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Title of the paper: Context Matters: A Review of Gender Differences in the Willingness to Compete

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Abstract:

The gender wage gap is one of the key indicators used in measuring the progress towards global gender parity. A body of work in experimental economics literature has postulated that gender differences in attitudes towards competition has a significant effect on women's salaries and self-selection into low paying sectors. This paper reviews the existing experimental research on gender and competitiveness, with special focus on context and framing of the competitive process. Experimental outcomes are tied to the specific contextual factors which shed light on the importance of gender norms and stereotypes, and the impact it has on women's attitudes towards competition. The paper ends with a discussion of the social costs that are imposed on women when they compete, and proposed solutions to mitigate these costs. The merits of affirmative action are discussed with reference to evidence from lab experiments.

Paper

Introduction

Mary Paley was a British economist who in 1875 became the first woman lecturer at the University of Cambridge. She married an influential economist and made significant contributions to academia and

economic thought, including a textbook that she co-wrote with her husband but never received credit for. Her husband initially supported her career, but he later withdrew his support and dismissed her contributions to his work (Pande and Roy, 2021). Later in life, he was outspoken in his opposition to women gaining higher education and entering the workforce. In a casual conversation with another contemporary economist Beatrice Webb, he laughingly remarked "If you (women) compete with us, we (men) shan't marry you." (Coit, 2015). This man was Alfred Marshall, the founder of neoclassical economics.

This single sentence encompasses the systemic barriers women face in the (paid) labour market and reveals the insecurities of the men who profit from the status quo in traditional gender roles. Though the victories from the feminist movement in the past century have meant that there are now fewer men like Alfred Marshall, the global gender gap has widened as a result of the effect of the COVID-19 pandemic ("Global Gender Gap Report 2021 | World Economic Forum," 2021). It will now take 135.6 years to bring about global gender parity, which worsens further when it comes to the gender gap in political empowerment.

The gender wage gap is one of the primary indicators used to track the state of gender equality around the world. The extent and determinants of the gender wage gap have been studied using a variety of disciplines and approaches. This paper focuses on one such determinant that has been identified in the experimental economics literature — the impact of gender differences in the willingness to compete on labour market outcomes for women and men. In the subsequent section, I have reviewed the body of experimental research on gender differences in competitiveness and performance under competition. Next, the external validity of these experimental results have been discussed with a focus on how context and framing brings about real changes in experimental results, as well as their implications for competitive behaviour in the real world. Finally, I examine the costs of competition that women bear as a result of gender norms and stereotypes, as well as the potential solutions that have been proposed to mitigate these costs.

Gender differences in competitive attitudes

There has been a considerable body of research in experimental economics over the last two decades that has uncovered gendered variations in individuals' propensity to compete, as well as gender disparities in performance within competitive settings. A major focus of these studies has been to tease out the effect of some innate desire to compete, when controlling for alternative behavioural tendencies such as risk aversion (Charness and Gneezy, 2012) or overconfidence (Beyer, 1990). Gender differences in willingness to compete, performance under pressure, and the impact of same-gender vs. different-gender rivals have been the subject of most studies.

The most influential study in this domain is by Niederle and Vesterlund (2007). Participants in this experiment were administered a simple mathematical task which involved adding up numbers in a fixed amount of time. Competitive attitudes of individuals were elicited by asking participants to choose between two different payment schemes. The first was a piece rate scheme, in which payments were proportional to the number of right answers, while the second pitted a person's performance against that of another randomly selected participant, with the winner receiving the payment. The study's key

finding was that men were twice as likely to choose the competitive payment scheme as women, and the gender gap in the willingness to compete remained after controlling for risk aversion and overconfidence.

A number of similar experiments and replications have followed, both in a laboratory setting and in the field. The gender gap in willingness to compete explains 20% of the variation in selection of future academic tracks, with girls choosing the “less prestigious” ones (Buser et al., 2014). A gender gap of 10-15% is also found in very young children and teenagers, which diverges with age (Sutter and Glätzle-Rützler, 2015). These findings are replicated in a field setting, using administrative and survey data from Denmark (Kleinjans, 2009). The lesser propensity of women to compete also reduces their educational attainment, and increases occupational segregation. In a study involving MBA students (which in itself is a hyper-competitive environment), the gender gap in the willingness to compete is 13.3%, controlling for risk preference and beliefs about relative performance (Reuben et al., 2015). Willingness to compete is also the principal determinant of the starting salaries of the students when they graduate.

Evidence from a number of studies suggest that hypercompetitive environments also result in a gender performance gap. In competitive situations, women may be less effective than men, which causes them to lose out on new opportunities and job promotions (Gneezy et al., 2003). When men and women perform tasks and compete for payment in mixed groups, women perform significantly worse than men , even though there exists no performance gap in the non-competitive setting. Moreover, women perform better in same-gender groups, signifying that their performance in mixed-gender groups may be affected by the presence of male rivals. In Ors et al. (2013), women perform significantly worse at the entrance examination of a prestigious business school, even though they out-perform men in a pass-fail type examination in the past.

The Role of Context

An examination of the literature on competition and gender finds that context is crucial and has a significant impact on experimental outcomes. While laboratory experiments are expected to be free of context in order to tease out the specific effects of the variables the experimenter is interested in (while controlling for confounds), one could argue that gender variations in competitiveness are specifically the result of environmental factors. This aspect is often the subject of critiques on such lines of research (Mavin and Yusupova, 2021), where the authors argue that the notion of competition being an easily measurable static phenomenon is problematic. Competition is a result of the interaction between individual motivation, the environment, and the underlying power relations. Even if there is some inherent biological process that influences competitiveness (Buser, 2012), a large body of research uncovers the impact of the nature and context of the competitive task, as well as the role of socialisation and gender norms.

The nature of the specific task and the framing of the competitive setting impacts experimental results. For example, the standard task that is chosen for these studies is the mathematical task used in Niederle and Vesterlund (2007). Günther et al. (2010) includes 3 kinds of tasks in their experiment – a stereotypically male task (solving a maze), a gender-neutral task (verbal), and a stereotypically female

task (pattern-matching). They find that in the case of the gender-neutral task, the gender gap in competitiveness ceases to exist, while women compete slightly more than men in the stereotypically female task. Similarly, in another study involving adolescents (Dreber et al., 2014), there is no gender gap in the propensity to compete when completing verbal tasks. However, gender differences in competitive preferences are found for the mathematical task which disappear after controlling for risk preferences, overconfidence, and actual performance. Even the well-known fact that women are more risk averse is contingent on the choice of a specific risk elicitation task (Filippin and Crosetto, 2016).

Gneezy et al. (2009) conduct a fascinating study to determine the impact of social learning and gender norms on competitive behaviour. They carry out the identical experiment among the patrilineal Masai tribe (Tanzania) and the matrilineal Khasi tribe (India), which involves a competitive gender-neutral task. The findings from Niederle and Vesterlund (2007) are replicated among the patrilineal Masai society: men are twice as likely to compete than women. However, this finding is neatly reversed in the matrilineal Khasi tribe – it is the women who compete more. In a similar vein, the gender gap in competitiveness is absent in girls who study in all-girls schools (Booth and Nolen, 2012). Co-ed girl students however exhibit lesser propensity to compete, underscoring the importance of environmental factors.

Flory et al. (2010) find that women are discouraged to apply to competitively framed job descriptions relative to men, when viable outside options exist. However, their willingness to compete increases once compensation becomes linked to the performance of a team, rather than individual performance. When it comes to competitive sports, evidence points that women are as least as competitive as men (Frick and Moser, 2021). When women self-select into highly competitive environments (such as alpine skiing), their career length does not differ significantly from men, signalling the absence of gender differences in competitiveness. However, it is of note that competitive skiing is a same-gender sport (women compete with women and vice-versa) and does not capture the impact of mixed gender competition.

The gender performance gap is also context dependent, as can be seen in the case of schoolteachers' performance under teacher incentive schemes (Lavy, 2013). There is no gender difference in the performance or effort provided by school teachers when the best performing teachers within a school receive bonuses. However, it is also true that women dominate the teaching profession, and being an excellent teacher is in no way against traditional gender norms. Hence teaching is one profession where gender differences would reasonably not exist.

Is there a cost to competing?

Traditional gender roles may deter girls and women from participating in competitions, but they may also shun competition to avoid the penalties of defying these gender norms. Women may feel compelled to exhibit stereotypically feminine characteristics such as agreeableness and a lack of competitive or aggressive conduct, which are stereotypically masculine traits. Bowles et al. (2007) studies the influence of stereotypes about gender roles and norms and the social resistance to women engaging in non-conforming behaviour, in the context of salary negotiations. Negotiation essentially reflects competition over scarce resources (salary, promotions, benefits). The authors find that women are reluctant to negotiate for higher salaries when they face a male interviewer/evaluator. Moreover, male

evaluators are more likely to hire women who do not negotiate, even if there is no difference in performance between a negotiating and a non-negotiating woman. When the evaluator is female, there is no gender difference in the propensity to negotiate.

A related literature dealing with non-traditional earning asymmetry in men and women further sheds light on the indirect costs borne by women when they earn more than their male partners. Women who are more successful than their husbands are more likely to get divorced and are less likely to participate in the labour force at all post marriage (Bertrand et al., 2015). In fact, when women are promoted to senior leadership positions, their chances of divorce doubles, although there is no such effect for men (Folke and Rickne, 2020). The pressure to conform to gender stereotypes, combined with women's relatively more negative reactions to rejection in top management positions (Brands and Fernandez-Mateo, 2017) and bad luck (Gill and Prowse, 2014), creates additional barriers for women to prosper in competitive contexts.

Bridging the gap: Policy implementation, systemic changes, and collective action

The discussion thus far has demonstrated that gender preferences for competition are formed by gender norms that emerge from the historical processes that underpin women's oppression, rather than being an ahistorical black box. When looking at the possible solutions aimed at closing this gap, ignoring the social and historical conditions may obfuscate the research on competitiveness and its relation to the gender pay gap. Instead of portraying the problem as one of individual failure and expecting women to fix themselves, or relying on superficial institutional and policy changes, the focus must shift to affirmative action by governments and corporations, as well as collective action by interest groups.

While it can be argued that affirmative action may lead to efficiency reductions by keeping out high ability individuals, it is not observed in the laboratory setting (Balafoutas and Sutter, 2012). Affirmative action causes an increase in women's likelihood to compete, especially that of high-performing women. There is no significant effect on the average performance of participants under affirmative actions, hence there is no inefficiency. Similar findings are reported in Niederle et al. 2013, where affirmative action causes a large increase in tournament entry by high-ability women and a decrease in men's entry. However, a word of caution on focussing on efficiency gains to justify affirmative action: such instrumentalist arguments obscure the fact that eliminating the gender gap in competitiveness (and the wage gap) should be a goal in and of itself.

When the competition evolves from being simply a zero-sum winner-takes-all proposition to more equitable distributions (which is arguably the case in a lot of real world examples), women take part in competitions at the same rate as men (Cassar and Rigdon, 2021).

Concluding remarks

This paper is concerned with the corpus of experimental economics literature that focuses on gender differences in competitive attitudes, which has been motivated in part by a desire to explain the gender-based labour market outcomes and occupational segregation. Niederle and Vesterlund's (2007) seminal work, followed by other experimental literature were reviewed, and it was found that the results obtained from laboratory experiments are not easily generalisable to the external world. In fact, the nature of the competitive task, the framing of the competitive environment, and gendered expectations of social behaviour (gender stereotypes and traditional gender roles) play a huge part in the gender differences in competitive attitudes and performance under competition.

The overarching gender norms present in society may also punish women who go against the grain, implying that there are indirect costs to competing which deters women. Experimental literature also suggests that affirmative action is the best way to encourage women to compete (especially high-performing women who stay out of competitions otherwise), and do not cause efficiency losses. Gender mainstreaming policy should not focus solely on a top-down approach that depoliticises the feminist agenda but should also emphasise the importance of collective action and labour unions involving women. The need of the moment is to recognise the systemic barriers that women face in the labour market, instead of putting the onus on individual women.

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