

## Cognitive and Environmental Factors Affecting Graduate Student Perception of Mathematics

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**Abstract :** The purpose of this study will examine the mediating relationships between the theories of intelligence, mathematics anxiety, gender stereotype threat, meta-cognition and math performance through the use of eye tracking technology, affecting student perception and problem-solving abilities. The participants will consist of (N=80) female graduate students. Test administered were the Abbreviated Math Anxiety Scale, Tobii Eye Tracking software, gender stereotype threat through Google images, and they will be asked to describe their problem-solving approach allowed to measure metacognition. Participants will be administered mathematics problems while having gender stereotype threat shown to them through online images while being directed to look at the eye tracking software Tobii. We will explore this by asking 'Is mathematics anxiety associated with the theories of intelligence and gender stereotype threat and how does metacognition and math performance place a role in mediating those perspectives?'. It is hypothesized that math-anxious students are more likely affected by the gender stereotype threat and that may play a role in their performance? Furthermore, we also want to explore whether math anxious students are more likely to be an entity theorist than incremental theorist and whether those who are math anxious will be more likely to be fixated on variables associated with coefficients? Path analysis and independent samples t-test will be used to generate results for this study. We hope to conclude that both the theories of intelligence and metacognition mediate the relationship between mathematics anxiety and gender stereotype threat.

**Keywords :** math anxiety, emotions, affective domains for learning, cognitive underlinings

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