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Choosing how to pay: The influence of foreign backgrounds

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ABSTRACT

Is having a foreign background a relevant factor in choosing between payment instruments in consumer point-of-sale transactions after migration? We analyze this question using a unique diary survey in which both participants with a Dutch and a foreign background documented their daily purchases. We present several pieces of evidence suggesting that foreign backgrounds still influence the choice between payment instruments after migration to the Netherlands. For instance, we find that first-generation migrants from a number of countries that can be seen as cash-oriented are more likely to use cash in the Netherlands. At the same time, second-generation migrants have similar payment habits as individuals with a Dutch background. This finding suggests that payment behavior is not passed on between generations, but affected by host country payment habits. Finally, we suggest that, in this context, special information campaigns to increase debit card usage will not have clear net social benefits.

1. Introduction

In a point-of-sale (POS) transaction, a typical consumer has the choice between various payment instruments, such as cash, debit cards, cheques or credit cards. The payments literature (see, for example, Bolt and Chakravorti (2010) for a synopsis) suggests the choice will depend on various factors, such as transaction characteristics (e.g. the amount), location characteristics (e.g. the availability of a POS terminal), and cost structures (e.g. charges for using cards). In addition, many studies find that consumer characteristics are important. The intensity of using various methods of payment is usually related to demographic factors, such as age, education, income and gender (Borzekowski et al., 2008; Klee, 2008; Stavins, 2001).

The literature has, so far, paid little attention to payment behavior of migrants. This paper studies whether the choices between payment instruments made by individuals with a foreign background are in any way different. If so, can we explain these differences? To this end, we conducted an extensive diary survey among 2258 residents of the Netherlands with either a Dutch or a foreign background. Thus, our paper sheds light on the role of home country payment habits and on possible changes in payment behavior after migration. Various respondents in our survey have ties – either directly or through their parents – to countries where consumers have payment habits that differ from the Dutch situation. Using our unique dataset, we present several pieces of evidence suggesting that foreign backgrounds still influence the choice between payment instruments after migration. First, we find that first-generation migrations with a non-western background are more likely to use cash in Dutch POS transactions. Second, respondents from three countries that, compared to the Netherlands, can be seen as cash oriented (Germany, Morocco, and Turkey) are up to 13% points more likely to use cash in POS transactions in the Netherlands than respondents with a Dutch background. Third, we combine our data with information on national payment systems collected by the World Bank (2008). We find that respondents with backgrounds in countries with high numbers of card transactions per capita are less likely to use cash in the Netherlands. These three findings are robust to including a variety of consumer, transaction and location characteristics.

In focusing on foreign backgrounds, this paper relates to earlier work that reports differences in payment behavior based on race or ethnicity (Borzekowski and Kiser, 2008; Borzekowski et al., 2008; Ching and Hayashi, 2010; Schuh and Stavins, 2010). However, these papers usually do not have detailed information on respondents' country of origin. A second key difference is that these papers are not able to distinguish between different generations. In contrast, we are able to assess whether payment preferences are passed on between generations. To this end, we use information

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on whether an individual was born abroad (first-generation migrant), or whether she was born in the Netherlands, while one of her parents was born abroad (second-generation migrant). Here, the key finding is an adjustment to host country modes of payment. Differences in payment behavior are only present for first-generation migrants. We do not find differences in usage of payment instruments between second-generation migrants and respondents with a Dutch background.

On the basis of our main results, we discuss potential implications for policy. Several studies show that instrument choices in POS transactions significantly affect the overall efficiency of a payment system.[1] In general, substitution of cash by debit cards is found to reduce social costs. On the one hand, we do find differences in payment habits for several migrant groups. On the other hand, the results show that payment habits change over time. Second-generation migrants have not taken over their parents' habits, but show an adjustment to host country modes of payment instead. We use a stylized analysis to assess the net social benefits of specialized publicity campaigns or information material targeted at payment habits of first-generation migrants from cash-oriented countries. Given the relatively high costs of such a campaign, it is not certain that the net social benefits will be positive.

This paper proceeds as follows: Section 2 presents a selective review of the relevant literature, both in the context of payments and use of financial services in general. Section 3 presents background information about Dutch migrant groups and home country payment patterns. Section 4 describes the methodology and data. Section 5 analyzes the role of foreign backgrounds in choosing between payment instruments. Section 6 reports additional results, while Section 7 concludes and discusses policy implications.

2. Related literature

A substantial amount of empirical research has examined consumer payment choice from a micro-perspective.[2] Due to the lack of accurate transaction data, most empirical studies are based on self-reported survey data.[3] Overall, the literature agrees that consumer payment choice at the POS and the adoption of electronic means of payment is influenced by consumer, transaction and situational characteristics as well as by financial incentives.[4]

First, demographic factors are relevant. A common finding is that the use of electronic means of payment is negatively correlated with age and positively related with a consumer's education and income level. Younger, more educated consumers with higher incomes are more likely to use electronic payment instruments, either at the POS or in remote transactions. In contrast, the elderly, consumers who have received less education and those with lower incomes are more prone to using cash or other paper-based instruments. The rationale is that young and more educated people are more open to new technologies and that young people lack the history of relying on paper-based payments. Moreover, educated and high-income people have higher opportunity costs, and dislike the greater amount of time it takes to initiate paper-based versus electronic transactions (e.g. Kennickell and Kwast, 1997). In addition, some studies find a role for gender and region. Women are more likely than men to use electronic payment media, such as payment cards or electronic bill payments. Furthermore, the probability of paying by cards instead of cash is found to decrease with the urbanization degree of consumers' living environment (Jonker, 2007). This might capture adoption- and acceptance-related determinants, such as the regional density of ATMs and POS terminals. Moreover, Stavins (2001) finds that the fraction of other people in the region using the same type of payment instrument is also affecting consumers' usage patterns. This may not only indicate demand-related network effects, but also that own use of payment instruments is influenced by others' habits.

Second, consumer payment choice is found to depend on transaction characteristics, such as the transaction amount and the type of good purchased. The size of the transaction is found to be a major determinant of consumers' payment choice at the POS. Higher transaction amounts are more likely to be paid by cards instead of cash, while cash is highly preferred for small-value transactions (Bounie and François, 2006; Jonker, 2007; Klee, 2008; Von Kalckreuth et al., 2009).

Third, location matters. For instance, the absence of a cashier, e.g. at vending machines, usually increases the probability of a cash payment (Hayashi and Klee, 2003). Bounie and François (2006) and Jonker (2007) also show that payment choices differ according to the location, which most probably reflects the different levels of penetration of payment terminals across stores and sectors. Rysman (2007), for example, demonstrates that consumer payment choice is highly correlated with the level of card acceptance by retailers.

Fourth, consumer payment choices are found to be influenced by financial incentives. Bolt et al. (2010) demonstrate that consumers react strongly to transaction charges imposed by retailers for particular payment instruments. In addition, explicit pricing by banks is shown to affect payment choices (e.g. Borzekowski et al., 2008). The payments literature has also shown significantly large and positive effects of incentive and reward programs (e.g. Ching and Hayashi, 2010) and card discounts, points and cashbacks are generally found to have a positive effect on the use of payment cards relative to cash (Carbó-Valverde and Liñares-Zegarra, 2011).

In focusing on foreign backgrounds, our paper is related to work that reports differences in payment behavior based on race or ethnicity (Borzekowski and Kiser, 2008; Borzekowski et al., 2008; Ching and Hayashi, 2010; Schuh and Stavins, 2010). However, these papers often only include race as additional covariates. In other fields, the role of foreign backgrounds has been studied more extensively. A dimension that receives increasing attention is migrant participation in financial service markets. Immigrants tend to be less 'banked' than the native population. Osili and Paulson (2009), for example, show that immigrants are less likely to own a saving and checking account compared to the native-born. Jankowski et al. (2007) analyze currency demand in Chicago and find that Latin American immigrants demand more $100 bills than other residents. Since these bills are mainly held as a store of value instead of for payment purposes, the results may either indicate barriers that Latin American immigrants face or their reluctance to open and maintain bank accounts. Studying the demand for large banknotes in Swiss, however, Fischer (2010) finds that immigrants, due to wealth and age effects, hoard less than natives. Finally, Campbell et al. (2012) find that involuntary closure rates for bank accounts are higher in countries with high black populations and lower in counties with Hispanic and Asian populations. Although the effects are sizeable, it is not immediately clear what drives these findings.

[1] See for example Brits and Winder (2005).

[2] The literature on consumer payment choice starts from the idea of heterogeneous consumer preferences based on comparative product attributes and distinct consumer needs. Each payment instrument differs from the other with respect to costs, safety, anonymity, speed, acceptance and other characteristics and each consumer attaches a different importance to each of these characteristics. In the end, consumer choice of which payment instrument to use is based on their net benefits received (see Bolt and Chakravorti (2010) and references therein).

[3] A few empirical studies use transaction data provided by banks, grocery stores or credit card companies (Rysman, 2007; Klee, 2008). Others have examined payment choice over time using aggregate data supplied by payment systems and data from industry sources (e.g. Humphrey et al., 1996; Amromin and Chakravorti, 2009).

[4] The many relevant references include Kennickell and Kwast (1997), Jonker (2007), Borzekowski et al. (2008), Borzekowski and Kiser (2008), Klee (2008), Ching and Hayashi (2010), and Schuh and Stavins (2010).