivations will have a significant mediating effect on the relationship between dimensions of perfectionism and statistics anxiety.

METHODS

Materials

Work Preference Inventory—Student Version (WPI; Amabile et al., 1994). The WPI was designed to evaluate students' overall intrinsic and extrinsic motivational attitudes toward their work. The scale consisted of two primary dimensions: (1) intrinsic motivation, which assesses levels of self-determination, competence, task involvement, curiosity, enjoyment, and interest ($\alpha = 0.75$), and (2) extrinsic motivation, which measures concerns with competition, evaluation, recognition, grades, and constraint by others ($\alpha = 0.79$).

RESULTS

To check for reverse causal effects, we exchanged the independent variable (statistics anxiety) with the dependent variable (dimensions of perfectionism) and tested for effects in the other direction. Anxiety had a significant negative direct and total effect on PAS, although it was smaller than the effect of PAS on anxiety. The indirect effect of intrinsic and extrinsic motivation was not significant. Anxiety also had a significant positive direct and total effect on MEC, again smaller than the effect of MEC on anxiety. The indirect effects were significant: bootstrap results showed that extrinsic motivation had a stronger indirect effect than intrinsic motivation.

IV	M1	M2	DV	Total Effect (c)	Direct Effect (c*)	z-score of the Indirect Effect (c-c')	Contrast*	95% CI of the Indirect Effect*	
PAS	Intrinsic	Extrinsic	Anxiety	-1.2161***	-1.2806***	-0.0645	N/A	-0.3213	0.2084
MEC	Intrinsic	Extrinsic	Anxiety	0.9788***	0.8312***	0.1476*	-0.0619	0.0306	0.2814
Anxiety	Intrinsic	Extrinsic	PAS	-0.0521***	-0.0430***	-0.0091	N/A	-0.0189	0.0008
Anxiety	Intrinsic	Extrinsic	MEC	0.2309***	0.1688***	0.0621*	-0.0512*	0.0352	0.0930

*If 0 is not in the 95% confidence interval, then the indirect effect is significant at $p < .05$ (two tailed).

DISCUSSION

Implications for the Classroom Setting: Previous research (Seipel & Apigian, 2005) linked statistics anxiety to academic performance and had found a positive relationship between PAS and statistics performance but no relationship between MEC and statistics performance. Although the scope of our research does not cover academic performance, our study may contribute to the overall understanding of the relationship between perfectionism and performance in the classroom setting. Our results suggested that intrinsic and extrinsic motivation contributed to students' anxiety levels. The result of our study also suggests that dimensions of perfectionism and anxiety may influence each other in a circular model that is partially mediated by motivations. For example, a student who is concerned about making mistakes may have anxiety about statistics; and the anxiety, through extrinsic motivation, then makes the student doubt even more her ability to succeed in the classroom. However, setting high standards without being over-critical of oneself seems to have a suppressing effect on anxiety. This may better explain the relationship between PAS and academic performance.

REFERENCES

- [illegible]