The University of San Francisco

USF Scholarship: a digital repository @ Gleeson Library | Geschke Center

Master's Theses

Theses, Dissertations, Capstones and Projects

Spring 5-21-2021

Does prize sharing close the gender-based gap of competition in Nepal?

Supriya Adhikari
University of San Francisco, sadhikari@usfca.edu

Follow this and additional works at: https://repository.usfca.edu/thes

 Part of the Development Studies Commons, and the Economics Commons

Recommended Citation

Adhikari, Supriya, "Does prize sharing close the gender-based gap of competition in Nepal?" (2021). *Master's Theses*. 1436.
https://repository.usfca.edu/thes/1436

This Thesis is brought to you for free and open access by the Theses, Dissertations, Capstones and Projects at USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. It has been accepted for inclusion in Master's Theses by an authorized administrator of USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. For more information, please contact repository@usfca.edu.

Does prize sharing close the gender-based gap of competition in Nepal?

Supriya Adhikari

Department of Economics
University of San Francisco
2130 Fulton St.
San Francisco, CA 94117

Thesis Submission for the Masters of Science Degree
in International and Development Economics

e-mail: sadhikari@dons.usfca.edu

07.15.2021

Abstract: Past research has shown that even when women perform equally as men, they are less competitive when cash is provided as incentive. Using the experimental design of Cassar and Rigdon (2021), where in a real effort tournament a social incentive motivates women to compete more and closes the gender gap in competitiveness, we examine if this will be found in a Nepal sample. Following the evolutionary literature that suggests women need each other's support for child care, participants are given an option to share the prize they win to help them earn friendships and bonds in a competitive game. Our results show that the gender gap in competition still exists with the prize-sharing option but the gap closes when women are mothers. Women are significantly more willing to enter competition when they have children. This could be to better provide for their children and also, an increased financial responsibility of child care encouraging them to compete more.

I. Introduction

For a long time, researchers have been trying to study the competitive behavior of individuals to identify if risk-taking is a psychological trait; a tendency that is generalized to different types of risks in different situations. A lot of studies link competition to gender pointing out the existence of the gender based gap in competition (Gneezy, Niederle and Rustichini, 2003). In labor markets, these gender gaps are very much evident. Census Bureau 2018 data suggests that women earn $0.82 for every $1 earned by men. The difference in income between men and women is explained by a lot of theories. One of those theories is the role of the Congruity Model that illustrates the gender gap (Eagly and Karau, 2002). The model describes that women are expected to work according to the constraints of society. If women deviate from these preconceived roles, they are to suffer from identity loss and the women who choose to divert from these constraints to make it to the top position are less likely to be favored by their peers because they are perceived to go against the norm.

Behavioral economists talk about competition being the driving force behind the gender-based gap. A lot of studies have shown that women are less competitive and less ambitious than men and that women underperform as compared to men when placed (Gneezy, Niederle and Rustichini, 2003). Studies also show that women avoid high-risk, high-return environments, and prefer lower but more predictable returns (Flory et al., 2015). However, some studies question the less ambitious female behavior and point out that females are just as competitive as males, but have a different way to display it (Brock, 2007; Stockley & Jorgensen, 2011). To test this, economists have designed laboratory experiments that allow subjects to perform under competitive and non-competitive environments. The research by Gneezy, Niederle and Rustichini (2003) has shown that in an experimental setting, males do better than women when there is competition. Grossman and Eckel

(2008) found that females decide against entering tournaments because of their risk aversion behavior as competition involves uncertainty in the payoff. This helps in understanding the labor market in females earning less; women being risk-averse hinders their opportunity to enter executive positions, take leadership roles, or ask for promotions. However, in the labor market, we know that competition is motivated by monetary incentives. It is also important to note that even the laboratory experiments are based on cash prizes.

There are a few theories that explain how cash prizes may not be the best motivator for females as they might not value "cash" as much as men and may not be motivated when presented with monetary benefits in a competitive environment (see Cassar & Rigdon, 2021 for more detail on the evolutionary framework). If we look at the evolutionary theory of gender, it explains that because males had to compete with other males for females, they evolved to be more competitive and high-risk-seeking. Whereas, the role of females was mainly to take care of the offspring and gain support from other females to help raise each other's children. Women valued helping each other and creating bonds which did not lead to any competitive behavior (Luxen, 2007). It was more important for females to stay in a group and earn each other's support for the safety of their off-springs.

For females, the difference in competition may lie in whom they compete over, whom they compete with, and their competitive tactics. With cash prizes being the major motivator, it could favor men to strive to perform better than women. However, if the incentive was child care, developing friendships, or gaining support, women might find that more inspiring.

This research tries to see, what if the incentive proposed to women were more encouraging to women? Would they be encouraged to compete for more? Following the evolutionary theory of gender and asserting that women valued support and friendship over monetary gain, we speculate that women would want to share the prize they win to earn stronger bonds with people playing the competitive game with. Therefore, if they could earn support from the people involved, they would want to be more competitive. The objective of this study is to implement the experimental design of Cassar and Rigdon (2021) to find out if, in Nepal, women would be as competitive as men if we changed the paying mechanism i.e., providing them an option to share the prize they win with other participants to generate better friendships. As we describe below, Nepal provides a unique setting to test whether the prosocial incentive will close the gender gap in competitiveness between men and women.

II. Literature Review

Various studies have supported the narrative, "gender roles exist from birth". One of the main theories that explain this narrative is the socialization approach. The socialization approach in gender claims that females and males have different traits and values due to gender differences in creating moral orientations which result in different practices and decisions (Scherer, Brodzinski, and Wiebe, 1990). The variation in males and females creates a difference in moral orientation with women having a greater commitment towards helping others (Yankelovich, 1972). The theory suggests that males and females have different responses to similar situations. Men tend to look for competitive success and break rules more whereas, women tend to be more focused on maintaining friendships and connections and like staying within the rules (Betz et al., 1989). Therefore, gender identity is the core trait of an individual which has been established at the time of birth and as per the theory, any sort of education or environment will not change this trait.

A theory that contrasts this belief is the Social Reconstruction Theory. This theory suggests that gender equality is a culturally constructed idea that varies across societies (Lindal, 2015). In some cultures, having equal opportunities for both genders is a basic human right and in other cultures, having separate responsibilities for both genders such as men being providers and women being homemakers is a common practice. This theory, hence argues, gender is not a descriptor of an individual but purely a product of society (Lorber, 1994). Therefore, if it is a society that determines what feminine qualities or masculine qualities are, they should be able to change what is considered feminine or masculine. (Connell, 1987). Following this, an individual can identify themselves in any gender they see fit.

As the theories above suggest, gender differences have various explanations. Research has further clarified this difference by claiming that men are motivated by competitive incentives in a competitive environment than women (Gneezy, Niederle and Rustichini, 2003)). While competition is measured by performance in a competitive setting, new research finds that these gender differences can diminish sharply if incentives are vouchers which benefit a participant's child (Cassar, Wordofa & Zhang, 2016).

In economics, Gender inequality is an important issue. Development leads to more gender equality and this equality leads to creating more opportunities for development through increased labor participation of women and outcomes in education (Duflo, 2012). To build strong economies, it is important to empower women to participate in the productive sectors. Only by doing this, it is possible to achieve sustainable and development goals for the better quality of life of families and communities (Women's empowerment principles, UN Women). However, global data suggests that

gender inequality is in everyday life, especially in developing countries. Data shows that women spend five times more on child care, twice as much in household chores, and half as much time in labor production when compared to men (Berniell and Sánchez-Páramo 2011).

Nepal, a patriarchal country with a history of discrimination against women has a gender Inequality Index value of 0.452 and ranks 142th out of 162 countries (Human Development Report, 2021). The position of a woman in a family determines her role in society in Nepal. In other words, there are different roles and responsibilities of a daughter as compared to the daughter-in-law, thus, they enjoy a different status in the community. Nepalese women face additional hardships of cultural, social, legal, and economic obstacles than men (Deuba, 1998). Nepali women have low socio-economic, cultural, political-legal status in comparison to men. They are always considered as daughters, wives, and mothers who are guided/protected by fathers, husbands, and sons respectively, but are not recognized as individuals with their own identity (Subedi, 1997). Data suggest that only 22% of working-age women are employed in Nepal and for every 100 employed males, there are only 59 employed females (Nepal Labour Force Survey, 2017-18). A lot of females in Nepal are still homemakers who mainly take care of their families and the majority of males are the sole providers of the family. The labor force participation for men in the country is 83.66%; whereas, for females, it is only 55.77% (The World Bank, 2021).

In a patriarchal society like Nepal with a massive gap in labor force participation, the majority of women have limited roles within their household, it would be likely that women are less competitive than men. For studying the competitiveness of both genders in Nepal and the change in these behaviors along with different paying mechanisms, this study tests for individual behavior

through an experimental approach of Cassar and Rigdon (2021) which is explained in the following sections.

III. Model and Hypothesis

We report regression analysis using an Ordinary Least-Squares (OLS) with clustered errors. The OLS regression specification on our dependent variable of interest, $Competei = \beta0 + \beta1(Femalei) + \beta2(Dictator) + \beta3(Femalei \times Dictator) + \beta4(R1\ score) + \beta5(Risk) + \beta3(Overconfidence) + \varepsilon$

where i is an individual subject, Femalei = 1 if female (0 if male), Dictator = 1 if Dictator Game (0 if Baseline Game), Femalei × Dictator is the interaction effect between Femalei and Dictator, R1 score is the score in piece-rate, Risk is choosing risky tickets in coin toss and Overconfidence is people guessing their ranks higher than they received.

H0: Difference in female willingness to compete is zero across both the games.
H1: Female subjects are significantly more willing to compete in the prize sharing Dictator game.

IV. Experimental Method

This experiment was conducted in 16 sessions between March 2021 and April 2021. Each session was approximately 150 minutes. Participants were provided with written instruction to ensure transparency. The instructions were translated to their home country's language, Nepalese. Participants began by reading a consent form that was approved by the Rutgers University School of Arts and Sciences Institutional Review Board and by the University of San Francisco

Institutional Review Board. All participants offered the opportunity to participate. There were two games, Baseline, and Dictator. The Baseline game was the one where the prize sharing option was not provided and the Dictator game was the one with the prize sharing option. Each game had 4 rounds and an end survey.

Each round had a time limit and presented a different payment scheme, plus an additional round of measuring risk aversion. Each round ended with the score being calculated by the enumerators. The information was provided to the subjects about their scores but not of scores of other participants or their performance relative to others at the end of each round. The sessions were held formally where there was no communication between the participants and the use of cell phones was prohibited. The experiment thus consisted of 3 main tasks: (1) a real-effort task that consisted of counting the number of zero in a matrix, (2) a risk preference assessment (Eckel & Grossman, 2008), and (3) a short survey. At the beginning of all rounds, the participants were explained the tasks they needed to perform and the payment method.

*1 Nepalese Rupee equals **0.0086556 USD** United States Dollar as of Tuesday 23 March 2021*

The first task was performed in three rounds which were timed 45 seconds and the task was to count the number of zeros from 16 boxes provided. The first round was called the “Piece-rate” round where the payment was distributed according to each participant’s own performance. In the number of zeros task, the participants had to count the number of zeros in a 16 box matrix. For each correct answer, they earned Rs. 50 and their final payment was Rs. 50* number of their correct answers. For example, if they solved 10 correct boxes out of 16, their earned payment would be 10*Rs. 50 i.e. Rs. 500. For the second round of the same task called the “Tournament”, the participants were randomly assigned to a group of 4 people. In the group, they had to compete with each other and only the ones who came first or second was the winner of the competition and would earn the payment of Rs. 100* number of their correct answers. For the people who came third or

fourth, the payment would be Rs. 0. In the baseline game, this would be the end of the second round but in the dictator game, the prize sharing option would allow participants to allocate their sum of money to the other participants if they won starting from as low as 10% to a full amount of 100%. However, participants also had an option to keep their amount to themselves and not share the money they won with other people.

After the tournament round, to measure their confidence level, the participants were asked to guess their rank, whether they came in the first two places i.e. 1 or 2, or the last two places i.e. 3 or 4. The participant who guessed their ranks correctly would be provided with Rs. 100 and the failure to do so would make the participants win Rs. 0 for this round. The same thing was also repeated in the third round, i.e. choice.

The third round of the task was the choice round where participants could choose the method of payment i.e., either Piece-rate or Tournament. If a subject chose the "Piece-Rate" method, they would receive NPR 50 for each table they solved, similar to the first round. However, if a subject chose the "Tournament" payment method, the payment would be Rs. 100 for every correct table solved only if they are the top performers. In this, the payment would be dependent on the current score of the subject as well as the past scores of the other 3 group members. Here, the subject's current score would be compared to the round 2 scores of the participants they are competing with. If the participants were in a tie, the tie was broken in a random order to have clear winners and clear losers.

In this round, we try to see if the participants could either be risk-seekers and choose the higher payment and higher risk or risk-averse and choose the lower payment and lower risk. Following the dictator game, the third round allowed participants to choose to allocate their sums to the ones who had performed lower from 10% to 100%.

In the prize sharing option of the dictator game, the two top performers had the right to be the dictator of the game so each top performer was paired with a low performer. Then they were given a choice to allocate their total sum won to the low performing participants to see their willingness to share. For example, if one top performer in a tournament game won Rs. 1200 and decided to allocate 20% to the low performer he is paired with, he will have 20% of Rs. 1200 i.e Rs. 240 reduced from his earnings which will make his earning Rs. 960 and the low performers earned Rs. 240 for the round. Here we are trying to see if the option to share this would affect their decision-making in the selection of a game type i.e., Piece-rate or Tournament in the "Choice" round. The allocation of the sum is one of the main results of our study which not only indicates gender-wise willingness to share payment but also determines the change in competitiveness in each round of each game when the option of allocation is present.

The second task was the Coin Toss task which was the game measuring risk tolerance and aversion. In this round, we assessed risk tolerance through a series of decisions between a fixed sum of money and an unpredictable, gambling option with a bigger payout but a 50% chance of winning, as determined by a coin flip. Subjects got 6 tickets from which they can choose from and the tickets get riskier, the higher they go. The first ticket starts as a no-risk choice where a subject will win Rs. 500 no matter what side the coin flip lands on. For the second ticket, if the coin turns on HEADS, the subject would earn Rs. 600 but if it landed on TAILS, the subject would earn Rs. 450. Similarly, for the third ticket, if the coin turned on HEADS, the subject would earn Rs. 700 but if it landed on TAILS, the subject would earn Rs. 400. In choosing ticket 4, the subject would earn Rs. 800 upon getting heads and Rs. 350 upon getting tails and in choosing ticket 5, the subject would earn Rs. 900 upon getting heads and Rs. 300 upon getting tails. The final ticket was the one where there was the most risk of losing money but also, more opportunity to make a lot of money with heads paying Rs. 1000 and tails paying Rs. 250. In the end, when the coin was flipped the subjects were

compensated according to the tickets they chose.

In the last round of the experiment, participants were asked to fill a survey which had questions about their views towards risks and competition.

V. Data

My sample consisted of 320 subjects, 158 males and 162 females. The original sample had 400 subjects, but we discarded the first 80 observations as a result of execution issue while performing the experiment. Subjects were selected from a savings and credit cooperative of Kathmandu, Nepal named "Pabasa". Pabasa had more than 15,000 members and was located in the central part of Kathmandu. For this experiment, I chose the active members who were involved in transactional activities of the cooperative, in savings, loans, and daily transactions. The cooperative provided me with a list that included the name and phone number of members with higher transactions in the year 2019; through which I was able to contact and plan different sessions. The reason for the selection of a cooperative in my experiment was to find people living in Kathmandu who still used the traditional form of banking and were essentially “unbanked”. These samples would represent an accurate demonstration of the population of the country as only 45.4% of the Nepalese population have bank accounts (Global Findex database, 2017).

In the sample, the subjects were distributed almost equally in terms of gender. They were on average 38 years old, 73% were married and 56% declared having children. About 57% of people had secondary education, 58% were working and the average income was Rs. 21,700. There appears to be no difference between Baseline subjects and Dictator subjects in terms of age, marriage, and having children. However, there are comparatively more educated and working subjects in the Dictator game treatment.

Table 1: Summary Statistics of Pabasa Sample by Treatment

	Overall	Baseline	Dictator
	Mean (S.D)	Mean (S.D)	Mean (S.D)
Female	.506 (.500)	.506 (.501)	.506 (.501)
Age	37.5 (7.54)	37.9 (7.52)	37.1 (7.57)
Married	.734 (.442)	.743 (.437)	.725 (.447)
Secondary Education	.568 (.496)	.543 (.499)	.593 (.492)
Parent	.565 (.496)	.575 (.495)	.556 (.498)
Working	.583 (.493)	.543 (.499)	.593 (.492)
Income	20968 (21699)	19525 (21819)	22412 (21550)
N	320	160	160

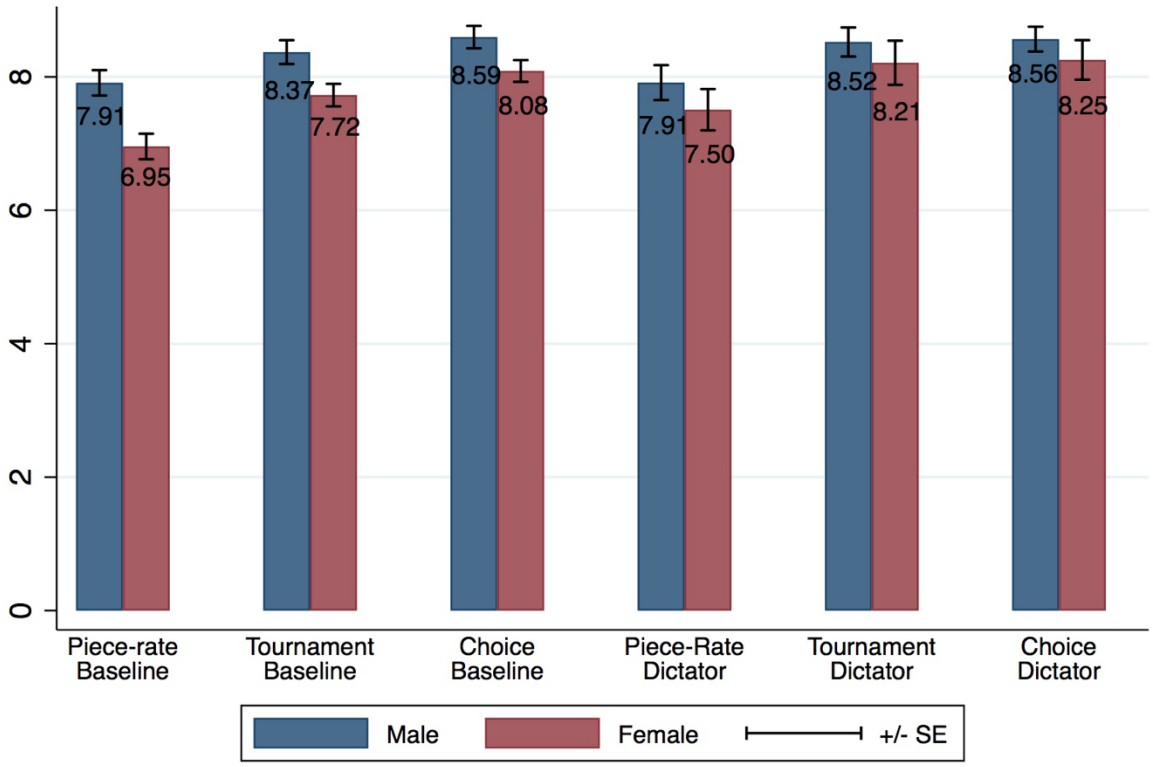
mean coefficients; sd in parentheses
*p<0.05, **p<0.01, ***p<0.001

VI. Results

In Figure 1, for the Baseline game in the first round, Piece-rate, the average number of scores for females was 6.95 and 7.91 for males. In the second round, Tournament, the average number of scores for females was 7.72 and for males, it was 8.37. In the third round, Choice, females on average scored 8.08 while males on average scored 8.59. While for the Dictator treatment, in the first round, Piece-rate, the average number of scores for females was 7.50 and 7.91 for males. In the second round, Tournament, the average number of scores for females was 8.21 and for males, it was 8.52. In the third round, Choice, females on average scored 8.25 while males on average scored

8.56. We can see that women have performed significantly lower than men in all Baseline three rounds (t-test; *p*-values at 0.0001, 0.009, 0.030 respectively). In the Baseline treatment, we can see that both men and women have significantly improved their performance as the rounds progressed, having significantly higher performance in the Tournament round and even higher in the Choice round. In the Dictator round, we see that men and women perform the same in all three rounds, Piece-rate, Tournament, and Choice (t-test; *p*-values at 0.319, 0.437, and 0.377 respectively).

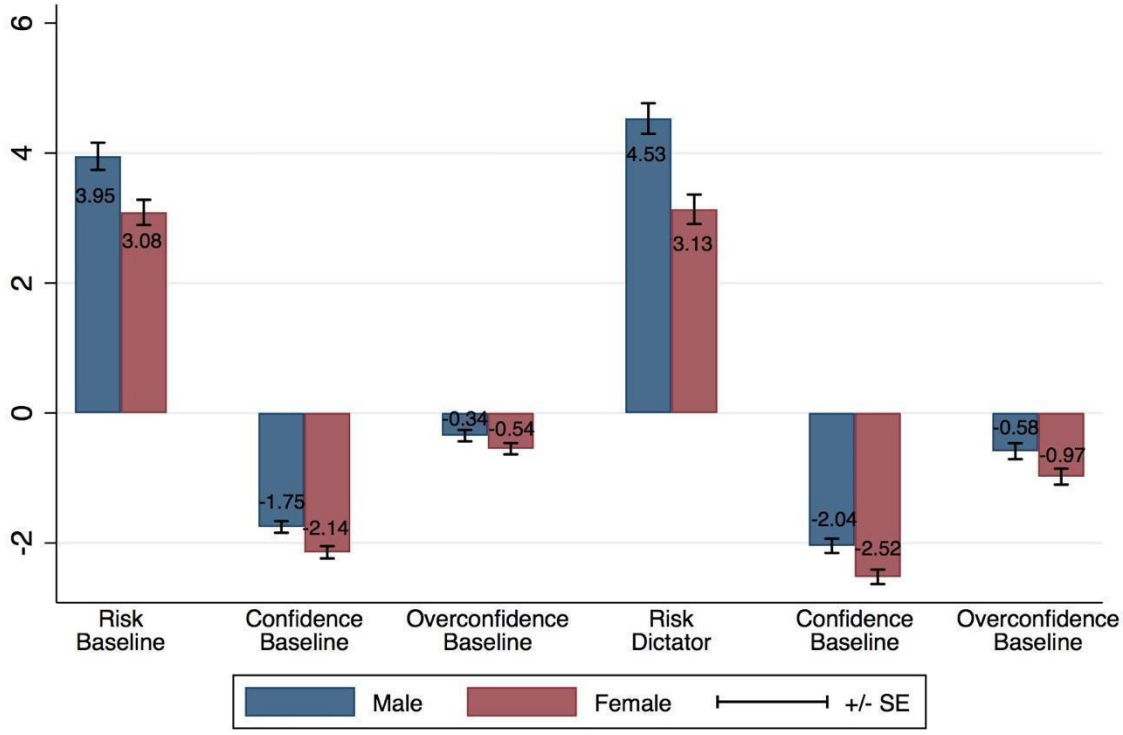
Figure 1: Performance by Gender and Treatment



Risk is the mean of people who chose riskier tickets in the coin toss game. Confidence denotes the mean of respondents who guessed their rank correctly whereas, overconfidence is the mean of respondents who guessed higher than their actual rank.

For figure 2, in the rank guessing round, for the Baseline treatment, the risk tolerance level for females on average was 3.08 and for males, it was 3.95; this is insignificant at the p-value of 0.72. Whereas, in the Dictator treatment, the risk tolerance level for females, 3.13 is significantly lower than males, 4.53 (*p*-value = 0.08).

Figure 2: Preferences and Beliefs



For the Confidence Baseline which measures whether the respondents were able to guess their rank correctly, both the gender had negative values with females scoring significantly lower negative values at -2.14 and males scoring -1.75 at a p-value of 0.003. In the Dictator treatment, the confidence level of women was still significantly lower at -2.52 and for men, it was -2.04 (*p*-value = 0.002). Men were significantly more confident in both sessions. Women were as overconfident at -0.54 vs -0.34 as men for the Baseline treatment (*p*-value = 0.1039). For the Dictator treatment,

overconfidence was significantly lower for women at -0.97 than men at -0.58 (p-value = 0.0259). This result is consistent with literature that suggests that women are more risk-averse than men and less confident when in competition.

Figure 3: Proportion Choosing to Compete

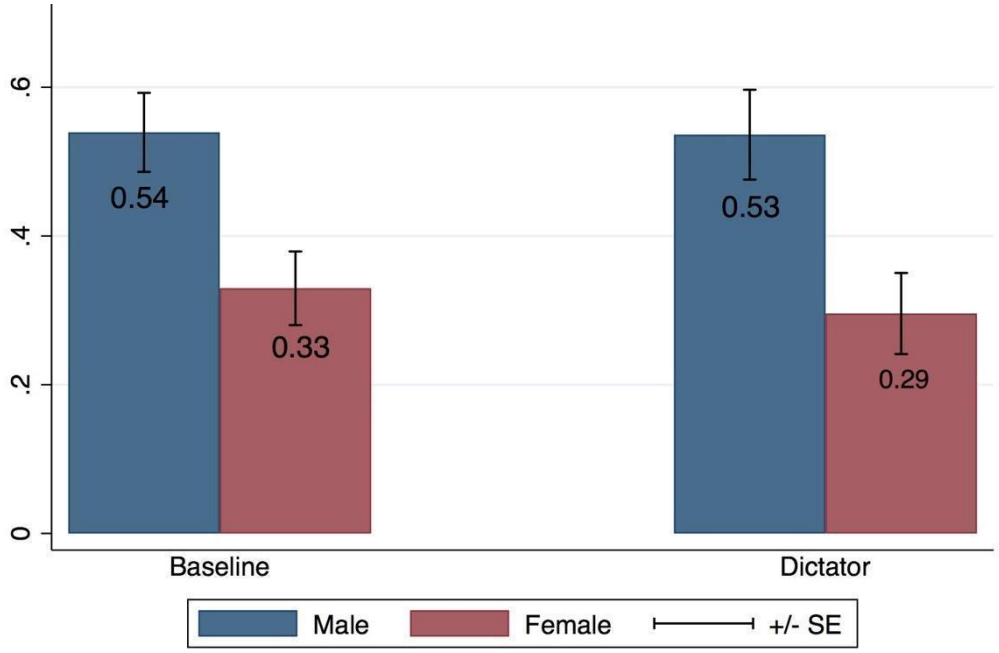


Figure 3 shows the results of a comparison between male and female proportions choosing to compete in each round where they had a choice between competing or not. Each participant had the freedom to choose a safer option, Piece-rate, or a competitive option, Tournament. The result shows that men are significantly more competitive in Baseline treatment: 54% of male subjects choose to compete vs 33% of female subjects (p-value = 0.004). Also, male subjects are significantly more competitive when the game is Dictator: 53% of male subjects choose to compete vs 29% of female subjects (p-value = 0.003). Here we can see that in both treatments, there are no variables of these variances except for Gender.

Table 2 – Comparison of performance and competitiveness under different game

Variable	Baseline (H0: difference=0 P value)	Dictator (H0: difference=0 P value)
Piece-rate	**0.000**	0.319
Tournament	**0.009**	0.437
Choice	**0.031**	0.377
Risk	0.724	**0.088**
Confidence	**0.003**	**0.002**
Overconfidence	0.103	**0.025**
Choosing to compete	**0.004**	**0.003**
Parent choosing to compete	**0.253**	**0.929**
Non-parent choosing to compete	0.002	0.000

VII. Regression Results

Table 3 shows the regression result using clustered errors at session level of the entire sample of 320 respondents. The result shows that females are 22% less likely to compete than men at a significance of 1% level. We can also see that Piece rate score of round 1 score is positively correlated to competition which means increase in R1 score increases competitiveness at 1% significance. Overconfidence also significantly increases the competitive behavior of participants. The female dictator measures the difference between two treatments which we obtain by multiplying Female and Dictator. The regression shows that when we have the entire sample, the treatment does not make any difference for females as it is not significant.

Since we did not find any significance in the difference in competitive behavior for the female dictators, we break the data into different groups to find if there is another factor that would affect competitiveness in both genders. We categorize our data into four groups which includes one with the sample including participants who do not have any children i.e., non-parents sample, another with the sample including participants who do have any children i.e., parents sample, another with the sample including participants who are only males i.e., male sample and the last sample including participants who are only females i.e., female sample. This way, we are going to be able to capture behavior of different groups in competition.

Table 4 shows regression results of non-parent samples using clustered errors. The result shows that females are 43% less likely to enter into the Tournament than men at a significance of 1% . Like the result from the entire sample, Round 1 scores also increases with competition at 1% significance. Moreover, female dictators are 26% less likely to compete at a significance of 10%. In Table 5 with the parent samples, female dictators are 12.4% more likely to compete but this is not significant. In Table 6, we see that male parents are 22.9% less likely to compete at 1% significance and male dictator parents are 22.9% less likely to compete. When we compare this result with female samples of Table 7, we find that 15% of female parents are more likely to compete at significance of 10%. We also observe that overconfidence in females increases the competitiveness in females at 1% significance.

Table 8 has added variable interaction with female and parent (female*parent), dictator and parent (dictator*parent) and female and dictator and parent (female*dictator*parent). It shows that female parents are 21.4% more likely to compete than male parents at 5% significance. And female

dictator parents are 0.38% more likely to enter in competition at 5% significance. Overall, our results show that while the Dictator treatment overall did not have a positive effect on the competitive behavior of women, it had a significantly positive effect on mothers. When women have children, they significantly increase their competitiveness. Hence, the gender gap in competition closes when women have children and have to care for their children. This could be because of the increased financial responsibility in mothers to provide better resources for their children.

Table 3: OLS Estimates Regressed on Competition Entry using Clustered Errors at Session Level

VARIABLES	(1) Compete	(2) Compete	(3) Compete	(4) Compete	(5) Compete	(6) Compete
Female	-0.223***	-0.223***	-0.210**	-0.150*	-0.153*	-0.144*
	(0.0585)	(0.0589)	(0.0760)	(0.0803)	(0.0796)	(0.0790)
Dictator		-0.0187	-0.00309	-0.00328	0.000225	0.0120
		(0.0515)	(0.0864)	(0.0881)	(0.0873)	(0.0871)
Female Dictator			-0.0308	-0.0650	-0.0666	-0.0556
			(0.0941)	(0.102)	(0.100)	(0.100)
R1 score				0.0625***	0.0619***	0.0602***
				(0.0126)	(0.0130)	(0.0135)
Risk					-0.0104	-0.00883
					(0.0160)	(0.0161)
Overconfidence						0.0514
						(0.0311)
Constant	0.538***	0.546***	0.539***	0.0453	0.0858	0.112
	(0.0403)	(0.0395)	(0.0439)	(0.101)	(0.140)	(0.145)
Observations	320	320	320	320	320	320
R-squared	0.051	0.051	0.052	0.120	0.122	0.131

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: OLS Estimates Regressed on Competition Entry using Clustered Errors at Session Level for Male Only Samples

VARIABLES	(1) Compete	(2) Compete	(3) Compete	(4) Compete	(5) Compete
Dictator	-0.00309	0.00464			
	(0.0865)	(0.0874)			
Round 1		0.0685***			
		(0.0203)			
Risk		-0.0141			
		(0.0277)			
Overconfidence		0.0133			
		(0.0433)			
Dictator			0.00947	0.140	0.137
			(0.0823)	(0.145)	(0.141)
Parent			-0.229***	-0.131	-0.129
			(0.0747)	(0.109)	(0.105)
Dictator Parent				-0.229*	-0.204
				(0.126)	(0.126)
Round 1					0.0613***
					(0.0183)
Risk					-0.0218
					(0.0255)
Overconfidence					0.0203
					(0.0402)
Constant	0.539***	0.0513	0.663***	0.610***	0.208
	(0.0601)	(0.215)	(0.0941)	(0.115)	(0.223)
Observations	158	158	158	158	158
R-squared	0.000	0.076	0.052	0.064	0.131

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: OLS Estimates Regressed on Competition Entry using Clustered Errors at Session Level for Female Only Samples

VARIABLES	(1) Compete	(2) Compete	(3) Compete	(4) Compete	(5) Compete
Dictator	-0.0339	-0.0251			
	(0.0628)	(0.0727)			
Round 1		0.0538***			
		(0.0166)			
Risk		-0.00892			
		(0.0195)			
Overconfidence		0.0863*			
		(0.0408)			
Dictator			-0.0327	-0.121	-0.119
			(0.0570)	(0.0973)	(0.107)
Parent			0.152*	0.0833	0.0871
			(0.0860)	(0.106)	(0.0855)
Dictator Parent				0.155	0.158
				(0.171)	(0.166)
Round 1					0.0567***
					(0.0167)
Risk					-0.00967
					(0.0185)
Overconfidence					0.0770*
					(0.0411)
Constant	0.330***	0.0326	0.243***	0.282***	-0.0403
	(0.0453)	(0.126)	(0.0617)	(0.0710)	(0.140)
Observations	162	162	162	162	162
R-squared	0.001	0.104	0.027	0.034	0.139

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: OLS Estimates Regressed on Competition Entry using Clustered Errors at Session Level for Parent Only Samples

	(1)	(2)	(3)	(4)
VARIABLES	Compete	Compete	Compete	Compete
Female	-0.0578	-0.0585	-0.114	-0.0451
	(0.0820)	(0.0824)	(0.114)	(0.119)
Dictator		-0.0265	-0.0889	-0.0645
		(0.0675)	(0.107)	(0.101)
Female Dictator			0.124	0.0843
			(0.126)	(0.129)
Round 1 score				0.0635***
				(0.0180)
Risk				-0.00743
				(0.0242)
Overconfidence				0.0330
				(0.0263)
Constant	0.438***	0.450***	0.479***	0.0156
	(0.0506)	(0.0639)	(0.0777)	(0.179)
Observations	181	181	181	181
R-squared	0.003	0.004	0.008	0.094

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: OLS Estimates Regressed on Competition Entry using Clustered Errors at Session Level for Male Only Samples

	(1)	(2)	(3)	(4)
VARIABLES	Compete	Compete	Compete	Compete
Female	-0.438***	-0.438***	-0.328***	-0.274**
	(0.0701)	(0.0706)	(0.0887)	(0.0925)
Dictator		0.00730	0.140	0.157
		(0.0694)	(0.111)	(0.111)
Female Dictator			-0.261*	-0.272**
			(0.128)	(0.120)
Round 1 score				0.0514***
				(0.0116)
Risk				-0.0232
				(0.0173)
Overconfidence				0.0733
				(0.0424)
Constant	0.667***	0.664***	0.610***	0.312*
	(0.0623)	(0.0658)	(0.0715)	(0.151)
Observations	139	139	139	139
R-squared	0.194	0.194	0.211	0.283

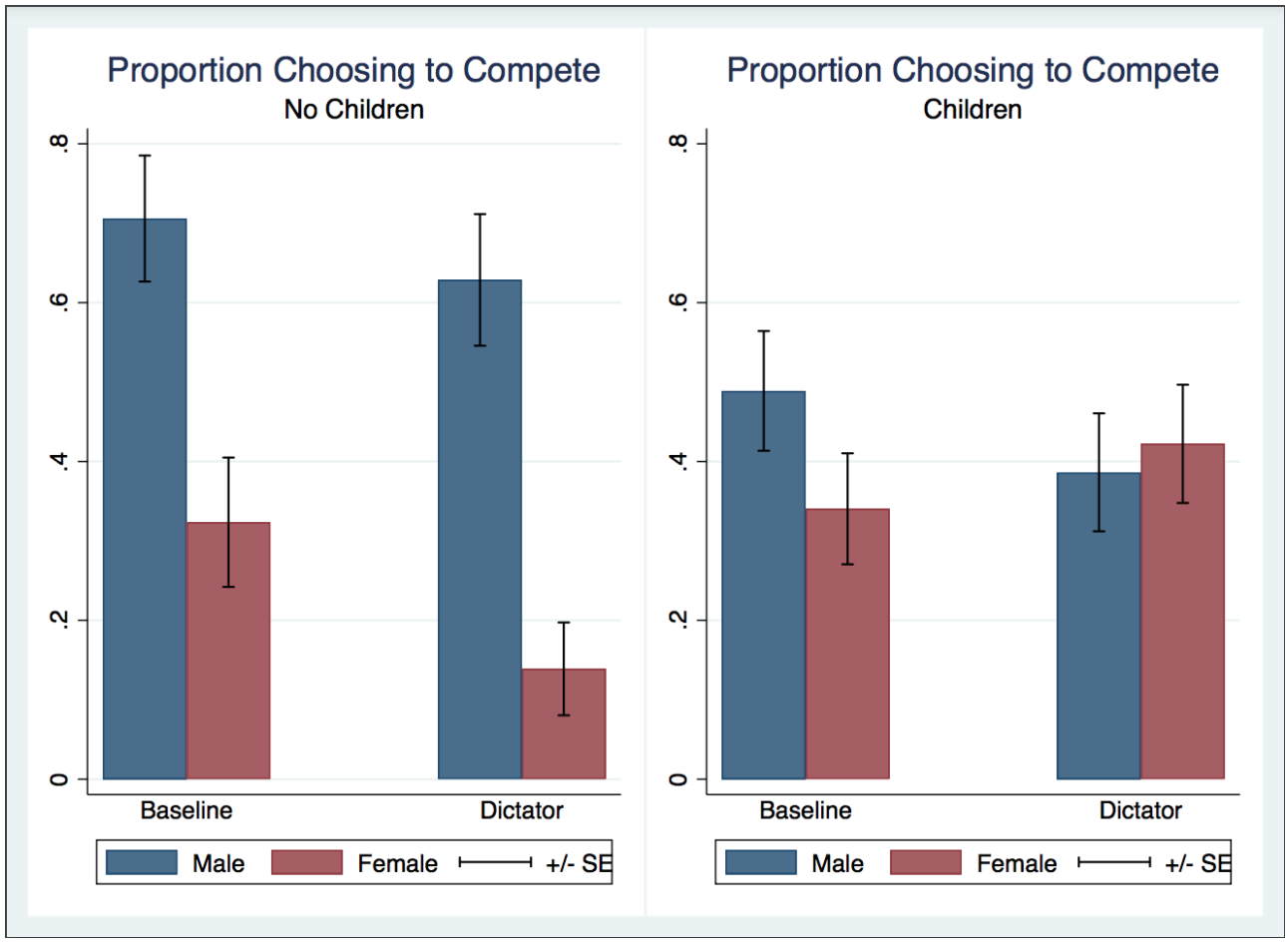
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: OLS Estimates Regressed on Competition Entry using Clustered Errors at Session Level

VARIABLES	(1) Compete	(2) Compete	(3) Compete	(4) Compete	(5) Compete	(6) Compete	(7) Compete
Female	-0.223***	-0.223***	-0.208**	-0.328***	-0.273**	-0.279**	-0.269**
	(0.0637)	(0.0640)	(0.0852)	(0.101)	(0.0988)	(0.0977)	(0.0991)
Parent	-0.0362	-0.0357	-0.0363	-0.131	-0.126	-0.127	-0.131
	(0.0695)	(0.0694)	(0.0691)	(0.109)	(0.106)	(0.105)	(0.105)
Dictator		-0.0179	-0.00110	0.140	0.115	0.127	0.141
		(0.0396)	(0.0852)	(0.146)	(0.140)	(0.138)	(0.144)
Female Dictator			-0.0331	-0.261*	-0.278*	-0.286*	-0.274*
			(0.129)	(0.143)	(0.146)	(0.149)	(0.151)
Female Parent				0.214**	0.219**	0.223**	0.222**
				(0.0895)	(0.0920)	(0.0913)	(0.0923)
Dictator Parent				-0.229*	-0.188	-0.199	-0.203
				(0.126)	(0.118)	(0.120)	(0.126)
Female Dictator Parent				0.385**	0.359*	0.368*	0.365*
				(0.144)	(0.174)	(0.177)	(0.174)
Round 1					0.0611***	0.0603***	0.0584***
					(0.0144)	(0.0145)	(0.0141)
Risk						-0.0152	-0.0138
						(0.0161)	(0.0168)
Overconfidence							0.0506*
							(0.0275)
Constant	0.558***	0.566***	0.559***	0.610***	0.124	0.185	0.214
	(0.0788)	(0.0844)	(0.0911)	(0.116)	(0.169)	(0.167)	(0.165)
Observations	320	320	320	320	320	320	320
R-squared	0.052	0.053	0.053	0.099	0.164	0.167	0.176

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 4: Proportion Choosing to Compete in parent and non-parent samples



VIII. Conclusion

To understand the competitiveness in different genders, it is crucial to understand what drives that competitive behavior. As per the evolutionary literature, men as hunters, gatherers, and providers wanted to compete for power, and women prioritized raising their children and helping other females to raise their children too. Many economists have conducted experiments to see women's competitive behavior with cash incentives and came to the conclusion that women are less competitive (Gneezy, Niederle and Rustichini, 2003). However, we also have to understand that competition for tasks with cash incentives was more advantageous for men because those incentives are considered to be more important to men. So will the outcome of competition change if we change the incentive of the competitive game and make them appeal more to women? To do this, we used the design of Cassar and Rigdon (2021) that introduced a prize sharing option (Dictator Game in the Dictator treatment) where participants could share a percentage of the prize they win with the ones who performed lower. If this practice could give women a chance to earn friendships and bonds, would they want to be more competitive and perform better? Our results show that in the games, women performed lower than men and both men and women improved their performance as the rounds progressed from Piece Rate, Tournament to Choice. Also, female participants were less likely to take risks and were less confident whereas males were significantly more competitive in both the Baseline and Dictator treatment. When looking at the overall sample using OLS regression, our result shows that females are 22% less likely to compete than men. When dividing the samples into groups of parents, non-parents, males, and females, the results show that for non-parents, female dictators were 26% less likely to enter the Tournament and for parents samples, female dictators were

12.4% more likely to enter the Tournament but this was not significant. This is further clarified by the male and females samples which shows that male dictator parents were 22.9% less likely than female samples to compete whereas 15% of female parents were more likely to compete. Although our hypothesis suggesting that females would increase their competitive behavior with a prize sharing option got rejected, we can conclude that mothers would enter into the competition more than the fathers would. These results with a Nepalese sample are different from the results in Cassar & Rigdon (2021) who demonstrate with a U.S. sample that the Dictator treatment closes the gender gap in competitiveness. The results are similar to Cassar et al. (2016) whose findings show that mothers are more competitive when the payoff is designed to be beneficial to their children, a voucher for children's books. This is also consistent with evolutionary theories in female competitive behavior of women wanting to care for their children. The result shows that women would be more likely to compete when they have children so that they can use their reward to provide better resources to their children. The study can have important policy implications for the labor market. Women's participation in the labor market could be hindered by having to work long hours and not having a flexible schedule in order to get a promotion or secure top positions (Goldin, 2014). Therefore, implementing programs for child-care could improve women's participation in the labor market (Clements, et al., 2013). In a workplace scenario, rewarding achievement with child benefitting incentives such as on-site child care, scholarship benefits to children, extracurricular activities vouchers for kids, tutor fees, etc. could motivate women to enter the labor market more and reduce the labor force gap.

References

Cassar, A. & Rigdon, M. L. (2021). Option to cooperate increases women's competitiveness and closes the gender gap. *Evolution and Human Behavior* online.

Cassar, A., Wordofa, F. & Zhang Y. J. (2016). Competing for the benefit of offspring eliminates the gender gap in competitiveness. *Proceedings of the National Academy of Sciences*, *113*(19), 5201-5205.

Berniell, M., & Sánchez-Páramo, C. (2011). Overview of Time Use Data Used for the Analysis of Gender Differences in Time Use Patterns. Background Paper for the World Development Report (2012), World Bank, Washington, DC.

Betz, M., O'Connell, L., & Shepard, J. M. (1989). Gender differences in proclivity for unethical behavior. *Journal of Business Ethics*, *8*(5), 321-324.

Central Bureau of Statistics (CBS) International Labour Office (ILO). (2019). Report on the Nepal Labour Force Survey 2017/18.

Clutton-Brock, T. (2007). Sexual selection in males and females. *Science*, *318*(5858), 1882-1885.

Demirguc-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. World Bank Publications.

Deuba, A. R. (1998). Empowering Nepalese women: What are the chances. *Contemporary Nepal*, 245-255.

Duflo, E. (2012). "Women empowerment and economic development". Journal of Economic Literature, 50(4), 1051-1079.

Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, *109*(3), 573.

Eckel, C. C., & Grossman, P. J. (2008a). Men, women and risk aversion: Experimental evidence. *Handbook of experimental economics results*, *1*, 1061-1073.

Flory, J. A., Leibbrandt, A., & List, J. A. (2015). Do competitive workplaces deter female workers? A large-scale natural field experiment on job entry decisions. *The Review of Economic Studies*, *82*(1), 122-155.

Gneezy, U., Niederle, M., & Rustichini, A. (2003). "Performance in competitive environments: Gender differences". The Quarterly Journal of Economics, 118(3), 1049-1074.

Goldin, C. (2014). A grand gender convergence: Its last chapter. *American Economic Review*, *104*(4), 1091-1119.

Lindal, P. J., & Hartig, T. (2015). Effects of urban street vegetation on judgments of restoration likelihood. *Urban forestry & urban greening*, *14*(2), 200-209.

Lorber, J. (1994). Night to his day. *Race, class, and gender in the United States*.

Luxen, M. F. (2007). Sex differences, evolutionary psychology and biosocial theory: Biosocial theory is no alternative. *Theory & Psychology*, *17*(3), 383-394.

Nakamura, Y., Leppert, M., O'Connell, P., Wolff, R., Holm, T., Culver, M., ... & Kumlin, E. (1987). Variable number of tandem repeat (VNTR) markers for human gene mapping. *Science*, *235*(4796), 1616-1622.

Scherer, R. F., Brodzinski, J. D., & Wiebe, F. A. (1990). Entrepreneur career selection and gender: A socialization approach. *Journal of small business management*, *28*(2), 37.

Subedi, P. (1997). Nepali Women Rising. Kathmandu. *Prativa Subedi*.

The World Bank. 2021. [online] Available at: <https://data.worldbank.org/indicator/SL.TLF.CACT.FM.ZS?locations=NP> [Accessed 15 June 2021].

U.N. Women (2010). Women's empowerment principles. *Equality means business*.

Van Den Hoogen, F., Khanna, D., Fransen, J., Johnson, S. R., Baron, M., Tyndall, A., ... & Pope, J. E. (2013). 2013 classification criteria for systemic sclerosis: an American College of Rheumatology/European League against Rheumatism collaborative initiative. *Arthritis & Rheumatism*, *65*(11), 2737-2747.

Yankelovich, D. (1972). The changing values on campus: Political and Personal Attitudes of Today's College Students: A Survey for the JDR 3rd Fund.