MUNI ECON

WORKING PAPER

n. 2021-02
ISSN 2571-130X
DOI: 10.5817/WP_MUNI_ECON_2021-02

Published in: Journal of Economic Behavior & Organization, 2023, Article

On the Internet you can be anyone: An experiment on strategic avatar choice in online marketplaces

Diya Abraham / Wirtschaftuniversität Wien, Institute for Markets and Strategy / Masaryk University
Ben Greiner / Wirtschaftuniversität Wien, Institute for Markets and Strategy / University of New South Wales, School of Economics
Marianne Stephanides / Wirtschaftuniversität Wien, Institute for Markets and Strategy

On the Internet you can be anyone: An experiment on strategic avatar choice in online marketplaces

Abstract

In order to decrease social distance and increase trust on their platforms, many online marketplaces allow traders to be represented by profile pictures or avatars. In a laboratory experiment, we investigate whether the presence of seller avatars affects trading behavior in a market. We contrast markets without avatars with markets where avatars truthfully represent traders and markets where avatars can be freely changed at any time and may thus be chosen strategically. At the aggregate level, we find that the presence of truthful avatars increases the trustwothiness of sellers, but that this effect is undone when avatars can be chosen strategically. We do not detect aggregate effects on buyers´ trusting choices. Female avatars are more trusted, and correspondignly in the treatment with free avatar choice men are more likely to represent themselves with a female avatar than vice versa.

Masaryk University
Faculty of Economics and Administration

Authors:
Diya Abraham (ORCID: 0000-0001-6709-7466) / Wirtschaftuniversität Wien, Institute for Markets and Strategy / Masaryk University
Ben Greiner / Wirtschaftuniversität Wien, Institute for Markets and Strategy / University of New South Wales, School of Economics
Marianne Stephanides / Wirtschaftuniversität Wien, Institute for Markets and Strategy

Contact: diya.abraham@wu.ac.at, bgreiner@wu.ac.at, marianne.stephanides@wu.ac.at

Creation date: 2021-02
Revision date: 2023-01

Keywords: online marketplaces, market design, trust and trustworthiness, avatars, strategic behavior
JEL classification: C72, C90, D91

Citation:
Abraham, D., Greiner, B., Stephanides, M. (2021). *On the Internet you can be anyone: An experiment on strategic avatar choice in online marketplaces*. MUNI ECON Working Paper n. 2021-02. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2021-02

On the Internet you can be anyone: An experiment on strategic avatar choice in online marketplaces*

Diya Abraham†, Ben Greiner‡ and Marianne Stephanides§

January 5, 2021

Abstract

In order to decrease social distance and increase trust on their platforms, many online marketplaces allow traders to be represented by profile pictures or avatars. In a laboratory experiment, we investigate whether the presence of seller avatars affects trading behavior in a market. We contrast markets without avatars with markets where avatars truthfully represent traders and markets where avatars can be freely changed at any time and may thus be chosen strategically. At the aggregate level, we find that the presence of truthful avatars increases the trustworthiness of sellers, but that this effect is undone when avatars can be chosen strategically. We do not detect aggregate effects on buyers' trusting choices. Female avatars are more trusted, and correspondingly in the treatment with free avatar choice men are more likely to represent themselves with a female avatar than vice versa.

Keywords: online marketplaces, market design, trust and trustworthiness, avatars, strategic behavior
JEL Classification: C72, C90, D91

*We thank audiences at the Norwegian School of Economics, WU Vienna, and the 2019 ESA meeting in Dijon for helpful comments. We thank Jan Vavra for skillful programming assistance.

†Wirtschaftsuniversität Wien, Institute for Markets and Strategy, Austria, e-mail: diya.abraham AT wu.ac.at, and Masaryk University, Brno, Czech Republic.

‡Wirtschaftsuniversität Wien, Institute for Markets and Strategy, Austria, e-mail: bgreiner AT wu.ac.at, and University of New South Wales, School of Economics.

§Wirtschaftsuniversität Wien, Institute for Markets and Strategy, Welthandelsplatz 1, 1020 Vienna, Austria, e-mail: marianne.stephanides AT wu.ac.at.

I Introduction

In the pervasive presence of incomplete contracts, most market transactions require a certain amount of trust. In the offline world, trust is built through repeated relationships, word-of-mouth, and product sampling, for example. Building trust is a particular challenge for online markets, with larger spatial and social distance between transaction partners, partial anonymity, less legal oversight, and no face-to-face social interactions.

To support trustworthy behavior, online markets employ feedback and reputation systems, where traders leave ratings about each other which are then aggregated and displayed to potential future transaction partners. These systems are often effective in incentivizing cooperative behavior (see Resnick and Zeckhauser, 2002 and Bolton et al., 2004 for field and laboratory evidence, respectively), but they are also subject to strategic and informational issues. For example, product or transaction reviews may be faked, user profiles can be traded, new sellers are disadvantaged, and strategic rating behavior and feedback reciprocity hamper the informativeness of reputation information (see, exemplarily, Bolton et al., 2013 for the case of eBay and Ert et al., 2016 for the case of Airbnb).

Many platforms support the building of trusting interaction relationships by allowing users to increase their *social* presence on the market, e.g. by providing more information about themselves or using graphical representations with user profile pictures or avatars. As we review below, there is robust evidence that such a reduction of social distance to transaction partners leads to higher trust and cooperativeness, both in general and on online markets, and in excess of reputation effects.

An aspect that is however largely ignored by the existing literature is that such social and graphical representations can be *strategically* chosen. For example, if a certain type of representation or avatar is particularly effective in increasing buyers' trust, other sellers have incentives to copy that picture (and thus to represent themselves untruthfully). The social representations become 'cheap talk', and should not carry any informational value in equilibrium, and thus not affect behavior. On the other hand, the empirical literature on cheap talk in experimental games suggests that it may, nonetheless, have positive effects on cooperation (see below).

In this paper, we study the issue of original and endogenously chosen social representations in online markets with the help of a laboratory experiment. Participants engage in 30 rounds of a buyer-seller trust game modeled after Bolton et al. (2004). In particular, in each round a buyer first chooses whether he sends money to the seller, and the seller then decides whether she sends the product or not. Since the product is more valuable to the buyer than to the seller, a transaction would be efficient and socially beneficial, but the moral hazard opportunities for the seller make it difficult for the buyer to trust. In a between-subjects design, we vary whether 1) the seller has no avatar representation, 2) the seller has an avatar she chose as representing

her *before* knowing the rules of the game, and 3) the seller can freely choose (and change) her avatar at the beginning of each round. Through these experimental treatments we attempt to understand how the display of (truthful) avatar representations of sellers affect cooperation in the market, and how those effects change if the avatar representation can be strategically changed, thus becoming cheap talk.

In our experiment, we focus on avatars as social representations of traders (rather than profile pictures or self-descriptions) for several reasons. First, they allow us to isolate the pure social effects of graphical representation from issues of anonymity or attractiveness, that would have plagued any experimental design that employed real photos. Second, avatars are used widely in online platforms and communities (often also for privacy reasons), as well as virtual worlds such as Second Life or IMVU, and typically have similar social effects as platforms that use photos or face-to-face interactions (see our review below). Third, we can carefully manipulate features of the avatar, such as gender, hair color, or attire, while holding other features constant. And fourth, avatars can be more easily chosen strategically, while misrepresentation with own photos, while feasible, is more difficult.

Our main hypotheses are that displaying seller avatars increases trust and trustworthiness in our markets, but that these effects vanish at least partly once sellers can freely choose their avatars in every round. Since females are generally regarded as more trustworthy, we may see a shift towards female avatars in that treatment. Overall, our experimental results weakly support our main hypotheses. While we do not find significant differences in buyers' trust across treatments, we do observe a significant increase in sellers' trustworthiness as a result of displaying their (true) avatar to buyers. This effect is undone when sellers can choose their avatars freely and strategically in each round. We further observe that in the free-choice treatment, men are more likely to represent themselves by female avatars, who are also rated as more trustworthy and elicit more trusting choices.

Our results fit squarely into the literature on social presence in cooperation and market transactions. Experimental studies show that trust and cooperation are increased with a reduction in social distance (e.g. knowing each other longer, having more friends in common, being from the same country, having the same race: Glaeser et al., 2000; lesser sense of anonymity to transaction partners: Hoffman et al., 1996). Eckel and Petrie (2011) report that showing participants their transaction partner's photo increased trust, and consequently participants were willing to pay for seeing these photos. Studies in psychology suggest that a tenth-of-a-second exposure to a photo of a transaction partner may be sufficient to form a robust assessment of their trustworthiness (Todorov et al., 2009), and Eckel and Wilson (2004) demonstrate that even simpler social cues such as the choice of a common representation icon are able to affect trust and trustworthiness in an experimental game. These effects seem to be applicable to

market interactions even when reputation information is available. Both Rezlescu et al. (2012) and Bente et al. (2012) study experimental buyer-seller trust games with fictitious sellers and find that seller profile photos affected buyer behavior beyond existing reputation information about past behavior. Ert et al. (2016) manipulated seller profile pictures on an experimental AirBnB platform and find that while the effect of these photos is strongest in the absence of reputation information, it is still existent and significant even when information about past behavior is provided.

Avatar pictures can be effective in replacing profile photos (for example for privacy reasons). In a laboratory experiment, Bente et al. (2008) find no difference in perceived interaction success, perceived social presence, and level of affect-based trust in a treatment with avatar communication compared to video communication. Bente et al. (2014) use computer-generated avatars rather than real photos and replicate the positive effects of personal representations on trusting a seller, even when reputation information is present. Based on an online experiment, Holzwarth et al. (2006) report that using an avatar sales agent leads to consumers being more satisfied with the retailer, having a more favorable attitude toward the product and a higher purchase intention compared to those who did not interact with an avatar. Teubner et al. (2014) observe that an increase in the level of "humanization" of graphical representations (generic silhouette indicating only gender, avatars generated from user pictures, or profile photos) in experimental gift-exchange games translates to increased perceived social presence and higher cooperation levels. That said, Greiner et al. (2014) could not detect an effect of avatar-to-avatar communication on cooperation in a virtual world that would be comparable to face-to-face communication in the real world, the observation of which however was hampered by very high per-se cooperation levels in the virtual world.

Our experiment complements this literature by reporting evidence that showing simple non-strategically self-chosen avatars to buyers increases the trustworthiness of sellers, albeit we do not find effects on trusting decisions of buyers.

Females are often rated more trustworthy than males, as Kleisner et al. (2013) observe when showing photographs to their subjects, and Wright and Sharp (1979) report that trust attitudes obtained in a survey are higher towards woman compared to men. Boltz et al. (2010) let participants rate the (perceived) truthfulness in statements in a conversation where they systematically varied the gender of the speaker, and find that female speakers are perceived as telling fewer lies for their own benefit (but more lies for the benefit of others), compared to male speakers. Based on a field survey, Johnson et al. (2018) report that amateur investors view female entrepreneurs as more trustworthy than male entrepreneurs. Consistent with that, experimental laboratory studies indicate that women send back a larger proportion of their wealth in an investment game (Buchan et al., 2008) and are less likely than men to lie to secure

a monetary benefit (Dreber and Johannesson, 2008). Based on a broader sample between the ages of 18 and 84, though, Garbarino and Slonim (2009) find that women are trusted more than men, but do not necessarily behave in a more trustworthy manner (where behavioral patterns varied by age and amount received). Our results align with these findings insofar as we observe that female avatars are more trusted, and consequently men are more likely to represent themselves with female avatars when this is feasible.

One of our main interests in this paper are environments where avatars may be chosen strategically. Based on observational data, interviews and survey responses from users of avatars in virtual worlds, Martey and Consalvo (2011) and Vasalou and Joinson (2009) conclude that many users choose their avatar not just as an accurate representation of themselves, but also condition their choice of avatar on their anticipated interaction partner and the type of interaction. Galanxhi and Nah (2007) let participants choose an avatar to represent themselves in an interaction where they were or were not instructed to deceive others, and find that subjects instructed to deceive chose avatars that looked more different than themselves. Tingley (2014) pre-generated avatar faces along the dimensions of trustworthiness, dominance, and threat, and finds that trustees in a trust game were more likely to choose avatar faces for themselves that rated higher on the trustworthiness dimension, and senders trusted more in the condition where the avatars were chosen rather than randomly assigned.

The strategic choice of social information such as avatars is related to the experimental literature on cheap talk. While game-theoretically costless communication should not have an effect on behavior in cooperation games with opposing player interests, laboratory experiments show robust evidence that cheap talk communication is helpful in sustaining cooperation (Ben-Ner et al., 2011; Cooper and Kühn, 2014; Palfrey and Rosenthal, 1991). Differently, in our experiment we find that allowing the free choice of avatars, which makes their use akin to cheap talk, nullifies the positive effects of introducing avatars into the market on the trustworthiness of sellers.

The remainder of this paper is organized as follows. In Section 2 we detail our experimental design and develop hypotheses. Section 3 presents and discusses our results, and Section 4 concludes.

II Experimental design, hypotheses, and procedures

Our experiment was conducted at the WULABS at WU Vienna, and encompasses three treatments. In all treatments, participants interacted in a binary variant of the trust game, framed as a buyer-seller interaction, based on the experimental design of Bolton et al. (2004). In the stage game, both the buyer and seller receive an endowment of 5 ECU (experimental currency units). The seller offers an item for sale at a price of 5 ECU at a production cost of 3 ECU,

with the buyer's value for the item being 7 ECU. The buyer first decides to pay for the product, or not. The seller then decides to produce and ship the item, or not. Thus, if the buyer does not buy, both keep their endowment of 5 ECU. If the buyer pays but the seller does not ship, then the buyer earns 0 ECU and the seller receives 10 ECU. If the seller ships upon the buyer's payment, then both the seller and buyer make 7 ECU. In the unique Nash equilibrium of the game, the seller does not ship and the buyer does not buy.

To collect more information, we employed the strategy method to elicit the seller's choice, i.e. we asked sellers to state whether they would ship if the buyer buys, before telling them about the buyer's decision. In the laboratory, we repeat this game for 30 rounds, with randomly changing roles and a (role-contingent) complete stranger matching in order to approximate the typical one-time interaction nature in online market places. In particular, role and group assignment were random under the constraints that each participant received the role of buyer in 15 rounds and seller in the other 15 rounds, and that each participant would never meet the same other participant more than once in the same role. We used the algorithm proposed by Both et al. (2016) to create this matching in the experimental software.

In all three treatments, before participants received the instructions for the game, they were asked to choose (out of a set of 8 avatars) the avatar that most closely resembled themselves. We created a set of 8 relatively homogeneous avatars that differed in three dimensions: gender (male/female), hair color (light/dark), and attire (informal/formal). We pre-tested different sets of avatars with 268 undergraduate students at WU, and selected the set that was found most representative of students. The set of avatars used in the main study is displayed in Figure 1.[1]

FIGURE 1: Avatar choice set, varying by gender, hair color, and clothing

The three treatments differed in what was displayed to buyers before they made their decision. In the baseline treatment ("No Avatar"), the buyers did not see any avatars. In the "True Avatar" treatment, buyers were shown the avatar which the seller had chosen to represent her/himself at the start of the experiment (before knowing about the game they were going to play). In the "Free Choice" treatment, the seller selected an avatar before every interaction with a new buyer (with the previous avatar being the default). In order to avoid interaction effects of avatar choice, buyers were not represented by an avatar.

[1]We note that since there are only a few students of color at WU Vienna (and none of them participated in the study), we did not vary skin color in the avatar set.

Based on the existing experimental literature on social presence and gender effects as well as the theoretical arguments on cheap talk communication discussed above, we formed the following hypotheses for our experiment.

Hypothesis 1 *Displaying avatars of sellers to buyers leads to higher trust and trustworthiness compared to when no social information about the seller is available to buyers.*

Hypothesis 2 *Permitting sellers to freely choose their avatar nullifies the positive effects of avatars on cooperation in the market.*

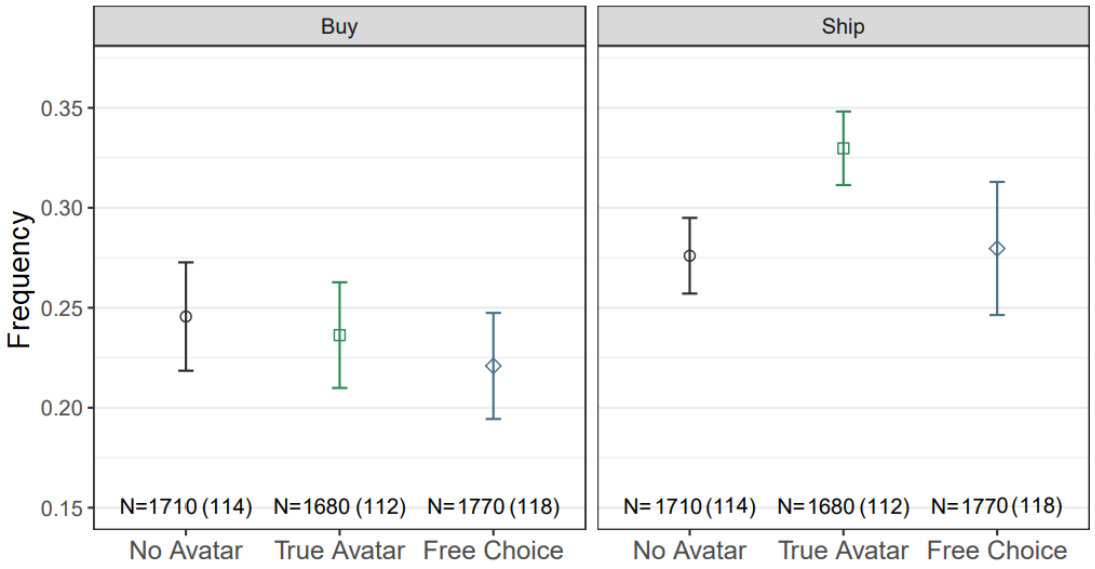
Hypothesis 3 *Sellers with female avatars are more trusted than sellers with male avatars when the true avatar of the seller is shown to the buyer. As a result, permitting sellers to freely choose their avatar leads to a gender bias in avatar selection.*

We recruited 344 participants from the student subject pool of WULABS using the recruitment software ORSEE (Greiner, 2015). The mean age of our subjects was 23 years, 63.5% were female, and almost all of them studied in a business, economics, or business law major. The experiment was implemented using the oTree software (Chen et al., 2016). Upon arrival, participants were randomly assigned to computers. Before being given any instructions, each participant was asked to choose one out of the set of 8 avatars that s/he believed resembled her/him most closely. Then the experiment instructions appeared on the screen. The buyer-seller interactions started after all participants had read the instructions and answered a few short comprehension questions. After completion of the 30 rounds of the experiment, participants answered a short demographic questionnaire, and were asked to evaluate the 8 avatars used in the experiment. Upon completing the survey, participants were privately paid in cash and dismissed. One round out of the 30 rounds was randomly selected for payment at an exchange rate of 1 ECU = 1 EUR. On average, sessions lasted about 45 minutes, and on average participants earned EUR 10.11 (StdDev 2.20) including a show-up fee of EUR 5.

III Results

Figure 2 displays the aggregate results for each of our three treatments. Even though the only Nash equilibrium of the buyer-seller trust game (for selfish and rational individuals) is not to ship and not to pay, consistent with previous results in the experimental economics literature we observe a significant amount of sellers being trustworthy (28-33%) and buyers trusting (22-25%). The resulting share of efficient trades is about 7-8% which is relatively low but not too different to other experiments with a stranger matching design (e.g. Bolton et al., 2004, upon which our experimental design is based).

FIGURE 2: Main effects of treatments on trust and trustworthiness.



Notes: Error bars are standard errors from Probit regression models controlling for rounds, and clustered at the session level. N is the number of observed games, with number of participants in parentheses.

TABLE 1: Probit regressions of buy and ship decisions on treatments

	Buy	Buy	Ship	Ship
Round	-0.011***	-0.011***	-0.004**	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
True Avatar	-0.008	-0.010	0.053**	0.053**
	(0.038)	(0.036)	(0.026)	(0.023)
Free Choice	-0.024	-0.022	0.003	0.008
	(0.038)	(0.035)	(0.039)	(0.037)
Male		-0.022		-0.004
		(0.022)		(0.042)
Age		0.009*		0.009**
		(0.005)		(0.004)
N	5160	5160	5160	5160
R^2	0.052	0.056	0.008	0.010
P-value for post-hoc test				
True Avatar=Free Choice	0.670	0.750	0.196	0.235

Notes: We report marginal effects with standard errors clustered at session level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

TABLE 2: Seller avatar characteristics and trader choices

Treatment	True Avatar		Free Choice	
	Buy	Ship	Buy	Ship
Round	-0.010***	-0.005**	-0.011***	-0.005***
	(0.003)	(0.002)	(0.002)	(0.001)
Female	0.032***	0.066	0.034***	-0.043
	(0.007)	(0.069)	(0.012)	(0.031)
Formal	0.005	-0.054	-0.016	0.006
	(0.009)	(0.090)	(0.016)	(0.025)
Light hair	0.002	0.028	-0.051**	0.059
	(0.022)	(0.066)	(0.023)	(0.044)
R^2	0.045	0.012	0.058	0.014
N	1680 (4)	1680 (4)	1770(4)	1770(4)

Notes: We report marginal effects with standard errors clustered at session level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

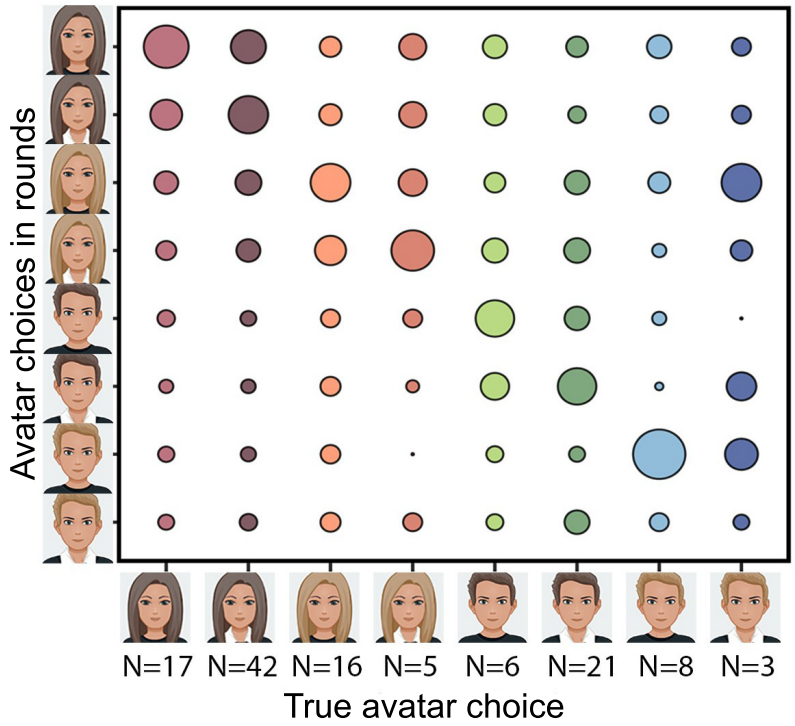
In order to study the effects of displaying avatars in the market place, we regress the buy and ship decision of our participants on the experimental treatments. We additionally include the *Round* to control for common time trends, and also run robustness models which include the decision-maker's age and gender.

Table 1 reports the results from our Probit models. With respect to sellers' shipping decisions, we find a positive effect of displaying seller avatars to buyers in the market place, compared to when no avatars are used. The effect is obliterated and not significantly different from zero when these avatars can be freely chosen. (The difference between the coefficients for True Avatar and Free Choice, though, is statistically not significant due to noise in Free Choice, as the post-hoc tests and Figure 2 show.) For buyers' purchase decisions we do not observe any treatment effects. These findings do not change when we include controls for participant demographics. Older participants are both more trusting and trustworthy, but this observation has to be interpreted with caution, since the age range across our student participants is very small.

In order to investigate how seller avatars affect trader decisions, for each of our two avatar treatments we regress the choices of buyers and sellers on the characteristics of the seller's avatar, namely gender, clothing, and hair color.[2] In Table 2 we report the results of this analysis. We find that for both avatar treatments, female seller avatars (as compared to male seller avatars) are trusted more. In terms of actual trustworthiness, sellers with female avatars

[2]Interaction effects of these characteristics in more extensive regression models are statistically not significant.

FIGURE 3: Relative frequency of avatar choices in rounds conditional on initially chosen true avatar in Free Choice treatment



Note: The bubble area reflects the relative frequency per column.

in the "True avatar" treatment (where the gender of the seller's avatar corresponds to the seller's gender) seem to be more likely to ship than male avatars, while in the Free Choice treatment (where avatar choice is presumably strategic) sellers with female avatars are less likely to ship. These effects, however, do not reach statistical significance. We do not observe effects of clothing style or hair color of the seller avatar, except that a light hair seller avatar in the Free Choice treatment is related to a lower likelihood of buying.[3]

Figure 3 displays the sellers' avatar choices in the trading rounds in the Free Choice treatment conditional on the seller's initial choice of a true avatar (before they received the experiment instructions), and thus gives an overview of the extent of misrepresentation. To analyze misrepresentation patterns, we regress the decision to be represented by a different gender, clothing, or hair color on the gender, clothing, and hair color of the initially chosen (true) avatar representation of the seller. We report results in Table 3. We find that men (more specifically: traders with an originally/true male avatar) are more likely to represent them-

[3]We did not have any expectation about this effect and cannot offer an interpretation. We note that this effect is driven by relatively few observations; see avatar choice frequencies reported below in Figure 3.

TABLE 3: Probit regressions of choosing different avatar characteristic on original (true) avatar characteristics

	Chooses different		
	Gender	Hair color	Clothing
Round	0.002	0.003**	0.002*
	(0.002)	(0.001)	(0.001)
True Avatar: Female	-0.223***	0.062**	0.057***
	(0.082)	(0.030)	(0.019)
True Avatar: Formal	0.056	0.066*	0.155***
	(0.039)	(0.037)	(0.036)
True Avatar: Light Hair	0.037	0.065	0.020*
	(0.034)	(0.043)	(0.012)
R^2	0.042	0.010	0.017
N	1770	1770	1770

Notes: We report marginal effects with standard errors clustered at session level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

selves as females, than vice versa. Traders with female avatars, on the other hand, are more likely to choose a different hair color or different clothing across rounds. Misrepresentations for hair color and clothing increase over rounds but not for gender. We observe other correlations between original avatar characteristics and effects of original and misrepresentation in the interaction rounds, but since we did not develop hypotheses for these, we do not attempt to interpret them.

IV Discussion and conclusion

In our laboratory experiment employing anonymous buyer-seller interactions with always new transaction partners, we find that showing seller avatars that truthfully represent users before market transactions increases trustworthiness of sellers, but does not have a detectable effect on the overall extent of buyers' trusting behavior in the market. However, discrimination also increases in that female avatars are trusted more than male avatars. Seemingly anticipating that female avatars are more trusted, when allowing sellers to freely choose an avatar in each trading round, sellers with an initial (true) male avatar are more likely to (strategically) choose a female avatar than vice versa. Buyers, on the other hand, seem not to anticipate these strategic seller choices, and still trust female avatars more than male avatars. At the aggregate level, however, the positive effects of avatars truthfully representing sellers on trustworthiness in the market is undone when avatars can be freely chosen.

As a result, we find partial support for our Hypothesis 1 that introducing avatars into the market place increases cooperation in the market, as well as for Hypothesis 2 that when these avatars can be chosen strategically, the positive effects disappear. Finally, our Hypothesis 3, stating that differently perceived trustworthiness of female avatars may result in a gender bias in avatar choice, also finds some support.

Overall, our results allow us to draw the following conclusions for the use of avatars in internet C2C markets. Allowing sellers to upload profile pictures or choose avatars can increase their social presence and trustworthiness and thus benefit the market place, unless sellers learn about differences in avatar effects and begin using these social representations strategically. The latter however is hardly preventable in real-world markets, unless one restricts users to using validated profile photos.

References

Ben-Ner, A., Putterman, L., and Ren, T. (2011). Lavish returns on cheap talk: Two-way communication in trust games. *The Journal of Socio-Economics*, 40(1):1–13.

Bente, G., Baptist, O., and Leuschner, H. (2012). To buy or not to buy: Influence of seller photos and reputation on buyer trust and purchase behavior. *International Journal of Human-Computer Studies*, 70(1):1–13.

Bente, G., Dratsch, T., Kaspar, K., Häßler, T., Bungard, O., and Al-Issa, A. (2014). Cultures of trust: Effects of avatar faces and reputation scores on German and Arab players in an online trust-game. *PLoS One*, 9(6):e98297.

Bente, G., Rüggenberg, S., Krämer, N. C., and Eschenburg, F. (2008). Avatar-mediated networking: Increasing social presence and interpersonal trust in net-based collaborations. *Human Communication Research*, 34(2):287–318.

Bolton, G., Greiner, B., and Ockenfels, A. (2013). Engineering trust: Reciprocity in the production of reputation information. *Management Science*, 59(2):265–285.

Bolton, G. E., Katok, E., and Ockenfels, A. (2004). How effective are electronic reputation mechanisms? An experimental investigation. *Management Science*, 50(11):1587–1602.

Boltz, M. G., Dyer, R. L., and Miller, A. R. (2010). Jo are you lying to me? Temporal cues for deception. *Journal of Language and Social Psychology*, 29(4):458–466.

Both, F., Adam, M., Hariharan, A., Dorner, V., Lux, E., and Weinhardt, C. (2016). A randomized tabu search-based approach for perfect stranger matching in economic experiments. *Economics Letters*, 145:235–238.

Buchan, N. R., Croson, R. T., and Solnick, S. (2008). Trust and gender: An examination of behavior and beliefs in the investment game. *Journal of Economic Behavior & Organization*, 68(3-4):466–476.

Chen, D. L., Schonger, M., and Wickens, C. (2016). oTree—An open-source platform for laboratory, online, and field experiments. *Journal of Behavioral and Experimental Finance*, 9:88–97.

Cooper, D. J. and Kühn, K.-U. (2014). Communication, renegotiation, and the scope for collusion. *American Economic Journal: Microeconomics*, 6(2):247–278.

Dreber, A. and Johannesson, M. (2008). Gender differences in deception. *Economics Letters*, 99(1):197–199.

Eckel, C. and Wilson, R. K. (2004). Whom to trust? Choice of partner in a trust game. *Working Paper, Rice University*.

Eckel, C. C. and Petrie, R. (2011). Face value. *American Economic Review*, 101(4):1497–1513.

Ert, E., Fleischer, A., and Magen, N. (2016). Trust and reputation in the sharing economy: The role of personal photos in Airbnb. *Tourism Management*, 55:62–73.

Galanxhi, H. and Nah, F. F.-H. (2007). Deception in cyberspace: A comparison of text-only vs. avatar-supported medium. *International Journal of Human-Computer Studies*, 65(9):770–783.

Garbarino, E. and Slonim, R. (2009). The robustness of trust and reciprocity across a heterogeneous US population. *Journal of Economic Behavior & Organization*, 69(3):226–240.

Glaeser, E. L., Laibson, D. I., Scheinkman, J. A., and Soutter, C. L. (2000). Measuring trust. *Quarterly Journal of Economics*, 115(3):811–846.

Greiner, B. (2015). Subject pool recruitment procedures: Organizing experiments with ORSEE. *Journal of the Economic Science Association*, 1(1):114–125.

Greiner, B., Caravella, M., and Roth, A. E. (2014). Is avatar-to-avatar communication as effective as face-to-face communication? An Ultimatum Game experiment in First and Second Life. *Journal of Economic Behavior & Organization*, 108:374–382.

Hoffman, E., McCabe, K., and Smith, V. L. (1996). Social distance and other-regarding behavior in dictator games. *American Economic Review*, 86(3):653–660.

Holzwarth, M., Janiszewski, C., and Neumann, M. M. (2006). The influence of avatars on online consumer shopping behavior. *Journal of Marketing*, 70(4):19–36.

Johnson, M. A., Stevenson, R. M., and Letwin, C. R. (2018). A woman's place is in the... startup! Crowdfunder judgments, implicit bias, and the stereotype content model. *Journal of Business Venturing*, 33(6):813–831.

Kleisner, K., Priplatova, L., Frost, P., and Flegr, J. (2013). Trustworthy-looking face meets brown eyes. *PLoS One*, 8(1):e53285.

Martey, R. M. and Consalvo, M. (2011). Performing the looking-glass self: Avatar appearance and group identity in Second Life. *Popular Communication*, 9(3):165–180.

Palfrey, T. R. and Rosenthal, H. (1991). Testing for effects of cheap talk in a public goods game with private information. *Games and Economic Behavior*, 3(2):183–220.

Resnick, P. and Zeckhauser, R. (2002). Trust among strangers in Internet transactions: Empirical analysis of eBay's reputation system. In *The Economics of the Internet and E-commerce*, pages 127–157. Emerald Group Publishing Limited.

Rezlescu, C., Duchaine, B., Olivola, C. Y., and Chater, N. (2012). Unfakeable facial configurations affect strategic choices in trust games with or without information about past behavior. *PLoS One*, 7(3):e34293.

Teubner, T., Adam, M. T., Camacho, S., and Hassanein, K. (2014). Understanding resource sharing in C2C platforms: The role of picture humanization. In *Proceedings of the 25th Australasian Conference on Information Systems*.

Tingley, D. (2014). Face-off: Facial features and strategic choice. *Political Psychology*, 35(1):35–55.

Todorov, A., Pakrashi, M., and Oosterhof, N. N. (2009). Evaluating faces on trustworthiness after minimal time exposure. *Social Cognition*, 27(6):813–833.

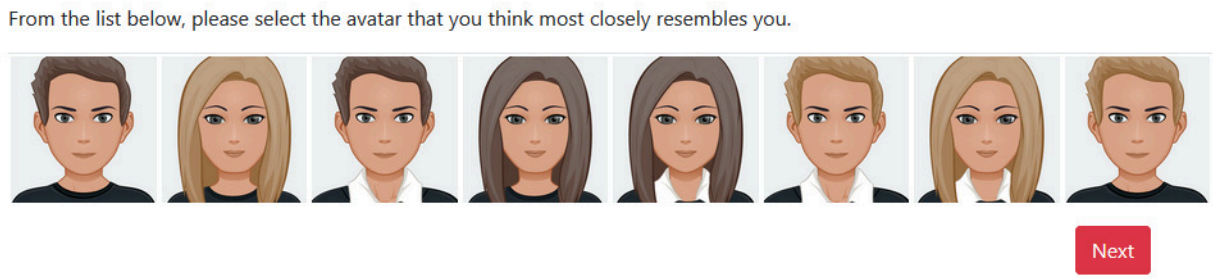
Vasalou, A. and Joinson, A. N. (2009). Me, myself and I: The role of interactional context on self-presentation through avatars. *Computers in Human Behavior*, 25(2):510–520.

Wright, T. L. and Sharp, E. G. (1979). Content and grammatical sex bias on the interpersonal trust scale and differential trust toward women and men. *Journal of Consulting and Clinical Psychology*, 47(1):72.

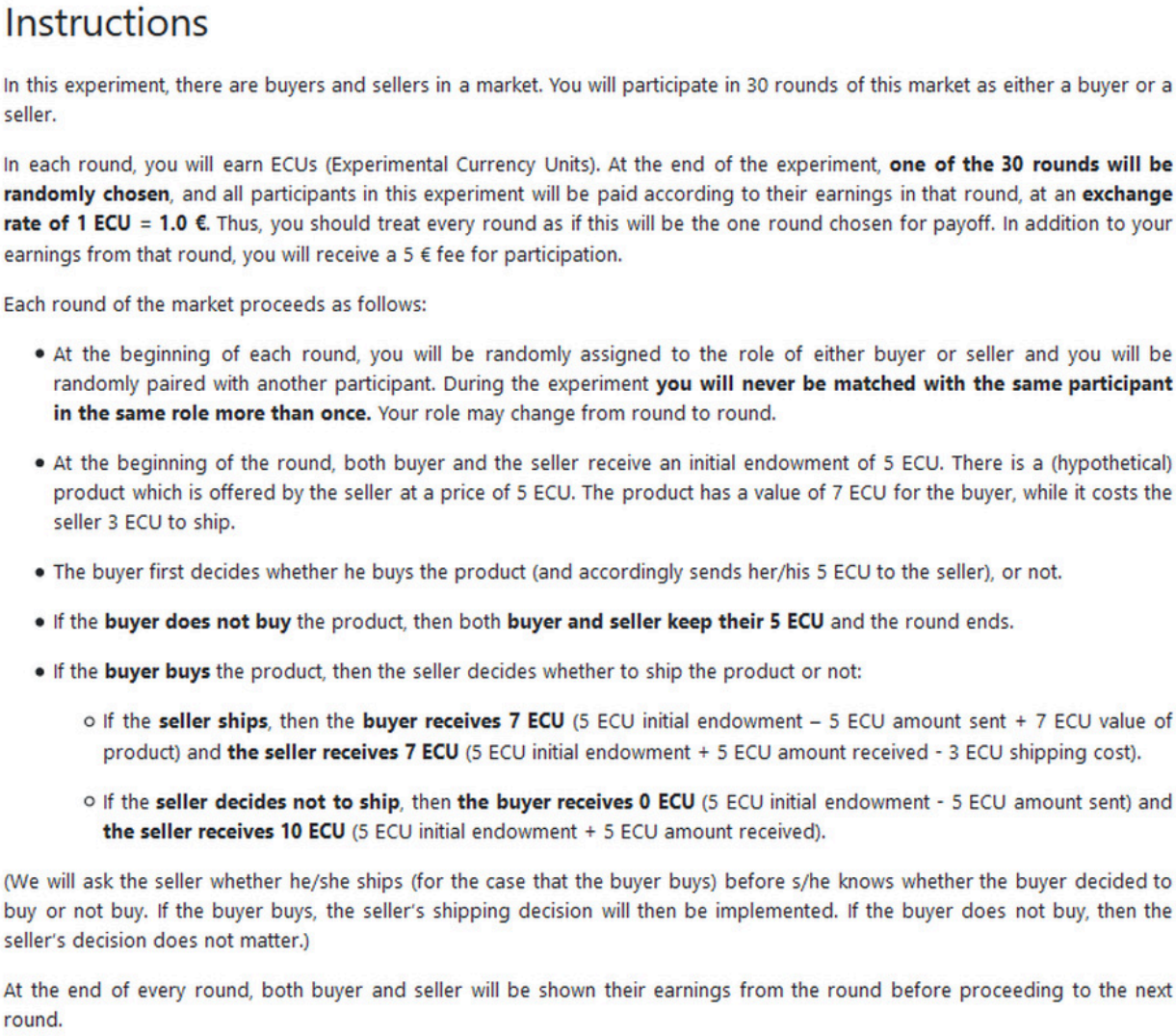
A Screenshots of experimental instructions and decision screens

Participants in the avatar treatments first chose their avatar. Then experimental instructions were displayed. Participants could review the instructions at any point by scrolling down to the lower portion of their screens. After answering comprehension questions, participants proceeded to decision screens.

Screenshot: Avatar selection before instructions (only avatar treatments)



Screenshot: Instructions



The picture below summarizes the interaction described above:

Next

Screenshot: Comprehension questions

Comprehension Questions

Please indicate how much (in ECU) the buyer and seller will earn in each of the cases below.
You will be able to proceed once you have answered all the questions correctly.

1) The buyer decided NOT TO BUY the product. ✔

Buyer earns 5

Seller earns 5

2) The buyer decided TO BUY, and the seller decided TO SHIP the product. ✔

Buyer earns 7

Seller earns 7

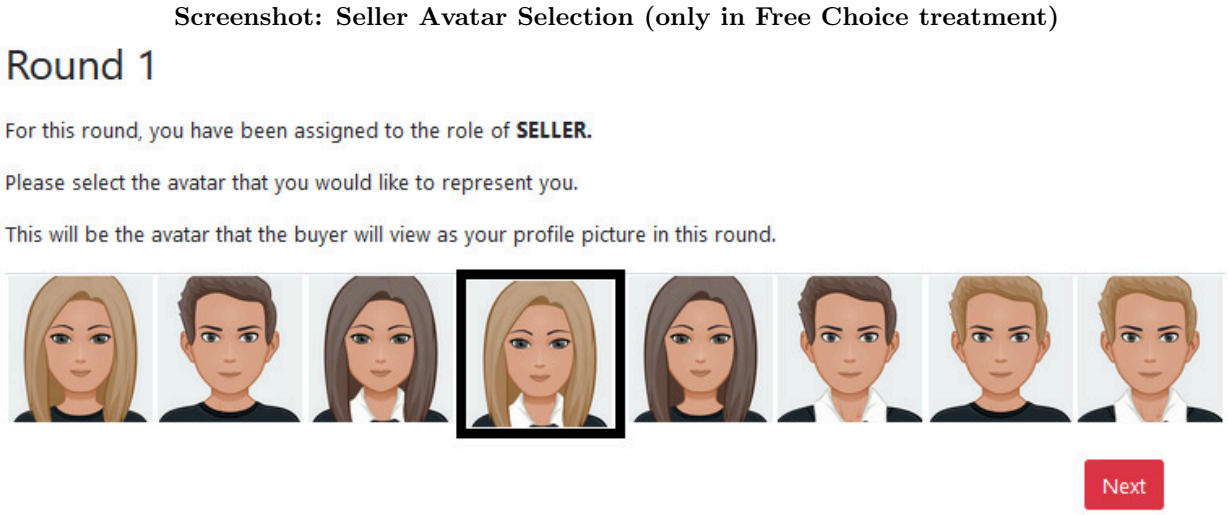
3) The buyer decided TO BUY, and the seller decided NOT TO SHIP the product. ✔

Buyer earns 0

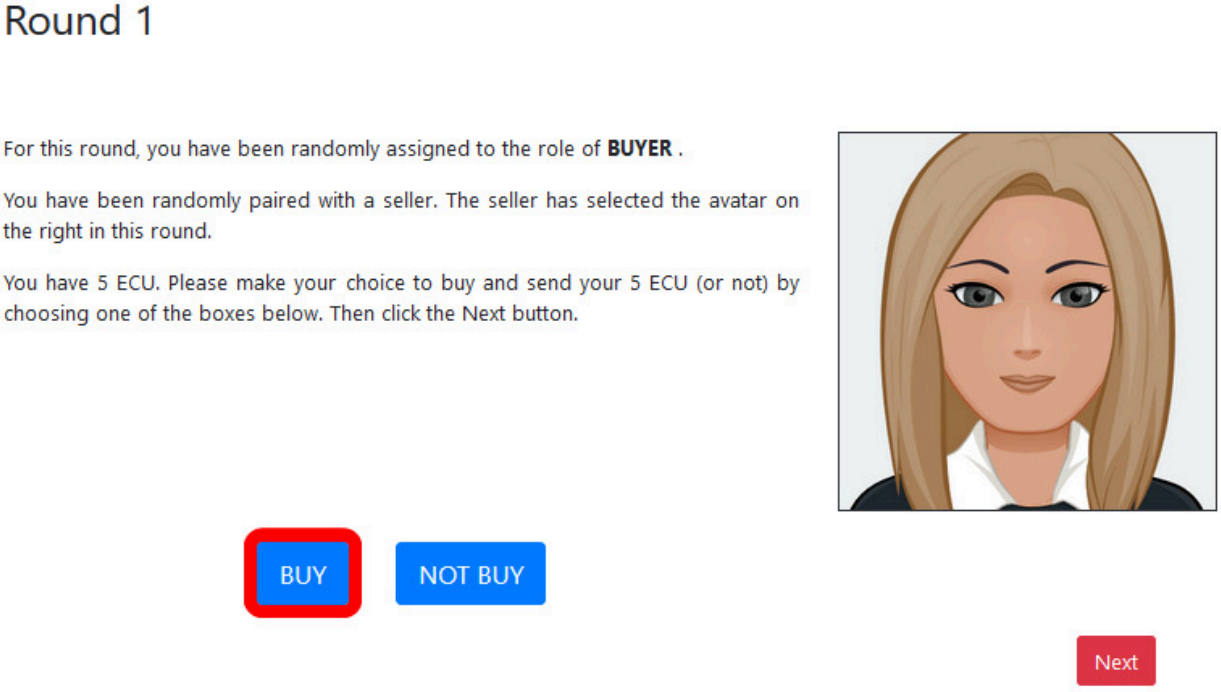
Seller earns 10

Next

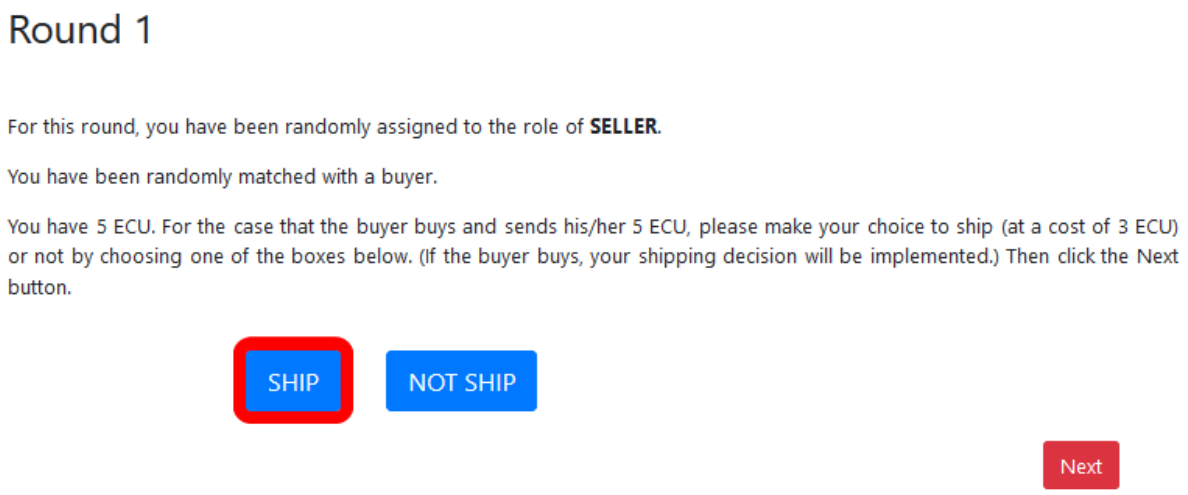
Screenshot: Seller Avatar Selection (only in Free Choice treatment)



Screenshot: Buyer Decision (here: Free Choice treatment)



Screenshot: Seller Decision



Screenshot: Round Results

MUNI Econ Working Paper Series (since 2018)

2021-02 Abraham, D., Greiner, B., Stephanides, M. (2021). *On the Internet you can be anyone: An experiment on strategic avatar choice in online marketplaces*. MUNI ECON Working Paper n. 2021-02. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2021-02

2021-01 Krčál, O., Peer, S., Staněk, R. 2021. *Can time-inconsistent preferences explain hypothetical biases?*. MUNI ECON Working Paper n. 2021-01. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2021-01

2020-04 Pelligra, V., Reggiani, T., Zizzo, D.J. 2020. *Responding to (Un)Reasonable Requests by an Authority*. MUNI ECON Working Paper n. 2020-04. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2020-04

2020-03 de Pedraza, P., Guzi, M., Tijdens, K. 2020. *Life Dissatisfaction and Anxiety in COVID-19 pandemic*. MUNI ECON Working Paper n. 2020-03. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2020-03

2020-02 de Pedraza, P., Guzi, M., Tijdens, K. 2020. *Life Satisfaction of Employees, Labour Market Tightness and Matching Efficiency*. MUNI ECON Working Paper n. 2020-02. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2020-02

2020-01 Fišar, M., Reggiani, T., Sabatini, F., Špalek, J. 2020. *a*. MUNI ECON Working Paper n. 2020-01. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2020-01

2019-08 Fišar, M., Krčál, O., Špalek, J., Staněk, R., Tremewan, J. 2019. *A Competitive Audit Selection Mechanism with Incomplete Information*. MUNI ECON Working Paper n. 2019-08. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2019-08

2019-07 Guzi, M., Huber, P., Mikula, M. 2019. *Old sins cast long shadows: The Long-term impact of the resettlement of the Sudetenland on residential migration*. MUNI ECON Working Paper n. 2019-07. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2019-07

2019-06 Mikula, M., Montag, J. 2019. *Does homeownership hinder labor market activity? Evidence from housing privatization and restitution in Brno.* MUNI ECON Working Paper n. 2019-06. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2019-06

2019-05 Krčál, O., Staněk, R., Slanicay, M. 2019. *Made for the job or by the job? A lab-in-the-field experiment with firefighters.* MUNI ECON Working Paper n. 2019-05. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2019-05

2019-04 Bruni, L., Pelligra, V., Reggiani, T., Rizzolli, M. 2019. *The Pied Piper: Prizes, Incentives, and Motivation Crowding-in*. MUNI ECON Working Paper n. 2019-04. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2019-04

2019-03 Krčál, O., Staněk, R., Karlínová, B., Peer, S. 2019. *Real consequences matters: why hypothetical biases in the valuation of time persist even in controlled lab experiments*. MUNI ECON Working Paper n. 2019-03. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2019-03

2019-02 Corazzini, L., Cotton, C., Reggiani, T., 2019. *Delegation And Coordination With Multiple Threshold Public Goods: Experimental Evidence*. MUNI ECON Working Paper n. 2019-02. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2019-02

2019-01 Fišar, M., Krčál, O., Staněk, R., Špalek, J. 2019. *The Effects of Staff-rotation in Public Administration on the Decision to Bribe or be Bribed*. MUNI ECON Working Paper n. 2019-01. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2019-01

2018-02 Guzi, M., Kahanec, M. 2018. *Income Inequality and the Size of Government: A Causal Analysis*. MUNI ECON Working Paper n. 2018-02. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2018-02

2018-01 Geraci, A., Nardotto, M., Reggiani, T., Sabatini, F. 2018. *Broadband Internet and Social Capital*. MUNI ECON Working Paper n. 2018-01. Brno: Masaryk University. https://doi.org/10.5817/WP_MUNI_ECON_2018-01

ISSN electronic edition 2571-130X

MUNI ECON Working Paper Series is indexed in RePEc:

https://ideas.repec.org/s/mub/wpaper.html