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Valuing personal safety and the gender earnings gap

Oscar Becerra,* José-Alberto Guerra†‡

Abstract

Are there gender differences in the willingness to pay (WTP) for safer jobs? Using a laboratory experiment, we elicit participants' WTP for an early (perceived 'safer') on-site shift. We find that women forego larger earnings in order to secure an early shift more than men do, with a safety concern about the late shift being a key driver, explaining up to 20% of the estimated gender gap. We do not observe a gender gap if the job can be completed remotely. Results are robust to controlling for morning-types, household and demographic characteristics, attitudes toward risk and uncertainty, victimization, and information provision about crime. Controlling for crime exposure reduces the estimated gender gap. Thus, our results suggest that policies that reduce gender disparities in safety concerns may affect women's labor supply.

Keywords: Safety concerns, willingness to pay, gender gaps, experiment

JEL: J16, C92, D03

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El valor de la seguridad personal y la brecha salarial de género

Oscar Becerra[*], José-Alberto Guerra[†‡]

Resumen

¿Existen diferencias de género en la disposición a pagar (DAP) por trabajos más seguros? Mediante un experimento de laboratorio, obtenemos la DAP de los participantes por un turno en la mañana (percibido como 'más seguro') en un lugar predeterminado. Descubrimos que las mujeres renuncian a mayores ingresos para asegurar el turno de la mañana más que los hombres, y que la preocupación de seguridad sobre el turno de la tarde es un factor clave, que explica hasta el 20 % de la brecha de género estimada. No observamos una brecha de género si el trabajo se puede completar de forma remota. Los resultados son robustos a controlar por tipos matutinos, características del hogar y demográficas, actitudes hacia el riesgo e incertidumbre, victimización y provisión de información sobre crimen. Controlar por la exposición al crimen reduce la brecha de género estimada. Nuestros resultados sugieren que políticas que reducen las disparidades de género en cuestiones de seguridad pueden afectar la oferta laboral de las mujeres.

Keywords: Preocupaciones por seguridad, disposición a pagar, brechas de género, experimentos

JEL: J16, C92, D03

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1 Introduction

Labor market disparities by gender prevail in both the developed and the developing world. Among the labor supply factors explaining those differences, the literature highlights gender differences in the valuation of job amenities (Bertrand, 2020). Empirical evidence shows that those differences can explain a significant part of the gender earnings gap. These include, for instance, differences in the valuation of time flexibility (Bertrand et al., 2010; Mas and Pallais, 2017), job stability (Wiswall and Zafar, 2017), non-competitive environments (Flory et al., 2015), commuting times (Le Barbanchon et al., 2020), earnings risk (Bonin et al., 2007), and risk of death on the job (DeLeire and Levy, 2004; Grazier and Sloane, 2008). In most of these cases, however, it is not possible to disentangle whether observed differences in the valuation of amenities by gender are the outcome of differences in preferences or constraints resulting from decisions at the household level.

In this paper, we analyze the role of concerns about personal safety on determining differences in labor market outcomes by gender. Job safety is a key dimension to consider when selecting a job. If job safety (including the commute to and from work) is a valuable amenity and there are gender differences in this valuation, these differences could explain part of the observed differences in the labor market. Previous literature on developing economies has found that risks faced by women have a direct influence on their labor supply choices. In India, Chakraborty et al. (2018) and Siddique (2018) show that the perception of crime against women has a negative effect on the female labor force participation, while Borker (2020) finds that the perception of street harassment influences women's schooling choices. In Mexico, Utar (2018) documents that after the increase in homicides derived from the Mexican drug war between 2007 and 2010, the negative effects of violence are stronger in sectors with a high intensity of female low-skilled employment, which is likely associated with a reduction of female labor supply. In rural Colombia, Fernandez et al. (2014) find that after a violent (conflict-related) shock affecting the household, men tend to adjust their labor supply towards off-farm non-agricultural activities, while women adjust their time allocation towards childcare and housework.

To study whether there are gender differences in the valuation of personal safety in relation to a job, we provide experimental evidence on a group of college students. We document gender differences in willingness to pay for a safer job and investigate its determinants. Our setting is implemented in two rounds. In the first round, we offer students the opportunity to participate in a second round in which they must perform an unspecified simple task at some time in the future at the University campus. Participants are then allowed to choose between an early shift (9-10 a.m.) and a late shift (8-9 p.m.) and are given a compensation schedule of 11 fixed payments. Based on their choices, we recover a measure of the willingness to pay for the early shift. Along with participants' willingness to pay, we gather information on participants' safety concerns in regard to the night shift on campus, household characteristics, commuting patterns, chronotype ('morningness'), and exposure to crime.

We find a gender gap in willingness to pay for the early shift. In our main specification, once we account for a strict indifference between shifts (about 38% of our participants), there is an average gender gap of about 4,900 Colombian Pesos (COP) (between 13% and 18% of our baseline payment). The average willingness to pay is about 5,400 Colombian Pesos (COP) for women and COP 500 for men. The observed gap is rather moderate, as the distributions of willingness to pay by gender exhibit a sizable variation, and about 20% of the participants (women and men) have a strong preference for one of the shifts.

When we analyze the factors that may explain the gender differences in the willingness to pay, we find that a concern for personal safety in choosing the late shift is the primary driver of this result. To start, 70% of participants (60% of men and 76% of women) rank the late shift (8-9 p.m.) as more unsafe around campus than the early shift (9-10 a.m.). Furthermore, although we do not find gender differences in transportation modes, we find a sizable gap in exposure to sexual harassment in the daily commute: 80% of female participants and 52% of male participants reported being either a victim or the witness of an episode of sexual harassment while traveling around the city in the last 12 months. These differences are the largest that we found across several dimensions explored in the data.

Using a regression analysis, we estimate the relationship between willingness to pay and several factors. We find that the safety concern about the late shift is a key driver, as it explains up to 20% of the gender gap in the willingness to pay. Moreover, when we run a similar regression using the willingness to pay for an early on-line shift as the dependent variable, we find no gender differences in the willingness to pay and no effect of safety concerns, which corroborates our results relating willingness to pay for the early shift with safety concerns. The estimated effect is robust to the inclusion of other determinants for household constraints, personal traits and preferences, and commuting times. Although estimated with low precision, the only variables that appear to mediate in the relationship between safety concerns and willingness to pay are related to exposure to crime.

Even though our results cannot be generalized to the whole population, they allow us to isolate how gender differences in safety concerns and psychological and socio-psychological factors may play a role in determining the willingness to pay for a job amenity; in this case, a presumably safer shift. By surveying undergraduate students, we focus on a homogeneous population where gender differences in characteristics, household, and time constraints (e.g., educational attainment or time constraints due to parenthood) have a lower influence on decisions. Moreover, we implement the experiment in a location that students are familiar with and announce a task with no more risk than the time of the day in order to avoid gender differences in unobservables confounding our results. By committing ourselves to hire the students in a second round given the payment schedule they choose, we mitigate the risk of hypothetical bias (Hausman, 2012; Mas and Pallais, 2017).

Our work is related to previous literature analyzing the willingness to pay for a job amenity in experimental and non-experimental settings (Flory et al., 2015; Mas and Pallais, 2017; Wiswall and Zafar, 2017; Le Barbanchon et al., 2020). We contribute to the literature in at least two dimensions: first, we focus on personal safety concerns as a determinant of labor market choices for women, especially in economies where women face higher personal safety risks. Second, although our approach is more limited in scope than literature focusing on a representative sample of population, our experimental design has allowed us to isolate the influence of safety perceptions, psychological characteristics, and constraints on an individual's willingness to pay for a safer shift.

Our paper also contributes to the general literature discussing the differential impacts and responses by gender to safety concerns. Personal safety is a conditioning factor in women's decision-making, such as in labor force participation (Chakraborty et al., 2018; Siddique, 2018), which school to attend (Borker, 2020), and even whether to adopt defensive behaviors regarding the use of public transportation (Delbosc and Currie, 2012; Kash, 2019). A paper related to ours is that of Trawalter et al. (2020), where the authors argue that safety concerns can produce gender gaps in academic engagement, as they prevent female students and faculty from using academic facilities in the late hours of the evening (e.g., the library or laboratories). Our work contributes to this literature by showing the prominent role of safety concerns in participants' decision-making, and by quantifying its influence on the potential earnings a worker can perceive in a future task.

The rest of the paper is organized into five sections, including this Introduction. Section 2 presents the details of the experimental design used to elicit a willingness to pay, safety perception, and preference parameters; Section 3 discusses our empirical strategy, and Sections 4 and 5 present our main results and robustness checks. Finally, Section 6 concludes.

2 Experimental design

We ran two experiments: the first was implemented on-site at Universidad de los Andes, Bogotá, Colombia; and the second was implemented online with a subsample of participants from the first experiment. Our main goal is to elicit individual preferences about alternative future task arrangements affecting the safety perception. To do so we exploit time of the day (early versus late shift) and location (online versus on-site) of the future task.

For the first experiment, we recruited participants from an undergraduate student pool and invited them to an on-site experiment that took place between 2:30 p.m. and 3:30 p.m. on November 2019 and February 2020. We asked students about their preferred time of day to participate in a future task to be held at Los Andes campus. They could choose from two shifts: 9 to 10 a.m. (early) and 8 to 9 p.m. (late).[1] Our prior is that the early shift is perceived as being safer than the late shift, especially for activities held at the Los Andes campus in the City Center of Bogotá. We offered participants different compensation schemes for each shift to elicit their willingness to pay for the early shift and recovered their safety concerns about the late shift. We additionally gathered risk, ambiguity, and loss aversion parameters. To mitigate the role of the nature of the task on determining our results, we told participants that the task was the same in both shifts, no previous knowledge of any kind was required to complete it, and they could choose the day on which to attend.

The second experiment was the follow-up task as mentioned to participants in the first experiment. Due to the Covid-19 lockdown in Colombia, we implemented the activity remotely in July 2020. Participants attended the hour-long activity in the shift that they had chosen in the first experiment and earned the promised payment. We elicited participants' willingness to pay for an early versus a late shift for a future task, however this time the task was to be held remotely. While in the first experiment, we gathered information about the willingness to pay using changes over time (early versus late) with a (presumably unsafe) fixed location, in our second experiment we used changes over time only. In this experiment, we also recovered participants' commuting patterns, time use, chronotype, and exposure to crime before the pandemic.

[1]Our experimental setup did not impose any additional hazard on the participants to what they would have normally encountered in student life. On-campus late classes and extracurricular activities are common during the academic term. Furthermore, since 2001, Los Andes and other 11 universities located in Bogotá's City Center have implemented a 'safe corridor' strategy. This strategy entails close work and information sharing with Bogotá's Police department and privately hired guards, who conduct round-the-clock patrols of the university and its adjacent and connecting streets to keep students safe (Manrique and Arias, 2016).

2.1 Additional details

2.1.1 Willingness to pay stage

In this stage, we asked students about their preferred time to participate in a future experiment. In our first experiment, we told students that the future task was to be held on-site at the University campus, while in the second experiment the future task was to be held remotely (online).

Participants chose from two shifts; an early shift from 9 to 10 a.m. or a late shift from 8 to 9 p.m. We elicited participants' preferences in a choice-list type experiment, similar to Mas and Pallais (2017), where we offered different compensation schemes for each shift.[2] The early shift had a randomly assigned payment $w_0 \in \{\text{COP } 25{,}000, \text{COP } 35{,}000\}$,[3] while the late shift had a varying payment $w_1 = w_0 + \Delta w$, where Δw ranges from COP $-15{,}000$ to COP $15{,}000$ in COP $2{,}500$ increments (11 values). For subjects to report truthfully, we committed ourselves to hold the future task at the particular time shift they preferred for one of the 11 possible payments Δw, which was randomly chosen by the computer.

Thus, participants report which shift they prefer for each payment Δw. We use this information to recover participants' willingness to pay for an early shift.

2.1.2 Individual preferences stage

In the first experiment, after recovering the willingness to pay for the early shift we gathered incentivized lab measures of risk, ambiguity and loss aversion.[4] For the risk aversion measure we follow Cavatorta and Schröder (2019) where participants decided in a choice-list experiment between a fixed low risk lottery and lotteries with varying higher variance. To recover ambiguity aversion, we follow Cavatorta and Schröder (2019) and asked subjects to specify whether they preferred lotteries with known probability distributions, with increasing variance, or a lottery with unknown probability distribution over the same outcomes. Finally, we follow Gächter et al. (2007) by using a simple choice-list task to recover loss aversion where participants decided whether to accept lotteries over two outcomes, with one outcome representing increasing losses. Participants' payment in the first experiment was based on one randomly chosen decision from these three choice-list experiments.

[2] A detailed set of instructions is presented in Online Appendix B.1.

[3] Following Mas and Pallais (2017) this is done to check whether the starting hourly rate affects individual decisions.

[4] See Online Appendices B.2.2, B.2.3, and B.2.4.

2.1.3 Individual characteristics stage

In both experiments, we complemented the willingness to pay for the early shift stage with questionnaires recovering a rich set of individual characteristics and activities prior to the restrictions of the Covid-19 pandemic[5]. We asked participants about their commuting patterns between their residence and the University Campus (mode of transport and time spent for each journey). We exploited standard household survey questions about time use (caring for other household members, time spent resting, studying, and doing housework) and crime exposure (robbery and sexual harassment). We applied the Composite Morningness Scale survey of Morales et al. (2005) to recover our subjects' chronotype in order to account for possible gender differences during the most active time of the day.

The experiment was programmed in O-Tree (Chen et al., 2016). For the first experiment, we conducted a total of 13 sessions with 223 participants. In the second experiment, spanning 12 sessions, 178 of the first-round participants took part (80% turnout rate) with no differential attrition by gender. Sessions lasted between 50 and 60 minutes. On average participants earned COP $15{,}000$ (USD 5) per session.

3 Empirical strategy

Our empirical strategy seeks to characterize the distribution of a participant's willingness to pay for a (perceived safer) early shift and its determinants. Based on the results of our experiments, we first obtain the distribution of the willingness to pay for the early shift. Next, we run regressions to estimate the importance of safety concerns and other covariates as determinants of the willingness to pay for the amenity.

The willingness to pay measure is based on the compensating differentials framework from Rosen (1986), which has been used to recover willingness to pay measures for job amenities (Mas and Pallais, 2017). Using this framework, a participant chooses an early shift (as long as his or her willingness to pay for the early shift is greater than the opportunity cost), given by the wage premium paid by the late shift. Let WTP_i the willingness to pay for a safer job of participant i, while the wage premium he or she forfeits by choosing the safer option is $\Delta w = w_{late} - w_{early}$. Thus, the probability that participant i chooses the late shift is[6]

$$P\left(Late\, shift_i = 1 |\, \Delta w, \theta\right) = P\left(WTP_i < \Delta w |\, \theta\right) = F\left(\Delta w |\, \theta\right), \quad (1)$$

[5] See Online Appendices B.3.3 and B.3.4.

[6] In the equation, we present the probability of taking the late shift rather than taking the early shift as this is the way in which we present the information in the experiments.

where $F(\cdot \mid \theta)$ denotes the cumulative distribution function (CDF) of WTP_i with parameters θ. By asking participants under what values of w_{late} they would prefer the late shift over the early shift (at a fixed rate w_{early}), we recover the willingness to pay for each participant as the value of Δw in which the participant starts accepting the late shift.

Since our data come from a choice-list experiment, we implement an interval response regression approach (McDonald et al., 2018). Let $\mathcal{B}$ denote the set of intervals (bins) that participant i faces, ordered in such a way that a lower index $b \in \mathcal{B}$ implies a lower wage premium and viceversa. Then, the likelihood that participant i starts preferring the late shift over the early shift in bin b_i is

$$\mathcal{L}_i(\theta; b_i) = \prod_{b \in \mathcal{B}} P\left(\Delta w_{lb}^b < WTP_i \leq \Delta w_{ub}^b \mid \theta\right)^{1\{b=b_i\}} = F\left(\Delta w_{ub}^{b_i} \mid \theta\right) - F\left(\Delta w_{lb}^{b_i} \mid \theta\right) \tag{2}$$

where Δw_{lb}^b and Δw_{ub}^b are bin b's lower and upper bound. Note that, for those who always choose the late shift $\Delta w_{lb}^b = -\infty$ and for those those who always choose the early shift $\Delta w_{ub}^b = +\infty$.

Implementing maximum likelihood estimation based on equation (2) is straightforward, yet it has an important shortcoming. As is common in these types of studies, the observed distribution of willingness to pay tends to exhibit an excess mass around zero, which the outlined model cannot properly account for (Mas and Pallais, 2017). We take advantage that for all our participants, we know whether by having all the other options in the list they start preferring the late shift around a wage premium of zero and estimate a 'breakpoint' model. In this model, we assume that with probability π the participant j is indifferent between the early and late shift. Thus, the probability that j chooses the late shift is given by

$$P\left(Late\ shift_j = 1 \mid \Delta w\right) = 1_{\{\Delta w \geq 0\}}, \tag{3}$$

where $1_{\{.\}}$ is the indicator function. Under this assumption, the likelihood function for a participant i is given by

$$\mathcal{L}_i(\theta, \pi; b_i) = \pi 1_{\left\{0 \in \left[\Delta w_{lb}^{b_i}, \Delta w_{ub}^{b_i}\right]\right\}} + (1-\pi)\left(F\left(\Delta w_{ub}^{b_i} \mid \theta\right) - F\left(\Delta w_{lb}^{b_i} \mid \theta\right)\right). \tag{4}$$

Once we assume a parametric form of $F(\cdot \mid \theta)$, we can characterize the distribution of willingness to pay for a safer shift and estimate the parameters θ and π by maximum likelihood. We assume that conditional to covariates $\mathbf{X}_i$, $WTP_i \mid \mathbf{X}_i \sim \mathcal{N}\left(\mathbf{X}_i'\beta, \sigma^2\right)$[7] and run regressions of the form

$$WTP_i = \beta_0 + \beta_1 Female_i + \beta_2 Night\,unsafe_i + \beta_3'\mathbf{Z}_i + u_i, \tag{5}$$

where $Female_i$ is an indicator variable for female participants, $Night\,unsafe_i$ is a self-reported measure of safety concerns about the late shift, and $\mathbf{Z}_i$ are control variables, such as measures of preferences, time use, person's chronotype, and crime exposure, among others.

Our main interest is to understand the role of safety concerns on determining the willingness to pay for a safer shift, and how those perceptions may explain gender differences in the willingness to pay. Following the literature on compensating differentials and the effects of violence on labor supply, we expect β_2 to be greater than zero, since participants with a higher concern of the risk in the late shift should be willing to pay more for a safer shift. The coefficient β_1 captures gender differences in the willingness to pay for safety once we control for personal safety concerns and other observable control variables.

A main concern in this setup is whether our analysis is really gathering information about gender differences in participants' willingness to pay for a safer option rather than gender differences in other dimensions, such as time constraints or access to transportation. If these differences are not properly controlled for and are correlated with the perception of safety in the late shift, we would get inconsistent estimates of the parameters of interest. Even though we cannot rule out the effect completely, we argue that the nature of our experimental approach accounts for most of these potential concerns. First, the location where the task is to be implemented (the University facilities) is familiar to our participants and is the same for any shift. Second, as our sample is composed of college students, their time constraints related to household responsibilities are more limited than, for instance, adults with young children. Finally, we collect a rich set of covariates that the literature has shown to be different across gender or that could explain the willingness to pay differentials, which our empirical strategy controls for.

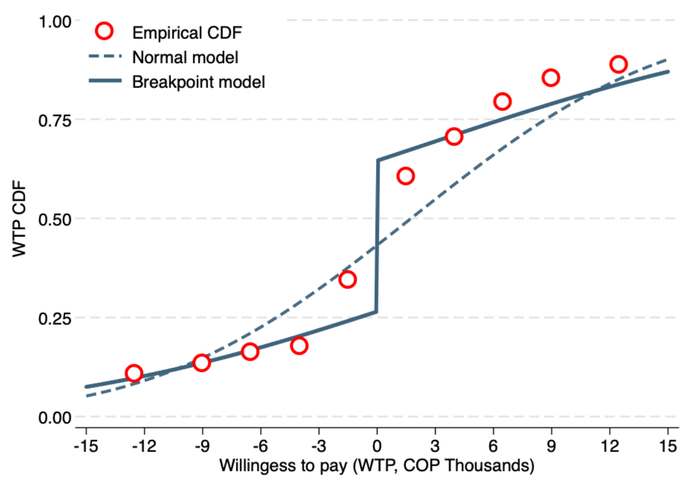
[7] We also estimate versions of the breakpoint model, assuming that WTP_i follows a logistic distribution and by also measuring our wage premiums in log differences. Our results are robust to these modeling choices.

4 Main results

4.1 Gender differences in willingness to pay for a safer on-site shift

Among the 223 participants of our first on-site experiment, we focus on 203 who exhibit consistent decision making in the willingness to pay stage. That is, we base our analysis on participants who, once they have stated that they prefer the late shift over the early shift given a wage premium $\Delta w'$, they do not prefer the early shift over the late shift given a premium $\Delta w'' > \Delta w'$.[8]

Figure 1: Cumulative distribution function of willingness to pay for an early on-site shift



Notes: The figure presents the cumulative distribution function (CDF) for the willingness to pay for a (presumably safer) early shift. The figure shows the probability that a person accepts to attend the late shift job based on a wage premium. Red circles represent the fraction of participants willing to take the late shift given a wage premium (horizontal axis). The dash and solid lines represent the estimated CDF assuming that the willingness to pay for an early shift follows a normal distribution and a breakpoint model (see Section 3). Number of observations 203.

Figure 1 presents the unconditional CDF of the elicited willingness to pay for the early on-site shift obtained in the first round of our experiment. Red circles are the empirical CDF, while the dashed and solid lines represent the fitted CDFs assuming the normal and the breakpoint models discussed above. Figure 1 highlights that differences in willingness to pay for a presumably safer shift are small for the median participant, yet there is a sizable variation in our measure of willingness to pay. The unconditional median willingness to pay is COP 1,750 in the normal model, and COP 0 in the breakpoint model. Since our baseline payment for

[8]A concern with choice-list experiments is that participants could select an option without paying attention to the questions, thus failing to reveal their true preferences. To address this, we compute two measures of inattention. First, since the options were presented in increasing order of Δw, participants with inattention may switch from the late shift to the early shift. Second, participants may switch several times between late and early shift. Out of 223 participants, no one displayed the first behavior, and 20 participants switched between the late and early shifts more than once. Including these inconsistent decision makers in our regressions does not affect our results.

the early shift is either COP 25,000 or COP 35,000, the median willingness to pay is about 0 to 7 percent of the baseline.

As Figure 1 points out, the observed patterns from the data indicate that the unconditional distribution of willingness to pay has heavier tails than the normal distribution, and that the breakpoint model offers a better fit to the data. Our estimated value of π in the breakpoint model indicates that about four out each 10 participants are indifferent between shifts, choosing the shift that pays them more.

Table 1: Willingness to pay for an early on-site shift by gender (COP thousands)

	Model	
	Normal	Breakpoint
Female	2.058	4.585
	[1.117]*	[2.150]**
Constant	0.690	0.514
	[0.873]	[1.686]
σ	10.26	15.07
	[1.026]***	[1.939]***
π		0.381
		[0.0570]***
Observations	203	203

Notes: The table reports maximum likelihood estimates of the mean by gender, the standard deviation (σ), and the probability of being indifferent between shifts (π) of the distribution of willingness to pay for an early shift (see Section 3). Wild bootstrap standard errors (clustered by session) in brackets. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Two central points in our analysis are whether there are gender disparities in the willingness to pay for the early on-site shift, and whether participants indeed perceive the early shift as safer than the late shift. Table 1 addresses the first point. In the table, we present estimates of regression (5) for the normal and the breakpoint model controlling only for gender. The table shows that women exhibit a higher average willingness to pay for the early on-site shift, yet those differences are relatively small compared with the overall dispersion of the data. Men's average willingness to pay for the presumably safer shift is close to zero, COP 690 in the normal model and COP 514 in the breakpoint model, while the same figures for women are COP 2,748 and COP 5,099. The results imply a gender gap in willingness to pay for an early on-site shift of COP 2,058 and, conditional on not being indifferent between shifts, COP 4,585. The mean difference in the breakpoint model is significant. Moreover, willingness to pay exhibits sizable dispersion around the mean, making the differences in mean values relatively small compared with the range of the variable. The implied Cohen's d statistic is within $0.2 - 0.3$, which indicates that average differences by gender are relatively small, and that the distributions of willingness to pay for an early shift by gender exhibit a sizable overlap (close to 90%) (Cohen, 2013).

Our second point is whether participants perceive the late on-site shift as more unsafe than the early shift. Table 2 shows that 68 percent of participants rank, in the endline questionnaire, the night shift as the most unsafe. When we compare the answers by gender, a higher percentage of women rank the night as more unsafe than men: 59 percent of men and 76 percent of women rank the 8-9 p.m. time as the most unsafe (Table 2). Gender disparities in safety concerns are also present in a more general setting, as a similar fraction of participants consider that (in general) the city of Bogotá is unsafe. There is a positive correlation between both measures, yet 30% of participants who consider the late shift as the more unsafe time of the day around Campus do not consider Bogotá as an unsafe city, and vice versa.

Table 2: Summary statistics: Safety concerns by gender

	Total ($N = 203$)	Men ($N = 98$)	Women ($N = 105$)	Difference (std. error)
Share of people that:				
Ranked 8-9 p.m. as the least safe time of the day around campus	0.68	0.59	0.76	-0.17***
	(0.47)	(0.49)	(0.43)	(0.06)
Consider that, in general, Bogotá is unsafe	0.66	0.57	0.73	-0.16***
	(0.48)	(0.50)	(0.44)	(0.07)

Notes: The table reports the means and standard deviations (in parenthesis) of indicator variables for the people who ranked the night shift (8-9 p.m.) as the most unsafe around University campus compared to morning (9-10 a.m.) and afternoon (2:30-3:30 p.m.) times, and an indicator variable for people who agrees/strongly agrees that Bogotá is unsafe in general. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Results from Tables 1 and 2 indicate that there are differences between men and women in their willingness to pay for the early on-site shift and their safety concerns about the late shift. Below, we study the role safety concern differences play in explaining the willingness to pay for an early on-site shift.

4.2 The mechanism: safety concerns

To characterize whether safety concerns about the late on-site shift determine the willingness to pay for the early shift, we implement two types of regression analysis following the empirical strategy discussed in Section 3. First, we estimate the relationship between the reported willingness to pay for an early on-site shift, gender, and safety concerns. Second, we compare these estimates to the ones we find when the task is performed remotely.

Table 3 presents the maximum likelihood estimates of equation (5), in which we analyze the relationship between willingness to pay for the early on-site shift. Since we implemented the experimental sessions at different times of the year and in different locations within the University campus, we compute bootstrapped standard errors clustered by experimental session (13 sessions in our first experiment).

Table 3: Willingness to pay for an early on-site shift, by gender and safety concerns

	Dependent variable: WTP for a safer shift on-site (COP Thousands)		
	(1)	(2)	(3)
Female	4.585	3.692	4.584
	[2.150]**	[2.102]*	[2.162]**
Night unsafe		5.374	
		[3.063]*	
City unsafe			0.0242
			[2.315]
Constant	0.514	-2.536	0.500
	[1.686]	[2.263]	[1.712]
π	0.381	0.381	0.381
	[0.0570]***	[0.0569]***	[0.0568]***
Observations	203	203	203

Notes: The table reports maximum likelihood estimates of the conditional mean and the probability of being indifferent between shifts (π) by gender and safety concerns (see Section 3). Wild bootstrap standard errors (clustered by session) in brackets. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

The first column of Table 3 presents the estimated gender gap, also included in Table 1, for the breakpoint model[9]. Correcting for the size of this indifferent group, the unconditional gender gap in willingness to pay for a safer shift is about COP 2,843 ($\approx (1 - 0.38) \times 4,585$).

In the second column of Table 3 we control for the safety concerns associated with the late shift, approximated by the indicator variable 'Night unsafe', which equals one when the person ranks 8-9 p.m. as the most unsafe around Campus compared with earlier times of the day (9-10 a.m. and 2:30-3:30 p.m.). Consistent with the hypothesis that participants who consider the late shift as the more unsafe will have a higher willingness to pay for the early shift, we find that, conditional on not being indifferent between shifts, participants with higher safety concerns about the late shift are willing to forfeit COP 5,374 on average to secure the safer shift. Safety concerns also explain part of the gender gap in willingness to pay. Compared with the first column of Table 3, the average gender gap in willingness to pay for a safer shift is COP 3,692, 20% lower than the estimate without controlling for safety concerns. We argue this is a lower bound of the effect safety concerns have on willingness to pay for personal safety as a job amenity. First, the safety experimental variation over the task

[9]We also run versions of regression (5) allowing that the share of indifferent individuals vary with gender and found no gender differences in these shares.

location is weak, given participants are already familiar with safety on campus. Second, given that the future experiment was a one-time event, safety concerns might not be as important if the shift choice had included a recurrent task. Finally, that our analysis is based on a homogeneous sample of college students might mask the relevance of safety concerns over labor outcomes for some population groups.

Table 3 also shows that our results are not driven by a concern about general safety in the city, but rather by a localized concern about safety around the University campus at night. In the third column of Table 3, we present estimates of regression (5), using as the explanatory variable an indicator variable for whether the participant considers that the city of Bogota is unsafe in general. In this case, the effect of general safety concerns on the willingness to pay for an early shift is small and not significant; about COP 24 for those who are not indifferent between shifts.

4.3 Online versus on-site

Results of Table 3 highlight the importance of safety concerns as one of the drivers of the willingness to pay for the safer on-site shift: it explains about 20% of the estimated gender gap in willingness to pay. However, it is still possible that the safety experimental variation related to an early versus a late on-site shift leaves aside important features determining a preference for an early shift that can bias our results. To address this concern, in our second experiment we recover the willingness to pay for an early shift, but this time in an online setting. We asked participants to report the level of compensation at which they were willing to participate in an unspecified task in the future in a late online session (8-9 p.m.) compared with an early online session (9-10 a.m.). We kept the same compensation scheme of the first experiment and, to mitigate concerns about hypothetical bias, we told participants, without deception, that we would select randomly some participants for this future experiment under the proposed scheme. If our results are driven by safety concerns about the late shift around University campus, once we shut this mechanism down by allowing participants to remotely participate in the task, gender gaps and our measure of safety concerns should not affect participants' willingness to pay for the early shift.

Columns (3) and (4) of Table 4 present estimates of regression (5) using as dependent variable the willingness to pay for an early online shift, while columns (1) and (2) show estimates for the on-site experiment. We restrict the sample to those who participate in both experiments and are consistent decision makers (139 individuals)[10]. Our results show that gender differences and safety concerns are less relevant for explaining

[10] Even though the turnout rate of our second experimental round was 80% (178 participants), an error in our coding prevents us

Table 4: Willingness to pay for an early shift in on-site and online settings

Dependent variable: WTP for a safer shift (COP Thousands)				
	(1)	(2)	(3)	(4)
	On-site setting		Online setting	
Female	6.010	5.450	-0.761	-0.831
	[3.559]*	[2.868]*	[2.397]	[2.359]
Night unsafe		7.555		2.352
		[2.531]***		[1.677]
Constant	-0.971	-5.757	2.847	1.317
	[3.267]	[3.055]*	[2.957]	[3.308]
π	0.350	0.351	0.592	0.592
	[0.0643]***	[0.0636]***	[0.0492]***	[0.0492]***
Observations	139	139	139	139

Notes: The table reports maximum likelihood estimates of the conditional mean and the probability of being indifferent between shifts (π) by gender and safety concerns. Columns (1) to (2) show the results for the distribution of willingness to pay for an early on-site shift, while columns (3) to (4) show the same results for willingness to pay for an early online shift. Wild bootstrap standard errors (clustered by session) in brackets. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

the willingness to pay for the early shift in our online setting. Comparing columns (1) and (3), the estimated share of individuals indifferent between both shifts (π) increases from 35% in the on-site task to 59% in the online task. Moreover, when we compare columns (2) and (4), we do not observe differences in the average willingness to pay for an early online shift by gender or by safety concerns; whereby the magnitude of those estimates is smaller than those observed in the on-site setting and are no longer significant.

5 Additional results

Our results so far show that safety concerns about the late shift affect the willingness to pay for the early on-site shift, and that they partly account for the gender gap. To exclude other confounding explanations, we asked participants about dimensions that may influence participants' willingness to pay for an early shift: household characteristics and time constraints, personal traits and preferences, commuting patterns, crime exposure, and victimization. Summary statistics of the participants' responses along these dimensions are presented in Appendix A.

It is worth mentioning that our sample is not representative of the Colombian population, yet our college students' characteristics, background and constraints are similar between genders. One-third of our

from matching the data of 24 individuals between both experiments. We drop 15 more participants because they are not consistent decision makers in the willingness to pay elicitation stage.

participants is younger than 20 years old and almost all have never been married. This balance helps us to isolate the effect of safety concerns on the willingness to pay from other factors that, in a broader population, may also be relevant (such as the number of children or gender household roles).

Overall, the estimates we present in this section show that the difference in willingness to pay for the early on-site shift by gender, and the role safety concerns plays in explaining it, remain stable after controlling for a rich set of household, individual and neighborhood characteristics. The only variable that appears to mediate in the relationship between personal safety concerns and willingness to pay is exposure to crime in traveling around the city.

5.1 Time use and household background

To measure any household constraints that participants might face, we ask them with whom they live when taking part in the first experiment. Two-thirds of participants lived in Bogota before entering college, 80 percent live with relatives (typically their parents), and a small fraction live alone. We also inquire about their time use during weekdays. Women spend about 0.5 hours more doing housework than men, yet this difference is small and not significant. In contrast, we do find a gender gap in the time spent resting and studying during weekdays. On average, men report spending one hour per day more resting than women, while women study 1.5 hours per day more than men.

In Table 5, we add these household characteristics (columns (3) and (4)) and individual time use (column (5)) as controls in our preferred specification to explain the willingness to pay for the early on-site shift (columns (1) and (2) report our baseline results). We note that the gender gap in willingness to pay for the safer on-site shift remains statistically significant and the coefficient associated with unsafe concerns about the late shift is robust to the inclusion of these variables.

Another concern in the analysis is that gender differences in the willingness to pay for an early shift simply reflect gender differences in chronotypes (i.e., the time of the day individuals reach their peak of cognitive and physical performance (Randler et al., 2017)), rather than safety concerns. To address this, in the second experiment, we recover the Composite Scale of Morningness (CSM) developed by Smith et al. (1989) and adapted to Spanish by Morales et al. (2005).[11,12] We use the CSM as an additional control in column (6)

[11] The CSM is an instrument developed by Smith et al. (1989) in which the authors combine previous questionnaires to get a measure of a persons' chronotype. Applying the CSM to 501 undergrad students, Smith et al. (1989) find that the derived composite scale is correlated with external data of a person's chronotype and circadian rhythms.

[12] The bottom panel of Table A.1, in Appendix A, presents the average CSM by gender. As a reference, a typical evening-type person scores below 22, an intermediate-type person scores between 23 to 43 and a morning-type person scores above 44. In our

of Table 5. The result supports the hypothesis that safety concerns are a main driver of the differences in willingness to pay for an early shift. The morningness score is not significant in explaining the willingness to pay for the early on-site shift; indeed, including it as a control does not affect the significance and magnitude of the coefficient associated with safety concerns about the late on-site shift.

Table 5: Effects of household characteristics and time constraints and preferences

Dependent variable: WTP for a safer shift on-site (COP Thousands)						
	Baseline		Household characteristics		Time use	
	(1)	(2)	(3)	(4)	(5)	(6)
Female	6.010	5.450	5.477	5.625	4.319	5.103
	[3.559]*	[2.868]*	[2.868]*	[2.778]**	[3.089]	[2.653]*
Night unsafe		7.555	7.645	7.855	7.219	7.431
		[2.531]***	[2.700]***	[2.832]***	[2.416]***	[2.711]***
Lived in Bogota before college			-2.107			
			[2.878]			
Lived with relatives				-3.082		
				[4.322]		
Daily hours spent in housework					0.353	
					[0.771]	
Daily hours spent in resting					-0.106	
					[0.767]	
Daily hours spent in studying					0.529	
					[0.745]	
Morningness score index						0.163
						[0.282]
Constant	-0.971	-5.757	-4.358	-3.469	-7.068	-11.23
	[3.267]	[3.055]*	[4.062]	[5.302]	[4.707]	[9.739]
π	0.350	0.351	0.351	0.351	0.351	0.350
	[0.0643]***	[0.0636]***	[0.0631]***	[0.0631]***	[0.0637]***	[0.0638]***
Observations	139	139	139	139	139	139

Notes: The table reports maximum likelihood estimates of the conditional mean and the probability of being indifferent between shifts (π) by gender and safety concerns. We test the sensitivity of our baseline results (Columns (1) and (2)) to the inclusion of participants' household characteristics (columns (3) and (4)) and variables related to time use (column (5)). Wild bootstrap standard errors (clustered by session) in brackets. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

5.2 Risk preferences

A second set of results is related to individual attitudes toward risk and uncertainty. Economic theory indicates that more risk averse individuals would be willing to give up part of their wage to get a safer job (DeLeire and Levy, 2004). Since previous literature has found that average risk aversion is slightly higher in women than in men (Borghans et al., 2009), risk taking attitudes may be a factor that confound our results. A similar rationale can be applied if there are gender differences in ambiguity, or loss aversion, as the late on-site shift is associated with more uncertain outcomes, or larger expected losses, than the early shift. Our data suggests

group of participants, women tend to exhibit a more morning-type behavior than men, yet the average male and female participants are classified as intermediate-type.

Table 6: Effects of attitudes toward risk and uncertainty

Dependent variable: WTP for a safer shift on-site (COP Thousands)			
	Baseline		Risk/uncertainty aversion
	(1)	(2)	(3)
Female	6.010	5.450	6.604
	[3.559]*	[2.868]*	[3.407]*
Night unsafe		7.555	7.703
		[2.531]***	[2.960]***
Risk aversion			-1.325
			[3.059]
Loss aversion			-4.457
			[3.491]
Ambiguity aversion			15.77
			[15.91]
Constant	-0.971	-5.757	-7.214
	[3.267]	[3.055]*	[11.49]
π	0.350	0.351	0.352
	[0.0643]***	[0.0636]***	[0.0641]***
Observations	139	139	139

Notes: The table reports maximum likelihood estimates of the conditional mean and the probability of being indifferent between shifts (π) by gender and safety concerns. We test the sensitivity of our baseline results (Columns (1) and (2)) to the inclusion of participants' attitudes toward risk and uncertainty. Wild bootstrap standard errors (clustered by session) in brackets. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

that there are gender similarities in our lab-based measures of risk, loss, and ambiguity aversion.[13]

The estimated coefficients related to measures of risk, ambiguity and loss aversion as determinants of the willingness to pay for the safer on-site shift are presented in Table 6. One of our hypotheses is that more risk or ambiguity averse individuals will tend to have a higher willingness to pay for a perceived safer shift. Since higher values of the lab-based measures indicate more averse individuals, our positive estimate for ambiguity aversion provides evidence supporting our hypothesis, suggesting that the late shift may be linked to high-ambiguity situations. However, once we control for these individual preferences, we do not find significant effects of risk, ambiguity, or loss aversion, because coefficients are estimated with low precision. Overall, the introduction of lab-based measures of attitudes toward risk and uncertainty affect neither the significance nor the magnitude of the night unsafe coefficient nor the gender gap.

[13]Table A.2 (Appendix A) presents summary statistics of the measures of risk, ambiguity, and loss aversion, and willingness to take risks by gender. Overall, we find gender differences in self-reported willingness to take risks depending on the context (on average, women are less willing to take risks in financial matters, sports, or car driving than men), although, according to our computed Cohen's d-statistics (ranging between 0.4–0.5), these differences are moderate. Econometric results presented in this section hold if we include in the analysis these self-reported risk measures instead of lab-based ones.

5.3 Commuting, victimization, and crime exposure

Previous results suggest that neither household constraints nor personal traits weaken the role of safety concerns in explaining willingness to pay for an early shift. Next, we investigate how daily commuting patterns to the Los Andes Campus, exposure to crime while traveling across the city, and objective crime measures of a person's neighborhood might explain observed preferences for an early on-site shift. We recover measures of those dimensions, at the time of the first experiment, and include them in our regression (5).

Estimation results are presented in Table 7, and summary statistics of these additional dimensions in Table A.3 (Appendix A). Columns (3) to (5) add commuting variables to our baseline specification. We do not find any influence of the use of public transportation on the coefficients associated with the female gender or the night being unsafe. This is consistent with the fact that participants' commuting patterns, methods of transportation and distance from home to the university campus are similar across genders, suggesting that there is no differential cost in taking the late shift by gender, and thus the inclusion of these variables do not affect our baseline results. Moreover, since most of our participants live with their relatives, it is unlikely that the location of their place of residence relative to campus is influenced by participants' own commuting preferences.

Regarding crime exposure in the last year, 64% of participants were victim to or witnessed a robbery, and 68% reported being the victim of or witnessing a case of sexual harassment in their daily commute. Our data reveals significant gender differences by type of offense: while 62% of women and 67% of men reported being victim to or witnessing a robbery, 80% of women and 52% of men reported being the victim of or witnessing a case of sexual harassment. Public transportation in Bogota is an environment in which sexual offenses frequently occur (Kash, 2019). Given that our participants use public transportation as their main mode for commuting, crime exposure during their commute is an important dimension to take into account in our analysis. In columns (6) and (7) of Table 7 we add measures of direct and indirect victimization. The estimates indicate that participants being a victim of or having witnessed a crime exhibit a higher willingness to pay for a safer shift, although coefficients are estimated with low precision.

Finally, we explore how neighborhood characteristics affect our results. Based on participants' approximate home address, we add official crime rates for the third-quarter of 2019 by UPZ (an administrative division larger than a neighborhood). For this analysis, we exclude six participants who live outside Bogota. Maps with the spatial distribution of participants' homes across Bogota, and crime statistics by UPZ are presented

Table 7: Effects of commuting, victmization and crime exposure

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Baseline		Commuting			Victimization & crime exposure		
Female	6.010 [3.559]*	5.450 [2.868]*	5.605 [2.683]**	5.284 [2.955]*	5.696 [2.893]**	5.107 [2.769]*	5.129 [3.051]*	4.773 [3.451]
Night unsafe		7.555 [2.531]***	7.456 [2.524]***	7.479 [2.565]***	7.816 [2.734]***	7.734 [2.707]***	7.459 [2.535]***	7.299 [3.406]**
Uses public transportation			3.072 [2.289]					
Time to college (hours)				0.490 [2.400]				
Distance home to campus (km)					0.244 [0.216]			
Victim/witness of robbery						6.460 [3.709]*		
Victim/witness of harassment							1.398 [2.484]	
Robberies by neighborhood								-0.000621 [0.00673]
Sexual crimes by neighborhood								-0.0470 [0.532]
Homicide rate by neighborhood								1.882 [2.674]
Constant	-0.971 [3.267]	-5.757 [3.055]*	-7.816 [3.231]**	-6.110 [3.593]*	-9.111 [4.498]**	-9.787 [3.979]**	-6.495 [2.868]**	-5.346 [3.651]
π	0.350 [0.0643]***	0.351 [0.0636]***	0.351 [0.0634]***	0.350 [0.0638]***	0.351 [0.0635]***	0.350 [0.0636]***	0.350 [0.0639]***	0.353 [0.0654]***
Observations	139	139	139	139	139	139	139	133

Dependent variable: WTP for a safer shift on-site (COP Thousands)

Notes: The table reports maximum likelihood estimates of the conditional mean and the probability of being indifferent between shifts (π) by gender and safety concerns. We test the sensitivity of our baseline results (Columns (1) and (2)) to the inclusion of participants' commuting patterns, and victimization during commute and crime exposure. Wild bootstrap standard errors (clustered by session) in brackets. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

in Figure A.1 of Appendix A.

We find that participants' residences are distributed across the whole city, with a higher concentration in the northeastern, more wealthy neighborhoods of Bogota. We also observe that criminal rates present wide geographical variation: robberies have a higher rate of incidence around the city center and in the northern part of the city, whereas homicides have a higher incidence in the southern areas. Our descriptive statistics suggest there are no sizable gender differences in crime exposure. Nonetheless, that women and men face similar average criminality rates at the neighborhood level does not mean that both genders experience the same crime salience. As discussed above, women are disproportionately affected by sexual harassment. Additionally, once we include our proxy for crime exposure (column (8)), the coefficient associated with female is smaller than the baseline, suggesting that the gender gap in the willingness to pay for the safer shift might be correlated with crime salience.

5.4 Information provision about crime

One last issue we address is whether biased beliefs about crime rates in Los Andes neighborhood may explain gender disparities in the willingness to pay for the safer shift. To deal with this, in the first experiment, we provided subjects with objective information about crime and theft rates in the University neighborhood.[14] Our aim is to vary safety considerations that might affect the willingness to pay for the early on-site shift. Specifically, we randomly allocated participants into one of two placebo conditions or an information provision treatment. In the placebo conditions, we either gave no information about Bogota's crime statistics or participants received information about rush hour schedules in public transport in Bogota. In the information treatment, participants received information about crime in Bogota.

Our results, which are available upon request, suggest that information provision affected neither safety perception about the late on-site shift nor the willingness to pay for the safer shift. This is consistent with participants holding unbiased beliefs about how safe the University neighborhood is and about the relative safety of the late on-site shift.

6 Final remarks

In this paper, we study whether there are gender differences in the valuation of personal safety in relation to a job. We use an experiment in which we elicit individual preferences for working in a late or an (presumably safer) early shift and relate them to gender and personal safety concerns.

Overall, we find that there is a gender gap in the willingness to pay for a safer shift of COP 4,585 (13%-18% of the baseline payment), and once we account for the share of indifferent individuals, this would imply a gap of COP 2,843These differences are driven by gender differences in personal safety concerns of the late shift around campus. Once we control for this dimension, we can explain about 20% of the gender gap. Our results hold even when we account for other factors that may explain observed gender differences in the willingness to pay for a safer shift, related to personal traits, household constraints, and commuting patterns. The only variables that help to mediate in the relationship between personal safety concerns and willingness to pay for a safer shift are related to exposure to crime in traveling around the city.

Our results indicate that personal safety concerns are a variable to take into account when designing policies to reduce gender disparities in the labor market. Providing safer jobs can unleash economic development by allocating resources more efficiently (Hsieh et al., 2019).). In fact, the empirical literature has found causal evidence that safer transit systems have positive effects on employment for women (Martinez et al., 2019). However, improvements in public transportation are not the only type of measures focused on providing

[14] See Appendix B.3 for detailed instructions.

safer jobs. Technological change driven by the gig economy might lead to safer environments in certain types of jobs, such as customer ratings and real-time support to workers. For instance, evidence from the US shows that women are more likely to participate as driver partners in applications such as Uber than in traditional driving services (Hall and Alan, 2015)), and that these women take into account safety concerns for avoiding zones with higher crime rates and a higher likelihood of picking up intoxicated passengers (Cook et al., 2020). This is only one example in which higher safety standards could help to increase female labor participation in certain industries.

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A Appendix: Descriptive statistics

Table A.1: Household environment, time use, and chronotype

	Total ($N = 139$)	Men ($N = 60$)	Women ($N = 79$)	Difference (std. error)
Household/demographic characteristics				
Age < 20	0.34	0.33	0.34	-0.01
	(0.47)	(0.48)	(0.48)	(0.08)
Never married	0.97	0.95	0.99	-0.04
	(0.17)	(0.22)	(0.11)	(0.03)
Lived in Bogota before college	0.67	0.67	0.67	-0.00
	(0.47)	(0.48)	(0.47)	(0.08)
Lived alone	0.04	0.05	0.03	0.02
	(0.19)	(0.22)	(0.16)	(0.03)
Lived with relatives	0.81	0.78	0.84	-0.05
	(0.39)	(0.42)	(0.37)	(0.07)
Lived with parents	0.72	0.68	0.75	-0.06
	(0.45)	(0.47)	(0.44)	(0.08)
Lived with roomates	0.15	0.17	0.14	0.03
	(0.36)	(0.38)	(0.35)	(0.06)
Willingness to get early/stay late in campus				
Get before 8:00 a.m.	0.47	0.47	0.47	-0.00
	(0.50)	(0.50)	(0.50)	(0.09)
Stay after 6:00 p.m.	0.56	0.50	0.61	-0.11
	(0.50)	(0.50)	(0.49)	(0.09)
Time use in weekdays. Daily average number of hours spent in				
Housework	1.88	1.57	2.12	-0.55
	(2.12)	(1.80)	(2.31)	(0.36)
Resting	7.71	8.19	7.35	0.84^{**}
	(2.24)	(2.28)	(2.15)	(0.38)
Studying	4.40	3.52	5.07	-1.55^{***}
	(2.74)	(2.58)	(2.69)	(0.45)
Chronotype - Composite scale of morningness				
Morningness score index	34.96	33.65	35.95	-2.30^{**}
	(5.69)	(5.06)	(5.97)	(0.96)

Notes: In this table we explore potential determinants of willingness to pay for a late shift beyond safety perception. It reports the means and standard deviations (in parenthesis) of household and demographic characteristics, preferences for getting early and staying late in the University campus, time use during weekdays and a measure of a person's chronotype. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table A.2: Personal traits and risk attitudes

	Total $(N = 139)$	Men $(N = 60)$	Women $(N = 79)$	Difference (std. error)
Personal traits:				
Risk aversion	0.02	0.03	0.00	0.03
	(0.44)	(0.44)	(0.44)	(0.08)
Ambiguity aversion	0.54	0.56	0.54	0.02
	(0.11)	(0.09)	(0.12)	(0.02)
Loss Aversion	1.72	1.68	1.74	-0.06
	(0.55)	(0.50)	(0.58)	(0.09)
Self-reported willingness to take risks:				
In general	6.60	6.70	6.53	0.17
	(1.63)	(1.63)	(1.63)	(0.28)
In car driving	2.97	3.67	2.44	1.22***
	(2.28)	(2.65)	(1.79)	(0.38)
In sports	6.27	6.82	5.85	0.97**
	(2.55)	(2.49)	(2.53)	(0.43)
In financial matters	4.99	5.57	4.56	1.01***
	(2.01)	(2.05)	(1.87)	(0.33)
In academic matters	6.14	5.98	6.27	-0.28
	(1.99)	(2.19)	(1.82)	(0.34)
In health	4.65	4.43	4.81	-0.38
	(2.69)	(2.87)	(2.56)	(0.46)

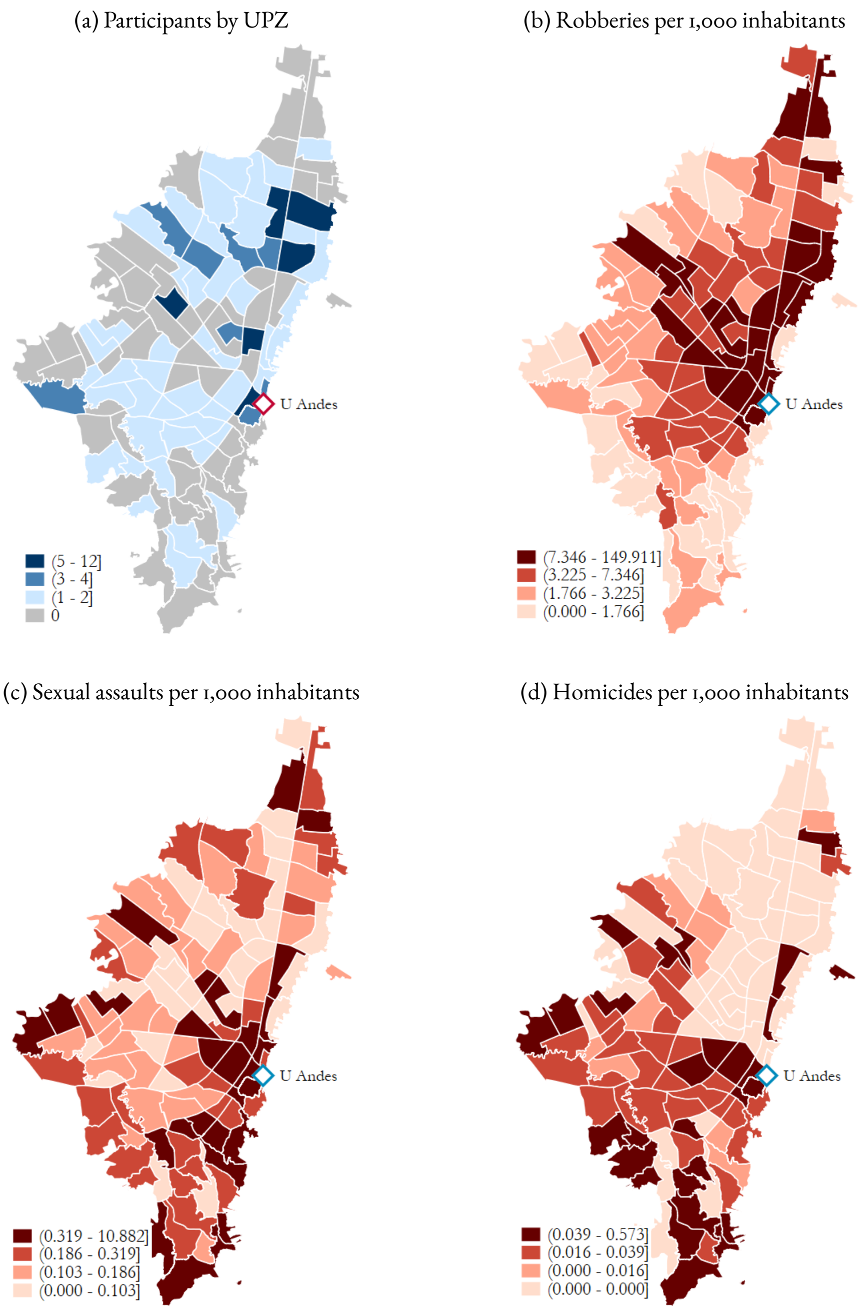
Notes: In this table we explore potential determinants of willingness to pay for a late shift beyond safety perception. It reports the means and standard deviations (in parenthesis) of lab-based measures of risk, ambiguity, and loss aversion , where higher values of each measure represent higher aversion. It also shows self-reported measures of willingness to take risks in different contexts, where 0 means not willing at all and 10 means completely willing. ${}^{*}p < 0.1$, ${}^{**}p < 0.05$, ${}^{***}p < 0.01$.

Table A.3: Commuting and victimization

	Total ($N = 139$)	Men ($N = 60$)	Women ($N = 79$)	Difference (std. error)
Commuting patterns (home to campus)				
Public transport	0.68	0.68	0.67	0.01
	(0.47)	(0.47)	(0.47)	(0.08)
Walking	0.17	0.17	0.18	-0.01
	(0.38)	(0.38)	(0.38)	(0.07)
Private car	0.06	0.03	0.09	-0.06
	(0.25)	(0.18)	(0.29)	(0.04)
Other	0.09	0.12	0.06	0.05
	(0.28)	(0.32)	(0.25)	(0.05)
Time spent (hours)	0.97	0.83	1.08	-0.24
	(0.92)	(0.43)	(1.15)	(0.16)
Distance to campus (km)	12.28	12.72	11.94	0.77
	(7.72)	(8.17)	(7.39)	(1.33)
Safety in traveling around the city (last year)				
Have been, or seen someone being, robbed	0.64	0.67	0.62	0.05
	(0.48)	(0.48)	(0.49)	(0.08)
Have been, or seen someone being, harassed	0.68	0.52	0.80	-0.28***
	(0.47)	(0.50)	(0.40)	(0.08)
Neighborhood characteristics ($N = 133$)				
Robbery per 1,000 inhabitants	20.08	19.80	20.30	-0.50
	(37.15)	(38.31)	(36.52)	(6.53)
Sexual assault per 1,000 inhabitants	0.41	0.41	0.40	0.01
	(1.05)	(0.99)	(1.10)	(0.18)
Homicide per 1,000 inhabitants	0.07	0.07	0.08	-0.01
	(0.17)	(0.17)	(0.17)	(0.03)
Number of robberies in the neighborhood	242.81	209.07	268.12	-59.05
	(220.84)	(207.48)	(228.42)	(38.50)
Number of sexual assaults in the neighborhood	2.71	2.12	3.16	-1.04
	(4.23)	(2.75)	(5.04)	(0.74)
Number of homicides in the neighborhood	0.17	0.21	0.13	0.08
	(0.57)	(0.77)	(0.34)	(0.10)

Notes: In this table we explore potential determinants of willingness to pay for a late shift beyond safety perception. It reports the means and standard deviations (in parenthesis) of variables reflecting commuting patterns, safety experiences when traveling in the city, and objective measures of distance to University campus and official statistics of crime rates at the UPZ level (an administrative unit larger than neighborhood). $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Figure A.1: Spatial distribution of participants and crime rates by UPZ, 2019:Q3



Notes: In this figure we explore the spatial allocation of the experiment participants and crime rates by UPZ (an administrative unit larger than neighborhood). Panel (a) shows the number of participants in each UPZ; while panels (b) to (d) display official statistics of robbery, sexual assault and homicide rates in the third quarter of 2019 by UPZ. The University campus is marked by a diamond, which roughly corresponds to Bogota's city center.

B Online Appendix: Experimental Instructions (in English)

In this appendix, we describe in detail the stages in an experimental session.

B.1 Willingness to pay for safety stage

Before we start with the current activity, we want to know your time preferences for further participation in another experimental session we will run in the future, on-site at Universidad de Los Andes.
This is an experiment where no prior knowledge of any kind is needed. And lasts for 1 hour.
We will give you two time options to choose from:

Option 1. ***9:00am-10:00am*** *and Option 2.* ***8:00-9:00pm****.*

The experiment is the same in both options. And once we contact you in the future you will be able to choose the day you prefer to attend.
In the experiment you will receive an hourly rate as compensation for your participation.
*We ask you to fill in the decision table below. The decision table consists of 11 different situations, listed 1 to 11. Each situation offers you a choice between two offers of the hourly wage, the first one for Option 1 (**9:00am-10:00am**) and the second one for Option 2 (**8:00-9:00pm**).*

- *The hourly rate for Option 1 is identical in all 11 situations: You will get paid* $\$x$ *is you choose this one*
- *The hourly wage for Option 2 changes from one situation to the next. Notice the payments goes from* $\$x - 15.000$ *in situation 1, to* $\$x + 15.000$ *in situation 11.*

Once you have made all your choices, the computer will randomly select one out of 11 situations (i.e., a number between 1 and 11). Then, depending on whether you have chosen Option 1 or Option 2 in that situation, you will be invited again at that time in the future and we will pay you an hourly rate according to your preferred option. Notice that even though you will make 11 decisions, only one of these will determine the actual invitation to take part in a future experiment, but you will not know in advance which situation will be selected (they are equally likely to be selected). Therefore, the best you can do is to tell us, in each situation, which of the tow options you actually prefer.
*There is a scientific reason for proceeding this way. Since you cannot influence which situation is chosen by the computer, which will be determined randomly, you have an incentive to state your **true preference** in each situation. Once you have made your choice, you cannot change it anymore.*

Please indicate, in the table below, in each situation, which of the two Options do you prefer for a future invitation to participate in another experiment, Option 1 or Option 2?

Situation	**Option 1** **9:00am-10:00am**	**Option B** **8:00pm-9:00pm**	Your choice
1	Hourly rate $\$x$	Hourly rate $\$x - 15.000$	Option 1 ☐ Option 2 ☐
2	Hourly rate $\$x$	Hourly rate $\$x - 10.000$	Option 1 ☐ Option 2 ☐
3	Hourly rate $\$x$	Hourly rate $\$x - 7.500$	Option 1 ☐ Option 2 ☐
4	Hourly rate $\$x$	Hourly rate $\$x - 5.000$	Option 1 ☐ Option 2 ☐
5	Hourly rate $\$x$	Hourly rate $\$x - 2.500$	Option 1 ☐ Option 2 ☐
6	Hourly rate $\$x$	Hourly rate $\$x$	Option 1 ☐ Option 2 ☐
7	Hourly rate $\$x$	Hourly rate $\$x + 2.500$	Option 1 ☐ Option 2 ☐
8	Hourly rate $\$x$	Hourly rate $\$x + 5.000$	Option 1 ☐ Option 2 ☐
9	Hourly rate $\$x$	Hourly rate $\$x + 7.500$	Option 1 ☐ Option 2 ☐
10	Hourly rate $\$x$	Hourly rate $\$x + 10.000$	Option 1 ☐ Option 2 ☐
11	Hourly rate $\$x$	Hourly rate $\$x + 15.000$	Option 1 ☐ Option 2 ☐

B.2 Individual preferences stage

In this stage we first present subjects with an introductory statment (B.2.1) and then we elicit their risk aversion parameter (subjects see instructions in appendix B.2.2, which are based on Cavatorta and Schröder (2019)). After risk aversion elicitation we show them the instructions for ambiguity aversion, based on Cavatorta and Schröder (2019) (see appendix B.2.3) and loss aversion (see appendix B.2.4), measure is based on simple task from Gächter et al. (2007)

B.2.1 Introduction

You are going to answer several questions. You are going to get paid for only one of these answers. Which one counts for your payment is determined by the computer via a random draw.
In the following questions there are no right or wrong answers. Your response should only reflect your own preferences. As the other parts of the questionnaire this following question is part of a scientific research project on how people make economic choices.

B.2.2 Risk preferences instructions (Cavatorta and Schröder, 2019)

In this task you need to fill in the decision table shown below. The decision table consists of 11 different situations, listed 1 to 11. Each situation offers you a choice between drawing a virtual ball from two different virtual urns, urn A or urn B. Both urns contain 10 balls, either white or black.

- The composition of urn A is identical in all 11 situations. There are 5 white balls and 5 black balls.
- The composition of urn B changes from one situation to the next. The number of white balls increases incrementally from 0 white balls in situation 1 to 10 white balls in situation 11, while the number of black balls decreases accordingly.

One ball will be drawn from the urn you choose. The Experimental Tokens (ET) you can earn depend on the color of the ball drawn. One color yields more ET than the other in both urns. You can choose whether the color that yields more ET is white or black.
Please choose now the color of the ball that provides you with more ET:

White ☐ Black ☐

Please look at the decision table below[15] At the end of the session, the computer will randomly select one out of the 10 situations. Then, depending on whether you have chosen urn A or urn B in that situation, the computer will randomly draw one ball from that virtual urn. Depending on the color of the ball, you earn the ET indicated in the table. Notice that even though you will make 10 decisions, only one of these will determine the points you earn, but you will not know in advance which situation will be selected (they are equally likely to be selected).
There is a scientific reason for proceeding this way. Since you cannot influence which situation is chosen by the computer, which will be determined randomly, you have an incentive to state your **true preference** in each situation. Once you have made your choice, you cannot change it anymore.
Please indicate, in the table below, in each situation, from which urn do you prefer to draw a ball, urn A or urn B?

[15] The actual decision table presented to the subjects depends on the color (s)he chose. In this appendix, we assume that the selected color is white. If the selected color is black, the word “white” has to be replaced with “black”, and vice versa.

Situation	**Urn A**	**Urn B**	Your choice
	If a "white" ball is drawn you earn 6ET If a "black" ball is drawn you earn 4ET	If a "white" ball is drawn you earn 10ET If a "black" ball is drawn you earn 0ET	
1	5 white balls, 5 black balls	0 white balls, 10 black balls	Urn A ☐ Urn B ☐
2	5 white balls, 5 black balls	1 white balls, 9 black balls	Urn A ☐ Urn B ☐
3	5 white balls, 5 black balls	2 white balls, 8 black balls	Urn A ☐ Urn B ☐
4	5 white balls, 5 black balls	3 white balls, 7 black balls	Urn A ☐ Urn B ☐
5	5 white balls, 5 black balls	4 white balls, 6 black balls	Urn A ☐ Urn B ☐
6	5 white balls, 5 black balls	5 white balls, 5 black balls	Urn A ☐ Urn B ☐
7	5 white balls, 5 black balls	6 white balls, 4 black balls	Urn A ☐ Urn B ☐
8	5 white balls, 5 black balls	7 white balls, 3 black balls	Urn A ☐ Urn B ☐
9	5 white balls, 5 black balls	8 white balls, 2 black balls	Urn A ☐ Urn B ☐
10	5 white balls, 5 black balls	9 white balls, 1 black balls	Urn A ☐ Urn B ☐
11	5 white balls, 5 black balls	10 white balls, 0 black balls	Urn A ☐ Urn B ☐

B.2.3 Ambiguity preferences instructions (Cavatorta and Schröder, 2019)

In this task you need to fill in the decision table shown below. The decision table consists of 11 different situations, listed 1 to 11. Each situation offers you a choice between drawing a virtual ball from two different virtual urns, urn A or urn B. Both urns contain 10 balls, either white or black.

- The composition of urn A changes from one situation to the next. While the number of balls in one color (e.g., white) increases incrementally from 0 to 10, the number of balls of the other color (e.g., black) decreases accordingly.
- The composition of urn B is identical in each situation. However, you don't know how many balls are white and how many balls are black. Any combination is possible. There might be from 0 to 10 white balls, with the remaining balls being black.

One ball will be drawn from the urn you choose. The Experimental Tokens (ET) you can earn depend on the color of the ball drawn. Only one color yields some ET. You can choose whether the color that yields ET is white or black.

Please choose now the color of the ball that provides you ET:

White ☐ Black ☐

Please look at the decision table below[16] In each of the 11 situations, we would like you to indicate from which urn (urn A or urn B) you prefer drawing a ball. As explained before, both urns contain 10 balls, either white or black.

- The composition of urn A changes from one situation to the next. While the number of balls in "white" increases incrementally from 0 to 10, the number of balls of "black" decreases accordingly.
- The composition of urn B is identical in each situation. However, you don't know how many balls are white and how many balls are black. Any combination is possible. There might be from 0 to 10 white balls, with the remaining balls being black. That is, there might be 10 white balls, or 10 black balls, or any other possible combination of white and black balls that add up to 10.

As you chose color "white" if a "white" ball is drawn, you earn 10ET. If a "black" ball is drawn, you earn no points (0ET).

At the end of the session, the computer will randomly select one out of the 11 situations. Then, depending on whether you have chosen urn A or urn B in that situation, the computer will randomly draw one ball from that virtual urn. Depending on the color of the ball, you earn the points indicated in the table. Notice that even though you will make 11 decisions, only one of these will determine the points you earn, but you will not know in advance which situation will be selected (they are equally likely to be selected).

There is a scientific reason for proceeding this way. Since you cannot influence which situation is chosen by the computer, which will be determined randomly, you have an incentive to state your **true preference** in each situation. Once you have made your choice, you cannot change it anymore.

Please indicate, in the table below, in each situation, from which urn do you prefer to draw a ball, urn A or urn B?

[16]The actual decision table presented to the subjects depends on the color (s)he chose. In this appendix, we assume that the selected color is white. If the selected color is black, the word "white" has to be replaced with "black", and vice versa.

Situation	**Urn A** If a "white" ball is drawn you earn 10ET	**Urn B** If a "white" ball is drawn you earn 10ET	Your choice
1	0 "white" balls, 10 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
2	1 "white" balls, 9 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
3	2 "white" balls, 8 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
4	3 "white" balls, 7 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
5	4 "white" balls, 6 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
6	5 "white" balls, 5 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
7	6 "white" balls, 4 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
8	7 "white" balls, 3 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
9	8 "white" balls, 2 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
10	9 "white" balls, 1 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐
11	10 "white" balls, 0 "black" balls	unknown composition of "white" and "black balls"	Urn A ☐ Urn B ☐

B.2.4 Loss aversion instructions Gächter et al. (2007)

In this task you need to fill in the decision table shown below. The decision table consists of 6 different situations, listed 1 to 6. Each situation offers you a choice between accepting to Accept playing a lottery or Reject it. The lottery, which is drawn by the computer, is equivalent to tossing a coin. If the coin turns up Tails you earn 6 Experimental Tokens (ET) in every situation. If the coin turns up Heads, depending on the situation, you lose between 2 and 7 ET.

At the end of the session, if this is the task the computer chooses for payment, the computer will randomly select one out of the 6 situations. Then, depending on whether you have chosen to Accept the lottery or Reject it, the computer will toss a virtual coin, that with equal probability turns up Heads or Tails. Depending on the coin tossed and your decision in that decision, you earn or lose the ET indicated in the table.

Notice that even though you will make 6 decisions, only one of these will determine the points you earn or lose, but you will not know in advance which situation will be selected (they are equally likely to be selected).

*There is a scientific reason for proceeding this way. Since you cannot influence which situation is chosen by the computer, which will be determined randomly, you have an incentive to state your **true preference** in each situation. Once you have made your choice, you cannot change it anymore.*

So please indicate, in table below, in each situation whether you are willing to Accept or Reject the Lottery.

Situation	Lottery	Your choice
1	If the coin turns up heads, then you lose 2ET; if the coin turns up tails, you win 6ET	Accept ☐ Reject ☐
2	If the coin turns up heads, then you lose 3ET; if the coin turns up tails, you win 6ET	Accept ☐ Reject ☐
3	If the coin turns up heads, then you lose 4ET; if the coin turns up tails, you win 6ET	Accept ☐ Reject ☐
4	If the coin turns up heads, then you lose 5ET; if the coin turns up tails, you win 6ET	Accept ☐ Reject ☐
5	If the coin turns up heads, then you lose 6ET; if the coin turns up tails, you win 6ET	Accept ☐ Reject ☐
6	If the coin turns up heads, then you lose 7ET; if the coin turns up tails, you win 6ET	Accept ☐ Reject ☐

B.3 Information stage

B.3.1 Control and Transit placebo conditions questionnaire

Before we start our activity, we want to know how informed you are about TRANSPORT proposals from the Bogotá's Mayor candidates. Additionally, we would like to know your knowledge about some statistics related to TRANSPORT in the city. Your answers in this stage will have no effect on the payments you will receive in subsequent stages of the activity.

I. For the following statements, please indicate which of the leading candidates, according to opinion polls (Carlos Galán, Claudia López and Miguel Uribe), has proposed the following TRANSPORT policies in their government plans

1. After the first heavy and high-capacity metro line to Suba and Engativá, the priority will be to carry out the western Regiotram that will become the second light metro line in Bogotá Region

    a) Carlos Galán

    b) Claudia López

    c) Miguel Uribe

2. To expand of the Transmilenio network: along Avenida Ciudad de Cali, Avenida Carrera 68, Avenida Carrera Séptima, Calle 13, Avenida Boyacá

    a) Carlos Galán

    b) Claudia López

    c) Miguel Uribe

3. To build Avenida Longitudinal de Occidente, with a blue-print that protects the main ecological structure, and to expand Avenida de los Cerros

    a) Carlos Galán

b) Claudia López

c) Miguel Uribe

[THE FOLLOWING TWO QUESTIONS ARE ONLY FOR TRAFFIC CONDITION]

II. Please order the following Bogotá Boroughs according the less extensive bike path network in 2015. For each Borough, please assign a number from 1 to 3, where 1 is the shortest network and 3 the longest network.

- La Candelaria _1_
- Ciudad Bolívar _2_
- Usaquen _3_

[PARTICIPANTS RECEIVE FEEDBACK]

III. Please indicate, in August 2019, in which time of the day Transmilenio reaches its rush hour

- Dawn-Morning (12:00am-11:59am) _X_
- Afternoon-Night (12:00pm-11:59pm) ___

[PARTICIPANTS RECEIVE FEEDBACK]

B.3.2 Safety treatment questionnaire

Before we start our activity, we want to know how informed you are about SAFETY proposals from the Bogotá's Mayor candidates. Additionally, we would like to know your knowledge about some statistics related to SAFETY in the city. Your answers in this stage will have no effect on the payments you will receive in subsequent stages of the activity.

I. For the following statements, please indicate which of the leading candidates, according to opinion polls (Carlos Galán, Claudia López and Miguel Uribe), has proposed the following SAFETY policies in their government plans

1. To build seven (7) Centers for Prevention and Protection that attends 24/7 all types of violence based on gender, domestic violence and child mistreatment

    a) Carlos Galán

b) Claudia López

c) Miguel Uribe

2. To implement facial recognition cameras in public transport systems, crime hot-spots, and public buildings

   a) Carlos Galán

   b) Claudia López

   c) Miguel Uribe

3. To create, within the Police Force, an Urban Force for Rapid Deployment, organized in three shifts across the day, which will provide support to certain neighborhoods

   a) Carlos Galán

   b) Claudia López

   c) Miguel Uribe

II. Please order the following Bogotá Boroughs according to robberies per 1,000 inhabitants in 2018. For each Borough, please assign a number from 1 to 3, where 1 is the highest robberies per 1,000 inhabitants and 3 the smallest robberies per 1,000 inhabitants.

- La Candelaria _1_
- Ciudad Bolívar _2_
- Usaquen _3_

[PARTICIPANTS RECEIVE FEEDBACK]

III. Please indicate, in 2018, in which time of the day do you think robberies per 1,000 inhabitants was the highest in the City Center (La Candelaria Borough)

- Madrugada-Mañana (12:00am-11:59am) ___
- Tarde-Noche (12:00pm-11:59pm) _X_

[PARTICIPANTS RECEIVE FEEDBACK]

B.3.3 Endline questionnaire, first experiment

Survey First Experiment

(presented after Willingness to Pay stage)

1. What is your gender?
   - o Female
   - o Male
   - o another
2. How old are you?
   - o Less than 20 years
   - o Between 20 and 29 years old
   - o Between 30 and 39 years
   - o Between 40 and 49 years
   - o Between 50 and 59 years old
   - o 60 years or more
3. What is your marital status?
   - o Currently married (includes Free Union)
   - o or Widowed
   - o Divorced / Separated
   - o I have never married
4. What is the highest educational level completed?
   - o Primary or less
   - o Baccalaureate
   - o Technical
   - o University or more
5. Overall, on a scale from 1 (not willing) to 10 (very willing), how willing are you to take risks in your life?

   0 1 2 3 4 5 6 7 8 9 10
6. In general, on a scale from 1 (not at all willing) to 10 (very willing), how willing are you to take risks when driving a vehicle?

   0 1 2 3 4 5 6 7 8 9 10
7. Overall, on a scale from 1 (not willing) to 10 (very willing), how willing are you to take risks when making financial decisions?

   0 1 2 3 4 5 6 7 8 9 10
8. Overall, on a scale from 1 (not willing) to 10 (very willing), how willing are you to take risks when playing sports?

   0 1 2 3 4 5 6 7 8 9 10
9. Overall, on a scale from 1 (not at all willing) to 10 (very willing), how willing are you to take risks when making a career or career decision?

   0 1 2 3 4 5 6 7 8 9 10
10. Overall, on a scale from 1 (not at all willing) to 10 (very willing), how willing are you to take risks when making a health-related decision?

    0 1 2 3 4 5 6 7 8 9 10
11. Do you agree with the following statement? A working mother can form as warm and safe a relationship with her children as a non-working mother.
    - o Disagree
    - o Agree
    - o I do not know
12. Do you agree with the following statement? Both men and women should contribute to the household income
    - o Disagree
    - o Agree
    - o I do not know
13. In general, throughout the city you feel:
    - o Insurance

1

o Relatively safe
o Unsafe
o Very insecure

14. For which of the following do you feel unsafe in the whole city:

a. There are few police
o Yes o No

b. You have been a victim of assault
o Yes o No

c. For the news you see or hear in the media
o Yes o No

d. Family members or friends have been the victim of different attacks
o Yes o No

e. People comments
o Yes o No

F. You must travel through dangerous places
o Yes o No

g. People are very aggressive
o Yes o No

h. There are criminal groups
o Yes o No

i. Other
o Yes o No

15. On a scale from 0 to 10, where 0 is "not at all willing" and 10 is "always willing", how willing do you consider yourself to give up something that is beneficial to you now but would be more beneficial in the future? the future?

0 1 2 3 4 5 6 7 8 9 10

16. On a scale from 1 to 3, where 1 is the safest level and 3 is the most unsafe level, order the following three schedules according to the level of security that you would feel in each of them to participate in an activity at the University of the Andes.

____ 9:00 am-10:00am
____ 2:30 pm-3:30pm
____ 8:00 pm-9:00pm

B.3.4 Questionnaire, second experiment

Survey Second Experiment
(At the beginning of the experiment)

Transportation and place of residence

1. When you took part in the experiment (201920 or 202010), where did you live?

○ Bogota
○ Another municipality. Which? ____________

2. When you took part in the experiment (201920 or 202010), what was the address of your place of residence?
[Fill in your address according to the following example: Calle 112 A 32 C]
Note that you only have to enter the first two entries of your address.
_________ ____ _________ _________ # ____ _________ _________
In case you cannot write your address in this format (eg Santa Tereza Manzana 8 Casa 33 Reservations), write the address below:
____

3. When you took part of the experiment (201920 or 202010), what was the main mean of transportation (used most frequently) to get from your place of residence to the Universidad de los Andes?

○ Bus (SITP, urban, inter-municipal)
○ Walking
○ Bus Rapid System (Transmilenio)
○ Taxi
○ Private car
○ Shared use car (Uber, Cabify, Didi, etc.)
○ Motorcycle
○ Bicycle
○ Other

4. When you took part in the experiment (201920 or 202010), how long did it take on average to get from your place of residence to the University of the Andes (include waiting time in the mean of transport)?

Hours minutes
____ ______

5. When you took part in the experiment (201920 or 202010), what was the main mean of transportation (used most frequently) to get from the Universidad de los Andes to your place of residence?

○ Bus (SITP, urban, inter-municipal)
○ Walking
○ Bus Rapid System (Transmilenio)
○ Taxi
○ Private car
○ Shared use car (Uber, Cabify, Didi, etc.)

1

○ Motorcycle
○ Bicycle
○ Other

6. When you took part of the experiment (201920 or 202010), how many minutes did it take on average to commute from the Universidad de los Andes to your place of residence (include waiting time in the means of transport)?

Hours minutes

____ ______

7. When you took part of the experiment (201920 or 202010), how willing were you to get to college before 8:00 a.m.?

○ Never willing
○ Unwilling
○ Somewhat willing
○ Very willing
○ Always ready

8. When you took part of the experiment (201920 or 202010), how willing were you to stay at the university after 6:00 p.m.?

○ Never willing
○ Unwilling
○ Somewhat willing
○ Very willing
○ Always ready

9. Before entering university, in what city / municipality did you live?

○ In Bogotá
○ In another city / municipality in Colombia
○ In another city / municipality outside of Colombia

10. When you took part of the experiment (201920 or 202010), which of the following situations best describes your place of residence?

○ He lived alone
○ Lived with a relative
○ Lived with other people (friends, dormitories, room for rent)
○ Other

Siguiente

2

[This page is activated if people say they lived with a relative]

1. which family members lived in your residence? (select all that apply)
   - Partner / Spouse / Spouse Yes No
   - Father Yes No
   - Mother Yes No
   - Brother yes no
   - Sister Yes No
   - Uncles Yes No
   - Grandparents Yes No
   - Cousins Yes No
   - Other Yes No
2. When you took part of the experiment (201920 or 202010), what activities did you carry out during the week (Monday to Thursday) and how much time per day did you dedicate on average to each of these activities?

Activity	Yes/No	Legnth
Playing with another household member	Yes No	Hours Minutes ____ ______
To feed another household member	Yes No	Hours Minutes ____ ______
Bathing / dressing another household member	Yes No	Hours Minutes ____ ______
To help another household member with homework	Yes No	Hours Minutes ____ ______
Caring for another member of the household with a disability	Yes No	Hours Minutes ____ ______
Caring for another sick household member	Yes No	Hours Minutes ____ ______
Caring for another household member 60 years of age or older who was not sick or disabled	Yes No	Hours Minutes ____ ______
Caring for another household member 12 years of age or younger who was not sick or disabled	Yes No	Hours Minutes ____ ______

Siguiente

3

Time use

1. When you took part of the experiment (201920 or 202010), which of the following activities did you do during the week (Monday to Thursday) and how much time per day did you spend on average on each of these activities?

Actividad	Yes/No	Tiempo
Resting without doing anything else	Yes No	Hours ____ Minutes ______
To prepare and serve food for the people in this household	Yes No	Hours ____ Minutes ______
To Wash, iron and / or store clothes for the people in this household	Yes No	Hours ____ Minutes ______
To clean this home (sweep, mop, make beds, dust, take out the trash, etc.)	Yes No	Hours ____ Minutes ______
Other types of housework (feeding, bathing and / or walking pets, taking care of the garden or cleaning a vehicle, etc.) in your home	Yes No	Hours ____ Minutes ______
Studying	Yes No	Hours ____ Minutes ______
Sleeping	Yes No	Hours ____ Minutes ______

Siguiente

4

Morningness

[score in parentheses was not shown to participants]

1. Considering only your "feel good" feeling, what time would you get up if you had complete freedom to plan your activities in the morning?

- ○ 5:00 - 6:30 a.m. (5)
- ○ 6:30 - 7:45 a.m. (4)
- ○ 7:45 - 9:45 a.m. (3)
- ○ 9:45 - 11:00 a.m. (2)
- ○ 11:00 a.m. - 12:00 pm. (1)

2. Considering only your "feel good" feeling, what time would you go to sleep if you had complete freedom to plan your activities in the afternoon / evening?

- ○ 8:00 - 9:00 p.m. (5)
- ○ 9:00 - 10:15 p.m. (4)
- ○ 10:15 p.m. - 12:30 am. (3)
- ○ 12:30 - 1:45 a.m. (2)
- ○ 1:45 - 3:00 a.m. (1)

3. Under normal conditions, is it easy for you to get up early?

- ○ Very difficult (1)
- ○ Not easy (2)
- ○ Pretty easy (3)
- ○ Very easy (4)

4. Once you have woken up, do you feel clear / energetic for the first half hour?

- ○ Nothing clear (1)
- ○ Not very clear (2)
- ○ Fairly clear (3)
- ○ Very clear / o (4)

5. Once you have woken up, how do you feel for the first half hour?

- ○ Very tired (1)
- ○ Somewhat tired (2)
- ○ Somewhat rested (3)
- ○ Very rested (4)

6. Suppose you have decided to start exercising. A friend suggests doing it for an hour, twice a week, and the best time for him would be from 7 to 8 in the morning. Considering only your “feel good” feeling, how do you think you would carry out this activity?

○ I would be in good shape (4)

○ Would be fit enough (3)

○ I would find it difficult (2)

○ I would find it very difficult (1)

7. What time do you usually feel tired and need to go to sleep?

○ 8:00 - 9:00 p.m. (5)

○ 9:00 - 10:15 p.m. (4)

○ 10:15 p.m. - 12:30 am. (3)

○ 12:30 - 1:45 a.m. (2)

○ 1:45 - 3:00 a.m. (one)

8. Imagine that you want to do your best on a test that you know will be difficult and will last at least two Hours. You are totally free to plan your day. Considering only a “feel good” feeling, which of the four test schedules would you choose?

○ 8:00 - 10:00 a.m. (4)

○ 11:00 a.m. - 1:00 pm. (3)

○ 3:00 - 5:00 p.m. (2)

○ 7:00 - 9:00 p.m. (1)

9. People who tend to be "daytime" and people who tend to be "nocturnal" are sometimes discussed. In which of the following categories do you fall?

○ Fully a day person (4)

○ More daytime than nocturnal (3)

○ More nocturnal than daytime (2)

○ Totally a night person (1)

10. When would you rather wake up (considering you have a full-time eight Hours job) if you had complete freedom to decide?

○ Before 6:30 a.m. (4)

○ 6:30 - 7:30 a.m. (3)

○ 7:30 - 8:30 a.m. (2)

○ 8:30 or later in the morning (1)

11. How difficult and enjoyable would it be for you to get up every day at 6:30 a.m.?

○ Very difficult and unpleasant (1)

○ Quite difficult and unpleasant (2)

○ A little unpleasant, but not troublesome (3)

○ Easy and not unpleasant (4)

12. When you get up in the morning after a night's sleep, how long does it take to clear your mind up?

○ 0 - 10 min. (4)

○ 11 - 20 min. (3)

○ 21 - 40 min. (2)

○ More than 40 min. (1)

13. Please indicate the extent to which you consider yourself to be more active in the morning or more active at night:

○ Very active / or in the morning (clear / or in the morning and tired / or at night) (4)

○ Active to some extent in the morning (3)

○ To some extent active / or at night (2)

○ Very active / or at night (tired / or in the morning and clear / or at night) (1)

Siguiente

7

(presented after Willingness to Pay stage)

Safety

1. Of the following situations, please tell us which ones have happened to you in the last twelve months, when you have been transported between two points in the city (for example, from your residence to the university).

Someone tried to rob you	○ Sí ○ No
You witnessed a robbery attempt	○ Sí ○ No
Someone you know told you that when they were commuting someone tried to rob them	○ Sí ○ No
Someone you know told you that when they were commuting, they witnessed a robbery attempt	○ Sí ○ No
Someone approach to you and touched you in a way that made you feel uncomfortable (even if you think it was not on purpose)	○ Sí ○ No
Someone had unsolicited sexual attitudes towards you that made you feel uncomfortable (for example, intimidating looks, obscene gestures, hissing, foul language, etc.)	○ Sí ○ No
You noticed that someone touched another person inappropriately	○ Sí ○ No

2. During the last 12 months, due to the risk of being a victim of a crime, you have taken any of the following actions when you want to commute between two parts of the city (for example, from your residence to the university).

You avoided night trips	○ Sí ○ No
You ask someone for company	○ Sí ○ No
You used more expensive modes of transportation than you would regularly use	○ Sí ○ No
You did not make the trip you had to	○ Sí ○ No

Siguiente

8

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