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Financial inclusion of urban street vendors in Kigali

Diane Irankunda and Peter A.G. van Bergeijk

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Table of Contents

1	INTRODUCTION	5
2	RESEARCH STRATEGY	7
3	DEPENDENT AND EXPLANATORY VARIABLES	10
3.1	Dependent variable: financial inclusion	10
3.2	Individual street vendor characteristics	11
3.3	Business characteristics: size and trade characteristics	12
3.4	Availability of financial institutions	12
4	FINDINGS	13
4.1	Descriptive statistics	13
	4.1.1 Having an account	13
	4.1.2 Using an account	15
4.2	Econometric analysis	16
4.3	A closer look at the reasons for financial exclusion	18
	4.3.1 Stated reasons	18
	4.3.2. Background interviews	19
5	DISCUSSION AND CONCLUSIONS	20
	APPENDIX 1 SURVEY QUESTIONNAIRE	21
	REFERENCES	22

Abstract

This working paper studies street vendors in the Nyarugenge District (Kigali, Rwanda) during field research (July to August 2017) using a mixed method approach including document analysis, field observation, a survey and background interviews. The survey tests assumptions by policy makers about the determinants of financial inclusion of informal sector workers in order to strengthen the evidence base for Rwandan policies aimed at financial inclusion of the informal sector.

A logit analysis and Poisson regression of the survey data supports the importance of gender for both de jure bank account ownership and de facto bank account use of self-employed in the informal sector, but contradicts common assumptions about age and education of the street vendor. The physical presence of a financial institution in the home location of the street vendor is the most significant determinant identified by our research.

Iriburiro

Ubu bushakashatsi bwize kubacuruzi bo mu muhanda mu karere ka Nyarugenge Kigali (Rwanda) guhera mu kwezi kwa Nyakanga kugeza muri Kanama 2017. Hifashishijwe uburyo bw'ikusanyamakuru butandukanye aribwo ibiganiro by'imbona nkubone (interviews) ndetse nurutonde rw'ibibazo (questionnaires). Ubu bushakashatsi kwasuzumye uburyo abakora ubucuruzi butemewe n'amategeko bakorana nama banki cyangwa ibigo by'imari iciriritse bugamije kongerera ibimenyetso abafite munshingano gufata ibyemezo kubakora ubucuruzi butemewe n'amategeko ndetse n'uburyo bagana amabanki n'ibigo by'imari iciriritse.

Ubusenguzi bw'ubu bushakashatsi bushimangira agaciro kuburinganire mukugira konti muri banki cyangwa mubigo by'imari iciriritse kubushake cyangwa kugahato bw'abakora ubucuruzi butemewe n'amategeko. Ariko bukavuguruzanya ibijyanye n'imyaka ndetse n'urwego rwamashuri kuri abacuruzi bo mu muhanda. Ubu bushakashatsi bwagaragaje ko kuba hari ikigo cy'imari mu mudugudu utuwemo naba bacuruzi bo mu muhanda byongera amahirwe menshi yo gukorana nacyo.

Keywords

Rwanda, financial inclusion, gender, location, street vendors, mixed methodology.

Financial Inclusion of Urban Street Vendors in Kigali

Financial inclusion in Rwanda is getting more successful thanks to the efforts involved in the sensitization process. It is good since those with small amounts can have an account for ensuring their access, affordability, and usage of financial services” (interview with an assistant branch manager of Let’shego Microfinance, 14 August 2017).

1 Introduction

Financial Inclusion is a tool for poverty reduction and the main stage to ‘inclusive development’. (Sarma 2016: 116). Ajide (2015: 4) argues that financial inclusion plays a considerable role in attaining poverty alleviation as it helps essentially vulnerable groups by encouraging financial activity. This is particularly important in a country, such as Rwanda, where most of the small businesses are run by people in the informal sector and people with no or limited formal education. A better access to financial facilities can promote poverty alleviation by reducing vulnerability, increase the output of Micro, Small and Medium Enterprises (MSMEs) and reinforcement of businesses (Lapukeni 2015: 495). Indeed, financial inclusion is a key to support business development especially in developing countries, as small businesses (tailor, mason, vegetable sellers, welder, etc.) play a key role in the local economy. Rwanda has made significant improvements in terms of financial inclusion. Since the 2008 Finscope survey found that 48% of adult population in Rwanda were financially included sustained improvement has been measured and government goals intended to accomplish 80% of ‘financial inclusion’ by 2017 and 90% by 2020 appear realistic and attainable (Finscope 2015: 8).

One of our key informers, the district officer in charge of financial affairs, (interview 14 August 2017) noted “As far as Rwanda is developing in its several aspects, there is no corner that should lag behind. This is the reason the recent policy related to financial inclusion encourage people to approach financial institutions for receiving a substantial help regarding financial services.”

However, for Rwanda, and more specifically its urban areas, it is not clear how well small businesses in the informal sector are financially included. This working paper aims to provide a better understanding of financial inclusion by providing data for a specific group: street vendors in the Muhima, Gitega and Kimisagara sectors of the Nyarugenge District. Nyarugenge district is a major district where many commercial activities take place; it is the most Eastern of the three districts of Rwanda’s capital city Kigali and consists of 355 villages with a population of 285 thousand and a population density of 2124/km² (National Institute of Statistics of Rwanda 2015).

Our focus on street vendors helps us to get a picture of the financial (non) inclusion of the underprivileged that very often cannot be reached by traditional

surveys or a census. Bhowmik and Saha (2013: 6) define street vendors as persons who offer “goods for sale to the public at large without having a permanent built-up structure from which to sell” The reasons that push people to street vending vary, for example: “In Zambia most street vendors vend in the street for survival and because they have failed to get employment in the formal economy and they get involved in street vending as their only option” (Ndhlovu 2011: 9). Typically, street vending is associated with the underprivileged (Hasan and Alam 2015: 130). Low level of skills, no access to safe (formal) employment coupled with poverty in countryside areas has pushed individuals out of their rural community looking for a better existence in the towns (Timalsina 2012: 1). At the same time people are forced into the informal sector due to the loss of their occupations (Bhowmik 2005: 2256). Understanding financial inclusion of street vendors would also help to understand financial inclusion of others in the informal sector.

A key finding of the existing literature is that street vendors most of the time are not financially included (Sheik and Sareswathy 2016). This stylized fact is, as we will see, contradicted by our finding that a good fifty per cent of the street vendors in our sample has access to an account.

2 Research strategy

The field research focused on street vending in car parking areas in the Nyabugogo zone in Muhima Sector and the nearby zone of Kimisagara and the Nyakabanda Sector (Photos 1 and 2). The choice of the Nyarugenge district is based on the availability of many street vendors because it is in a city center where there are different activities and street vendors are always in this area searching for customers.

PHOTOS 1 and 2
Street vending Nyabugogo zone (July 2017)



Street vending is prohibited in the Kigali, Rwanda Nyarugenge District and during the field work several raids by local security agencies were observed (Photo 3). Just a few weeks after the field work period street vending was officially forbidden. During a media conference the city of Kigali announced that 14 public markets were created for the street vendors. Therefore the authorities stressed that the business of stress vending in the city center would be forbidden and that policies against street vending would be intensified. However, street vendors claimed that they cannot afford the public markets government provided for them and also that it would be difficult to get customers in those public markets (izubarirashe.rw 2017). Anyhow, our fieldwork offers a unique and no longer existing opportunity to survey street vending as a truly

The illegality of street vending implied that data collection from vendors was under time pressure and for this reason the questionnaire had to be limited to a set of questions that could be answered in a few minutes. The questionnaire was in Kinyarwanda (local language) and administered by the field researcher face to face to help respondents unable to read and write and also to speed up the procedure of data acquisition.

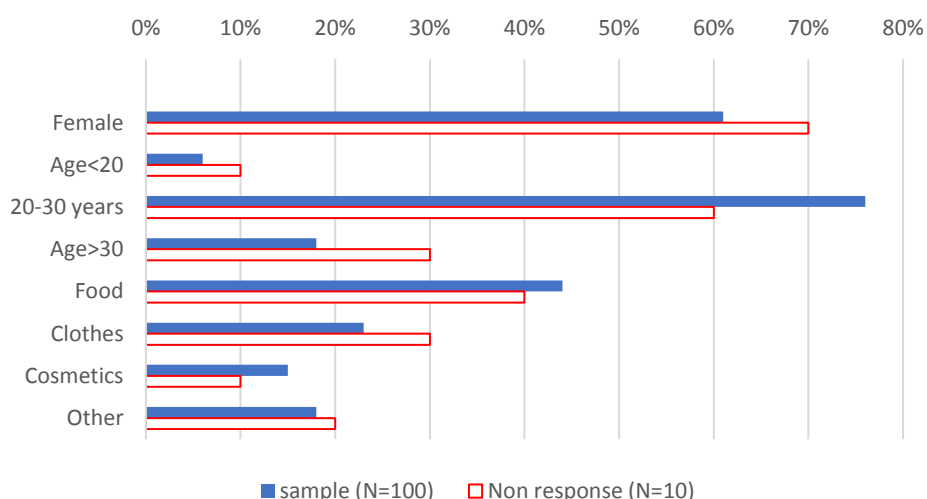
PHOTO 3
Security forces intervention



Source: <http://izubarirashe.rw/2017/08/umunsi-wa-mbere-abazunguzayi-bahigishijwe-uruhindu-karahava/>

While the aim was clearly to get the answers from the interviewees themselves, a number of respondent characteristics could be observed, which was also very useful for the analysis of non-response. As illustrated in Figure 1 the non-response is quite close to the response in terms of individual characteristics such as gender, age and product. Therefore non-response does not seem to have biased the survey.

FIGURE 1
Characteristics of respondents and non-respondents (N=110)



Observation also played a key role in determining the extent to which the sampling could be viewed as representative. It was observed that the street vendors neither have fixed locations nor fixed or regular selling days/times and that entry into and exit from the market are easy and costless so that the population of street vendors fluctuates significantly. Some street vendors only appear irregularly on the markets, for example, when home grown agricultural products are in ample supply. Moreover, the respondents were approached in their daily working conditions which required them to move around and around both to avoid security agencies and to find customers. As a consequence the actual population of street vendors that could be approached fluctuated and changed by day, if not hour, generating so to say a different randomized sample that can be seen as quite representative for street vendors in this area. It is worth noting that other research strategies (such as the use of self-administered or longer, more detailed, questionnaires and/or visits to home addresses) would not have yielded similar levels of representativeness and randomness of the data collection process.

Due to the organization of the fieldwork and the research strategy, the process of data collection also provided many opportunities to discuss living and working conditions not covered by the questionnaire. We discussed why respondents are still doing the business of street vendors while they know it is prohibited in Rwanda. Respondents indicated that street vending is easy for entry and exit at any time and does not require a huge amount of capital to start. Also, some respondents noted that they have limited education so that it is not easy for them to get a proper job. Quite some street vendors appeared to be from rural areas coming to Kigali and still looking for a (real/better) job.

3 Dependent and explanatory variables

The choices for the dependent and explanatory variables are based on the empirical literatures on financial inclusion and street vendors, respectively. We did not consider the informal way of getting financial means such as family money sharing or informal borrowing.

TABLE 1
Definition of variables and a priori expected sign

Variable name	Definition of variables	A priori expected sign
Gender	=1 if male; else zero	+
Marital Status	=1 if single	
Level of education	Level of education of street vendors =0 if no education =1 if primary education 1-3, = 2 if primary education 4-6, = 3 if secondary education 1-3, = 4 if secondary education 4-6, = 5 university	+
Weekly Amount	Weekly earnings in 1000 Rwandan Francs	+
Product	Dummy variables per category	
Availability of financial institution in the village	0 if no institution, 1 if one institution, 2 is more than 1 institution	+
Account holder	Do you have any account in the bank or in any microfinance or other financial institution	Dependent variable
Frequency	How many times do you access, use, afford your bank account or other financial institution	Dependent variable

Table 1 defines the variables on which we collected data and their coding for use in the empirical analysis. The right hand column summarizes *a priori* expected signs as will be discussed below.

3.1 Dependent variable: financial inclusion

As a first indication we conclude that a respondent is de facto financially included if (s)he answers ‘yes’ to Question 6 of our questionnaire: “Do you have any account (bank, institution or agents delivering financial services)?”. Finscope (2016: 63-65) reports the share of bank account holders within Rwanda differs significantly ranging from 69% in Nyarugenge district to only 11% in Ngororero district. The share of 53% who answered yes on our survey question is below the 69% in the Finscope report, as could be expected since street vendors work in the informal sector and have relatively low income levels. Still the percentage compares favorably to percentages reported for street vendors in other countries.

This is of course a very crude measure and actually only indicates that the respondent is not financially excluded (as obviously is the case with the 47% answering ‘no’ to Question 6). Access to finance and financial inclusion are, however, different phenomena. Indeed, it is possible to have access to financial facilities at inexpensive prices, but prefer to not use financial products and

services for personal reasons. Not using financial facilities does not necessarily mean a lack of access (Lapukeni 2015: 495) although some frequency of use is important to reap the benefits of holding a bank account (Demirgüç-Kunt and Klapper 2014: 2). In developing countries, only around half of those with a bank account stated accessing their accounts on a monthly basis. Nevertheless, this average for developing countries differs significantly across countries and economies. In Africa, there is an enormous difference in account holder hidden under the average of 24% of adults in sub-Saharan Africa holding an account at a formal financial organization. This ranges from 11% in central Africa to 51% in southern Africa. (Demirgüç-Kunt and Klapper 2012: 4).

All in all we will use two different measures to define our empirical measure in order to reflect both *de jure* account holding and *de facto* use of the account. The variable *binary dummy* variable ACCOUNT assumes the value 1 if the respondent indicates the existence of an account (else 0) and the *count variable* FREQUENCY reflects the number of times the account was actually accessed on a monthly basis.

3.2 Individual street vendor characteristics

From a policy perspective it is important to correctly understand the determinants of financial inclusion. For example, if being a woman significantly reduces the probability of having an account then a gender specific policy would seem to be necessary. This relationship which has been commonly reported in the early literature on financial inclusion and exclusion seems to hold to a lesser extent in Africa and may be a spurious correlation caused by other aspects: females are expected to use less financial facilities mostly since they have lower revenue, have limited education and/or work in the informal sector (Triki and Faye 2013: 27).

The general trust of the literature appears to be that, as Zin and Weill (2016), observed, individual characteristics are significant determinants of financial inclusion. Using the World Bank's Global Findex dataset on 37 African countries' they report that gender, wealth, higher level of education and age significantly influence financial inclusion (Zins and Weill 2016: 46). Other individual characteristics that have been identified are per capita income, education and age. Similar findings are reported by Demirgüç-Kunt and Klapper (2014) and Akudugu (2013). In the background interviews for the present survey our informers also pointed out marital status as a potential determinant because marital status indicates stability and could therefore be positively associated with financial inclusion.¹

Based on these findings in the literature we will include gender, age and educational level as potential explanatory variables for the extent of financial inclusion. We *a priori* expect that male have easier access to financial means and that both account holding and frequency of use are positively associated with age and education of the respondent.

¹ Background interviews with branch managers BPR (10 August 2017) and Bank of Africa (14 August 2017)

3.3 Business characteristics: size and trade characteristics

Financial inclusion is more likely for street vendors with a higher revenue (sales; turnover) both because they will have to pay larger sums for their goods and because the fixed costs of account holding can be dispersed over a larger base. Dzoko and Appiah (2014) pointed out that low profit margins may act as a barrier to promoting financial inclusion. Since profit margins will vary with the type of product on sale we constructed binary dummy variables for five categories of goods: Edible, Clothes, Cosmetics, Shoes and Others. The product group dummies appear in the fixed effects estimates in section 4.2; the variable WEEKLY AMOUNT is used as an explanatory variable for both measures of financial inclusion and our a priori expectation is that this relationship is positive

3.4 Availability of financial institutions

As a final explanatory variable we investigate whether or not a financial institution is located in the respondent's village (VILLAGE INSTITUTION is a binary dummy variable that assumes 1 if the respondent reports that a financial institution exists in his or her village; else 0). We expect that screening and monitoring is comparatively speaking easier if financial institutions are close to (potential) customers. We expect that presence of a financial institution will stimulate account holders also because traveling time adds additional implicit costs to having a bank account.

4 Findings

This section first provides and discusses descriptive statistics (mainly frequency distributions) regarding our sample. Next we offer a set of multivariate analyses using logit analysis for the binary dependent variable ACCOUNT and Poisson regression for the count variable FREQUENCY. We combine and confront the econometric findings with additional findings from the survey and background interviews with three key informers in Section 4.3.

4.1 Descriptive statistics

Table 2 summarizes key statistics. Based on mean, median and mode the ‘average’ street vendor in our sample is female, married, 20-30 years, with 6 years of primary schooling. She has an account but only infrequently accesses it and her weekly income is 5000-7500 Rwandan Francs per week (€4.76 - €7.13 at current exchange rates).

TABLE 2
Descriptive statistics key variables (N=100)

	Minimum	Maximum	Mean	Median	Mode	Standard Deviation	Coefficient of Determination
Account	0	1	0.53	1	yes	0.50	0.95
Frequency	0	4	0.74	0	0	1.14	1.54
Gender	0	1	0.39	0	female	0.49	1.26
Age	1	4	2.14	2	2	0.51	0.24
Single	0	1	0.34	0	no	0.48	1.40
Education	0	5	1.92	2	2	1.02	0.53
Amount	1	25	7.46	6	5	4.73	0.63
Village Institution	0	2	1.19	1	yes	0.83	0.69

FIGURE 2
Gender composition by product (N=100)

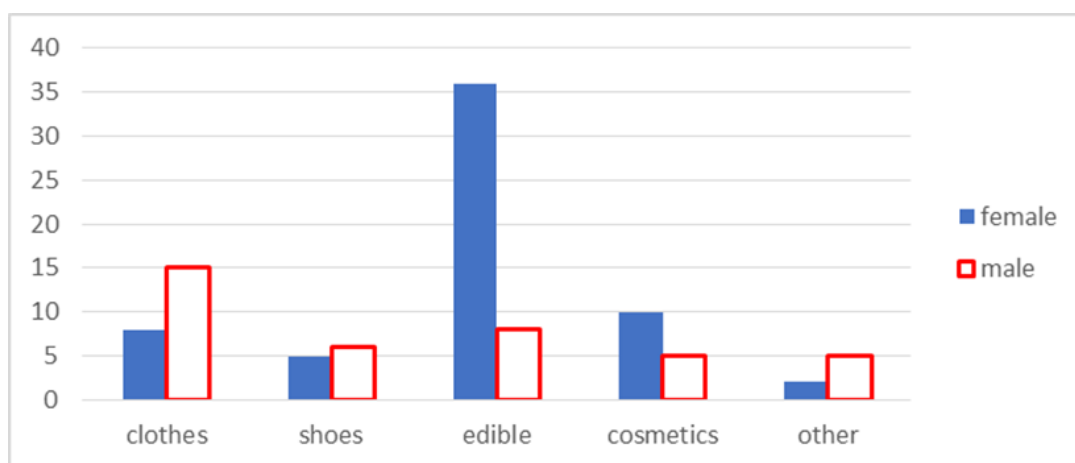


Figure 2 reports the gender composition of our sample distinguished by product group. Female street vendors dominate trade in cosmetics and especially edible items.

4.1.1 Having an account

Two important observations regarding having an account relate to the product on sale (Table 3) and the level of education (Figure 2). Noteworthy in Table 3 is the heterogeneity with respect of having an account which ranges from 91% of street vendors selling clothes to 36% for food and drinks.

This may be due to the type of trade (for example, it may be necessary to have an account in order to buy clothes from suppliers) or due to (self) selection effects (for example, women may be more involved in trade in edible items with lower sales so that an account is not necessary).² For this reason we will introduce product fixed effects (in addition to individual street vendor characteristics) in the econometric analysis in section 4.2 in order to test for product specific effects.

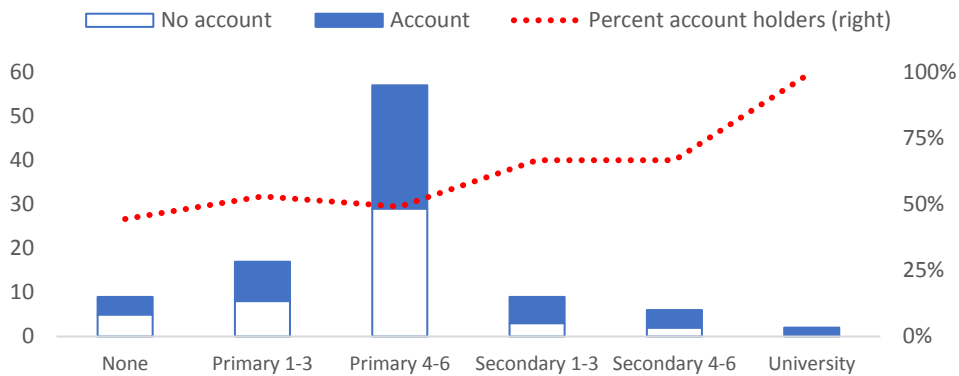
TABLE 3
Account holding by product group

Product	Percent account holders	Number of street vendors
Clothes	91%	23
Shoes	64%	11
Others	43%	7
Cosmetics	40%	15
Edible items	36%	44
Total	53%	100

Figure 3 illustrates the relationship between account holding and education, which ranges from 44% for street vendors without any education to 100% for respondents with university education. Importantly in the largest category with (partial) primary education account holding balances non account holding.

² An important observation during the fieldwork was that most women are mothers (taking care of babies) and were selling small amounts and goods of low value. The majority of street vendors in shoes and clothes is male.

FIGURE 3
Account holding by level of education



4.1.2 Using an account

It is important to differentiate analytically and empirically between de jure financial inclusion that was discussed in section 4.1.1 and de facto financial inclusion (frequency of accessing an account) that is the topic of this section. This is an important issue because as Finscope (2016) indicated only 52% of bank customers used at least one bank service in the month before the Finscope 2016 study and 25% used at least one financial service in the 6 months before the study, 23% of adults’ bank customers have inactive accounts which means it was not used in the last year before the study (Finscope 2016: 46-48).

The majority of account holders does not use the account frequently. 56.6% of the 53 street vendors with an account accessed it once or less a month.³ Table 4 also provides bivariate frequency distributions regarding the key individual characteristics. With respect to gender we note that female street vendors hardly use the account (76.9% accesses the account once a month or less). Frequency of use is higher for those with secondary education and weekly income above 10000 Rwandan Francs. As before significant heterogeneity is observed with respect to the traded product type.

³ Once it became clear in the early phase of the data collection process that most of street vendors have a bank account while they do not access or use their account regularly, we decided to pay extra attention to this question and double checked by means of additional follow up discussion. The finding appears to be genuine and not related to an unclear question or hasty communication.

TABLE 4
Frequency of use by individual street vendor characteristics,
product and weekly sales (N=53)

		Monthly Account Access Frequency					
		Zero	Once	2-3	4-5	More than 5	N
Total		28,3%	28,3%	30,2%	1,9%	11,3%	53
Gender	Female	53.8%	23.1%	15.4%	3.8%	3.8%	26
	Male	3.7%	33.3%	44.4%		18.5%	27
Age Category	<20	66.6%		33.3%			3
	20-30	24.4%	34.1%	24.4%	2.4%	14.6%	41
	30-40	33.3%	11.1%	55.6%			9
Marital Status	Single	26.1%	30.4%	26.1%	4.3%	13%	23
	Married	31.0%	24.1%	34.5%		10.3%	29
	Separated		100%				1
Education Level	None	75%	25%				4
	Primary 1-3	66.7%	22.2%			11.1%	9
	Primary 4-6	17.9%	28.6%	39.3%	3.6%	10.7%	28
	Second. 1-3	16.7%	16.7%	66.7%			6
	Second. 4-6		25%	25%		50%	4
	University		100%				2
Commodities	Edible	25%	37.5%	31.2%		6.2%	16
	Clothes	23.8%	33.3%	28.6%		14.3%	21
	Shoes	14.3%		57.1%	14.3%	14.3%	7
	Cosmetics	66.7%		16.7%	16.7%	16.7%	6
	Others	33.3%	66.7%				3
Weekly Income Earning	1000-	33.3%	22.2%	33.3%		11.1%	9
	5000-	40%	44%	12%		4%	25
	10000-	16.7%	16.7%	58.3%	8.33%		12
	15000-			42.9%		56.1%	7

4.2 Econometric analysis

Table 5 reports the econometric findings. Columns 1, 2 and 3 relate to de jure financial inclusion (dependent variable ACCOUNT) while columns 4, 5 and 6 (dependent variable FREQUENCY) represent de facto financial inclusion. Column 1 and 4 report regressions that only deal with individual street vendor characteristics. Columns 2 and 4 include a dummy variable that is zero is the village where the street vendor lives does not have a financial institution. Columns 3 and 6 extend this specification with fixed product effects.

TABLE 5
Econometric findings on de jure (account holding) and de facto (frequency of use)
financial inclusion (Logit and Poisson regressions N=100)

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Bank account holding			Frequency of use		
Estimation method	Logit			Poisson Maximum Likelihood		
Gender (male=1)	0.61** (0.29)	0.14 (0.35)	0.10 (0.37)	1.13*** (0.28)	0.58* (0.31)	0.78** (0.34)
Age	-0.11 (0.28)	-0.31 (0.30)	-0.38 (0.31)	-0.36 (0.29)	-0.40 (0.30)	-0.32 (0.29)
Marital status (single=1)	0.47 (0.31)	0.58 (0.38)	0.31 (0.41)	0.10 (0.29)	0.08 (0.12)	0.23 (0.76)
Education	0.03 (0.14)	0.05 (0.27)	0.04 (0.18)	0.18 (0.12)	0.20* (0.12)	0.18 (0.12)
Weekly sales	0.0 (0.0)	0.0 (0.0)	-0.0 (0.0)	0.04*** (0.02)	0.04* (0.02)	0.03 (0.03)
Village institution		1.21*** (0.22)	1.11*** (0.23)		0.96*** (0.24)	1.02*** (0.26)
Fixed effects			By product			By product
Constant term	-0.28 (0.68)	-1.14 (0.79)	-2.9** (1.3)	-0.94 (0.65)	-2.00* (0.74)	-3.4*** (1.1)
McFadden R²	0.08	0.36	0.39			
R²				0.25	0.38	0.36
LR	11.5**	49.2***	54.2***	43.4***	64.4***	68.5***

Notes *** 99% **95% *90% confidence levels (standard errors in brackets)

The specifications that include the highly (statistically *and* economically) significant VILLAGE INSTITUTION as an explanatory variable perform satisfactorily explaining more than 36% of variation of ACCOUNT and FREQUENCY. Gender is not significant in de jure financial inclusion but male street vendors do have a significantly higher FREQUENCY (de facto financial inclusion). Weekly sales is significant in regressions 4 and 5, but these effect disappears when we add fixed product effects in regression 6. Marital status and AGE are never significant. Education is only marginally significant ($p < 0.1$) in regression 5.

4.3 A closer look at the reasons for financial exclusion

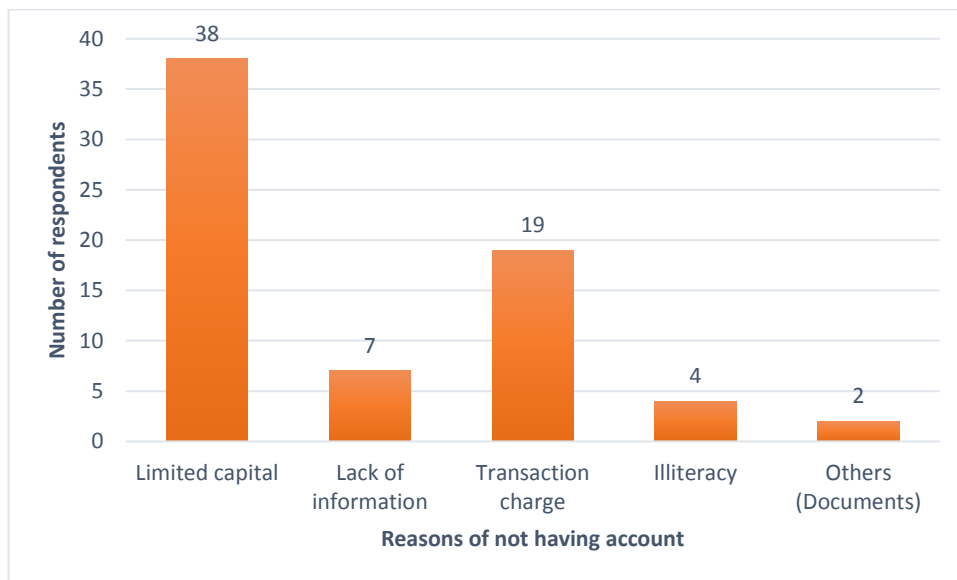
In addition to the logit analysis and Poisson regression, the 47 non-banking respondents in our sample have also been asked directly for the reasons for not having a bank account. We also used three back ground interviews with local bank managers and the district officer in charge of financial affairs to triangulate our findings and provide a qualitative reflection on financial inclusion of street vendors in Kigali.

4.3.1 Stated reasons

Figure 4 reports the stated reasons of not having accounts (multiple answers were possible). The vast majority (81%) of non-account holders replied that they do not have an account because of the limited size of their daily business. Typically respondents indicated that their daily life depends on the daily earning to get food for consumption. The second most important reason (40%) was cost considerations (banking institutions transaction charges). Other reasons mentioned included lack of information (15%), financial illiteracy (9%) and lack of important and required credentials to open accounts (4%).

The conclusion is that most of the street vendors appear by choice not to have accounts (that is: their sales are too low⁴). Only in a small minority lack of

FIGURE 4
Reasons of not having account (N=47)



⁴ Follow up questioning in addition to the questionnaire probed the living conditions in this group. Some street vendors who do not have a bank account claimed to earn little money which is one of the barriers as to why they could not open account with financial institutions. They claimed the little profit they made was fully used for household consumption.

documentation is a relevant bottleneck. These findings can be compared to Demirgüç-Kunt and Klapper (2012: 7) who for sub-Saharan Africa report that about 80% of non-banking adults do not have a formal account because of lack of sufficient income and 54% of non-account holders mention cost as a cause for not having a formal account. Our sample differs from their findings regarding lack of credential documents (more than 30% of non-account holders in sub-Saharan Africa according to their study).

4.3.2. Background interviews

The background interviewees reflecting on socio-economic characteristics and formal financial inclusion, noted that the progress of financial inclusion in Rwanda is substantial and that institutions do not differentiate between people. The BPR branch manager's indicated that: "Socio economic characteristics of beneficiaries do not matter when looking at service provided in the process of delivering financial services" (interview with the branch manager of BPR, 10 August 2017). The branch manager of Bank of Africa, however, noted important gender issues: "Male clients are more received than their fellow females although females are more trusted and honest since the majority come as part of small group (*tontines*)" (interview, 14 August 2017). In addition "The small business in the informal sector have limited capital, fear of monthly charges and most of the time the lack of information and finally many small business prefer to use mobile money for money transfer, money saving, cash payments" (interview with all informers, 14 August 2017). This is because mobile money facilities are cheap and easy and do not require many documents and charges to open accounts. Again, due to technology, almost everyone has access to a mobile phone nowadays and this makes it easy for street vendors to access to their accounts wherever they are without traveling to the all the way to the mobile money facility to ask for account balances.

5 Discussion and conclusions

Our field research clarifies that two factors determine financial inclusion of urban street vendors in Kigali, Rwanda Nyarugenge District, in particular account ownership and frequency of use, namely: gender (male street vendors are more likely to be financially included) and availability of financial institutions in the home village/town of the street vendor. It is relevant to note that age and education of the respondents of this survey are not statistically significant. From a policy perspective it is relevant that key actors during background interviews have indicated that they believe that individual characteristics such as gender are not important for the formal decision to accept an individual as an account holder at a financial institution (*de jure* financial inclusion), but that gender plays a significant role in our logit and Poisson regression models. Importantly, gender is a statistically significant determinant of frequency of use (*de facto* financial inclusion). In view of the fact that all specifications of the regressions find this gender effect, we consider this to be a robust result.

The second important factor, the availability of a financial institution in the home town/village of the respondent is also important from a policy perspective because it underlines the importance of the financial infrastructure: the geography of financial inclusion is important as has been established by earlier research on the differences between urban and rural areas, but our result show that the driver is the availability of a financial institution in the street vendor's home town, providing policy makers with a tool to improve financial inclusion in Rwanda.

At another level this paper demonstrates the utility of a mixed methodology approach that enables the researcher to collect individual observable characteristics of non-respondents. Our fieldwork approach will be useful for researchers that work with highly mobile respondents that are under time pressure, because data are collected when they are working and under stress because of the illegal nature of their economic activities. Mixed methodologies also was helpful because we could triangulate our quantitative and qualitative findings. One important issue is the difference in *perception* of our background interviewees that personal characteristics do not matter for *de jure* financial inclusion and the survey *findings* that gender is a significant factor in *de facto* financial inclusion. It is also worth pointing out that the availability of a financial institution in the street vendor's home town is neither mentioned in the background interviews with key informers (section 4.3.2 above) nor identified by the respondents themselves in their answers to question 6.2 (section 4.3.1 above), but that it is a highly significant determinant of financial inclusion.

It is clear that these findings relate to a specific and small sample, but we are confident that the data collection process is sufficiently random to be representative for street vendors in Kigali in 2016. Our research cannot be generalized beyond that population of course, but on the other hand we do not see why gender and the geography of financial institutions would only have an impact on street vendors. While further research is necessary we expect that these factors are important for all informal sector workers.

Appendix 1 Survey questionnaire

The first section contained demographic data such as age, sex, education level of respondents and the types of commodities and even the estimated amount of weekly earnings. The second section comprises of questions probing into the status of financial inclusion. The questionnaire was interpreted in Kinyarwanda (local language) that facilitates communication with the respondents. Before the start of the field work the target sample was set at between 50 and 100 respondents. In case of non response answers to questions 1, 2 and 5 were obtained via direct observation.

A Respondent characteristics

- 1: Gender: (a) male (b) female
- 2: Age: (a) <20 years (b) 20-29 (c) 30-39 (d) > 40 years
- 3: Marital status (a) single (b) married (c) separated
- 4: Level of education (a) none, (b) primary 1-3 (c) primary 4-6 (d) secondary 1-3 (e) secondary 4-6 (f) university (g) other (specify)
- 5: Daily business: (a) product sold (b) estimated weekly turnover in FRWS

Product	Estimate of the amount in Frws (week)
1.Edible items	
2.Clothes	
3.Shoes	
4. Cosmetics	
5. Others (Specify).....	

B Financial (non) inclusion

- 6: Do you have any account (bank, institution or agents delivering financial services)? (yes /no)
 - 6.1 If yes: why? (a) security (b) saving and investment (c) convenience (d) management of personal finance (e) other (specify)
 - 6.2. If no, why? (a) limited capital (b) lack of information (c) transaction charges (d) illiteracy (e) other (specify)
- 7: How many times did you visit the financial institutions in a month to obtain financial services in the last twelve months? (a) zero (b) once (c) 2 tot 3 (d) 4-5 (e) more than 5
- 8: Is there any bank or micro finance service in your village? (yes /no)
- 9: If yes: which type do you use: (a) commercial bank (b) cooperative community bank (c) micro finance bank (d) mobile money

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