

# Parental Expectations and Children's Willingness to Compete: A Lab-in-the-field Experiment in Colombia

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## Abstract

*We conduct a lab-in-the-field-experiment in Bogotá to explore whether parents' beliefs on children's expected absolute performance in games are predictors of the children's willingness to compete in these games. In our game, children are randomly assigned to one of three games, whose outcome depends either on knowledge (relative to their school's educational attainment), fine motor skills, or gross motor skills. We study whether the physical closeness of the parent during the game affects willingness to compete and performance. We find that male children are slightly more likely to compete than female children, and that they are more likely to compete when they are accompanied by their father than by their mother.*

## 1. Introduction

Despite the fact that competition has likely been a part of the human existence since the beginning, there is still little certainty regarding what exactly makes an individual more likely to compete than another. However, recent research in developed countries has shown that, while women seem to shy away from competition, men seem to embrace it (Niederle & Vesterlund, 2007), furthermore, forcing women to compete might make them less productive than if they were able to perform in non-competitive environments (Gneezy et al., 2003), though this might be slightly mitigated if they are able to compete only against other women (Niederle & Vesterlund, 2011).

In non-WEIRD societies, however, some studies have shown quite different results, such as evidence that women from Khasi, a matrilineal society in India, were twice as likely to opt for competition compared to their male peers and were even slightly more prone than males from the Maasai, a patriarchal society in Tanzania (Gneezy et al., 2009). In another example, once you control for individual performance, college aged women in the United Arab Emirates were more likely to compete than their male counterparts, despite this being considered a stereotypical patriarchal society (Dariel et al., 2017).

Because of the relative importance that willingness to compete has in determining future outcomes, such as educational achievement or earnings potential, recent studies have focused on understanding at what age do children develop their taste for competition, and what are the contributing factors into shaping said taste. For instance, two studies conducted with kids in Sweden and Colombia respectively, found no significant gender difference in either willingness to compete or performance across three different tasks (Dreber et al., 2011; Cárdenas et al., 2012), all of which implies that the trends we see

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in adults are likely to be the product of external factors. This result contrast with other preferences, such as fairness preferences when unequal outcomes are not avoidable, which are more broadly accepted among university students compared to children (Sutter, 2007).

In the paper closest to ours, Khadjavi and Nicklisch (2018) argue there might be a relationship between willingness to compete and socioeconomic status. They find that lower income parents tend to have higher expectations on their kids, leading them to compete less strategically, and therefore, earn fewer rewards.

Our contribution dwells on looking for a possible relationship between the presence (or absence) of an authority figure, a guardian hereafter, and the kid's willingness to compete and their performance at said task. In order to measure this, we conducted an activity in which kids were randomly assigned to one of three tasks (jumping rope, stacking a pyramid with cups, or answer grade-appropriate questions), and then asked if they wanted to compete against a kid that had previously gone before them, while the guardians were randomly asked to either watch their kid from a distance or to be with them while they did their task. Additionally, before assigning the kid to an activity, the guardian had to answer a short interview regarding both his beliefs of the kid's preferences, as well as over said kid's performance.

We collected a sample of 106 participants, between the ages of 5 and 14. We find that male children are slightly more likely to compete (77%) than female children (73%). However, the most interesting result is that, while female companions expect more often that their children competes (compared to male companions), children actually are more likely to compete in presence of their father than in presence of their mother.

## 2. Experimental Design

We designed an experiment to measure how the pressure imposed by parents (or an authority figure) over the children can affect their performance in some tasks. The experiment had three possible tasks, each participant was randomly assigned to the activity that should complete.

The first task was a trivia of scholar knowledge (based on the 'Derechos básicos de aprendizaje' created by the Colombian Ministry of Education, thus files detail the topics that should be taught at each scholar grade). This trivia variates according to the actual grade of the child. The second possible task evaluates gross-motor skills, we ask the children to jump the rope as much times as they can in one minute. The third activity was speed-stack, the participant had to stack the cups in a pyramid and unstack it in the lowest possible time, in this activity we evaluate the fine-motor skills. A design with three different activities was essential to guarantee the non-self-selection bias, calling the attention of every child not just the good ones in some activity.

In each of the activities, the participant had the possibility to compete or not compete with another child. This child, the opponent, was a randomly selected participant that already completed the same task. We didn't tell the participant any information about the opponent, in this way we guaranteed that

the decision of compete or not compete wasn't bias by any expectation on the competitor's performance as a goal to beat, just the his/her preferences for competition. After the participant made the decision and completed the task, we compared his/her results with the opponent's results, based on this comparison we knew the payoff of the child.

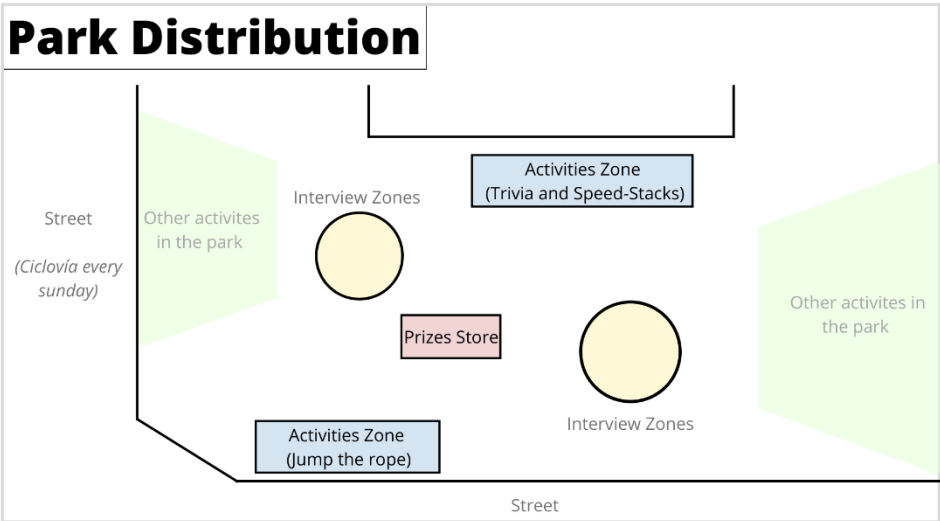
The payoff depends on the willingness for compete. If the participant decided to "not compete", he/she received a fixed payment, a midpoint payoff; but, if the decision was "compete", the payment depends on the performance in the activity. If the result surpassed the opponent's, then he/she would obtained the maximum payoff, or, if the result was lower, the payoff would be the minimum. Table 1 the specification of the payments, given it in stars that the child can redeem in the "prize store". An important clarification is that the participants had knowledge about the variety of prizes, they know what kind of prizes could obtain with each quantity of stars.

Our random variation lies on the distance between the participant and his/her guardian. We randomly define whether the parent can join him/her at the "Activities Zone", or if he/she should to wait at the "Interview Zone" (approximately 4-5 meters of distance). Figure 1 shows a representation of the distribution at the park.

Table 1. Incentives explained to participants before they took the decision to compete or not.

Compete or Not Compete Decision	Task Performance	Payment (in stars)
Compete	Better than past competitor	6
Compete	Worse than past competitor	2
Not Compete	N/A	4

Figure 1. Distribution of areas in the experiment



### 3. Data Collection

Our objective was to be in a place with high affluence of kids within 5 and 14 years old who were accompanied by either their parents or a guardian, and who were not limited to a particular socioeconomic level. The experiment has been run on two Sundays (March 6 and March 27), both times in a park called Parque de las Pampas, just beside the ciclovía passing through Carrera 9. This park was chosen not only for its proximity to ciclovía, but also thanks to the variety of activities available, such as a skatepark, a basketball court and a soccer field.

Ciclovía is an activity in Bogotá which happens every Sunday morning from 6 am to 2 pm. It consists of closing one lane of several main avenues, in order to allow people to use their bikes, roller skates, or even just go for a jog or a walk. As a result, more than 120km of the main avenues are closed each Sunday, facilitating non-vehicular mobility both from north to south and east to west, while some use it to exercise, it is also used by families looking to spend some quality time outdoors.

To invite participants, we first approach their guardians. After a brief explanation of the activity (including the minimum requirements to participate, such as age, emphasizing that the activity was part of an academic field study, and that it would not take more than 15 minutes), they were asked if they would like their kids to participate in the activity, after which, in case of an affirmative answer, it was confirmed with the kids that they would also like to participate. In case the guardian was in charge two or more participants, they were both allowed to participate, though they were handled in such a way that both kids were not participating at the same time if the guardian had been randomly assigned to be with both their kids while they carried out the activity.

### 4. (Preliminary) Results<sup>3</sup>

#### 4.1. Summary statistics

We asked the guardians in which games they expect their companion children to compete. We find that guardians expect the kids to compete in the “stack the cups” activity (93%), followed by the trivia activity (75.5%) and “jump the rope” (75.2%). However, we find that male children are expected to compete more often than female children: in “stack the cups”, 94% versus 92%; in the trivia, 79% versus 71%; and in “jump the rope”, 77% versus 74.5%. However, gender differences are much more pronounced, and in the opposite direction, among the guardians. Female guardians expect that the children compete in 96.8%, 77.7%, and 80.6% in the stacking, trivia, and jump rope game, respectively. By contrast, these values among male guardians are 88.4% (12 percentage points lower), 72.1% (5 pp lower), and 67.4% (13 pp lower).

Regarding performance, children correctly responded 4.5 trivia questions within two minutes, took on average 29.9 seconds stacking and de-stacking the pyramid of cups, and completed on average 21.5 jumps with the rope during 60 seconds. We do not find large differences by the children’s sex: in the trivia questions, female children completed 4.7 on average, and male children 4.3; in the stacking task,

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<sup>3</sup> By the time of the *Congreso de Economía Colombiana*, we expect to collect roughly the same number of observations.

female children took 29.8 and male children 29.7 seconds; and female children completed 22.1 jumps and male children 21.2.

Regarding the predictions of the guardians, we informed them about the average performance in each activity from kids in the past (i.e., in the past sessions). Female guardians estimate a higher performance in the trivia (4.7 questions) compared to males (4.3 questions). By contrast, male guardians estimate a higher performance in the stacking task (27.7 seconds) compared to women (32.3 seconds). The same behavior was observed for the “jump the rope” task: male companions expected 25.7 jumps, compared to the 16.8 jumps expected by female guardians.

#### 4.2. Decisions to compete

We find that the task in which children are more likely to compete is trivia (85.3%), followed by the cup-stacking activity (71.4%), and by jumping the rope (68.9%). Male children are only slightly more likely to compete (76.9%) than female children (73.1%).

Regarding the guardian’s relationship with the kid, children are more likely to compete when accompanied by their father (84.9%) than by their mother (63.6%). Moreover, when they are accompanied by another guardian, they compete 83% of the time.

Regarding the correspondence between parental beliefs and children’s decision, we find that parents correctly predict their children’s decision to compete 73.5% of the time for the trivia, 61.9% for the stacking the cups task, and 55.2% of the time for jumping the rope.

### 5. Conclusions

We designed and conducted an experiment to validate the differences in the willingness to compete by sex among children, and to understand the paternal expectations for competition. We find an interesting mismatch between female guardians’ expectations that their children compete, which are much larger than the expectations among male guardians; and the actual children’s decision to compete, which is larger when they are accompanied by their father than by their mother.

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