

INTRODUCTION

As entrepreneurship education becomes more prevalent in engineering program curriculums, it is imperative that these learning environments be investigated to determine their impact, particularly for underrepresented groups. The purpose of this review is to guide future research on engineering entrepreneurship through a gendered lens. Further, this review serves to inform the development or improvement of existing engineering entrepreneurship education programs that seek to attract and retain more women.



RESEARCH QUESTION

How has gender been addressed in entrepreneurship education scholarship, particularly with respect to assessment literature?

- How have researchers approached this work theoretically and methodologically?

METHODS

- **Search Terms in Scopus and Proquest:**

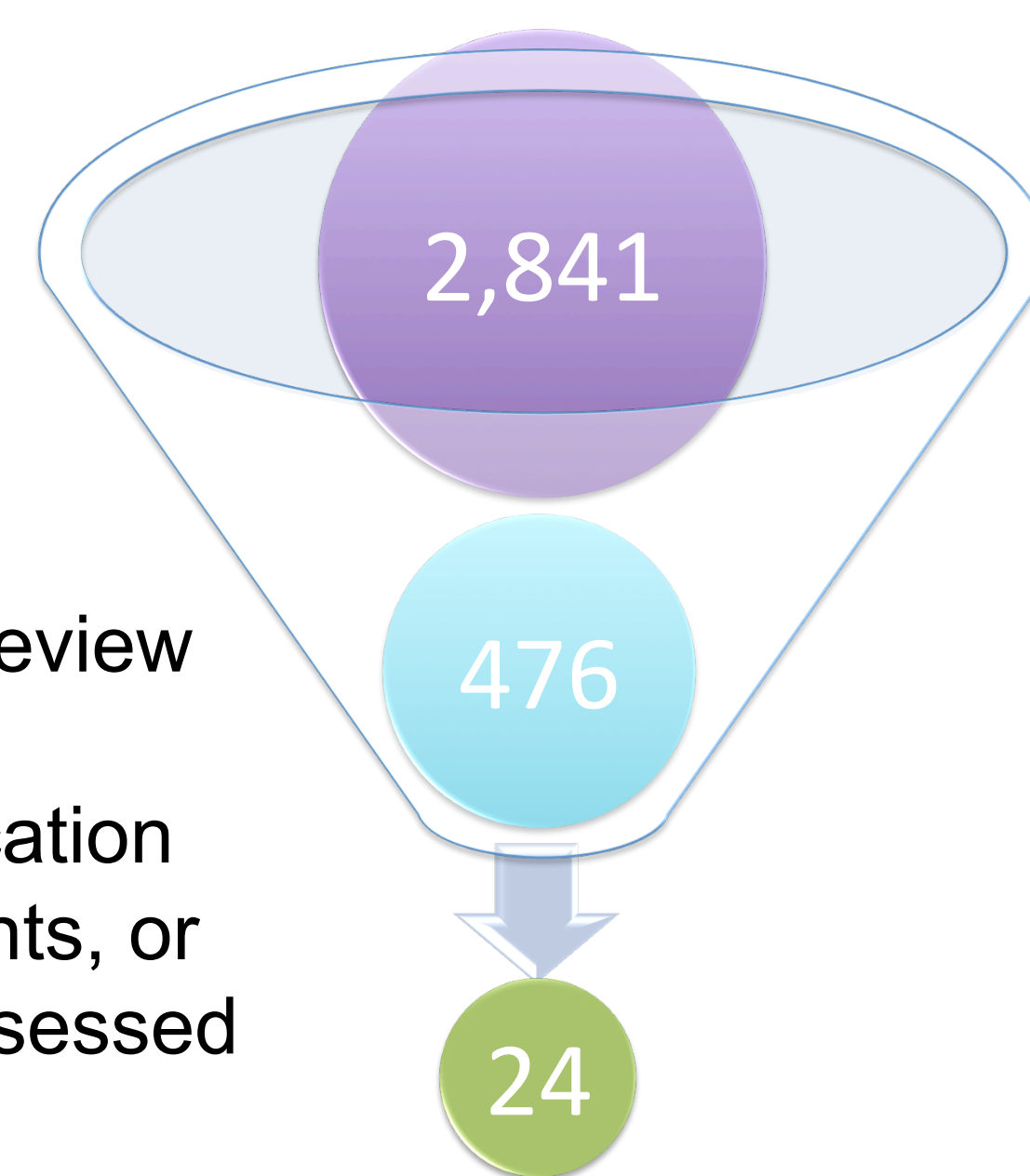
• ("entrepreneurship education" OR "entrepreneurial education") AND ("measurement" OR "instrument" OR "assessment")

- **Inclusion Criteria:**

Studies included in the review must have:

- Entrepreneurship education outcomes for participants, or qualities and skills possessed by entrepreneurs
- Data collected from human subjects
- Clearly delineated a research method

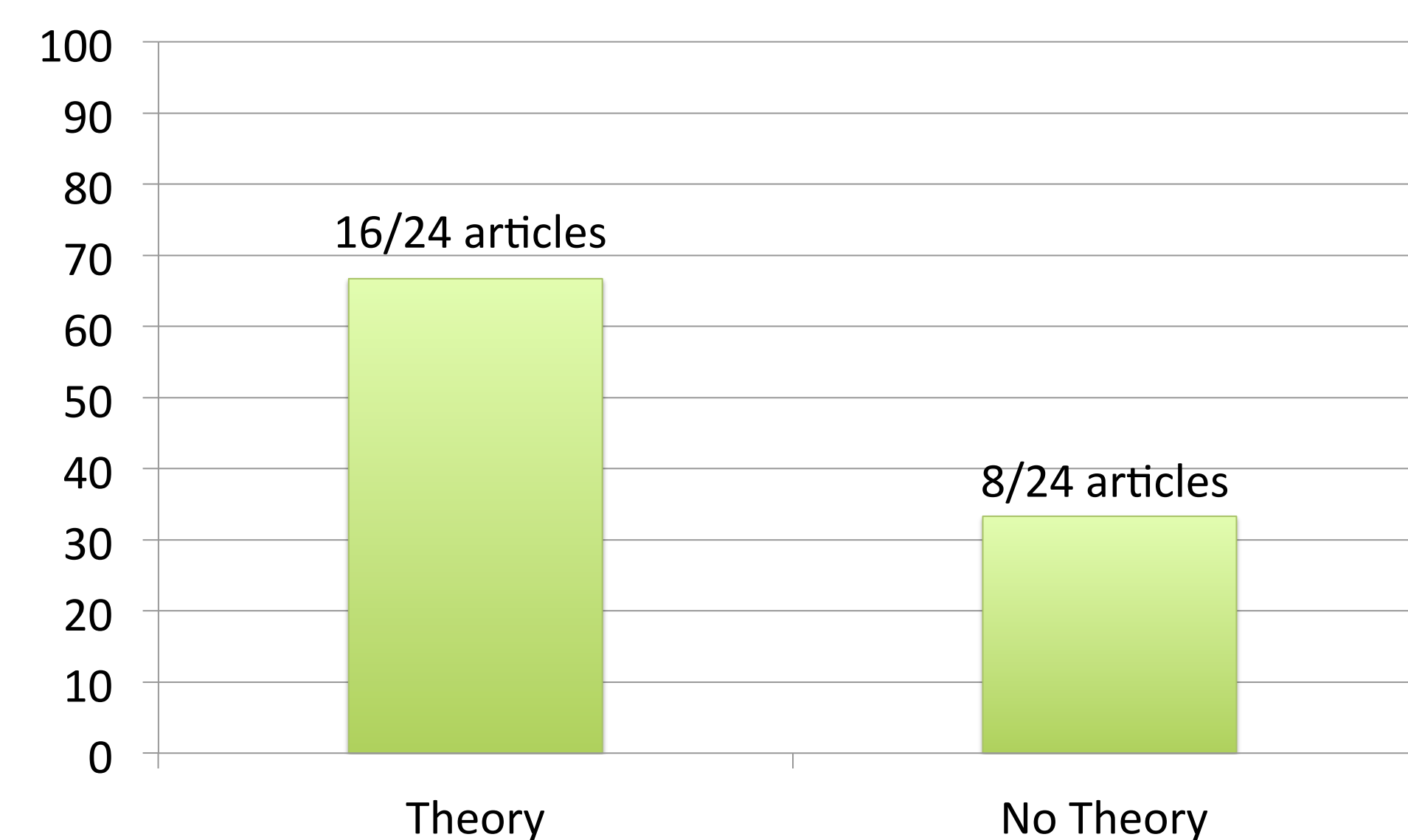
- **Last Step:** Purposefully subsampled articles with the term "gender" in the title



FINDINGS

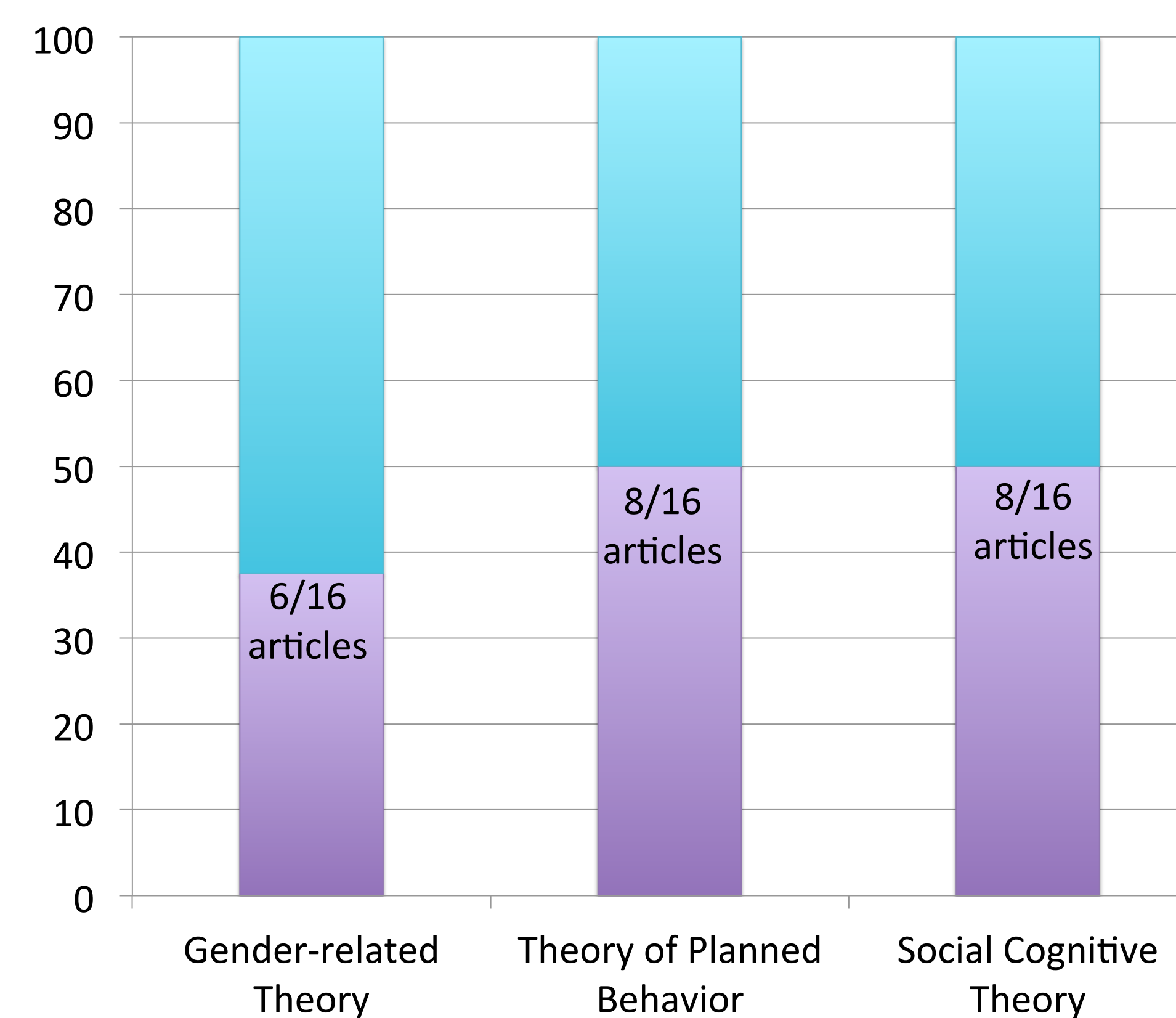
Theory

Figure 1: Theory Use in Examined Articles (n=24)



Approximately one-third of the examined articles did not use theory to frame their research.

Figure 2: Theories Cited in Examined Articles

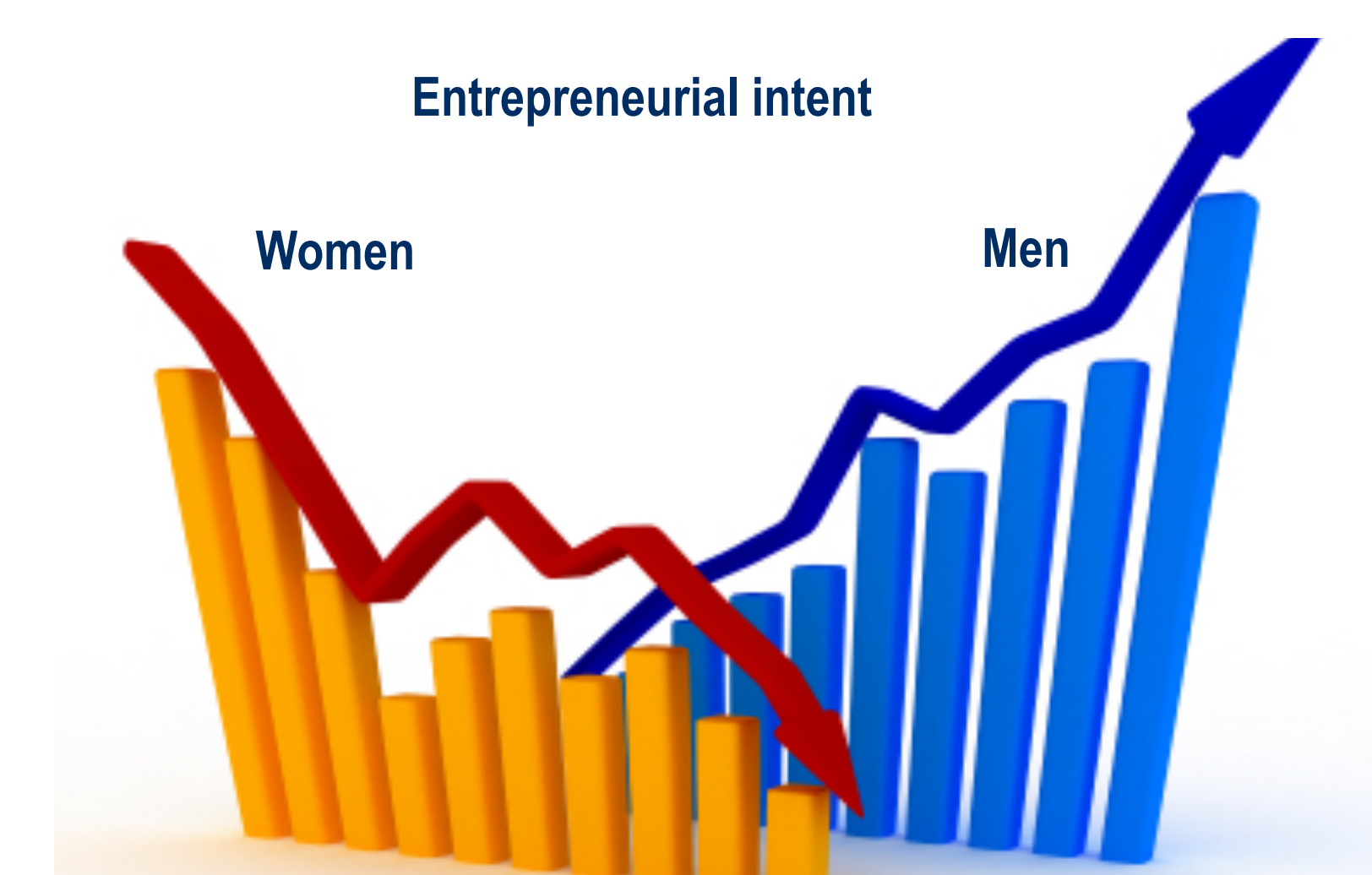


Only 6 of the 16 articles that used theory used gender-related theories to frame their research. The two most frequently cited theories were the Theory of Planned Behavior (Ajzen, 1991) and Social Cognitive Theory (Bandura, 1989).

Gender-related Theories Used

- Social Role Theory (Eagly, 1987)
 - 3/24 articles used this theory
- Gender Schema Theory (Bem, 1981)
- Liberal Feminism Theory (Carter & Allen, 1997)
- Gender Role Theory (Heilman, 1983)
- Sex Role Socialization Theory (Gilligan, 1982)

Women's Entrepreneurial Intent



Multiple studies in the review demonstrated that women have lower entrepreneurial intentions than their male counterparts (Cañizares & García, 2010; Dabic et al., 2012; Scherer et al., 1991; Shinnar et al., 2014; Urban, 2011).

Women's Entrepreneurial Self-Efficacy

Findings regarding women's entrepreneurial self-efficacy have yielded mixed results

- Although studies have shown that women have lower entrepreneurial self-efficacy than men (Dempsey & Jennings, 2014; Scherer et al., 1991), in two separate studies, Mueller and Dato-on (2008; 2013) did not find statistically significant differences in entrepreneurial self-efficacy between women and men.

Women's Gender Role Performance in Entrepreneurial Settings



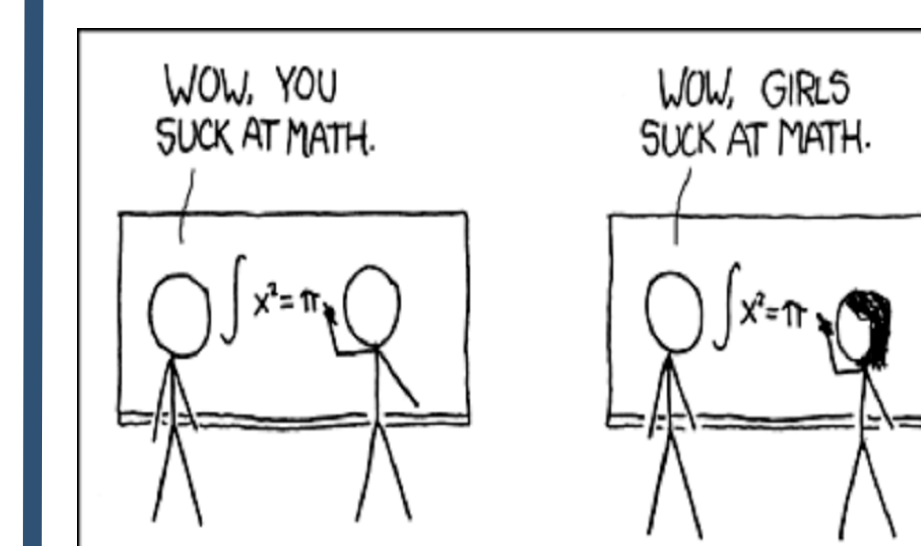
- Mueller and Dato-on (2013) found that American males were most likely to demonstrate perceived masculine orientations (e.g. assertiveness and competitiveness) and least likely to demonstrate perceived feminine orientations (e.g. nurturing, caring, and cooperation) as compared to American women, Spanish men, and Spanish women.
- Lim and Envick (2011) found that male participants regardless of national orientation preferred and were more likely to engage in high-risk ventures and were more competitively aggressive than female entrepreneurs.

RELEVANT THEORY



Social Role Theory

Men and women are socialized into gender roles, which influences the performance of sex-typical work (Eagly, 1987).



Stereotype Threat

The "immediate situational threat that derives from the broad dissemination of negative stereotypes about one's group" (Steele & Aronson, 1995, p. 798)



Solo Status and Tokenism

Being the only member of one's social category within a group (King et al., 2010; Sekaquaptewa & Thompson, 2003; Thompson & Sekaquaptewa, 2002).

IMPLICATIONS

Recommendations	Relevant Theories and Constructs
Develop clear evaluation processes	Stereotype Threat Solo Status and Tokenism
Incorporate examples of successful female entrepreneurs	Social Role Theory Stereotype Threat
Be thoughtful about group composition for team-based tasks	Social Role Theory Stereotype Threat Solo Status and Tokenism
Consider how activities like pitch competitions affect women differently than men	Stereotype Threat Solo Status and Tokenism
Incorporate social entrepreneurship	Social Role Theory Stereotype Threat
Reinforce entrepreneurship education is meant to be developmental	Stereotype Threat
Provide multiple opportunities for student success	Stereotype Threat

REFERENCES

Complete references can be found in Morton, C.S., Huang-Saad, A.Y., & Libarkin, J.C. (2016). Entrepreneurship education for women: A systematic review of entrepreneurship assessment literature with a focus on gender. Paper presented at the 2016 ASEE Annual Conference, New Orleans, LA.