Summary of the Innovative Data Used

The innovativeness of the data used in this paper stems from the following:

1. Visual attention (eye-tracking) data are not commonplace in economics, finance, and related areas. In that sense we contribute to the literature on neuroeconomic and choice process data (for example, Caplin and Schotter, 2008; Glimcher, 2010).

2. When such data *have* been used, it has primarily been in laboratory contexts with significantly smaller samples of students (for example, Krajbich and Rangel, 2011; Reutskaja et al., 2011).

3. Our data are particularly innovative once one considers the subjects in question. They are Central American migrants with relatively little education, income, and trust in digital finance for whom the decision-making context (remittance sending) is highly relevant. This population is especially interesting to study from a financial inclusion standpoint (for example, Committee on Payments and Market Infrastructures, 2020).

To get a visual sense of our data collection in action (no pun intended), see Figure 5 in the paper.

Incomplete Nature of the Paper

The main aims of the paper are to (1) assess how migrants respond to new information about remittance companies, (2) use visual attention to better understand the choice process, and (3) assess potential welfare impacts of additional/new information. As you will note from reading the paper, we are mid sentence on the analysis. However, we plan to have the analysis (near) finalized in time for the conference.

Neuroeconomics for development: Financial inclusion and visual attention

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Abstract

Migrant remittances to low- and middle-income countries reached USD 647 billion in 2022, impacting 800 million people worldwide. Despite this, sending remittances remains relatively costly. International organizations have argued that fintech in the form of comparison websites, i.e., sites like kayak.com but for sending money, can boost financial inclusion and reduce remittance prices. Yet, little is known about how migrants with limited education and trust in digital financial services interact with fintech. We collaborate with a comparison site to conduct a field experiment among Central American migrants that meet these criteria. We vary attributes of the remittance company, specifically, the delivery speed and customer reviews (trustworthiness) to assess the potential for fintech to impact migrant choices and welfare. We use visual attention data to understand the mechanisms that determine choices. We find that (1) while migrants are apprehensive to switch companies at day-to-day stakes, reviews induce them to experiment with new companies and (2) while choice process data are consistent with choice data, the former shed light where the latter cannot. Ongoing analysis will unpack how new information impacts search, habits, and welfare.

JEL Codes: C93, D87, F22, F24, G53, O12

Keywords: migrant remittances, financial inclusion, visual attention, eye-tracking, field experiments, Central America.

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1 Introduction

Migrant remittances benefit 800 million people across the world, with USD 647 billion going to low- and middle-income countries in 2022.[1] Remittances thus constitute a key driver of global development and economic stability (for example, Yang, 2011). Migrant workers typically send USD 200-300 monthly to their home country, and this can make up as much as 60 percent of the recipient's household income. As of the third quarter of 2021, the Remittance Prices Worldwide dataset reported 343 remittance corridors across the world, with an average of 15 companies (money transfer operators/MTOs) per corridor. Despite this, remittances remain relatively costly to send: the average fee for USD 200 is about six percent of the transaction value, twice the target set by the United Nations Sustainable Development Goals.

As the financial industry continues to undergo significant changes, partly brought on by the COVID-19 pandemic, it is expected that financial technologies "fintech" will play an increasing role in how migrants send remittances and the prices they will pay. For example, the amount of money sent via mobile transfers increased by 65 percent in 2020 to USD 12.7 billion and grew again to USD 16 billion in 2021. From a financial inclusion standpoint, there is a particular interest in how migrants with relatively little education and trust in digital methods interact with fintech (for example, Committee on Payments and Market Infrastructures, 2020). This interest was heightened during the COVID-19 pandemic when previously unwilling consumers and money-transfer operators were forced to consider switching from cash-only, brick-and-mortar services to digital, online-only services.

In this paper, we assess how a sample of U.S.-based Central American remittance senders with relatively little education, income, and trust in digital services interacts with fintech in the form of a metasearch/comparison website, that is, a site such as kayak but for sending money (Section 2.1). We combine data on migrants' choice of money-transfer operator with data on migrants' choice process in the form of visual attention (eye-tracking) to address three research questions. First, are migrants' choice of money-transfer operators impacted by new information (fintech)? Second, how do choice process (visual attention) data impact our understanding of choice in this context? Finally, what are the potential welfare impacts of new information (fintech)?

Our findings are as follows. First, while migrants are apprehensive to switch money-transfer operators at high/day-to-day stakes, trustworthiness in the form of prior customer experiences offsets this effect. So, reviews are important for inducing migrants to experiment with new money-transfer operators (in the spirit of for example, Reimers and Waldfogel, 2021). Second, while choice process data are consistent with choice data, the former shed light where the latter cannot. For example, more time spent on a specific attribute can translate into sticking with or moving away from a money-transfer operator. Ongoing analysis will unpack how new information impacts search, habits, and welfare.

We contribute to a few different literatures. First, we add to findings on the sender side of remittances (e.g., Lucas and Stark, 1985; de la Brière et al., 2002; Ashraf et al., 2015; Torero and Viceisza, 2015). In so doing, we indirectly shed light on the potential recipient-side impacts of remittances (e.g., Edwards and Ureta, 2003; Yang and Choi, 2007; Yang, 2008).

[1] See http://bit.ly/3jyKEFq and the references within.

Second, we complement prior evidence on how financial inclusion, fintech, and digitization more generally impact behavior (e.g., Jensen, 2007; Jensen and Oster, 2009; Nakasone et al., 2014; Gomber et al., 2018; Goldfarb and Tucker, 2019; Stulz, 2019; Philippon, 2019; Reimers and Waldfogel, 2020; Lee et al., 2021). Third, we contribute to the literature on information provision experiments (e.g., Haaland et al., 2023) and their welfare impacts (e.g., Abaluck and Gruber, 2022). Finally, we supplement several parts of the behavioral literature, in particular on (a) visual attention and choice process (e.g., Krajbich and Rangel, 2011; Reutskaja et al., 2011; Chavez et al., 2018; Caplin, 2016; Gabaix, 2019; Harrison and Swarthout, 2019; Kee et al., 2020), (b) neuroeconomics more generally (e.g., Caplin and Schotter, 2008; Glimcher, 2010), (c) behavioral development (e.g., Kremer et al., 2019), (d) information and choice overload (e.g., Chernev et al., 2015), and financial literacy, particularly among migrants (e.g., Gibson et al., 2012; Lusardi et al., 2017; Kaiser et al., 2020). One of our key contributions is the inclusion of eye-tracking data from field participants that have relatively little education and for whom such choices have significant day-to-day relevance.

The remainder of the paper is organized as follows. Section 2 describes the study design. Section 3 covers the data and empirical strategy. Section 4 presents the results. Finally, Section 5 concludes.

2 Study design

2.1 Why comparison websites?

Prior literature suggests that comparison websites can reduce search costs and prices and in so doing, increase consumer welfare. For example, Brown and Goolsbee (2002) found that increases in Internet comparison shopping reduced the price of term life insurance by 8-15 percent. Zettelmeyer et al. (2005) found that the use of an Internet price referral service reduced new car prices by 1.2 percent (also see Zettelmeyer et al., 2001). Baye et al. (2003) found that the ease of search provided by an online comparison site saved consumers an average of 16 percent on electronics. Finally, Scott Morton et al. (2015) found that limiting airline price and schedule information could reduce consumer welfare by more than USD 6 billion per year.

It is thus not surprising that Global Remittances Working Group (2009) proposed comparison websites as a way to increase competition (reduce prices) in the remittance industry. However, there are two potential caveats. First, migrant consumers need to use comparison websites for them to have the intended impacts. In fact, several comparison websites have ceased to exist over time in part due to take-up remaining low, specifically among consumers with relatively little education, technological literacy, and trust in digital services (for example, LoVoi et al., 2016).[2] Second, while reduced prices constitute a positive for consumers, they translate into a negative (reduced revenues) for remittance companies. So, some prior work has found that competition can lead to reduced financial inclusion (for example, Brunnermeier et al., 2023). In this paper, we focus on the first caveat.

[2]Interestingly, these are also the consumers who could benefit from comparison websites the most because they tend to send small but frequent amounts and engage in costly search because of information frictions and recipient characteristics, for example, recipients who reside in more rural locations.

2.2 Recruitment and sample size

We recruited a sample of 383 Central American migrants (see Section 3 for details on our final sample size) through a reputable nongovernmental organization that has been active in the Washington DC, Maryland, and Virginia area for more than 30 years.[3] In addition to advocating on behalf of foreign-born individuals, they have worker, English-language, and pathways-to-citizenship programs. Listed participants had to (a) be older than 18 years of age, (b) have sent remittances at least four times in the past year to El Salvador, Guatemala, or Honduras, (c) at least be able to read and use a computer, and (d) not wear bifocal glasses. Criterion (c) was consistent with our goal of understanding fintech use and implications for financial inclusion among consumers with relatively little education. Criterion (d) was solely for the purpose of eye-tracking since the software would not calibrate properly otherwise.

We focused on migrants from El Salvador, Guatemala, and Honduras for three reasons. First, these countries continue to rely heavily on financial remittances as a percent of Gross Domestic Product, ranging anywhere from 19 to 27 percent as of 2022 (see `http://bit.ly/36iCwwl`). Second, the countries are of particular interest given their geographical proximity to and recent migratory relations with the United States (e.g., Cohn et al., 2017). Third, we further contribute to understanding what drives the sender side of remittances to Central America (for example, Ambler et al., 2014; Ashraf et al., 2015; Torero and Viceisza, 2015).

While this is a convenience sample, we aimed to be inclusive of migrants with relatively little education and financial access by recruiting via the above-referenced nongovernmental organization. Section 3.1 will discuss the sample characteristics in detail, but the Table 1 compares some basic demographics of Salvadorans, Guatemalans, Hondurans, and Hispanics in the US overall (per Moslimani et al., 2023) relative to the study sample. Our sample is relatively older by about 8-11 years at the median, less likely to be married by about 13-17 percentage points on average, much less likely to have completed a bachelor's degree by a fraction of 1/9 to 1/5 on average, and significantly poorer by about 22-42 percentage points. Relative to foreign-born Hispanics in the US, our sample is more likely to be employed and comprise women.

2.3 Treatments and randomization

We partnered with a World Bank certified comparison website to create an offline-equivalent of their site for experimentation purposes. The landing page for the real-time site is in Figure 1. It has the option to change from English to Spanish in the upper right corner. Users can choose (1) how much they would like to send, (2) to which country, and (3) the delivery speed/transfer time, i.e., whether the funds should arrive "the same day or less" or "in a few days". Once users click "compare", the site redirects to a results page that pulls data from money-transfer operators that (1) service the respective corridor (that is, from the US to country X) and (2) have an online presence containing the attributes discussed next. This

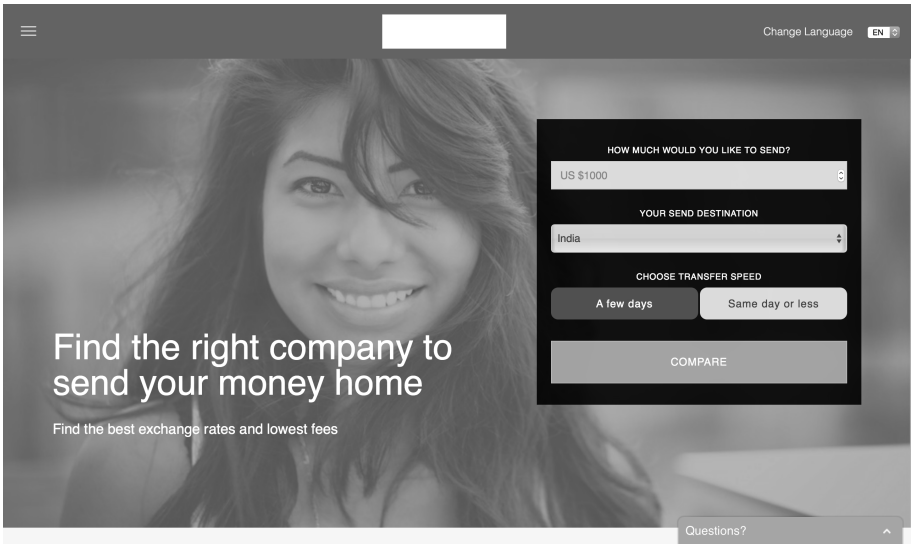
[3] In the funding proposal, we committed to a sample size of 400 migrants across six potential between-subject treatments, mostly because there was a hard budget maximum. As explained in Section 2.3, we ended up with four main treatments between-subjects. The planned sample size of $N = 400$ was large relative to several studies using eye-tracking data at the time (for example, see Wedel, 2015, who reviews attention research in marketing). This is in part due to the high-frequency nature of eye-tracking data.

Table 1: Characteristics of US Hispanics versus the study sample

	Salvadorans		Guatemalans		Hondurans		Hispanics
	US	Sample	US	Sample	US	Sample	
N	2.5 million	195	1.8 million	115	1.1 million	58	62.5 million
Foreign-born	1.3 million	195	1 million	115	0.7 million	58	19.9 million
Age[1]	30.3	41	26.6	38	26.9	38	29.5
Income[1] (USD)	30,000	23,400	25,000	14,400	26,000	18,000	30,000
Married[2]	0.55	0.38	0.49	0.37	0.49	0.33	0.58
Bachelor's degree[2]	0.09	0.01	0.08	0.01	0.11	0.02	0.20
Employed[3]		0.88		0.93		0.81	0.64
Woman[3]		0.58		0.38		0.57	0.49

The data/statistics for the US population are from Moslimani et al. (2023). All statistics for the study sample are for foreign-born individuals. [1]The median age and median household annual income for the US are across native and foreign-born individuals. [2]The likelihoods of being married and having a bachelor's degree for the US are for foreign-born individuals only. [3]The likelihoods of being employed and identifying as a woman for US Hispanics are for foreign-born individuals only.

Figure 1: Comparison website's landing page

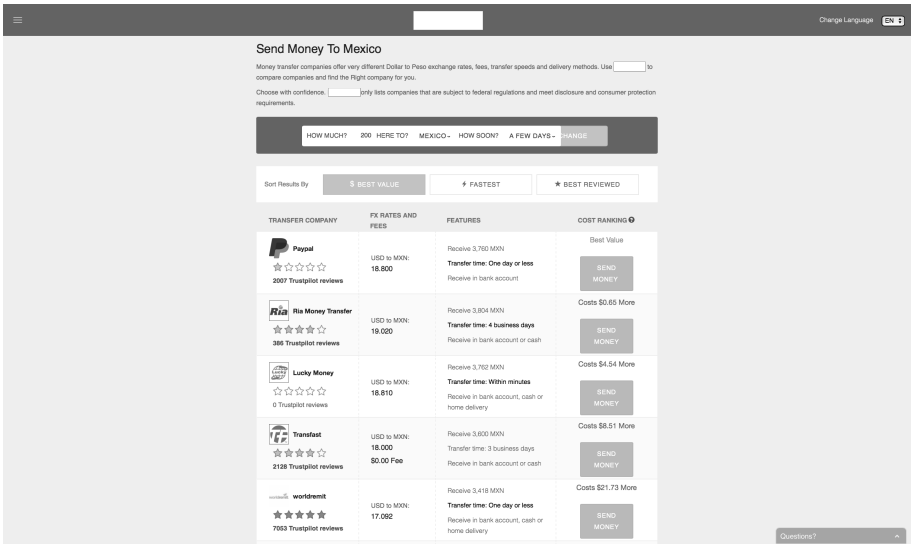


is because the site scrapes attribute information from company webpages in real time.

Figure 2 contains part of the real-time site's results page, specifically, for sending USD 200 to Mexico arriving in a few days. The page provides the following attributes by option/row: (1) the money-transfer operator name and logo, (2) customer reviews (as a measure of reliability/trustworthiness), (3) the exchange rate, transaction fee, and thus, amount that will arrive, (4) the delivery speed, and (5) whether the funds will arrive as a deposit or in cash, for pick-up or home delivery. By default, the results page ranks the options according to "best value" which is calculated based on the exchange rate and fee. However, users can also rank based on delivery speed and best reviewed. Once users click "send money", the site redirects to the money-transfer operator's website so they can transact directly there.

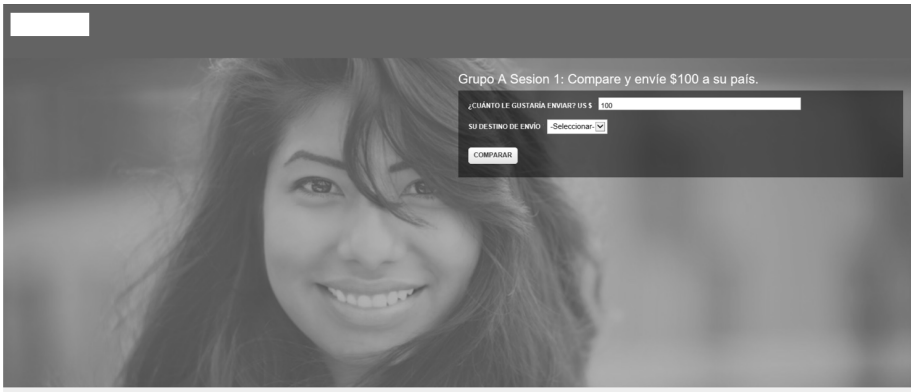
For the study, that is, the offline equivalent of the real-time site, we made the following

Figure 2: Comparison website's (partial) results page for USD 200 to Mexico



modifications to the above pages. First, the landing page was simplified as follows (Figure 3). First, since the whole study was in Spanish, there was no need for a bilingual site. Second, since participants were randomly assigned to stakes of USD 100 or USD 300 (see lottery discussion in Section 2.4), the amount to be sent was not a choice. The choice in question was which money-transfer operator to send with. The screenshot in Figure 3 is for the USD 100 treatment. There was a similar screen for the USD 300 treatment. Third, the ability to search for "same day or less" versus "a few days" was removed, since this was varied as part of the experiment (more below). Finally, the destination drop-down box only gave El Salvador, Guatemala, or Honduras as options, since these were the three countries under consideration.

Figure 3: Offline website's landing page



Second, the results page was modified as follows (Figure 4). A countdown clock was added at the top of the page since participants had a maximum of five minutes to review the

page and decide on their preferred money-transfer operator. Once the timer reached zero, an alert appeared asking the participant to make a decision. Also, the page did not contain the option to rank by "best value", "fastest", or "best reviewed" because attributes were manipulated as part of the experiment, as explained next.

Figure 4: Offline website's (partial) results page for USD 100 to Honduras



The experimental design comprised two main treatments: Group A and Group B. Both groups saw the simplified landing page (Figure 3) and the modified results page (Figure 4) three times. As stated previously, participants had five minutes for each results page since this is where a decision had to be made.[4] Groups A and B differed in terms of the order in which attributes were presented across the results pages. Specifically:

- Results page 1 contained the following attributes, regardless of being in Group A or B: the money-transfer operator name and logo; the exchange rate, transaction fee, and amount that would arrive; and whether the funds would arrive as a deposit or in cash, for pick-up or home delivery.

- If a participant was in Group A, the second results page added delivery speed to the attributes on Page 1. If a participant was in Group B, Page 2 added customer reviews instead.

- Finally, if a participant was in Group A, the third results page added customer reviews to Page 2. If a participant was in Group B, Page 3 added delivery speed instead.

So, while the third results page was the same for Groups A and B, the order in which additional information had been presented varied. This variation allows for an assessment

[4]As Figure 3 indicates, each landing page was termed "option" in the study.

of whether or not comparison websites can be simplified by removing information. From an experimental standpoint, this design also enables an assessment of order effects.

We did not experiment with treatments that substituted for or added other attributes for a few reasons. First, as explained in Section 2.2, we did not have the budget and thus, sample size to accommodate additional treatments. Second, a key attribute that could have been added was the distance to the nearest money-transfer operator branch, be that on the sender and/or recipient side. However, this was not obvious to implement, especially considering potential subsequent adoption by the comparison website. Some money-transfer operators do not have branch location information readily available on their site, especially on the recipient side where it arguably matters most. So, not only did this pose a challenge for our study, but it also raised scalability concerns. Third, the existing set of attributes does include how the money arrives, for example, by means of a bank deposit or in cash, for pick-up or home delivery. This can be considered an imperfect proxy for precise branch locations.

Table 2 summarizes the attributes by group and results page. Assignment to Group A or B was random. In addition, 60 percent of participants were randomly assigned to stakes of USD 100 and 40 percent were assigned to USD 300. Finally, there were three possible versions of results pages, which varied in terms of the order in which money-transfer operators were presented on any given results page as well as which operator had a 50 percent price discount. From a programming standpoint, this led to the creation of 108 possible webpages, i.e., 3 countries $\times$ 2 Groups (A or B) $\times$ 2 stakes (USD 100 or USD 300) $\times$ 3 results pages $\times$ 3 webpage versions (Figure 9, Appendix A).

Table 2: Attributes by treatment group and results page

	Group A (USD 100 or USD 300)	Group B (USD 100 or USD 300)
Page 1	MTO name + logo exchange rate + fee delivery mode	
Page 2	Adds delivery speed	Adds reviews
Page 3	Adds reviews	Adds delivery speed

2.4 Study protocol

The study was implemented as follows:

1. During recruitment, potential participants were informed that (1) the study would take between one to two hours, (2) they would be paid USD 50 for participating, and (3) one in eight participants would have USD 100 or USD 300 sent to their family and friends in the country of origin, based on the choices made in the study.[5] This increased the chance that participants gave decisions careful consideration, as tends to be the case the day-to-day environment.

[5]Figure 10 in Appendix A shows the gist of the recruitment flyer in English.

2. Those who agreed to participate provided informed consent (Figure 11 in Appendix A).[6] They were then assigned a study ID and completed a pre-survey (http://bit.ly/36pOsfS). Among other issues, the survey asked about (a) demographics (for example, country of origin, household composition), (b) preferences for remittances (for example, typical sending patterns, frequency and amounts, preferred money-transfer operators), (c) pre-existing knowledge of comparison websites, (d) economic variables (for example, employment, income), and (e) behavioral characteristics (for example, risk, time, and social preferences).

3. The main experiment was conducted:

   (a) Participants were seated at a laptop and given the following instructions: (1) a reminder of the study ID which had to be entered on the main page prior to starting, (2) the study objective (that is, to better understand why and how people send remittances), (3) an explanation that the study would entail eye-tracking and thus, calibration of the Tobii eye-tracker at the bottom of the laptop screen, and (4) an explanation that they would have to review webpages with several money-transfer operators and then, make choices (with five minutes for each page). Figure 5 shows one of the sessions during the instruction phase.

   (b) The eye-tracker was calibrated and participants were asked not to move back and forth in order to maintain accuracy. The eye-tracker was then activated.

   (c) Participants saw three landing pages, each followed by a results page on which they had to choose one of the money-transfer operators (recall Section 2.3).

4. A subset of participants completed a short post-survey (http://bit.ly/36mQJbs). This open-ended survey asked participants to indicate any issues that they considered important, but the study may have missed.

5. The USD 50 were paid in cash at the end of the session. The lottery was conducted once a batch of sessions had finished. Lottery winners were notified by phone and asked to confirm the contact information for their preferred recipient in the country of origin. After the money was sent, they were provided with a confirmation number so that the recipient could claim the funds.

3 Data and empirical strategy

We collected pre-survey data, website clicks (that is, choice of money-transfer operators for the three results pages), eye-tracking data during the process of choosing money-transfer operators, and post-survey data. The post-survey was short and only a subset of participants completed it, so we will focus on the other data points.

Technically, our sample comprises 396 cases. However, since the study was conducted across two waves (May and October), 13 individuals participated twice, thus leading to 383

[6]The study protocol (# 0B6A1D) was approved by Spelman's Institutional Review Board on July 14, 2016 prior to receiving NSF funding.

Figure 5: Experiment session



unique individuals. Of these, 378 completed the pre-survey, website clicks, and eye-tracking. If their second response is included, we have 394 pre-survey responses, 391 clicks, and 379 eye-tracking instances. That said, for any given individual we will drop their second response from the analysis.

The eye-tracking data were collected by means of the Tobii X2-60 eye-tracker and exported using version 3.4.8 of Tobii Studio software. The default I-VT fixation filter was used, as discussed in Section 6.2 of version 3.4.5 of the Tobii Studio user manual. This filter is responsible for how fixation data are calculated. A separate document describing the detailed process for exporting the data is available from the authors upon request. At a high level, the following steps were implemented:

1. Areas of interest (AOIs) were identified as in Figure 6, specifically: the clock, the MTO logo and name, customer reviews, the fee and exchange rate, the amount that would arrive, the delivery speed, the mode of delivery, and the send money button.

2. Webpages were grouped according to the variations in Section 2.3 (Figure 9).

3. Areas of interest were copied and pasted to webpage-groups.

4. Areas of interest were assigned to AOI-groups, for example, all logos in row one of page one were part of a group, all logos in row two of page one were part of a different group, and so on.

5. Raw statistics were exported, in particular, time to first fixation, total fixation duration, total visit duration, and percentage fixated. See the previously referenced Tobii user manual for a complete list of possible statistics.

The pre-analysis plan available at https://bit.ly/3d3c4M3 discusses the main variables that will be analyzed. They are also included in Appendix B.

Figure 6: Areas of interest on partial results page



3.1 Sample characteristics and internal validity

Table 3 describes some of the demographics collected in the pre-survey (see Appendix B.1 for variable definitions). Fifty two percent of our participants are women. On average, they are 39.64 years old and live in households that have 4.21 members. Forty five percent of the sample has completed at most primary school (21.60 percent completed secondary school – not shown in the table) and 89 percent are employed. Fifty two percent of our participants are of Salvadoran descent, 31 percent are of Guatemalan descent, and 15 percent are of Honduran descent.

Table 4 describes typical remittance behavior and preferences based on the pre-survey. On average, participants send USD 297.92 monthly to the primary remittance recipient. About one third of the sample sends to two recipients while 12 percent sends to three recipients (these statistics are not reported in the table). Participants typically pay USD 8.31 per transaction to the primary recipient, thus constituting about three percent of the transaction value. The maximum fee paid for a transaction is USD25.00. The most prevalent money-transfer operators are: Western Union at 42 percent, Ria Money Transfer at 21 percent, and other money-transfer operators, including MoneyGram and Sigue, at 32 percent. The majority of participants send to parents (40 percent) followed by siblings (21 percent), spouses (10 percent), and children (10 percent).

Tables 3 and 4 also show that our randomization was successful since participants are by and large balanced on pre-characteristics across Groups A and B as well as stakes of USD 100 and USD 300. As one would expect when performing a sufficient number of tests, there are some significant differences, specifically with regard to gender, household size, and whether the participant typically compares money-transfer operators based on fees. We will control for these baseline imbalances as appropriate in the analysis.

Table 3: Sample characteristics and balance tests (pre-survey)

	N	All	A-100	B-100	A-300	B-300	p-value of diff.
Woman	377	0.52	0.64	0.47	0.52	0.43	0.02
Age	377	39.64	38.00	41.57	38.44	40.16	0.13
Married	375	0.37	0.36	0.40	0.34	0.36	0.85
Household size	375	4.21	4.48	3.81	4.52	4.13	0.01
Completed at most primary school	375	0.45	0.42	0.47	0.46	0.45	0.88
Employed	369	0.89	0.90	0.88	0.91	0.85	0.65
Salvadoran	375	0.52	0.52	0.50	0.55	0.52	0.93
Guatemalan	375	0.31	0.32	0.31	0.31	0.28	0.96
Honduran	375	0.15	0.14	0.16	0.13	0.19	0.72
Has smartphone	377	0.82	0.86	0.84	0.80	0.78	0.45
Has tablet	377	0.18	0.14	0.16	0.25	0.17	0.25
# financial accounts (US)	374	1.15	1.20	1.21	1.10	1.05	0.84
# financial accounts (origin)	374	0.29	0.27	0.30	0.20	0.36	0.36
Percent allocated to risky asset	327	21.70	19.58	25.37	17.32	23.42	0.31
Patience (0=very impatient ... 2=patient)	375	1.02	1.05	1.03	0.87	1.09	0.40
Altruism (always/sometimes gives money)	364	0.54	0.56	0.56	0.49	0.54	0.83
Trust (always/sometimes lends money)	361	0.50	0.55	0.50	0.46	0.47	0.64
Feeling overwhelmed by information	343	5.40	5.32	5.15	6.10	5.21	0.12
Financially literate	374	0.51	0.50	0.54	0.54	0.44	0.51

Note: p-values are obtained by running a one-way ANOVA test using STATA with standard errors clustered at the day-part level. All variables were measured before interacting with the comparison site. Group A=Page 2 adds delivery speed and Page 3 adds reviews. Group B=Page 2 adds reviews and Page 3 adds delivery speed. These results are for the subsample of respondents that excludes repeats (recall Section 3).

3.2 Empirical strategy and hypotheses

Two attributes of money-transfer operators were experimentally presented to participants as they advanced through the three results pages – the speed at which the funds would be delivered and the money-transfer operator's trustworthiness in the form of prior customer reviews (recall Table 2, Section 2.3). Specifically, participants in Group A saw the delivery speed on Page 2 while participants in Group B got this additional information on Page 3. On the other hand, participants in Group B saw reviews on Page 2 while those in Group A got this additional information on Page 3.

3.2.1 New information and choice consistency

To assess whether any of these differences are statistically significant, we turn to some basic regressions. Specifically, we estimate the following equation:

$$Switch_{it,t+1} = \beta_0 + \beta_1 B_i + \beta_3 Stakes_i + \beta_4 B_i * Stakes_i + \beta_5 * X_{it-1} + \varepsilon_{it,t+1} \quad (1)$$

where $Switch_{it,t+1}$ is a dummy for whether participant i switches money-transfer operators between results pages t and $t+1$. That is, we compare whether a participant chooses a different money-transfer operator across results pages pairwise (Page 1 versus 2 and Page 2 versus 3 as in Tables 5-6). B_i and $Stakes_i$ are the treatment indicators, where B_i is a

Table 4: Day-to-day remittance sending and preferences (pre-survey)

	N	All	A-100	B-100	A-300	B-300	p-value of diff.
Monthly remittance top 3 recipients (USD)	359	365.90	315.31	333.53	423.98	425.75	0.36
Monthly remittance primary recipient (USD)	362	297.92	260.86	271.79	334.41	349.76	0.52
Remittance fee, primary recipient (USD)	340	8.31	8.05	8.34	8.34	8.57	0.48
Western Union	352	0.42	0.42	0.42	0.44	0.41	0.99
Ria Money Transfer	352	0.21	0.24	0.17	0.25	0.19	0.47
Xoom	352	0.03	0.02	0.04	0.01	0.03	0.79
Wells Fargo	352	0.01	0.02	0.00	0.03	0.01	0.41
Transfast	352	0.00	0.00	0.00	0.00	0.01	0.32
Lucky Money	352	0.00	0.00	0.00	0.01	0.00	0.24
Other MTOs (e.g., MoneyGram, family)	352	0.27	0.21	0.32	0.21	0.33	0.12
Primary recipient is parent	364	0.38	0.40	0.30	0.47	0.39	0.14
Primary recipient is sibling	364	0.21	0.26	0.21	0.17	0.20	0.51
Primary recipient is grandparent	364	0.05	0.05	0.06	0.04	0.05	0.99
Primary recipient is spouse	364	0.10	0.09	0.12	0.09	0.11	0.84
Primary recipient is child	364	0.10	0.08	0.13	0.07	0.11	0.52
Compares MTOs	375	0.59	0.65	0.54	0.54	0.61	0.28
Compares MTO fee	375	0.41	0.46	0.34	0.34	0.52	0.03
Compares MTO speed	375	0.20	0.19	0.22	0.20	0.20	0.93
Aware of comparison sites	375	0.48	0.42	0.56	0.41	0.51	0.10
Spending based on sender's preference	322	0.80	0.84	0.81	0.81	0.75	0.51

Note: p-values are obtained by running a one-way ANOVA test using STATA with standard errors clustered at the day-part level. All variables were measured before interacting with the comparison site. Group A=Page 2 adds delivery speed and Page 3 adds reviews. Group B=Page 2 adds reviews and Page 3 adds delivery speed. MTO=money-transfer operator (remittance company). These results are for the subsample of respondents that excludes repeats (recall Section 3).

dummy for whether participant i was randomized to Group B versus Group A and $Stakes_i$ is a dummy for whether participant i was randomized to the USD 300 versus USD 100 treatment. X_{it-1} is a vector of control variables measured at baseline (pre-survey) comprising the variables that were unbalanced (Tables 3 and 4) and additional control variables to improve precision determined using double LASSO (following for example, Belloni et al., 2014; Dhar et al., 2022). $\varepsilon_{it,t+1}$ is an error term.

We also estimate:

$$NeverSwitch_{it,\ldots,t+2} = \beta_0 + \beta_1 B_i + \beta_3 Stakes_i + \beta_4 B_i * Stakes_i + \beta_5 * X_{it-1} + \varepsilon_{it,\ldots,t+2} \quad (2)$$

where the outcome variable is a dummy for whether participant i *never* switches money-transfer operator. That is, this variables takes the value one if participant i chooses the same money-transfer operator on all three results pages, t, $t+1$, and $t+2$ and zero otherwise. This was the case for 9.5 percent of the participants (we return to this statistic later).

3.2.2 Mechanisms and visual attention (in progress)

In the pre-analysis plan, we intended to assess this by means of standard and extended discrete choice models, augmented for visual attention measures (e.g., Chavez et al., 2018; Fosgerau et al., 2019). Subsequent discussions have revealed that potential reviewers might

not be as concerned about this. So, we might end up mostly providing a descriptive sense of the eye-tracking data other than controlling for it in the analysis (as we currently do in Figures 7-8 and Tables 7-8). We will likely go down the search route (e.g., Reutskaja et al., 2011) to assess whether subjects first fixate on the money-transfer operator they typically send with outside the lab (based on the pre-survey).

3.2.3 Welfare impacts (in progress)

One descriptive way to proceed is to take the pre-survey responses (stated preferences) as subjects' true preferences and compare whether the information provided in the study shifts subjects towards money-transfer operators that are closer to such preferences. That said, we are also looking at the class of papers that try to assess welfare in contexts where people make mistakes (e.g., Abaluck and Gruber, 2022) to see what such approaches could mean here.

4 Results

4.1 Research question 1: Is the choice of money-transfer operator impacted by information?

Table 5 displays the percentage of participants who choose the same money-transfer operator (along the diagonal) and those who do not (off-diagonal) when presented with new information in the form of the delivery speed. The table has two panels (top and bottom) because as explained previously, Group A participants saw the delivery speed on Page 2 while Group B participants saw the delivery speed on Page 3. In the top panel, that is, when delivery speed is added on the second page, 53.63 percent choose a different money-transfer operator. In the bottom panel, when delivery speed is added on the third page, 52.79 percent choose a different money-transfer operator. So, the order in which delivery speed is presented does not seem to matter.

Table 6 is similar to the previous table but instead focuses on customer reviews. In this case, the top panel reflects the fact that Page 2 added reviews for participants in Group B while Page 3 did so for participants in Group A. 54.31 percent choose a different money-transfer operator when reviews are added on Page 2 while 58.10 percent do so in the case of Page 3. This suggests that the order in which delivery speed is presented also does not seem to matter. We will return to regression-based estimates of these effects further below and at that point, we will control for the fact that some participants faced stakes of USD100 while others faced stakes of USD300.

In the meantime, some other patterns are noteworthy. First, while the usual brick-and-mortar money-transfer operators such as Western Union, MoneyGram, and Ria Money Transfer tend to be chosen more frequently, there is quite a bit of variation across pages and other companies. For example, digital money-transfer operators such as WorldRemit, Remitly, and Xoom also enter double digits.

Second, while a significant proportion of participants switch money-transfer operators across results pages, more than 40 percent stick with the same company, at least when com-

Table 5: Does delivery speed impact switching?

	MTO on Page 2A										
	WU	MG	WF	PP	Ria	LM	RL	TF	WR	XO	Total
MTO on Page 1A											
WU	10.06	7.26	1.12			1.12				1.68	21.23
MG	0.56	8.38	0.56		0.56	1.12	0.56	0.56		0.56	12.85
WF		1.68	5.03		0.56	0.56			0.56		8.38
Ria	0.56	1.12	1.12		9.50	1.68				1.12	15.08
LM			0.56			5.03		0.56			6.15
RL	1.12	2.23	1.68	0.56	1.68	4.47	2.79	0.56	1.68	2.23	18.99
TF						0.56	0.56	0.56		1.68	3.35
WR	0.56	1.68	0.56		1.12	2.79	0.56		3.35	0.56	11.17
XO					0.56					1.68	2.23
PG							0.56				0.56
Total	12.85	22.35	10.61	0.56	13.97	17.32	5.03	2.23	5.59	9.50	100.00
	MTO on Page 3B										
	WU	MG	WF	PP	Ria	LM	RL	TF	WR	XO	Total
MTO on Page 2B											
WU	5.58	2.03		0.51	0.51	0.51				2.03	11.17
MG	1.52	3.55			0.51	0.51		0.51		0.51	7.11
WF			3.55		1.52		0.51			0.51	6.09
Ria	1.52	2.03	1.02		12.69		1.02	2.03	0.51	2.54	23.35
LM						1.52		0.51	0.51		2.54
RL	1.02	2.03	1.52		2.54	1.02	5.08	0.51	1.02	3.55	18.27
TF	0.51				0.51	0.51		1.52	0.51	0.51	4.06
WR	0.51	1.02			1.02	0.51	1.02	1.02	10.15	4.06	19.29
XO		0.51			1.52	0.51	0.51		0.51	3.55	7.11
PG			0.51						0.51		1.02
Total	10.66	11.17	6.60	0.51	20.81	5.08	8.12	6.09	13.71	17.26	100.00

Note: Sample size for Page 1-2A (top part of table): 179. Sample size for Page 2B-3 (bottom part of table): 197. All duplicate participants have been removed (recall Section 3), but the results are robust to their inclusion. MTO=money-transfer operator (remittance company) WU=Western Union MG=MoneyGram WF=Wells Fargo PP=PayPal Ria=Ria Money Transfer LM=Lucky Money RL=Remitly TF=Transfast WR=WorldRemit XO=Xoom PG=Pangea.

paring pages pairwise. When looking across all three pages, 9.5 percent of the participants (36 out of 378) always choose the same money-transfer operator, with 11 of them choosing Western Union and 13 choosing MoneyGram. We return to the issue of preferences, habits, and potential welfare consequences when addressing the third research question.

Table 7 shows the results for regression equations 1 (columns 1-6) and 2 (columns 7-9). In columns 1-3, the dependent variable is whether or not participant i switches money-transfer operator between pages 1 and 2, that is, when first provided with new information. In this instance, Group B is the effect of customer reviews relative to the delivery speed since Group A is the omitted category. USD300 is the impact of participant i being assigned to the high-

Table 6: Do customer reviews impact switching?

	MTO on Page 2B										
	WU	MG	WF	Ria	LM	RL	TF	WR	XO	PG	Total
MTO on Page 1B											
WU	8.12	1.52	0.51	3.55	1.02	2.54	0.51	2.03			19.80
MG	0.51	3.55	1.02	2.03		2.54	0.51	3.55	1.02		14.72
WF		0.51	2.54			3.55	0.51	0.51	1.52		9.14
Ria	1.02	0.51	1.02	13.71		0.51	1.02	1.52	1.02	0.51	20.81
LM				0.51	1.02		1.02	1.52	0.51		4.57
RL	0.51	1.02	1.02	1.52	0.51	8.12	0.51	2.03	0.51		15.74
TF	0.51			1.52		0.51		1.52	0.51		4.57
WR						0.51		6.60		0.51	7.61
XO				0.51					2.03		2.54
PG	0.51										0.51
Total	11.17	7.11	6.09	23.35	2.54	18.27	4.06	19.29	7.11	1.02	100.00

	MTO on Page 3A										
	WU	MG	WF	PP	Ria	LM	RL	TF	WR	XO	Total
MTO on Page 2A											
WU	8.38	0.56		0.56	1.68		0.56		0.56	0.56	12.85
MG	3.35	8.38	0.56		2.23	0.56	0.56	0.56	2.23	3.91	22.35
WF		0.56	2.79		2.23			0.56	2.23	2.23	10.61
PP					0.56						0.56
Ria	0.56				10.06		0.56		1.12	1.68	13.97
LM	0.56				3.91	1.12	1.12	1.12	5.59	3.91	17.32
RL		0.56			1.12		1.68	0.56	0.56	0.56	5.03
TF								0.56	1.68		2.23
WR	0.56					1.68	0.56		2.79		5.59
XO	0.56	0.56	0.56		1.12				0.56	6.15	9.50
Total	13.97	10.61	3.91	0.56	22.91	3.35	5.03	3.35	17.32	18.99	100.00

Note: Sample size for Page 1-2B (top part of table): 197. Sample size for Page 2A-3 (bottom part of table): 179. All duplicate participants have been removed (recall Section 3), but the results are robust to their inclusion. MTO=money-transfer operator (remittance company) WU=Western Union MG=MoneyGram WF=Wells Fargo PP=PayPal Ria=Ria Money Transfer LM=Lucky Money RL=Remitly TF=Transfast WR=WorldRemit XO=Xoom PG=Pangea.

stakes treatment versus the low-stakes treatment of USD100. Recall from Table 4 that on average, participants send about USD300 monthly to the primary recipient. So, even though USD300 is high stakes in the study, it is a better approximation of the day-to-day level of remittance sending. In columns 4-6, the dependent variable is whether participant i switches money-transfer operator between pages 2 and 3. Finally, the dependent variable for columns 7-9 is whether participant i never switches money-transfer operator, that is, always sticks with the same money-transfer operator across pages 1, 2, and 3 ("never switchers").

Columns 1-6 suggest three key findings. First, on average participants are just as likely to switch money-transfer operator when they have information about customer reviews as

Table 7: What determines money-transfer operator switching?

	Switches MTO Page 1-2			Switches MTO Page 2-3			Never switches MTO		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Group B	-0.10	-0.08	0.04	-0.00	0.01	-0.11	-0.05	-0.06	-0.05
	(0.07)	(0.07)	(0.10)	(0.07)	(0.07)	(0.10)	(0.04)	(0.04)	(0.06)
USD300	-0.25***	-0.25***	-0.24***	0.01	0.02	0.00	-0.10**	-0.10**	-0.07
	(0.07)	(0.08)	(0.09)	(0.08)	(0.08)	(0.09)	(0.04)	(0.04)	(0.05)
Group B × USD300	0.27***	0.27**	0.27**	-0.11	-0.11	-0.11	0.07	0.08	0.04
	(0.10)	(0.11)	(0.13)	(0.11)	(0.11)	(0.13)	(0.06)	(0.06)	(0.06)
Guatemala		0.06	0.03		0.01	0.02		-0.04	-0.05
		(0.06)	(0.08)		(0.06)	(0.07)		(0.03)	(0.04)
Honduras		-0.00	0.10		0.02	0.03		0.02	0.02
		(0.08)	(0.09)		(0.08)	(0.09)		(0.05)	(0.05)
Constant	0.63***	0.52***		0.57***	0.52***		0.14***	0.18***	
	(0.05)	(0.10)		(0.05)	(0.10)		(0.03)	(0.05)	
Observations	366	364	266	366	364	266	366	364	266
Mean dep. variable	0.54	0.54	0.56	0.55	0.55	0.57	0.09	0.09	0.08
Unbalanced controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Double LASSO	No	No	Yes	No	No	Yes	No	No	Yes
R^2	0.03	0.04		0.01	0.01		0.02	0.03	

Note: Standard errors in parenthesis. $^*p < 0.10$ $^{**}p < 0.05$ $^{***}p < 0.01$. MTO=money-transfer operator. The unbalanced controls are gender, household size, and whether the participant compares fees across money-transfer operators (recall Tables 3 and 4). Double LASSO is obtained by running Stata 17's `dsregress` command, which implements the algorithm proposed by Belloni et al. (2014). It fits a lasso linear regression model and uses the double-selection method to estimate the reported coefficients and select from potential control variables to be included in the model. The set of 79 potential control variables includes practically all pre-survey variables as well as individual-level eye-tracking statistics. A notable exception is the participant's occupation (that is, type of employment) because it significantly reduces the number of observations due to missing data. Whether or not the participant is employed, however, is included. The unbalanced control variables are not optional since they are included by default as *alwaysvars* controls.

when they have information about the delivery speed. Moreover, the sequence in which such information is provided does not seem to matter. This is reflected by the fact that the dummy for Group B is not statistically significant in any of the columns 1-6. Second, stakes matter, specifically when participants get information for the first time (when transitioning from page 1 to page 2). This is reflected by the fact that the dummy for USD300 is negative. Third, information counteracts this, which is reflected by the interaction term being positive. Collectively, this suggests that while migrants are apprehensive to switch money-transfer operators at high/day-to-day stakes, trustworthiness in the form of prior customer experiences offsets this effect (the interaction term is positive). So, in a nutshell, reviews are important for inducing migrants to experiment with new money-transfer operators (in the spirit of for example, Reimers and Waldfogel, 2021).

The final set of columns (7-9) assesses whether information and/or stakes impact participants who always choose the same money-transfer operator ("never switchers" who comprise 9.5 percent of the sample). Again, stakes seem to matter, although the effect does not statistically survive the inclusion of double LASSO controls (note the reduced sample size as well). That said, columns 7-8 suggest that being assigned to the USD300 treatment, reduces a participant's likelihood of always choosing the same company. In other words, when facing day-to-day stakes, participants are more likely to break their "habits", potentially because the benefits of experimentation outweigh the costs.

To further unpack the mechanisms underlying these effects, Table 8 runs modified versions of equations 1 (columns 1-12) and 2 (columns 13-18). The dependent variables are as before; however, the specifications differ in three ways. First, the interaction terms are for visual attention statistics (as opposed to stakes). One set of statistics calculates the total time spent *visiting* a specific attribute (that is, fee, amount, delivery mode, speed, reviews in terms of star ratings and quantity) while the other set comprises the total time spent *fixating* on those same attributes (see Appendix B and the pre-analysis plan for more precise definitions). Second, to avoid triple interactions we run separate regressions for stakes of USD100 and USD300. Finally, while the unbalanced controls and country dummies are included in all specifications, we do not run double LASSO. Note that columns (1), (4), (7), (10), (13), and (16) only include the Group B dummy and unbalanced controls. They are thus most comparable to the coefficients in Table 7.

Consistent with Table 7, there is suggestive evidence that the more time participants spend looking at reviews (for example, stars in column 2 or quantity of reviews in columns 5 and 11), the more likely they are to switch relative to baseline switching. Note that the Group B dummy is negative or insignificant across all specifications that include interaction terms, except when switching from page 1 to 2 at stakes of USD300. This was established previously in Table 7. So, switching seems to be driven by prior customer reviews (trustworthiness).

Interestingly, while "never switchers" also seem to be driven by reviews, fees appear to be the most important attribute to them (columns 14, 15, and 17). Specifically, at stakes of USD100, the more time they spend visiting or fixating on fees, which comprises both the price of sending and the exchange rate, the more likely they are to stick to the money-transfer operator. On the other hand, at stakes of USD300, the more time they spend visiting fees, the less likely they are to stick with the same money-transfer operator. This underscores the weighing of costs and benefits of experimentation alluded to earlier.

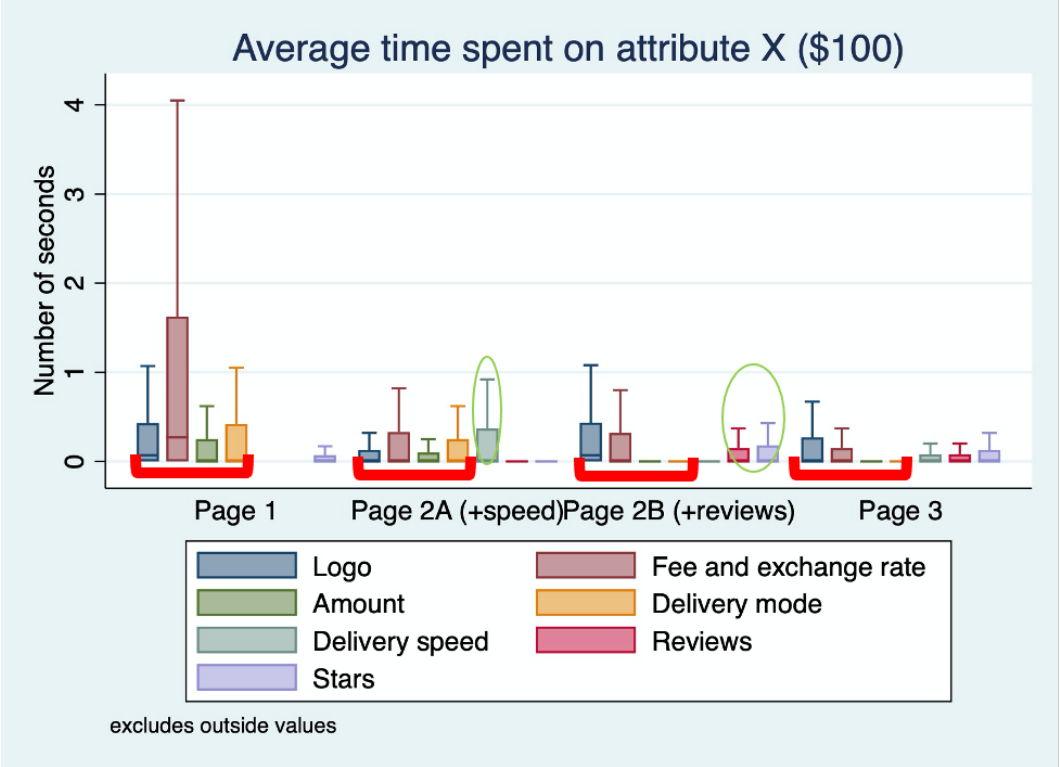
From a more methodological standpoint, the incorporation of visual attention statistics points at the following. First, total visit duration statistics appear to be more predictive than fixation statistics in this context. Second, while choice process data are consistent with choice data, the former shed light where the latter cannot. For example, more time spent on a specific attribute can translate into sticking with or moving away from a money-transfer operator. We dig further into the visual attention data and what they mean for welfare in Sections 4.2 and 4.3.

Table 8: Does visual attention determine money-transfer operator switching?

	Switches MTO Page 1-2						Switches MTO Page 2-3						Never switches MTO					
	(1) USD100	(2) USD100	(3) USD100	(4) USD300	(5) USD300	(6) USD300	(7) USD100	(8) USD100	(9) USD100	(10) USD300	(11) USD300	(12) USD300	(13) USD100	(14) USD100	(15) USD100	(16) USD300	(17) USD300	(18) USD300
Group B	-0.09	-0.17*	-0.15*	0.21**	0.11	0.09	-0.01	-0.09	-0.07	-0.06	-0.20*	-0.21**	-0.06	-0.14***	-0.11**	0.02	0.08	0.07
	(0.07)	(0.09)	(0.09)	(0.08)	(0.11)	(0.11)	(0.07)	(0.09)	(0.09)	(0.08)	(0.11)	(0.10)	(0.04)	(0.04)	(0.05)	(0.04)	(0.05)	(0.05)
B × visit fees		0.00			-0.00			0.00			-0.00			0.02***			-0.00**	
		(0.01)			(0.00)			(0.01)			(0.00)			(0.01)			(0.00)	
B × visit amount		0.00			0.00			0.00			0.00			0.00			0.00	
		(.)			(.)			(.)			(.)			(.)			(.)	
B × visit delivery mode		0.00			0.01			0.00			0.00			-0.00			-0.00	
		(0.00)			(0.01)			(0.00)			(0.01)			(0.00)			(0.00)	
B × visit delivery speed		0.00			-0.02			0.00			0.01			0.01			-0.00	
		(0.01)			(0.02)			(0.01)			(0.02)			(0.01)			(0.00)	
B × visit review stars		0.02**			0.00			-0.00			-0.00			-0.00			-0.00	
		(0.01)			(0.01)			(0.01)			(0.01)			(0.01)			(0.00)	
B × visit number reviews		-0.00			0.01*			-0.00			0.01*			-0.02**			0.00	
		(0.01)			(0.01)			(0.01)			(0.01)			(0.01)			(0.00)	
B × fix fees			-0.00			0.01			0.00			0.00			0.00*			-0.00
			(0.00)			(0.00)			(0.00)			(0.01)			(0.00)			(0.00)
B × fix amount			0.00			0.01			0.01			-0.01			-0.00			-0.00
			(0.01)			(0.01)			(0.01)			(0.01)			(0.01)			(0.00)
B × fix delivery mode			0.00			0.01			-0.00			0.02			-0.00			0.00
			(0.01)			(0.01)			(0.01)			(0.01)			(0.00)			(0.00)
B × fix delivery speed			-0.00			-0.02			-0.00			-0.00			0.01			-0.00
			(0.02)			(0.02)			(0.02)			(0.03)			(0.01)			(0.01)
B × fix review stars			0.02			-0.00			-0.01			0.00			-0.00			-0.00
			(0.01)			(0.01)			(0.01)			(0.01)			(0.01)			(0.00)
B × fix number reviews			-0.02			-0.02			-0.00			0.02			-0.01			0.01
			(0.03)			(0.02)			(0.02)			(0.02)			(0.02)			(0.01)
Constant	0.54***	0.53***	0.55***	0.24	0.23	0.27	0.62***	0.65***	0.66***	0.35**	0.37**	0.35**	0.20***	0.23***	0.24***	0.07	0.06	0.05
	(0.12)	(0.13)	(0.13)	(0.16)	(0.16)	(0.16)	(0.12)	(0.13)	(0.13)	(0.17)	(0.17)	(0.17)	(0.06)	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)
Observations	211	211	211	153	153	153	211	211	211	153	153	153	211	211	211	153	153	153
Mean dep. variable	0.58	0.58	0.58	0.48	0.48	0.48	0.56	0.56	0.56	0.52	0.52	0.52	0.12	0.12	0.12	0.05	0.05	0.05
R^2	0.02	0.04	0.03	0.05	0.08	0.09	0.01	0.02	0.03	0.06	0.11	0.12	0.05	0.13	0.08	0.01	0.04	0.04

Note: Standard errors in parenthesis. $^*p < 0.10$ $^{**}p < 0.05$ $^{***}p < 0.01$. MTO=money-transfer operator. The visit statistics calculate the total amount of time that an individual visits a given attribute/area of interest, specifically (1) the exchange rate and fees, (2) the amount received, (3) the mode of delivery (that is, bank deposit versus in cash, for pick up or home delivery), (4) the delivery speed, (5) the number of stars capturing the customer review/rating, and (6) the number of people who reviewed the money-transfer operator. The fix statistics calculate the total amount of time that an individual fixates on these same attributes. All specifications include country dummies and the unbalanced controls, which are gender, household size, and whether the participant compares fees across money-transfer operators (recall Tables 3 and 4).

Figure 7: Visual attention, Stakes USD 100



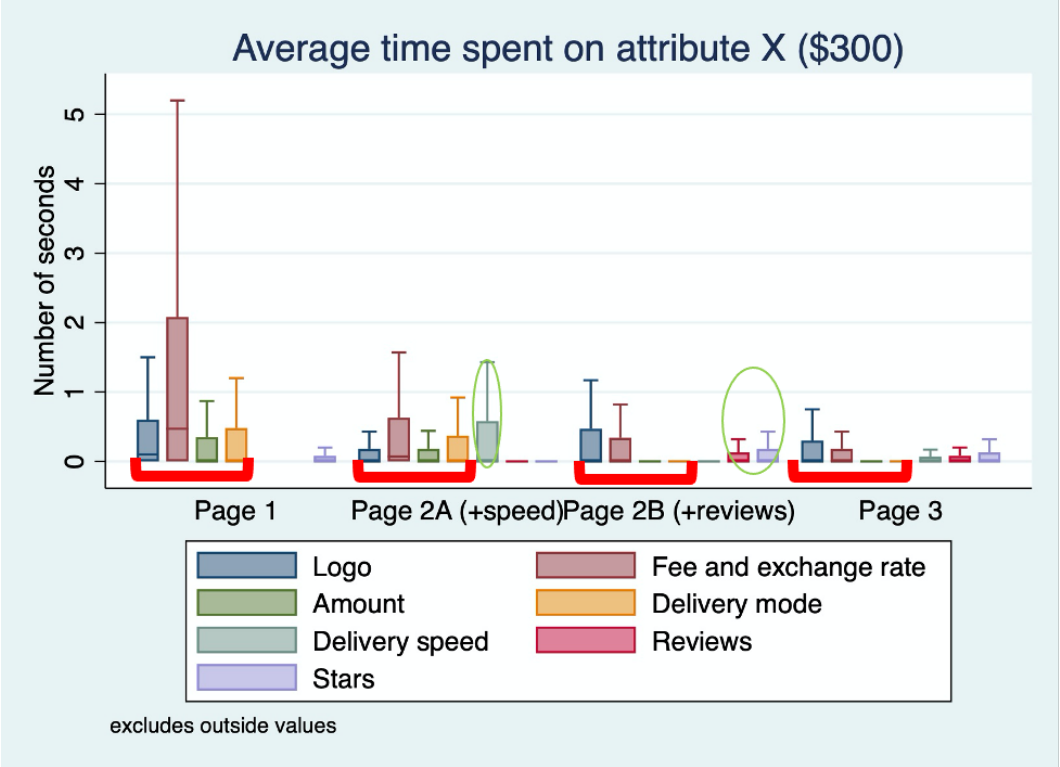
4.2 Research question 2: What do we learn from visual attention? (in progress)

Figures 7 and 8 compare the average time spent looking at money-transfer operator attributes across pages for stakes of USD 100 and USD 300 respectively. Some patterns emerge. First, subjects spend less time on any attribute as they advance through the pages. This can be seen by comparing the red buckets, which comprise the four attributes that are common across pages (logo, fee, amount, and delivery mode). Second, comparing the green elipses across Pages 2A and 2B, it becomes apparent that subjects spend significantly more time (visual attention) on delivery speed than they do on reviews. This suggests that the findings in Section 4.1 are not because people are failing to look at delivery speed – they seem to be giving it due consideration as potentially relevant information and then, ruling it out. Third, subjects spend more time on characteristics across the board when stakes are high. This further underscores the findings in Section 4.1.

4.3 Research question 3: What are the potential welfare impacts of information?

PENDING

Figure 8: Visual attention, Stakes USD 300



5 Conclusions

PENDING

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A Additional materials

Figure 9: Webpage variations

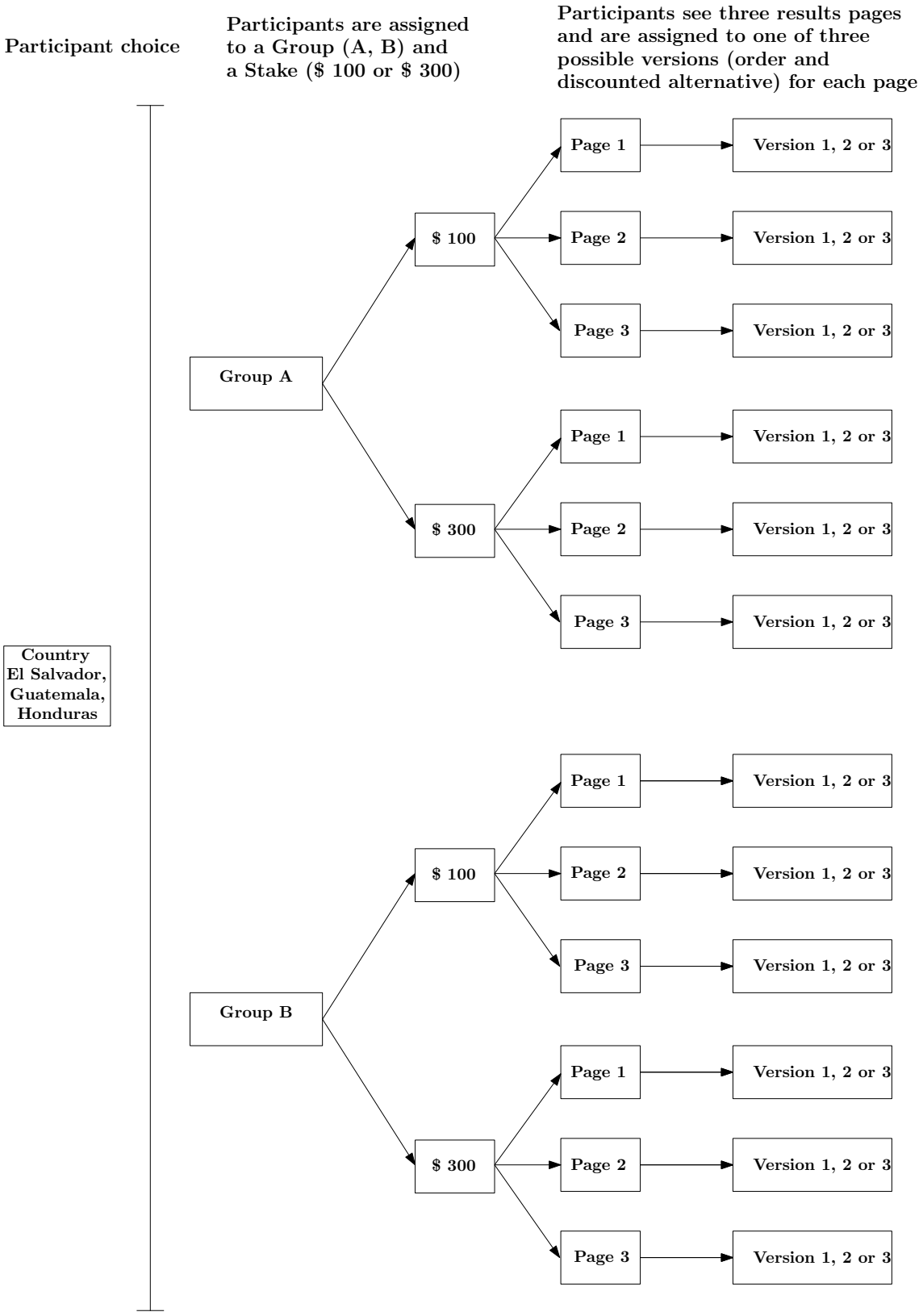


Figure 10: Recruitment flyer





Invitation to participate in research study about sending money to Central America
(El Salvador, Honduras and Guatemala)

Objective of the study:

The objective of this study is to understand how and why people send money to family and friends (also known as "remittances") in an effort to improve money-transfer services.

Dates and length of the study:

The study will last for 1-2 hours. Depending on your availability, you can participate during the following two-hour windows on the following dates …

Location:

NGO (exact locations concealed for privacy purposes).

What will you gain from participating in the study:

You will be paid **$50** for participating in the study. In addition, you will be entered into a lottery. The winners of this lottery will have **$100** or **$300** sent to their families/friends in the respective country of origin. One in eight participants will win this lottery of $100 or $300.

Criteria for participation:

(a) Have sent remittances at least four times in the past year to families/friends in El Salvador, Honduras or Guatemala; (b) Be able to read; (c) Be able to use a computer; (d) *NOT* wear bifocal glasses.

What should I do if I would like to participate in the study?

Please contact the offices of NGO at ... During this call, we can get you registered and discuss your preferred times for participating in the study. In addition, we can address any questions or concerns you may have.

Many thanks for your interest in participating in our study!

Figure 11: Informed consent form

Spelman College
A Choice to Change the World

Consent Form: Study on Remittances

- This study will last for one year. We may contact you throughout this period to ask questions. However, agreement to participate in this study does not mean that you must participate for the full duration of the study.

- Are there any risks associated?
  - There are no specific risks to participating in this study, beyond those of everyday life.

- Will information from this study be kept private?
  - The information from this study will be kept private. It will be stored securely and only authorized personnel will have access.

- Who may I contact for more information?
  - You may contact Dr. Angelino Viceisza (cell number aviceisz@spelman.edu) or Chandra Chambliss at the Spelman College Institutional Review Board (404-270-5706 irb@spelman.edu).

- What if I change my mind about participating?
  - Participation in this study is voluntary and you may withdraw from it at any time by formally notifying Dr. Angelino Viceisza before the findings are presented.

- Statement of consent
  - If you agree to participate in this study as outlined above, please check the first box below.
  - If you do not agree, but would like to be contacted in the future, please check the second box. Please also complete the requested information, so we can contact you.

- I **agree** to participate in this study.
- I **do not agree** to participate in this study, but agree to be contacted in the future.

_____ _____

Signature Date

_____

First Name, Last Name (PRINT) Phone number Email address

B Variable definitions

B.1 Pre-survey

The pre-analysis plan and verbatim pre-survey questions are available at https://bit.ly/3d3c4M3.

Remittance variables

1. *MTO Habit$_{ij}$ (Q103)*: This variable is a dummy or set of dummies for the MTO j that participant i typically uses to send money.
2. *Compare MTO$_i$ (Q85)*: This variable is a dummy for whether or not participant i typically compares MTOs, e.g., via web or phone.
3. *Compare Attribute$_{ik}$ (Q86)*: This variable is a dummy or set of dummies for whether or not participant i compares MTOs on attribute k, e.g., fees or delivery speed.
4. *Compare Aware$_i$ (Q89-93)*: This variable is a dummy for whether or not participant i is aware of the existence of comparison websites.
5. *Remittance$_i$ (Q103-104)*: This variable is the average monthly remittance amount (in USD) that participant i sends to the top three recipients.
6. *Fee$_i$ (Q104)*: This variable is the average fee (in USD) that participant i incurs across MTOs.
7. *Relation$_i$ (Q103)*: This variable is a dummy or set of dummies for the relationship between participant i and the main remittance recipient/s.
8. *Spending preference$_i$ (Q107*: This variable is a dummy for remittances being spent as they should according to participant i's preference, i.e., equality of the two columns.

Demographics

9. *Female$_i$ (Q10)*: This variable is a dummy for whether or not participant i identifies as female.
10. *Age$_i$ (Q11)*: This variable is the participant i's age.
11. *Education$_i$ (Q73)*: This variable is a dummy for whether or not participant i completed primary school or higher.
12. *HH size$_i$ (Q74)*: This variable is participant i's household (HH) size.
13. *Married$_i$ (Q75)*: This variable is a dummy for whether or not participant i is married.
14. *El Salvador$_i$ (Q6)*: This variable is a dummy for whether or not participant i identifies El Salvador as the country of origin.
15. *Guatemala$_i$ (Q6)*: This variable is a dummy for whether or not participant i identifies Guatemala as the country of origin.

16. *Honduras$_i$ (Q6)*: This variable is a dummy for whether or not participant i identifies Honduras as the country of origin.

Employment and assets

17. *Employment$_i$ (Q108)*: This variable is a dummy for whether or not participant i is employed. Retired will be coded as zero while "other" will be coded as one if it identifies an occupation not previously listed.

18. *Smartphone$_i$ (Q8)*: This variable is a dummy for whether or not participant i owns a smartphone.

19. *Tablet$_i$ (Q9)*: This variable is a dummy for whether or not participant i owns a tablet.

20. *Financial access US$_i$ (Q96)*: This variable counts the number of financial instruments that participant i has access to in the US.

21. *Financial access home$_i$ (Q97)*: This variable counts the number of financial instruments that participant i has access to in the the country of origin.

Behavioral characteristics

22. *Risk$_i$ (Q80)*: This variable is the share of USD 100 that participant i hypothetically chose to invest in a risky asset relative to a safe asset. The risky asset paid 25 times the amount invested with 50 percent chance and zero otherwise. The safe asset paid 10 times the amount invested with certainty.[7]

23. *Time$_i$ (Q81-84)*: Participants made a hypothetical choice between a USD 100 reward in one month and an USD X reward in three months. X started out at USD 125 and was increased to USD 150 and USD 200 as applicable. Participants who always chose USD 100, were asked how much X would need to be (up to USD 1,000) in order for them to wait three months. Participant i is categorized as "0=very impatient" if USD 100 was always chosen, "1=impatient" if USD 100 was chosen once or twice, and "2=patient" if the participant chose X the first time.

24. *Altruism$_i$ (Q114)*: This variable is a dummy for whether or not participant i always or sometimes *gives* money to others.

25. *Trust$_i$ (Q113)*: This variable is a dummy for whether or not participant i always or sometimes *lends* money to others.

26. *Information processing$_i$ (Q117)*: This variable counts how frequently participant i feels overwhelmed by information, e.g., words, letters, and numbers.[8]

27. *Financial literacy$_i$ (Q99)*: This variable is a dummy for whether or not participant i identified the correct category "More than USD 102".

[7] This type of lottery was first proposed by Gneezy and Potters (1997). It has been applied in a field context by for example, Charness and Viceisza (2016).

[8] The question is similar to willingness-to-take-risk questions along the lines of Dohmen et al. (2011).

B.2 Website clicks

1. *MTO Choice*$_{it}$: This is a categorical variable for participant i's choice of company on page t. There will be three such choices for each participant. These variables have also been converted into a set of dummy variables for whether or not participant i chose MTO j on page t.

2. *MTO Attributes*$_{jt}$: This set of variables represents the attributes of company j on page t. Specifically:

   (a) *Reviews*$_{jt}$: The (weighted) number of positive reviews that MTO j on page t has.

   (b) *Fee*$_{jt}$: The exchange rate and fee associated with company j on page t. We may end up creating two separate variables, one for the fee and one for the exchange rate.

   (c) *Discount*$_{jt}$: A dummy variable for whether or not MTO j on page t had a 50 percent price discount.

   (d) *Amount*$_{jt}$: The amount that would arrive if funds were sent via MTO j on page t.

   (e) *Speed*$_{jt}$: A dummy variable for whether the funds sent via MTO j on page t would arrive in a day or less.

   (f) *Delivery*$_{jt}$: A categorical variable for how funds sent via MTO j on page t would arrive, i.e., as a deposit, in cash for pick-up or delivery, or either.

B.3 Eye-tracking

1. *Fixation Duration*$_{ikjt}$: The average amount of time that participant i fixated on attribute k for company j on page t. This variable is an average since a participant may fixate on the AOI multiple times. If an attribute/AOI was not fixated upon, it will be assigned a zero.

2. *Visit Duration*$_{ikjt}$: The average amount of time that participant i visited attribute k for company j on page t. A visit is defined as the interval of time between the first fixation on the AOI and the next fixation outside the AOI. This variable is an average since a participant may visit an attribute/AOI multiple times. If an attribute was not visited, it will be assigned a zero.

3. *Duration*$_{ijkt}$: This variable is defined as *Fixation Duration*$_{ikjt}$ + *Visit Duration*$_{ikjt}$. I.e., it gives an overall measure of time spent on an attribute/AOI.

4. *Fixation*$_{ijkt\tau}$: The attribute/AOI k that participant i fixated on for company j on page t at a given point in time τ. This can include refixations.