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* Views expressed are those of the authors and do not necessarily reflect official positions of De Nederlandsche Bank.

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Trust in other people and the usage of peer platform markets *

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Abstract

The use of online peer-to-peer marketplaces is growing rapidly. It is important to understand what drives consumers' usage of these markets. Based on detailed survey data collected among a representative panel of Dutch consumers, we report a significant positive relationship between trust in other people and current and expected future usage of peer platform markets (PPMs). People who in general trust others are 10 percentage points more likely to use PPMs than people who distrust others. Less uncertainty about the reliability of other persons, the quality of goods and services offered and payments can stimulate usage of PPMs.

Keywords: peer platform markets, generalised trust, consumer behaviour, consumption, consumer survey.

JEL classifications: D12, D14, O33.

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1. Introduction

Suppose your birthday is coming up and you want to celebrate it by throwing a garden party. As nowadays not only businesses, but also individuals can easily trade products and services online, this birthday party is easier to organise than your eighteenth birthday celebration. You can rent a marquee, and even a garden if necessary, buy a birthday cake from a hobby baker, and find someone to entertain your guests by simply using PPMs. The OECD defines PPMs as follows: *"The phrase "peer platform markets" is used to describe a wide range of new and emerging production and consumption models that involve the commercial exchange of goods and services between peers through Internet platforms."* (OECD 2016, p.7). Initially PPMs were mainly used to sell and buy used goods (e.g. eBay), but nowadays there's a wide array of possibilities to borrow and rent products (e.g. FatLama) and short-term accommodation (e.g. Airbnb), to consume and supply services (e.g. TaskRabbit) and food (e.g. Eatwith), and to borrow and lend money (e.g. Prosper). PPMs bring together supply and demand, reduce transaction costs and thereby enable transactions that otherwise would not have taken place (Thierer et al. 2016).

The use of PPMs is growing rapidly. Policymakers monitor these markets constantly and are highly interested in their economic, social and environmental impact. They are also keen to learn what drives consumers' usage, as this will help them forecast future developments and judge what, if any, policy is needed.

Research on the use of PPMs and motives of PPM users is still at a very early stage, but is growing rapidly. Böcker and Meelen (2017) argue that social contacts are one of the motivations for using PPMs, although there is also research that contests this view by showing that the use of PPMs is largely motivated by utilitarianism and self-interest (Bardhi and Eckhart 2012). Moreover, Parigi and State (2014) find that the ability to create new close social contacts via the usage of these online markets has declined over time. Moreover, it is found that users of PPMs may suffer from discrimination (e.g. Edelman et al. 2017). Balck and Cracau (2015) show that cost reduction is an often documented motive in the literature and their analysis among German customers and four industries (accommodation renting, car sharing, commodities and clothing) confirms that the main motive for using sharing offers is lower prices. Lamberton and Rose (2012) find that the perceived risk of scarcity related to sharing – the unavailability of the product one wants – can be a factor withholding people from participating.

Perhaps surprisingly, little is known about the relationship between generalised trust – trust in other people – and the usage of PPMs. Although the literature that links generalised trust to economic growth is large (e.g. Knack and Keefer 1997; Zak and Knack 2001) there is little research on generalised trust and financial decisions at the individual level (e.g. Jiang and Lim 2018), let alone the usage of PPMs. Nonetheless there seems to be a broad consensus that trust

between strangers, as pointed out by Botsman and Rogers (2010), is one of the main principles on which PPMs thrive.

We contribute to the literature on the use of PPMs, the motives of users and the role of generalised trust in economic decision making, by researching the relationship between generalised trust and the usage of PPMs. To examine this link, we use a unique dataset compiled of three surveys from the Dutch CentERpanel: the Nederlandsche Bank (DNB) trust survey (DTS) which includes the generalised trust measure, the DNB Household Survey (DHS) for several background characteristics, and our specially designed PPM-survey. The PPM-survey allows us to measure individuals' self-reported current usage and expected future usage of various types of PPMs, as well as the factors triggering usage and factors withholding people from interacting on these markets. The nature of the data allows us to distinguish triggers and barriers between both users and non-users, while earlier studies (e.g. Böcker and Meelen 2017) neglected non-users and the factors that withhold them from using PPMs.[1] The Netherlands is a good setting to research this topic, as it leads Europe with internet access: 98% of inhabitants have internet access at home (Statistics Netherlands 2018). Hence, almost everyone could use PPMs.

Foreshadowing our main results, we find that people who in general trust others are 10 percentage points more likely to use PPMs than people who distrust others. Also in case of expected usage within the next five years, there is a positive effect of generalised trust. This effect is stronger for consumers of goods and services than for suppliers. Less uncertainty about the reliability of other persons, the quality of goods and services offered and payments can stimulate usage of PPMs.

The remainder of this paper is structured as follows, section 2 describes the related literature on generalised trust and the literature on trust and PPMs. Section 3 describes the data and in section 4 we report the usage of PPMs. Section 5 documents to what extent respondents indicate that (dis)trust is a trigger for (not) using these markets. In Section 6 we describe our empirical approach, whereas the results of this empirical analysis and robustness checks are presented and discussed in section 7. We end with a discussion and conclusion in Section 8.

2. Related literature

By examining the link between generalised trust and usage of PPMs we contribute to two strands of literature: (1) literature on generalised trust, and (2) literature on PPMs. We briefly discuss the main findings of these lines of research.

[1] See Hawlitschek et al. (2016a) for an overview.

2.1 Literature on generalised trust

Many studies have shown that generalised trust is an important asset for society as it positively influences long term growth and development (e.g. Knack and Keefer 1997; Zak and Knack 2001; Algan and Cahuc 2010; Horváth 2013). There are various channels through which this occurs, for example via higher levels of human capital (e.g. Bjørnskov 2009; Dearmon and Grier 2011; Bjørnskov and Méon 2013), lighter regulation (e.g. Aghion et al. 2010), and increased government efficiency (La Porta et al. 1997). Generalised trust is also correlated with lower macro-economic volatility (Sangnier 2013).

Although the literature that links generalised trust to economic growth is large, there is little research on the relation between generalised trust and financial decisions at the individual level. The few studies on this topic clearly show that consumers' financial decisions depend on the level of trust in other people. For example, using data on consumers in the U.S., Jiang and Lim (2018) show that high trust individuals are less likely to default in household debt and have a higher net worth than low trust individuals. Trusting people are also more likely to participate in the stock market (Guiso et al. 2008; Balloch et al. 2015), more likely to become an entrepreneur (Guiso et al. 2006), more likely to be enrolled in pension plans (Agnew et al. 2007) and more likely to report an intention to use e-commerce (Mutz 2005). Using data from the European Social Survey, Butler et al. (2016) find a hump-shaped effect of trust on personal income, indicating that there is an optimal level of trust. Too little trust results in missing profitable opportunities, whereas too much trust increases the chances of being cheated and experiencing a loss.

2.2 Literature on trust and PPMs

Literature on trust and the usage of PPMs is still in its infancy and the commonly-used generalised trust measure is not used, but some studies touch upon interpersonal trust. For example, using a sample of 754 adult travellers residing in the US Tussyadiah (2015) focuses on peer-to-peer accommodation rentals and shows that drivers of usage are sustainability, community and economic benefits, whereas the main deterrents are lack of trust, lack of efficacy and lack of economic benefits. Distrusting the host is one of the four elements of the factor lack of trust. Others are concerns about safety and privacy, and distrusting the platform to execute the transaction.

Another example is research commissioned by the OECD on users of PPMs (OECD 2017). Users generally trust PPMs and it is shown that trust is more anchored in the platform than in the sellers/providers of products and services. Depending on the type of PPM, several factors drive trust in PPM, such as a secure payment method, confidence in careful handling of data, pictures of the products and services, ratings, reviews, verification of identity and the possibility to contact the seller. There is some indication that lack of trust is one of the reasons for not using PPMs, but a detailed look at non-users and their motives for not-using PPMs is absent.

There are also some studies that build conceptual research models for the role of trust in PPMs (e.g. Lu et al. 2010; Jones and Leonard 2008; Leonard 2012; Yoon and Occeña 2015 and see Hawlitschek et al. (2018) for an overview). To give one example, Hawlitschek et al. (2016b) present a model that distinguishes three types of trust: trust in the peer, platform and product (3P). Moreover, they look at both the consumer and supplier perspective and hypothesize that all types of trust positively affect the intention to consume and trust in the peer and platform also the intention to provide. Trust in the supplying and consuming peer consists of three constructs: ability (skills and competences), integrity (keeping one's word), and benevolence (keeping the other's interest in mind). They test their model empirically by conducting an online survey, describing an accommodation sharing example. Based on 91 observations they find a first indication that their 3P model is suitable; the intention to consume and supply depend significantly on the different types of trust.

2.3 Hypothesis development

Despite the increased accessibility and transparency of PPMs – as search facilities and reviewing systems have become more sophisticated – a central challenge faced by the owners remains how to build enough trust so that people want to use them to transact with a stranger. Recent research therefore focusses on the role of reviewing systems that are embedded in PPMs. According to Sundararajan (2016) PPMs are increasingly able to digitize trust, not only because of the option to leave reviews but also because online platforms increasingly contain digitised representations of people's real world identity and social capital. An explorative study by the European Commission reviews the services provided by 485 platforms and finds that consumers risk suffering from fraudulent activities when they use PPMs (European Commission 2017). 48% of these platforms do not have a peer review or rating system, 47% have no complaints handling mechanism, three quarters of the platforms have no mechanism to verify the identity of peers, 70% do not systematically monitor users' compliance with platform rules, and only 1% provide a criminal record check. Moreover, a growing body of research documents that even when a rating system is present, it might not be reliable because reviews are overly positive (e.g. Zervas et al. 2015) for instance due to selection bias (Fradkin et al. 2015).[2] About half of surveyed PPM consumers in an OECD study have seen dishonest ratings or reviews (OECD 2017).

Given the absence and imperfectness of review systems that are embedded in PPMs, we expect the usage of PPMs to depend on the individual's degree of trust in other people. Coming back to our example, when organising the birthday party, you need to trust the supplier of the marquee that it is waterproof, the owner of the garden that it is as pretty as on the picture, the

[2] See also Luca and Zervas (2016) for a study on restaurant reviews.

hobby baker that the birthday cake is as tasty as promised, and the entertainer that he/she is indeed entertaining. We expect that trust in other people also matters for the suppliers of the goods and services. For example, the owner of the marquee needs to trust you to return the tent in good condition and to pay for it. The sole hypothesis we test in this research and expect to be supported is the following: '*People who in general trust most other people are more likely to use PPMs than people who think that one cannot be careful enough in dealing with other people.'*.

3. Description of data

To test our hypothesis that the usage of PPMs depends on the degree of trust in other people, we use survey data collected among Dutch consumers in December 2016. Our PPM-survey was completed by members of the CentERpanel.[3] The CentERpanel is a representative internet panel of the Dutch-speaking population in the Netherlands (16 years and older), which is managed by CentERdata. The CentERpanel has been used to research a wide range of topics, resulting in a list of publications in various peer-reviewed journals.[4] For more information on the methodology see Teppa and Vis (2012).

Our questionnaire was sent out to 2,613 members of the CentERpanel. The questionnaire contained 11 questions to measure current usage of PPMs and expected future usage, as well as the factors triggering people to use PPMs and the factors withholding them from using them. The questionnaire furthermore distinguished several different types of PPMs, allowing separate examination of the effects of trust on the *second-hand economy* (consumers selling goods to each other), the *on-demand economy* (consumers delivering services to each other), and the consumer-to-consumer part of the *sharing economy* (consumers lending out goods to each other).[5] Although we have data on *person-to-person lending* (consumers providing each other loans), we do not run regressions for this PPM as there is only very limited current usage and expected future usage. The questionnaire was filled in completely by 2,365 members (response rate: 90.5%).

A key advantage of using the CentERpanel is that we can merge the PPM-survey data with other data collected among the CentERpanel. First, we use data from the annual DTS to get a measure of trust in other people. The DTS elicits trust beliefs by asking the standard question *"Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?"* and gives respondents, as in the World Values Survey and the US General Social Survey, two answer options. They can choose between *"people can be trusted"* and *"one cannot be careful enough"*. We use the outcomes of the 2016 and 2017 DTS. The 2016 DTS (Week 1) measures generalised trust for 1,792 of the respondents in our sample. The 2017 DTS (Week

[3] The questionnaire is available upon request.
[4] See www.centerdata.nl/en/publications#Article_in_Journal for an overview. URL last accessed on September 18, 2018.
[5] See also Meelen and Frenken (2015).

13 and 14) provides information on generalised trust for 2,059 of the respondents in our sample. For 1,628 respondents in our sample we have both a 2016 measure of trust and a 2017 measure. As the PPM-survey was held in between the 2016 DTS and the 2017 DTS, we take the average of generalised trust in 2016 and 2017.[6] For respondents for which we only have one observation, we simply use that observation to construct generalised trust. We have data on generalised trust for 2,223 of the 2,365 respondents in our sample.

Second, we use data from the annual DHS, which covers a wide range of topics and enables us to control for various personal characteristics, such as gender, age, educational attainment and income level.[7] Our regressions are based on the answers of respondents for which we have information on all personal characteristics we want to include in our analysis. This is the case for 1,953 respondents.

4. Usage of PPMs

Our results show that 45% of the respondents use PPMs (Table 1). Some type of PPMs are clearly more popular than others. 37% of the respondents buy products from other peers via PPMs and 32% of the respondents sell products via these markets. Substantially fewer users use platforms to borrow (6%) or rent (1%) products, with the same figures applying to purchasing (6%) and offering services (1%). In the Netherlands, platforms are still hardly used for crowdfunding.

Table 1. Current usage of PPMs and reported usage within the next five years
Share of respondents in %

	Current usage	*Usage within the next five years*
Usage of PPMs to…		
…buy products from other people.	37%	43%
…sell products to other people.	32%	37%
…borrow belongings from other people.	6%	44%[1]
…rent belongings to other people.	1%	23%[2]
…purchase services from other people.	6%	33%
…offer services to other people.	1%	11%
…offer loans to other people.	1%	2%
…get a loan from other people.	0%	5%
Overall	45%	62%

Source: PPM-survey among the CentERpanel, December 2016.
Note: 2,365 observations. [1]Panellists could tick off one or more of the following items: full dress, marquee, vacuum cleaner, steam cleaner, bicycle, car, squash or tennis racket and (holiday) home, and something else I do not own. They could also opt for the answer "I would not do this". Panellists who own these products were instructed to imagine they did not own these products. [2]Panellists could tick off one or more of the following items: full dress, marquee, vacuum cleaner, steam cleaner, bicycle, car, squash or tennis racket and (holiday) home, and something else I own. In addition they could also opt for the answer "I would not do this". Panellists who did not own these products were instructed to imagine they own these products.

[6] A paired t-test shows that generalised trust did not change significantly from 2016 to 2017.
[7] Information on the DHS is available at https://www.centerdata.nl/en/projects-by-centerdata/dnb-household-survey-dhs. URL last accessed on September 18, 2018.

Our results also show that the number of PPM users is expected to increase over the next five years. The share of respondents indicating they would use PPMs in the future is 62%, which is significantly higher than the 45% currently using these markets (the p-value of the paired t-test is 0.00). An increase in usage is especially expected for PPMs that allow consumers to rent products or to trade in services. The use of PPMs to buy or sell products seems to saturate, the increase in usage of PPMs for crowdfunding is limited and still a substantial share of people will probably not use PPMs within the next five years.

5. Trust as key factor driving the use of PPMs

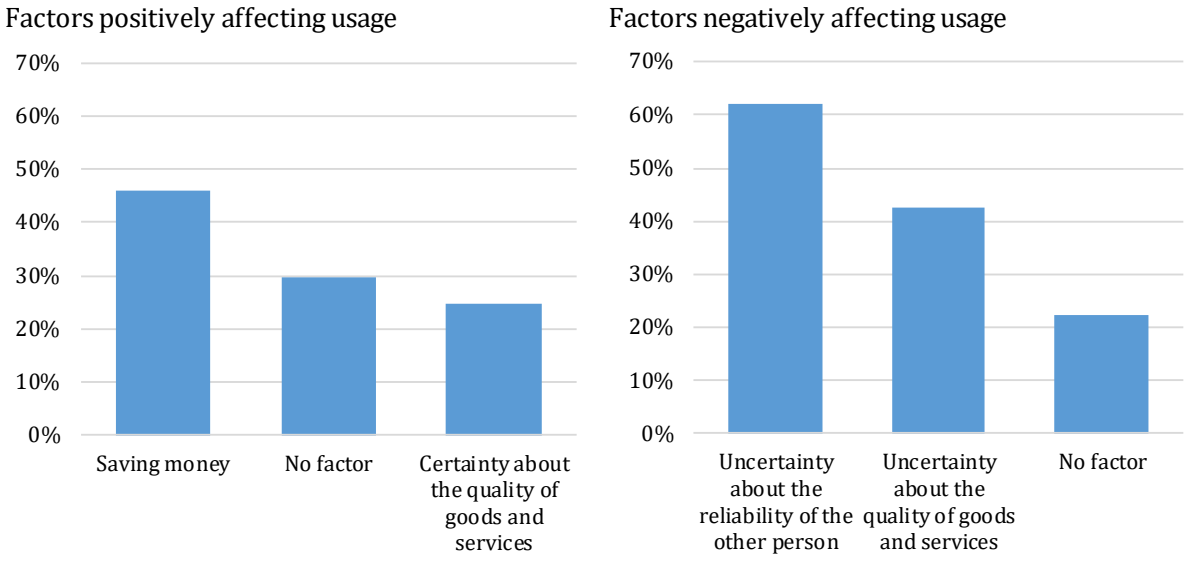
Next, we examine the drivers of the use of PPMs and in particular the role of trust in other people. Respondents were given a list of factors that could positively affect their current and future use of PPMs and were asked to select the two most important ones. It was also possible to select "no factor" instead. In the same way, they had to indicate the two most important factors that could negatively affect usage. Figure 1 shows the most frequently mentioned factors.[8]

The results indicate that trust is an important driver of the use of PPMs. The most frequently mentioned factor with a negative effect on the usage of PPMs for trading goods and services is uncertainty about the reliability of the other person. It is mentioned by 62% of the respondents in case of the consumption of goods and services and by 46% in case of the supply of goods and services. In the prior case uncertainty about the quality of the offered products and services ranks second in the list of most often mentioned obstacles. In the latter case uncertainty about the payment ranks second. A frequently mentioned reason to use PPMs is to earn and save money. Another important factor triggering purchases via PPMs is the possibility to observe the quality of goods or services, whereas a large group of buyers triggers the supply of goods and services.

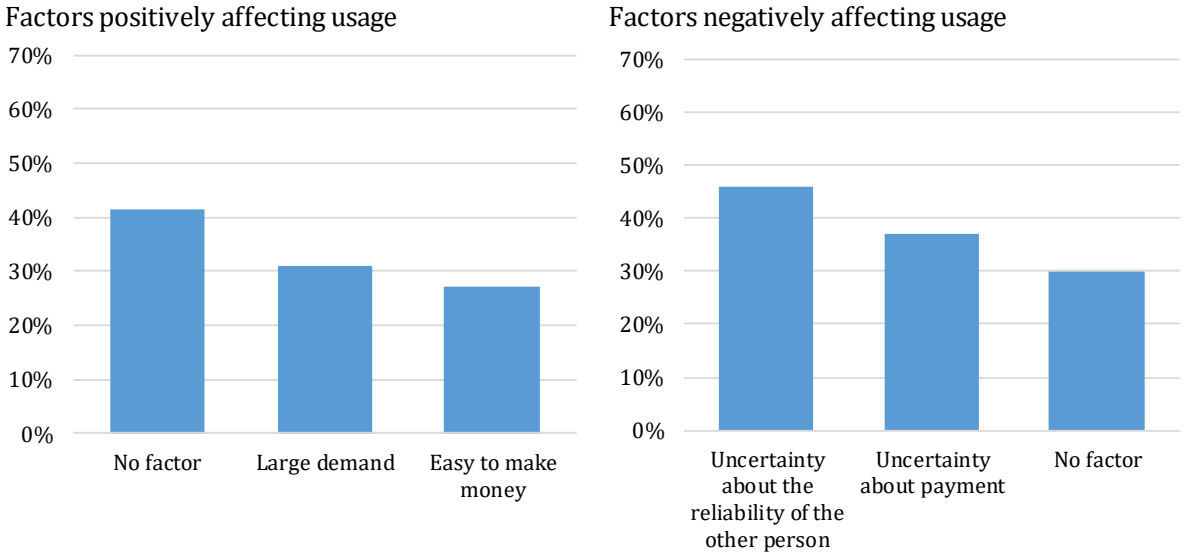
[8] The complete list of factors positively affecting demand of goods and services with response shares between brackets is: when there is a varied supply of belongings and services (12%), when it saves money (46%), when it is good for the environment (8%), when it brings me social contacts (1%), when I can find quickly what I search for (21%), when the quality of products and services is known (25%), when other people in my environment have positive experiences (16%), another factor (1%), and no factor (30%). The list of factors negatively affecting demand of goods and services is: when it is unclear whether the other person can be trusted (62%), when it is unclear what the quality of the delivered belongings and services is (42%), when it is unclear whether there is insurance in case of damage or calamities (7%), when it costs me too much time to find what I search for (11%), another factor (1%), and no factor (22%). In case of offering goods and services the list of positive factors is: when it is an easy way to earn money (27%), when there are many people who can rent/buy my belongings and services (31%), when it is good for the environment (11%), when it brings me social contacts (4%), when other people in my environment have positive experiences (25%), another factor (3%), no factor (42%). Last, the list of negative factors included in the question on offering goods and services is: when it is unclear whether the other person can be trusted (46%), when it is unclear whether there is insurance in case of damage or calamities (9%), when there is uncertainty about the payment (37%), when platform companies want part of my earnings (10%), when it yields not enough profit (11%), when it costs too much time to offer my belongings and services (16%), another factor (1%), no factor (30%).

Figure 1. Factors affecting the use of PPMs

(a) Demanding goods and services



(b) Offering goods and services



Source: PPM-survey among the CentERpanel, December 2016.
Note: 2,365 observations. The figures show the share of respondents that selected the specific factor. Respondents could select the two most important factors. It was also possible to indicate "no factor".

6. Regression method

To test whether consumers' current usage of PPMs is significantly related to their trust in other people we run logit regressions. First, we test whether generalised trust matters for self-reported current usage of PPMs. As a dependent variable we take *current user PPMs*, which is a binary dummy variable that takes the value 1 for current users PPMs and 0 for non-users.

Trust in other people is our main explanatory variable of interest. It is the mean of a 2016 and 2017 binary dummy indicating whether one thinks that in general other people can be trusted

(*trust in other people* = 1) or that one cannot be careful enough in dealing with people (*trust in other people* = 0). *Trust in other people* is 0 for 28% of the respondents, 0.5 for 13% of the respondents and 1 for 59% of the respondents included in the regressions.[9] We expect the coefficient of *trust in other people* to be positive and significant, so people who trust other people are more likely to use PPMs than people who distrust others.

We control for a wide range of commonly used control variables. In all regressions, we put the following individual-specific binary dummy variables in the set of explanatory variables to control for personal characteristics*: male, between 35 and 44, between 45 and 54, between 55 and 64, 65 and over, education: bachelor or higher, income: EUR 1,001-2,000, income: ≥ EUR 2,001, homeowner, partner, degree of urbanisation: middle, degree of urbanisation: high, religious, getting by: neither hard, nor easy, getting by: hard/very hard*. The reference person is a low-educated, unreligious woman who earns a personal net income of EUR 1,000 or less a month, does not live with a partner, is 34 years or younger, finds it easy or very easy to get by and lives in a region with a low degree of urbanisation in a rented home. Appendix A describes all the variables in more detail and incudes summary statistics.[10]

Furthermore, we research whether generalised trust is positively related to the expected usage of PPMs within the next five years. We run a set of similar regressions, now with *future user PPM A* as dependent variable, where A is the specific type of PPM. As the group of future users is larger than the number of current users, we follow a more in depth approach here; we run separate regressions for each type of activity A (renting products, lending products, buying services, selling services, buying products and selling products).[11] *Future user PPM A* is a binary dummy that is 1 for users of PPM type A and 0 for non-users.

Again, we expect the coefficient of *trust in other people* to be positive; people who trust other people are more likely to indicate using platforms in the next five years than people who distrust others.

[9] To further examine the reliability of our trust measure we ran an ordered logit regression relating *trust in other people* to a standard set of personal control variables. In line with prior studies on generalised trust, we find that *trust in other people* is positively related to the level of education (e.g. Hooghe et al. 2012) and income (e.g. Van Oorschot et al. 2006; Alesina and La Ferrara 2002). In addition, *trust in other people* is higher for females than males and positively related to homeownership, which is a rough proxy for wealth. Van der Cruijsen et al. (2012) find the later effects as well for the Netherlands. Last, *trust in other people* is higher for people who are 34 years or younger than for people belonging to older age classes. Prior research on age and generalised trust shows mixed results.

[10] Note that multicollinearity is not a problem. The mean Variance Inflation Factor (VIF) is 1.64. The maximum VIF is 3.12, the minimum is 1.07.

[11] As mentioned before, we exclude the market for crowdfunding which is expected to remain small in the next five years.

7. Regression results

7.1 Usage of PPMs positively depends on trust in other people

Our main finding is that the use of PPMs is positively related to trust in other people; so our hypothesis is supported. People who trust others are 10 percentage points more likely to use PPMs than people who think one cannot be careful enough in dealing with other people (Table 2, column 1).

Also in case of expected usage within the next five years, there is a positive effect of generalised trust. This effect is strongest in case of renting products (14 percentage points), buying products (12 percentage points) and buying services (11 percentage points). Trust matters less for the probability of lending products than for the probability of renting products. Similarly, generalised trust is less of an issue for suppliers on the PPM for buying items than it is for consumers. In contrast to the probability of demanding services, the probability of supplying services does not significantly depend on generalised trust. These findings imply that people are more concerned about the reliability of other people when they consume goods and services than they are when they supply goods and services.

Regarding the control variables, most findings do not come as a surprise. The likelihood of using PPMs decreases with age. For example, someone aged 65 or above is 49 percentage points less likely to use PPMs than someone aged 34 or below. People who find it difficult to get by are more likely to use PPMs than people who find it easy to get by. Regarding expected future usage, the people who find it more difficult to get by are more likely to lend products, sell services, and sell products than people who find it easy to get by. This finding suggests that being active on PPMs is an attractive route to earn additional income or save on costs.

People with a high income and people who are wealthy (indicated by homeownership) are more likely to use PPMs than their counterparts. People who live together with a partner are most likely to use PPMs. Regarding future usage, they are 6 percentage points more likely to sell products via PPMs than unmarried people and people who do not live together with a partner. Only with respect to the expected future usage of PPMs to supply services is there a gender difference: males are more likely to supply services than females. Higher educated people are more likely to use PPMs in the future than lower educated people. Last, we find that religious people are less likely to use PPMs than unreligious people. This may be due to the fact that they have more frequent contact with their family and neighbours than unreligious people and help others more often (Schmeets 2013).

Table 2. Generalised trust and the usage of PPMs: baseline regression results

Average marginal effects based on logit regressions

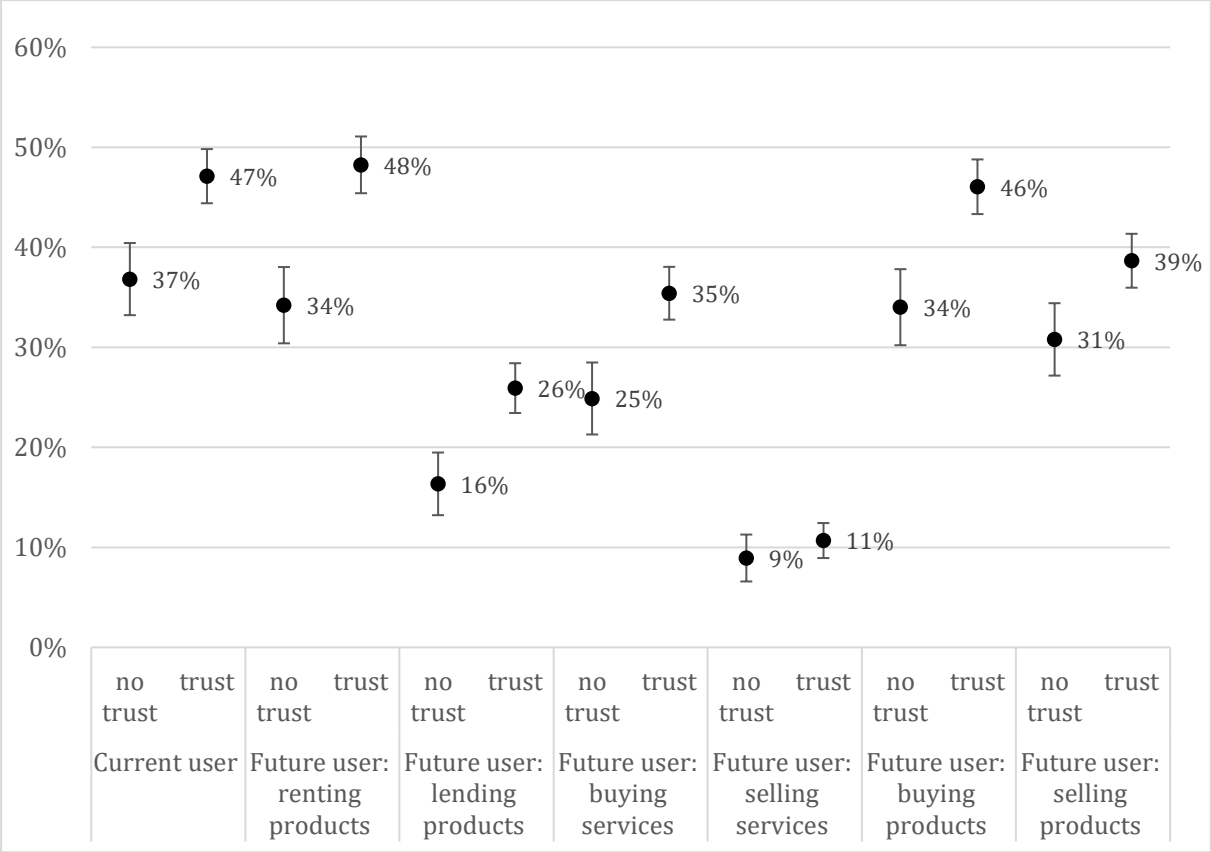
	Current user PPMs	*Future user PPM*					
		Renting products	*Lending products*	*Buying services*	*Selling services*	*Buying products*	*Selling products*
Trust in other people	0.10***	0.14***	0.10***	0.11***	0.02	0.12***	0.08***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Controls							
Male	0.01	-0.04	-0.01	-0.00	0.04**	0.01	-0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Between 35 and 44	-0.13***	-0.14***	-0.02	-0.10**	-0.01	-0.04	-0.06
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)	(0.04)	(0.04)
Between 45 and 54	-0.26***	-0.14***	-0.04	-0.06	0.00	-0.12***	-0.13***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)	(0.04)	(0.04)
Between 55 and 64	-0.37***	-0.23***	-0.07**	-0.16***	-0.04	-0.24***	-0.26***
	(0.04)	(0.04)	(0.03)	(0.04)	(0.02)	(0.04)	(0.04)
65 and over	-0.49***	-0.34***	-0.16***	-0.25***	-0.09***	-0.37***	-0.37***
	(0.04)	(0.04)	(0.03)	(0.03)	(0.02)	(0.04)	(0.03)
Education: bachelor or higher	0.02	0.08**	0.02	0.09***	0.03*	0.08***	0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Income: EUR 1,001-2,000	-0.00	0.06*	0.04	0.06*	-0.02	0.04	0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Income: ≥ EUR 2,001	0.07**	0.13***	0.08**	0.12***	-0.01	0.10***	0.09***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Homeowner	0.09***	0.03	0.03	0.02	0.00	0.05*	0.06**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Partner	0.10***	0.03	0.00	0.01	0.01	0.04	0.06**
	(0.03)	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.03)
Degree of urbanisation: middle	0.01	0.01	0.00	0.04	0.05***	0.00	0.00
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Degree of urbanisation: high	0.01	0.03	0.03	0.04	0.03	0.02	0.00
	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)
Religious	-0.06***	-0.00	-0.02	-0.05**	-0.03**	-0.04*	-0.04*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)
Getting by: neither hard, nor easy	0.02	-0.01	0.02	-0.01	0.03**	0.01	0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Getting by: hard/very hard	0.10**	0.02	0.09***	-0.01	0.05**	0.05	0.10***
	(0.04)	(0.04)	(0.03)	(0.04)	(0.02)	(0.04)	(0.04)
Pseudo R^2	0.15	0.08	0.05	0.08	0.05	0.11	0.10
Log-pseudolikelihood	-1137.7	-1229.8	-997.8	-1128.4	-604.2	-1176.7	-1142.2
Wald χ^2	291.9***	178.1***	80.3***	168.3***	58.8***	241.3***	224.4***

Note: The number of observations is 1,953. Standard errors are clustered by household and shown in parentheses. The reference person is a low-educated, unreligious woman who earns EUR 1,000 or less a month (personal net income), does not live with a partner, is 34 years or younger, finds it easy or very easy to get by and lives in a region with less than 1,000 addresses per squared kilometre and in a rented home. PPM = peer platform market. ***, **, * denote statistical significance at the 0.01, 0.05 and 0.10 level respectively.

Figure 2 shows the predicted probability of using PPMs for people who trust others and people who distrust others. The figure clearly depicts the significant relationship between generalised trust and the (future) usage of PPMs. For example, the likelihood that someone uses PPMs is 47% for someone who in general trusts others and 37% for a person with low trust. The figure also clearly shows that the effect of generalised trust is especially present on the demand

side of PPMs, rather than on the supply side. For example, the gap in predicted probability of usage between people who trust others and distrusting people is higher for people who buy services than for people who sell services (10 percentage points versus 2 percentage points).

Figure 2. Predicted probability of usage of PPMs for different levels of trust



Note: the figure shows predicted probabilities with 95% confidence intervals.

7.2 The finding of a trust effect is robust

As a first robustness exercise, we use *current user PPMs restricted* instead of *current user PPMs*. This alternative variable does not incorporate the use of PPMs to buy or sell goods, since these kinds of platforms have existed for longer and their use is already widespread. *Current user PPMs restricted* takes the value of 1 for people who use PPMs for lending products, delivering services to each other, and/or loans and is 0 for other respondents. On average it is 0.11. This means that only 11% of the people in the sample use these three PPMs. The results are in Appendix B, Table B.1.

Again, we find that people who trust others are more likely to use PPMs than people who think one cannot be careful enough in dealing with other people. The effect is 9 percentage points. The results also show that usage of PPMs is higher in cities than in rural areas, which likely reflects the higher consumer and supplier density which makes PPMs more attractive to use. The latter is in line with Sundararajan (2016), since he argues that urbanisation is an important socioeconomic

driver of the success of PPMs. In addition, higher educated people are 7 percentage points more likely to use PPMs than lower educated people. Contrary to the baseline case, there is no significant effect of *getting by: hard/very hard* and *partner*, so these people are especially likely to be active on second-hand markets.

As a second test, we estimate the equations together to allow individual-level errors to be correlated. Our findings are unaffected by this. As is the case in the baseline, the coefficient of generalised trust is significant at the 0.01 level in six out of seven regressions.[12]

As a final robustness exercise, we test for the presence of significant interaction effects. These results further support our finding that trust in other people matters for the current and future usage of PPMs. We run three different sets of regressions to examine whether the trust effect is related to: (1) age, (2) how hard people find it to get by, and (3) being religious. With respect to current usage, we find that the trust effect positively depends on age and also on how hard people find it to get by. There is no clear pattern for future usage. The trust effect does not significantly depend on being religious.[13]

7.3 The change in the user status also positively depends on generalised trust

As an additional exercise, we research whether the change in usage of PPMs is also related to trust in other people. We make the variable *change in user status PPMs*. This ordered variable is -1 for people who currently use PPMs but indicate they will not use them in the future (3% of the sample), 0 for respondents who use them and will continue to do so (75% of the sample), and 1 for people who do not use PPMs yet but intend to use them within the next five years (the remaining 22% of the sample). We run an ordered logit regression with *change in user status PPMs* as dependent variable and the same set of explanatory variables as we used in our baseline analyses. The results are in Appendix C, Table C.1.

We find a positive effect: people who trust others are more likely to start using PPMs than distrusting people. Trusting people are 4 percentage points more likely to become a new user than people who believe one cannot be careful enough in dealing with others.

8. Conclusion and discussion

To sum up, we find a significant positive relationship between trust in other people and usage of PPMs. People who in general trust others are 10 percentage points more likely to use PPMs than people who distrust others. Also in case of expected usage within the next five years, there is a positive effect of generalised trust. Moreover, we find that people are more concerned about the reliability of other people when they consume goods and services than they are when they supply

[12] The results of these regressions are available upon request.
[13] These results are also available upon request.

goods and services. Less uncertainty about the reliability of other persons, the quality of goods and services offered and payments can stimulate usage of PPMs.

By showing the importance of generalised trust for the usage of PPMs we contribute to literature linking generalised trust to financial decision making and to literature on the drivers of (non)usage of PPMs, two lines of research that are still in their infancy. We provide further evidence that generalised trust is important for society as it can stimulate the usage of PPMs. Coming back to the birthday example, when you trust other people you can save a lot of time and money by using PPMs to organise your party. In contrast, when you distrust others you may end up baking the birthday cake yourself or paying a large bill for a birthday party in the garden of a restaurant.

Our findings are relevant from a policy perspective as well. They provide policymakers with a better understanding of the drivers of usage of PPMs and the factors that withhold people from using PPMs. They also help them gain insight into the expected future usage of PPMs. When desirable, policymakers could possibly stimulate the use of PPMs by strengthening review systems – which makes it easier to judge the reliability of other people and the quality of goods and services offered – and innovations such as instant payments. However, we leave it to future research to figure out the most promising route.

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Appendix A. Description of variables

Table A.1 Description of variables

Variable	Description	Mean	Sd
Dependent variables			
Current user			
Current user PPMs	Binary dummy (1 = user of PPMs, 0 = nonuser).	0.44	0.50
Current user PPMs restricted	Binary dummy (0 = non-user PPMs or only user of PPM for selling and buying products, 1 = else).	0.11	0.32
Future user			
Future user PPM A			
A = renting products	Binary dummy (1 = user of PPMs to rent products, 0 = else).	0.43	0.50
A = lending products	Binary dummy (1 = user of PPMs to lend products, 0 = else).	0.23	0.42
A = buying services	Binary dummy (1 = user of PPMs to buy services, 0 = else).	0.32	0.47
A = selling services	Binary dummy (1 = user of PPMs to sell services, 0 = else).	0.10	0.30
A = buying products	Binary dummy (1 = user of PPMs to buy products, 0 = else).	0.42	0.49
A = selling products	Binary dummy (1 = user of PPMs to sell products, 0 = else).	0.36	0.48
Generalised trust			
Trust in other people	Mean of 2016 and 2017 measures of trust. These measures of trust are binary dummies (1 = in general most other people can be trusted, 0 = one cannot be careful enough in dealing with people). For respondents for which we only have one observation, we simply use that observation.	0.66	0.44
Controls			
Male	Binary dummy (1 = male, 0 = female).	0.54	0.50
Between 35 and 44	Binary dummy (1 = between 35 and 44, 0 = else).	0.15	0.36
Between 45 and 54	Binary dummy (1 = between 45 and 54, 0 = else).	0.16	0.37
Between 55 and 64	Binary dummy (1 = between 55 and 64, 0 = else).	0.21	0.41
65 and over	Binary dummy (1 = 65 and over, 0 = else).	0.38	0.49
Education: bachelor or higher	Binary dummy (1 = higher vocational education or university education, 0 = else).	0.14	0.35
Income: EUR 1,001-2,000	Binary dummy (1 = personal net monthly income ≥ EUR 1,001 and < EUR 2,000, 0 = else).	0.42	0.49
Income: ≥ EUR 2,001	Binary dummy (1 = personal net monthly income ≥ EUR 2,001, 0 = else).	0.34	0.48
Homeowner	Binary dummy (1 = homeowner, 0 = else).	0.76	0.43
Partner	Binary dummy (1 = head of household is living together or married, 0 = else).	0.75	0.43
Degree of urbanisation: middle	Binary dummy (1 = at least 1,000 addresses per squared kilometre but less than 1,500, 0 = else)	0.22	0.41
Degree of urbanisation: high	Binary dummy (1 = at least 1,500 addresses per squared kilometre, 0 = else)	0.39	0.49
Religious	Binary dummy (1 = religious, 0 = non-religious).	0.54	0.50
Getting by: neither hard, nor easy	Binary dummy (How well can you manage on the total income of your household? 1 = neither hard nor easy, 0 = else).	0.42	0.49
Getting by: hard/very hard	Binary dummy (How well can you manage on the total income of your household? 1 = hard or very hard, 0 = else).	0.10	0.30

Note: This table describes the variables used in the regressions reported in Table 2. The number of observations is 1,953. The mean and standard deviation (sd) are reported for the sample included in these regressions. For all variables it holds that the minimum value in the sample is 0 and the maximum value is 1. The reference person is a low-educated, unreligious woman who earns EUR 1,000 or less a month (personal net income), does not live with a partner, is 34 years or younger, finds it easy or very easy to get by and lives in a region with less than 1,000 addresses per squared kilometre and in a rented home. PPM = peer platform market.

Appendix B. Robustness

Table B.1 Generalised trust and the usage of PPMs: excluding the second-hand economy

Average marginal effects based on logit regressions

	Current user PPMs	*Current user PPMs restricted*
Trust in other people	0.10***	0.09***
	(0.02)	(0.02)
Controls		
Male	0.01	0.00
	(0.02)	(0.02)
Between 35 and 44	-0.13***	-0.07***
	(0.04)	(0.02)
Between 45 and 54	-0.26***	-0.07***
	(0.04)	(0.02)
Between 55 and 64	-0.37***	-0.09***
	(0.04)	(0.02)
65 and over	-0.49***	-0.13***
	(0.04)	(0.02)
Education: bachelor or higher	0.02	0.07***
	(0.03)	(0.02)
Income: EUR 1,001-2,000	-0.00	-0.00
	(0.03)	(0.02)
Income: ≥ EUR 2,001	0.07**	0.05**
	(0.03)	(0.02)
Homeowner	0.09***	0.10***
	(0.03)	(0.02)
Partner	0.10***	0.00
	(0.03)	(0.02)
Degree of urbanisation: middle	0.01	0.03
	(0.03)	(0.02)
Degree of urbanisation: high	0.01	0.06***
	(0.02)	(0.02)
Religious	-0.06***	-0.03**
	(0.02)	(0.01)
Getting by: neither hard, nor easy	0.02	0.00
	(0.02)	(0.02)
Getting by: hard/very hard	0.10**	0.04
	(0.04)	(0.03)
Pseudo R^2	0.15	0.14
Log-pseudolikelihood	-1137.7	-593.9
Wald χ^2	291.9***	172.4***

Note: The number of observations is 1,953. Standard errors are clustered by household and shown in parentheses. The reference person is a low-educated, unreligious woman who earns EUR 1,000 or less a month (personal net income), does not live with a partner, is 34 years or younger, finds it easy or very easy to get by and lives in a region with less than 1,000 addresses per squared kilometre and in a rented home. PPM = peer platform market. The restricted measure excludes the usage of the second-hand economy. ***, **, * denote statistical significance at the 0.01, 0.05 and 0.10 level respectively.

Appendix C. Additional analysis

Table C.1 Generalised trust and change in the user status of PPMs

Parameter estimates for ordered logit regressions

	Change in user status PMMs
Trust in other people	0.25**
	(0.13)
Controls	
Male	-0.11
	(0.12)
Between 35 and 44	0.33
	(0.23)
Between 45 and 54	0.88***
	(0.20)
Between 55 and 64	0.87***
	(0.19)
65 and over	0.95***
	(0.18)
Education: bachelor or higher	0.17
	(0.15)
Income: EUR 1,001-2,000	0.27*
	(0.14)
Income: ≥ EUR 2,001	0.36**
	(0.16)
Homeowner	-0.26*
	(0.13)
Partner	-0.28**
	(0.13)
Degree of urbanisation: middle	-0.01
	(0.14)
Degree of urbanisation: high	0.06
	(0.13)
Religious	0.21*
	(0.11)
Getting by: neither hard, nor easy	-0.01
	(0.12)
Getting by: hard/very hard	-0.12
	(0.19)
Pseudo R^2	0.02
Log-pseudolikelihood	-1262.4
Wald χ^2	63.88***

Note: The number of observations is 1,953. Standard errors are clustered by household and shown in parentheses. The reference person is a low-educated, unreligious woman who earns EUR 1,000 or less a month (personal net income), does not live with a partner, is 34 years or younger, finds it easy or very easy to get by and lives in a region with less than 1,000 addresses per squared kilometre and in a rented home. PPM = peer platform market. The dependent variable *change in user status PMMs* is -1 for people who are going to stop using PPMs, 0 for people who will continue using PPMs and 1 for people that will start using them. ***, **, * denote statistical significance at the 0.01, 0.05 and 0.10 level respectively.

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