The role of gender in agent banking for a highly under-developed financial sector: Evidence from Democratic Republic of Congo

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Abstract

Women's financial inclusion and empowerment is an important objective for many policy makers, financial services providers and development partners. With the advent of digital financial services (DFS), positive strides have been documented on both financial inclusion and empowerment of women. However, it is not well understood whether gender matters in the provisioning of DFS through agent banking. Utilizing a unique dataset with 1.2 million customer transactions from a microfinance institution (MFI) in the Democratic Republic of Congo (DRC) from 2017 to 2018, we investigate this question. Our results show that female clients are 16% more likely to transact with female agents than male clients, indicating a clear gender preference. Interaction effects show that females have a stronger preference for female agents when making high-value transactions. The fact that both male and female clients prefer to transact with agents of their gender provides evidence for assortative gender matching in agent banking transactions. Our preferred interpretation for the observed pattern of females transacting with female agents for high-value transactions is that trust and risk perceptions may lead female clients to seek out these agents for higher stake transactions. Our results also show that both female agents and clients were associated with lower value transactions than males. Given the observed gender preferences, the underrepresentation of female agents may constitute a barrier, contributing to the persistent gender gap in financial access and usage. Conversely, making steps towards a gender balance in agent networks may help to increase uptake and usage of DFS by women. The findings provide evidence that financial institutions have the potential to contribute to women's financial inclusion if they ensure that women have access to agents of their gender. Further, understanding that gender-diversified agent networks can increase women's participation on the channel support the business case for women agents.

JEL classification : G21, G23, G29

Keywords:
Gender; Agent banking; Mobile money; Microfinance institutions; Financial inclusion

1. Introduction

There is ample evidence that gender matters in banking and finance. Compared to men, women make different financial decisions (Sunden and Surette 1998; Indeed, Barber and Odean 2001; Huang and Kisgen 2013). Literature shows that microfinance institutions (MFIs) with more women in their lending portfolios have lower default risk and higher repayment rates (Espallier et al. 2011). Credit decisions of female loan officers are associated with lower default rates than men's (Beck et al. 2014) and MFIs with female executives have significantly higher outreach efficiency than MFIs with male directors (Hartarska et al. 2014). This suggests that gender is relevant in many aspects of finance. Digital financial services (DFS) are the new frontier of financial services provisioning, facilitating financial inclusion of underrepresented and marginalized groups including women, through improved accessibility, convenience, and reduced costs. Despite the promising role of DFS on improving financial access, there is limited research available on the role of gender on matters of DFS provisioning. On the one hand, DFS may reduce face-to-face contact which would render gender less salient for service usage if gender effects are created through physical interaction. This is the case when DFS transactions are made via a mobile phone or other digital devices. On the other hand, agents act as physical access points for DFS and the literal face of the service, where customers can deposit and withdraw money, hence retaining an element of human interaction. We investigate whether gender matters in customer transactions at agents.

This question is relevant for several reasons. Closing the gender gap in financial access is a goal of institutions such as the World Bank, the International Finance Corporation (IFC), and the United Nations. According to Global Findex data (2017), the gender gap in financial institutions accounts was at 9% points (35% of male versus 26% of female had an account) and for mobile money, the gap was at 7% points (28% males and 21% females had an account). While there is growing literature on barriers to service uptake, little research has been done on barriers and gender patterns in DFS usage.

This study takes a micro-level approach, analyzing the role of gender in customer transaction behavior from FINCA DRC, an MFI in DRC. Our dataset comprises 1.2 million transactions for the period of May 2017 to April 2018 and includes a variety of covariates such as customer-level characteristics including age, gender, registration date, transaction type, and amount. We also have information on agent gender, age, location, registration date and branch. This data allows us to investigate the relationship between customer gender and agent gender, controlling for customer, agent, and market-level information.

The results show gender differences in many facets of agent banking. Females represent 39.3% of the MFIs customers and 23.3% of all agents. In the context of male-dominated agent networks, both genders transact overwhelmingly with male agents since there are simply more male agents. However, despite male agents being the majority in the network, the overall geographic distribution of male and female agents is relatively homogenous. Based on the descriptive statistics, 31.1% of women's transactions in the dataset are with female agents compared to 22.1% for males yielding a 9%-point difference in usage of female agents. Our regression results indicate that women are 16% more likely to transact with female agents. To further understand the behavioral dynamics, we assess how variations in transaction amounts affect agent choice and we find that, overall, being a woman predicts lower transaction amounts. By computing interaction effects, the results suggest that women are more likely to use female agents when making larger value transactions. We show that these findings hold when accounting for customer, agent, and market-level covariates and also restricting the analysis to markets with substantial representation of female agents

We discuss three potential explanations- assortative matching, trust and risk aversion, and household dynamics. Given the non-experimental nature of our data, we are unable to cleanly test and discriminate between competing explanations. However, the underlying dataset contains the complete transactions over the time period and our results are therefore pertinent to the entire population. The results from our study make several contributions. To our best knowledge, they represent the first analysis of the salience of gender in transaction decisions when banking with agents. The data provides an example of (assortative) matching in a one-sided matching market (Roth et al. 2007) where customers know agent gender (since it is easily observable) and can choose while agents are 'passive' and being chosen. The paper also contributes to an understanding of how matching differs in high versus low-stake decisions (i.e. when transaction values are large or small). Our findings also have practice and policy implications. Under the observed preference of female customers for female agents, the increased availability of female agents can have benefits. As females may travel further to seek out a female agent, they may incur risks and costs that may be mitigated by a stronger presence of female agents, thus contributing to women's uptake and usage of DFS.

The rest of the paper is structured as follows. Section 2 presents relevant literature on DFS and women, assortative gender matching and trust. Section 3 describes the study setting, data and methods used. Our results are presented in Section 4. Sections 5 discusses the implications of the findings and limitations. Section 6 concludes.

2. Relevant Research

2.1 DFS and gender

There is consensus among policy makers, development partners and financial services providers that innovative services such as DFS and agent banking contribute to financial access of previously excluded or underserved populations. Suri and Jack (2016) exploit variations in service roll out and estimate that DFS rollout lifted 2% of Kenyan households out of poverty. The authors highlight that one mechanism through which these benefits operate is women's reallocation of labor from agriculture to business. They find that women-headed households benefit more from DFS through increased financial resilience and changes in occupational choice. In Sub-Saharan Africa women are 7% more likely to be excluded from DFS and thus are deprived of the social and economic benefits associated with the service. Barriers that impede women's participation in DFS include limited access to phones and internet connectivity, lack of information and assets, limited participation in the salaried labor force and lower socio-economic status (Chamboko et al., 2018).

2.2. Agent banking and gender

Agents represent physical access points for cash-ins and cash-out services. Given their importance in service provisioning, the study of how agent gender affects customer behavior is important to the understanding of DFS usage patterns. A noteworthy feature of agent banking is that the agent will usually be the same person in contrast to a bank branch where personnel fluctuates more. Thus, customers can select the agent based on observable characteristics such as age or gender. This is different to previous research such as Beck et al. (2014) and (Hausmann et al. 2018) who studied situations where the gender match is not the result of selection but rather exogenously determined (through promotion or allocation).

Gender is also pertinent for explaining differences in agent performance. When comparing environmental characteristics (low income, densely populated areas with high levels of commercial development) with personal characteristics, Cull et al. (2018) find that environmental factors were more important than personal characteristics of agents for predicting the number of transactions. At the same time, they highlight that female agents perform about thirty more cash-in transactions per month. Similarly, Harten and Rusu (2015) argue that women make better agents, noting that women register higher amounts and numbers of transaction per month. Differences in the customer base composition at male and female agents are one potential explanation for the performance gap, which is however not explored in Harten and Rusu (2015). Cull et al. (2018) speculate that gender could play a role in promoting comfort as female clients may be more at ease when doing banking transactions with a female agent. To our best knowledge, the interaction between customer and agent gender has not been assessed in the literature.

2.3 Gender, assortative matching, trust and household dynamics

Several strands of research discuss mechanisms that may explain gender differences in agent selection. First, the preference of females to transact with female agents can be conceptualized as *assortative matching*. This phenomenon describes people's tendency to interact with others who are similar rather than dissimilar (Barr et al. 2012). Salient variables are context-dependent and assortative matching may occur along gender or religious lines, ethnicity, education age and gender. In an experiment in 14 Zimbabwean villages, Barr et al. (2012) examine group-formation under different conditions. They find gender to be an important determinant of assortative matching, but also find that it becomes less relevant in purely trust-based group formation games where co-religion rises in importance. In the Zimbabwean context, trust appears to be associated with co-religion and gender.

Second, differences in *trust and risk preferences* along gender lines are another candidate mechanism for the observed phenomenon. Women are known to be more risk averse than men in the vast majority of environments and tasks (Croson and Gneezy, 2009). Women's trust is also much more context sensitive than men's (Croson and Gneezy, 2009; Eckel and Wilson, 2004; Bohnet 2007). For instance, Greig and Bohnet (2009) run a public good game in a Nairobi slum and find that men and women in single sex pairs make higher contributions in a one shot public good game, while sex heterogeneity reduces the contributions of women but not men. Thus, women tend to react stronger to information on trustworthiness of their partner in experimental settings. A limitation of the trust and gender literature is its focus on experiments (trust and ultimatum games) which are largely conducted in developed-country contexts (Croson and Gneezy, 2009). Findings that investigate trust in real-world situations in developing countries can enrich the understanding of gender, trust and risk preferences.

Intra-household dynamics represent a third mechanism for the observed gender dynamics. DRC is characterized by large gender inequalities: the country was ranked 176th out of 189 countries in the 2018 Gender Inequality Index (United Nations Development Programme, 2018). Gender-based violence is prevalent with 52% of women aged 15-49 experiencing physical violence (World Bank, 2018). These factors impede on women's full participation in social and economic life, creating a source of insecurity. In such a context where women have low bargaining power and experience discrimination, it is plausible to assume that women may seek to hide their money from male influence. Since the FINCA MFI agents can see a customer's balance when making withdrawals, women should prefer to go to women agents when they have large balances and make high-value transactions. Evidence from Kenya suggests that accessibility of accounts to the (male) household decision-maker matters for women's financial

behavior. Distribution of automated teller machines (ATM) cards made money in women's account more accessible to their spouses and drove some women to stop using their accounts (Schaner, 2017). Qualitative research in DRC and three other African countries highlights the importance of anonymity and the lack of traceability as an advantage of DFS (Butter and de Bruijn, 2017; Heitmann et al. 2018). Safeguarding privacy represents a motive for customers to seek out agents who they trust will not pass on their financial information to others.

The discussion section revisits the explanatory power of these three mechanisms for the patterns observed in our data. While the observational data imposes limitations for distinguishing between competing explanations, it allows for a rich study of gender and financial behavior of FINCA's entire customer base in a naturalistic setting.

3. Data and Methods

3.1 FINCA

FINCA DRC is a subsidiary of FINCA international, a microfinance institution operating in 23 countries worldwide which pursues women's financial inclusion as part of its mission. FINCA DRC launched branchless banking in 2011 in an effort to expand outreach. As a lower-cost alternative to bank branches, agents enable customers to more conveniently make deposits, withdrawals, money transfers, and repayments of loans (Lyman et al., 2006; Siedek et al., 2008; Flaming et al., 2011). FINCA's network has grown rapidly from 322 agents in 2014 (Gutin, 2015) to over 1200 agents in the study period of May 2017 to April 2018.

3.2 About the data

The data we obtained from FINCA DRC is comprised of 1,194,265 transactions performed by 104,292 customers through 1250 agents linked to 21 FINCA branches. For the regression analysis, we draw a random sample of 119,599 transactions from the complete dataset. Transactions were performed over a period of about a year between May 2017 and April 2018. The transaction level data contained the value of each transaction, the gender and age of the customer who executed the transaction as well as the gender and the age of the agents where the transactions were performed. The data also includes information on the type of transaction (cash deposit, withdrawal, funds transfer, or school fees payment transaction) and the currency used (US dollar or Congolese franc (CDF)). Market level information such as the branch, the town and the dominant financial institution where the branch (local market) was located was also available. To enrich the analysis, we generated new variables from existing information such as the total number of transactions performed by each customer and at a female and male agent.

Figure 1 shows the spatial distribution of the agents in Kinshasa that could be matched with GPS data.[1] Out of 1250 agents in the dataset 23.3% are female. The mapping of agents clarified that there is no obvious sorting of agents by gender in Kinshasa. This implies that one can infer that customers have on average lower access to female agents than to male agents because they are expected to be located closer to a male than a female agent on average.

[1] Approximately 50% of agents could be matched with GPS data

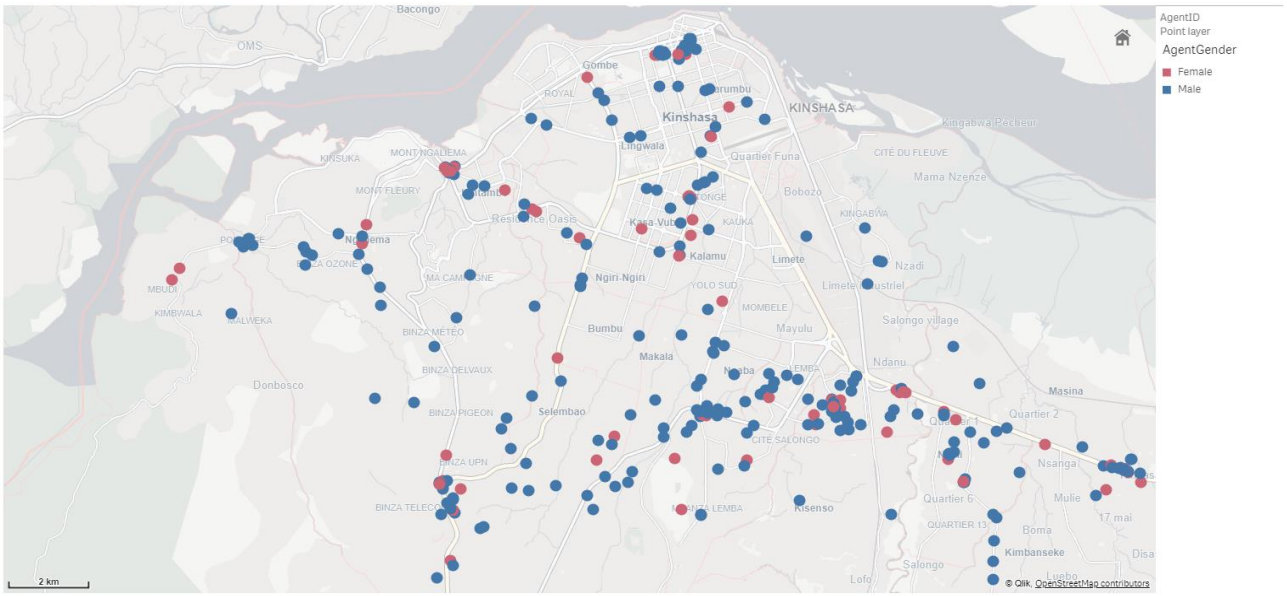

Figure 1: Kinshasa's geographical distribution of the agent network

3.3 Data analysis and estimation methods

Descriptive and bivariate analysis

To understand the market and the distribution of transactions within markets, across agents' and customers' gender, currency and transaction types, some descriptive statistics and bivariate analysis were performed. This included frequency procedures, measures of central tendency and dispersion as well as measures of association.

Generalized Estimating Equation (GEE) Models

The dataset comprised recurrent (repeated) transactions performed by different individuals and it is likely that transactions performed by the same individual tend to be "more alike". This phenomenon, generates intrinsic correlation (clustering) for transactions performed by the same individual, thus making it essential to incorporate within-subject and between subject variations into the model fitting process to improve power and estimation efficiency (Friedman, et al. 1989; Wang, 2014). To achieve this, we fitted the Generalized Estimating Equation (GEE) models introduced by Zeger and Liang (1986) to account for the clustered data generated by recurrent observations over time. A key merit for the GEE approach is that it is robust, providing asymptotically good β estimates even if the correlation structure is misspecified (Zeger and Liang, 1986; Zorn, 2001). Another advantage of the GEE approach is that it can be used to handle binary, discreate or continuous outcomes. We argue that ignoring the correlation structure of the data due to recurrence of observations and fitting standard statistical models would lead to biased and inefficient estimates and potentially wrong conclusions.

The notation for the GEE model is given as follows. Suppose the clustered data comprises of k individuals (subjects/clusters). For individual (subject) $i(i = 1,2 \dots, k)$, suppose that there are n_i transactions

(observations), and Y_{ij} represents the jth response $(j = 1, \dots, n_i)$, and let X_{ij} represent a $p \times 1$ vector of covariates. Let $Y_i = (Y_{i1}, Y_{i2}, \dots Y_{ini})'$ represent the response vector for the ith individual (subject) with mean vector denoted by $\mu_i = (\mu_{i1}, \mu_{i2}, \dots, u_{in_i})'$ where μ_{ij} represents the corresponding jth mean. It is assumed that the responses are independent across the individuals (subjects/clusters) and correlated within an individual (subject/cluster). The relation between μ_{ij} and X_{ij} is expressed by the marginal model

$$g(u_{ij}) = x'_{ij}\beta$$

Where g is the link function and β is a $p \times 1$ vector of regression coefficients with β_0 as the true value.

By fitting GEE models on this dataset, we provided insight into the factors that influenced the choice of the agent's gender. Since in this case, the outcome was binary, we presented the parameter estimates as odds ratios. We also used the GEE approach to determine the factors affecting the value of transactions, and in this case, we presented the parameter estimates as model coefficients since the outcome was continuous.

4. Empirical Results

4.1 Descriptive Statistics

As depicted in Figure 3, about 61% of the FINCA DRC customers were males compared to 39% females. This gender distribution illustrates that males in DRC are more likely to have access and use digital financial services. This distribution is not surprising as it is the trend in most developing countries (Chamboko et al., 2018). We observed that male agents were the most prevalent at FINCA DRC (77% males vs 23% females). It is important to highlight that the limited participation of females in the consumption of digital financial services have a direct effect on their ability to become future agents for FINCA DRC. Cull et al., (2018) noted that the recruitment of agents at FINCA DRC finds its roots from the relationships regenerated through its core credit business. Among other metrics which were considered, being a former or current FINCA client for which FINCA had a reliable financial activity record was advantageous and such applicants were preferred and targeted as prospective agents. Thus, applicants who were former or current group-lending clients, long term borrowers and trusted group loan officers had an elevated chance of being appointed as an agent.

Figure 3: Agent and customer gender distribution

Table 1 presents the age description for agents as well as the customers. The age of customers ranged from 15 to 75 years averaging at 39 (median =37) years. On average, female clients (40.18 years) were older than male clients (37.99 years) ($p<0.001$). The age of agents ranged from 22 to 73 years averaging 41 years. On average, there was no significant difference between male agents (40.88 years) and female agents (41.89 years) ($p=0.1272$).

Table 1. Customer and agent age

	min	**max**	**Mean (All)**	**Mean (Male)**	**Mean (Female)**	**T test (p-value)**	**Median (All)**	**Median (Male)**	**Median (Female)**	**SD**
Customer age	15	75	38.85	37.99	40.18	p<0.001	37	36	39	9.15
Agent age	22	73	41.12	40.88	41.89	p=0.1272	40	40	42	9.81

Table 2 presents the distribution of customers and agents across the type of transactions as well as the type of currency[2] used by gender. Of all transactions performed during the study period, 72% were performed by male clients with the remaining 28% by female clients. The fact that 61% of the clients were men and performed 72% of the transaction reinforces the dominance of male clients on both account ownership and the volume of transactions. We also observed that three quarters (75%) of the transactions were performed at a male agent whilst only a quarter (25%) were performed at a female agent. On the type of transaction, the results show that, of all transactions done, 95.3% were cash deposits, 4.28% were withdrawals, 0.13% were funds transfers whilst the other 0.29% were school fees payments. There are relatively minor but significant (all $p<0.01$) differences in patterns on the type of transactions performed by male and female clients as well as agents. Female clients performed slightly more cash deposits than male clients. Male clients performed more withdrawals and funds transfer than females while female clients performed comparatively more school fees payments than male clients. There was a relationship between gender and currency used with transactions at female agents being 4.4% points more likely to be conducted using the United States dollar (USD).

Table 2. Proportion of agents and customer transactions per category

	All transactions %	Male Customers %	Female Customers %	Chi-square (p-value)	Male Agents %	Female Agents %	Chi-square (p-value)
Transactions All	100	72.24	27.76	-	75.37	24.63	-
Cash Withdrawal	4.28	5.11	2.12	P<0.001	4.4	3.8	P<0.001
Cash Deposit	95.30	94.56	97.23	P<0.001	95.2	95.7	P<0.001
Funds transfer	0.13	0.16	0.08	P<0.001	0.2	0.1	P<0.001
School fees payment	0.29	0.18	0.57	P<0.001	0.2	0.4	P<0.001
CDF	38.78	39.38	37.24	P<0.001	39.9	35.5	P<0.001
USD	61.22	60.62	62.76	P<0.001	60.1	64.5	

[2] FINCA agents as well as clients transact in both USD and Congolese Franc

Table 3 presents the descriptive statistics on the customer and agents' value of transactions. Overall, there were significant differences in the value of transactions performed by males compared to females across the different categories. It is clear that, on average, male clients did higher value transactions[3] (USD$198) than female clients (USD$155). Similarly, male agents, on average, handled transactions of higher value (USD$190) compared to female agents (USD$176). However, we observe the inverse for school fees payments where transactions by female clients (USD$121.13) were on average higher than those for male clients (USD$22.68).

Table 3 also shows that male clients, on average performed more transactions (13.37) than female clients (7.78). Similarly, male agents, on average performed more transactions (11.94) than their female counterparts (9.32). Table 4 presents some market information, specifically showing the agent branches and the towns they are linked to, an indication of whether the town is regarded as an urban or rural locality, the population sizes, and the dominant financial instruction serving that market. These variables paint a picture on the level of financial development in each market and the population sizes.

[3]All transaction values converted to USD.

Table 3. Customer and agents' value and volume of transactions- continuous variables

Value of transactions (USD)													
	Mean (All)	**Median (All)**	**SD**	**Mean (Male Customers)**	**Mean (Female Customers)**	**T-test p-value**	**Median (Male Customers)**	**Median (Female Customers)**	**Mean (Male Agents)**	**Mean (female Agents)**	**T-test p-value**	**Median (Male Agents)**	**Median (Female Agents)**
Amount	186.11	40.0	341.37	198.34	154.91	P<0.001	30.75	43.05	189.69	175.49	P<0.001	40	41
Withdrawal	532.89	307.50	541.28	559.23	402.55	P<0.001	350.0	200	536.75	519.60	P=0.013	307	307
Cash Deposit	175.14	39.67	327.30	185.03	150.25	P<0.001	40.0	30.75	178.29	165.81	P<0.001	36	40.0
Funds transfer	287.16	184.50	363.40	283.25	308.39	P=0.329	184.5	170.53	279.01	342.42	P=0.023	184.50	175
School fees payment	77.32	27.68	89.99	22.68	121.13	P<0.001	20.0	83.03	64.37	101.66	P<0.001	27.67	55.35
CDF	52.51	12.3	92.36	55.49	44.29	P<0.001	12.3	7.69	53.32	49.72	P<0.001	12.3	12.0
USD	279.69	95.0	413.43	302.00	225.62	P<0.001	100	65	291.08	248.94	P<0.001	100.00	80.0
Number of transactions													
	Mean (All)	**Median (All)**	**SD**	**Mean (Male Customers)**	**Mean (Female Customers)**	**T-test p-value**	**Median (Male Customers)**	**Median (Female Customers)**	**Mean (Male Agents)**	**Mean (female Agents)**	**T-test p-value**	**Median (Male Agents)**	**Median (Female Agents)**
Number of transactions	11.18	3	129.88	13.37	7.78	P<0.001	4	2	11.94	9.32	P<0.001	3	3

Table 4: Market level information

Agent branch	Town/ Province	Locality	Dominant type of financial institution
Bukavu	Bukavu/ Sud Kivu	Peri- Urban	Cooperative
Bukavu 2		Peri- Urban	
Goma	Goma/Nord Kivu	Peri- Urban	Cooperative
Bel Air	Lubumbashi/ Haut Katanga	Urban	Bank
Katuba		Urban	
Lubumbashi		Urban	
Likasi	Likasi/ Haut Katanga	Urban	Bank
Kolwezi	Kolwezi/ Lualaba	Urban	Bank
Boma	Boma/ Kongo Central	Peri- Urban	Cooperative
Matadi	Matadi/ Kongo Central	Peri- Urban	Cooperative
Binza/ UPN	Kinshasa	Peri- Urban	Bank
Gombe		Peri- Urban	
Kintambo		Urban	
Limete		Urban	
Masina		Peri- Urban	
Matete		Peri- Urban	
R.P Ngaba		Urban	
Victoire		Urban	
Ndjili		Urban	
Kisangani	Kisangani/ Tshopo	Peri- Urban	Bank
Mbuji-Mayi	Mbuji-Mayi/ Kasai Oriental	Peri- Urban	Bank

Figure 4 shows the distribution of male and female agents across the 21 branches (henceforth referred to as markets). The highest representation of female agents was in Matete (34%) and lowest in Boma (6.5%). In Matete, Ndjli, Bukavu, Mbuji-Mayi, Ngaba, Matadi, Victorie, Goma, Masina, and Kintambo markets, the proportion of female agents was more than the average for all the markets (above 23%). It is important to highlight that every market had both male and female agents, even though skewed in favor of men. This is essential as it illustrates that in every market, clients had a number of agents available to them and could choose who to transact with among the male and female agents.

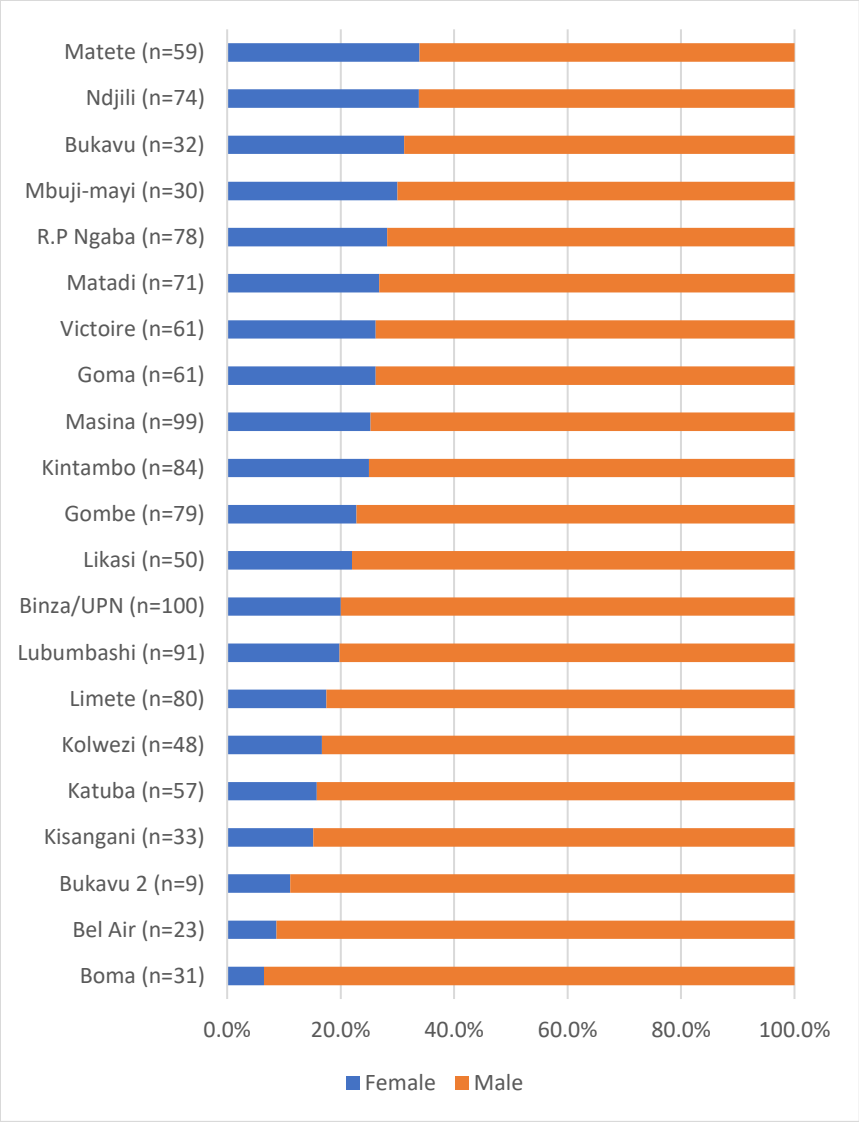

Figure 4: Distribution of agents by market and gender

Figure 5 shows the distribution of transactions across markets by gender. The market which recorded the highest proportion of transactions by female clients was Ngaba at 35% followed by Kintambo (32%) whilst the lowest proportion of female transactions was recorded in Kisangani (21%).

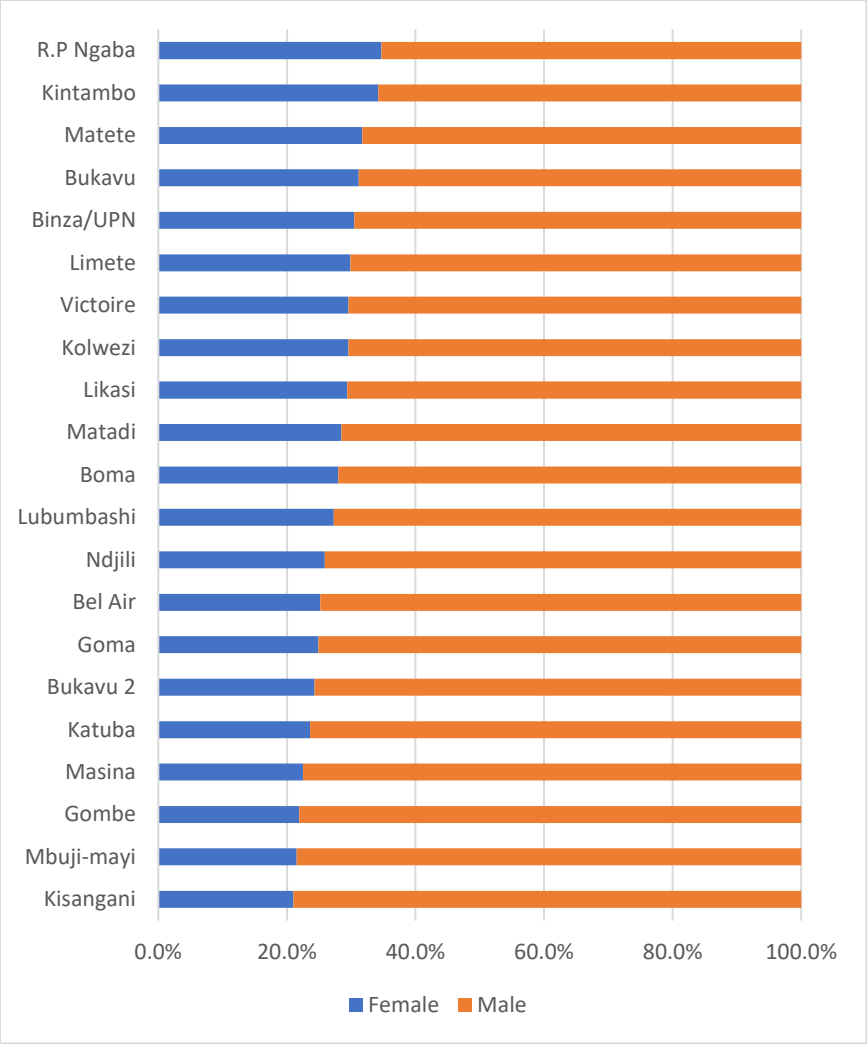

Figure 5: Distribution of transactions by market and gender

Results from a simple crosstabulation of the relationship between agent gender and client gender are presented in Figure 6. Among female clients, 31% of transactions were done at a female agent compared to 22% of male clients who performed transactions at a female agent. Conversely, 69% of the female clients' transaction were done through a male agent compared to 78% of male transactions done through a male agent. This tabulation (not yet controlling for other factors) suggests that female clients were 9% more likely to transact with female clients than male clients. Conversely, male clients were 9% more likely to transact with males than their female counterparts (see gender gap in blue stripes in Figure 6).

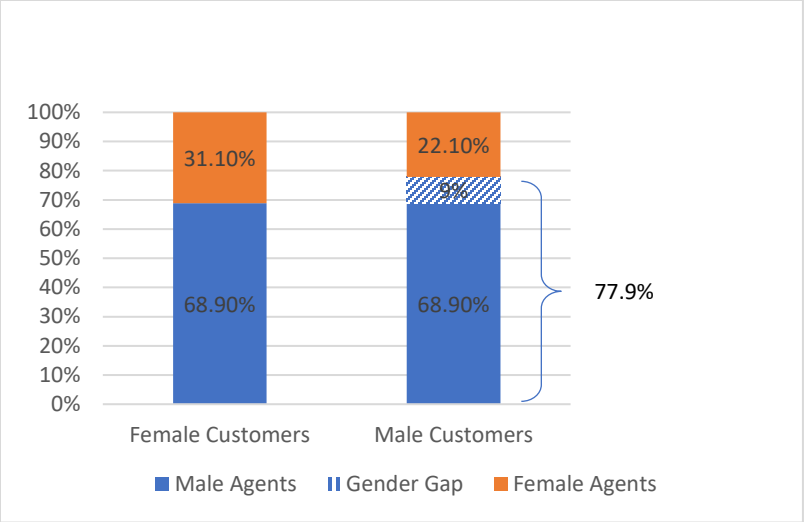

Figure 6: Relationship between agent and client gender (gender gap)

Breaking down Figure 6 into patterns observed in every local market shows an almost universal preference of customers to transact with agents of their gender. Only in three out of 21 markets (Goma, Mbuji-Mayi and Matadi), we observe the inverse pattern of male clients having a stronger preference for female agents than female clients. This shows that for most of the markets (18 out 21) there appears to be a preference for customers to transact with agents of their gender based on descriptive statistics.

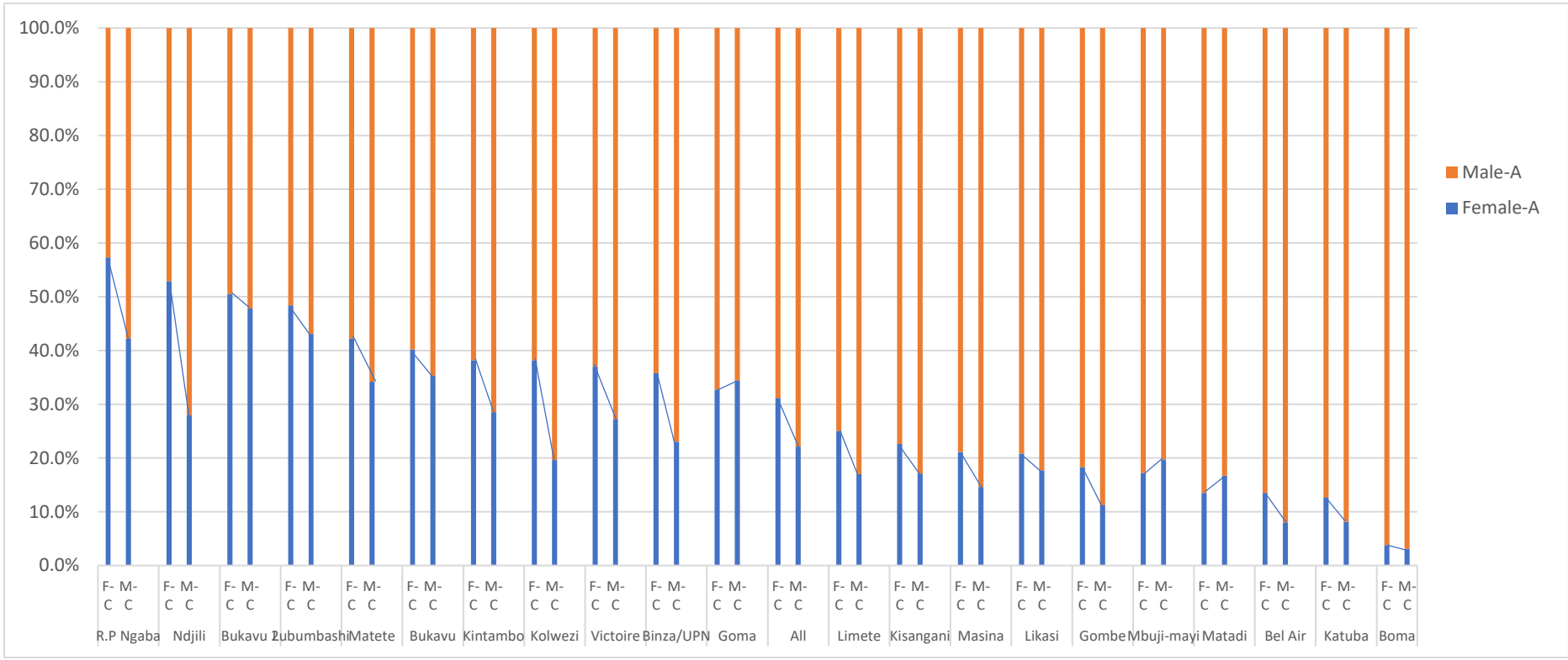

Figure 7: Distribution of transitions by customer and agent gender

4.2 Multivariate model results

The primary research question relates to the importance of agent gender in transaction behavior. To this end, we investigated the impact of customer gender as the main independent variable on agent gender, our main dependent variable, controlling for the currency used, the type of transaction, the age of the customer and the log of amount transacted, the agent branch, and the dominant financial institution.

Results from our multivariate regression models are presented in Tables 5 to 8. Results from our main model is presented in Table 5. In Tables 6 to 8 we conduct additional analyses using the value of individual client transaction as the outcome variable.

Probability of transacting with female agents

Results presented in Table 5 indicate that female clients were 16% more likely than male clients to transact with female agents (OR = 1.16, $p<0.001$). The direction of this effect is consistent with descriptive statistics presented in Figure 6 which showed that an excess of 9% females transacted with female agents compared to male agents before controlling for other factors.

We also observed that, other than gender other factors were important in determining the choice of the agent's gender. We can tell from Table 6 that, compared to the local currency-CDF, USD transactions were 8% more likely to be performed at female agents (OR=1.08, p=0.003). These results are also supported by the descriptive statistics above (Table 2) showing that, of all transactions done by female agents, 65% were in USD compared to 60% for male agents. These results suggest that clients with USD were more likely to transact with a female agent than a male agent. Women's preference for USD transactions is consistent with risk-aversion and holding 'hard currency' which protects against local currency devaluation.

We also observed variations in the gender preference with respect to the market or branch were an agent was located as also shown in Figure 7. The results show that the level of development of the financial sector in a particular local market was a relevant factor as well. Customers in markets dominated by cooperatives (an indication of financial underdevelopment) were more likely to perform transactions at female agents compared to those dominated by banks (OR = 1.45, p= 0.001). The results show significant differences on the preferred gender by each local market.

Table 5: Factors influencing the choice of an agent's gender

Agent gender	Odds Ratio	Robust Std. Err.	P>z	[95% Conf. Interval]	
Currency-USD	1.075383	0.0261541	0.003	1.025324	1.127885
Customer gender-F	1.162065	0.0264778	0.000	1.111312	1.215137
Cash Deposit-ref	-	-	-	-	-
Cash Withdrawal	1.174213	0.116569	0.106	0.9665948	1.426426
Funds Transfer	0.6276267	0.1443619	0.043	0.399866	0.985118
School Fees Payment	0.7350814	0.0772698	0.003	0.5982178	0.903257
Log(amount)	0.9883892	0.007529	0.125	0.9737422	1.003257
Customer age	1.000190	0.0004955	0.702	0.9992188	1.001161
Cooperative	1.452370	0.1688805	0.001	1.156379	1.824124
Bel Air-ref	-	-	-	-	-
Binza/UPN	3.356104	0.4003357	0.000	2.656434	4.240057
Boma	0.213635	0.0218568	0.000	0.1748187	0.261070
Bukavu	3.089069	0.2437768	0.000	2.646392	3.605794
Bukavu 2	5.456643	0.6135814	0.000	4.377345	6.802058
Goma	2.941005	0.2225379	0.000	2.535640	3.411174
Gombe	1.550005	0.2026517	0.001	1.199623	2.002726
Katuba	0.813619	0.1068858	0.116	0.628924	1.052554
Kintambo	3.227833	0.3605531	0.000	2.593168	4.017828
Kisangani	1.804932	0.2378787	0.000	1.394048	2.33692
Kolwezi	2.075691	0.2387043	0.000	1.656817	2.600464
Likasi	1.643195	0.1949931	0.000	1.302205	2.073474
Limete	1.775997	0.2112464	0.000	1.406682	2.242274
Lubumbashi	5.95614	0.6609543	0.000	4.791890	7.403259
Masina	1.427018	0.174024	0.004	1.123637	1.812312
Matete	3.817646	0.4816092	0.000	2.981354	4.888523
Mbuji-mayi	1.721085	0.2529379	0.000	1.290346	2.295612
Ndjili	3.860157	0.4382389	0.000	3.090075	4.822151
R.P NGABA	6.807277	0.7833918	0.000	5.432702	8.529646
Victoire	3.342780	0.3791562	0.000	2.676454	4.174992
_cons	0.1340111	0.0146367	0.000	0.108186	0.166000

Value of transactions

Table 6 presents the factors affecting the value of the individual transactions performed by clients. The dependent variable was the logarithm of the value of transactions. It is evident that the gender of the agent was an important factor. We find that female agents were associated with transactions of lower amounts (coef = -0.252, $p<0.001$). Given the finding in Table 5 that female clients were more likely to transact with female agents, it is consequential for female agents to be associated with low value transactions since female clients were also associated with transactions of lower value (coef = -0.594, $p<0.001$) (Table 6).

The variable agent branch controls for potential self-selection of agents to open their agent business at specific FINCA branch (i.e. market). We further control for spatial characteristics (urban versus peri-

urban), and the dominant type of financial institution in each market. We observed that, compared to markets (branches) dominated by banks, those dominated by cooperatives (a potential indication of financial underdevelopment) were associated with higher value transactions (Coef = 0.604, p<0.001).

The interaction term for agent and client gender (representing female clients transacting at female agents) shows that female clients tend to transact high value amounts when transacting with female agents (coef =0.576, p<0.001). On average, a female client transaction at a male agent was USD$136 (median = USD$25) compared to USD$186 (median = USD$50) at a female agent. Female clients thus doubled the median transaction value when transacting with female agents compared to when transacting with male agents.

In contrast to gender, age is not related positively to transaction value. Neither customer nor agent age, nor the interaction term (older customers preferring older agents) is significant. This suggests that there is no assortative age matching in our sample.

The value of transactions also varied with the type of transaction performed. The order of the coefficients reveals that withdrawals had the highest amounts followed by funds transfer, cash deposits and lastly school fees payments. The descriptive statistics in Table 3 confirm the above finding showing that on average withdrawal transactions averaged at USD$533, whilst funds transfer transactions averaged at USD$287 and cash deposit transactions at USD$175 and last school fees payments averaging at USD$77.

Results in Table 6 also show that the branch or market were transactions were performed also determined the value of transactions with those branches in underdeveloped markets dominated by cooperatives associated with high value transactions. As such, the level of financial development in a particular market as measured by the dominant financial institution was significant (coef =0.603, p <0.001).

Table 6: Factors affecting the value of transactions

Log(amount)	Coef.	Robust Std. Err.	P>z	[95% Conf. Interval]	
Agent gender-F	-0.25091	0.043583	0.000	-0.33633	-0.16549
Customer gender-F	-0.59276	0.077930	0.000	-0.7455	-0.44002
Curreny -USD	2.07700	0.042676	0.000	1.99336	2.160647
Cash Deposit-ref	-	-	-	-	-
Cash Withdrawal	1.745008	0.109085	0.000	1.531204	1.958811
Funds Transfer	1.466078	0.171155	0.000	1.130621	1.801535
School Fees Payment	-0.665570	0.780339	0.394	-2.195	0.863871
Cooperative	0.602786	0.157858	0.000	0.293391	0.912181
Customer age	-0.002190	0.005688	0.700	-0.01334	0.008956
Agent age	0.003697	0.005506	0.502	-0.0071	0.014489
Bel Air-ref	-	-	-	-	-
Binza/UPN	0.365784	0.185768	0.049	0.001686	0.729882
Boma	-0.29645	0.161663	0.067	-0.61331	0.0204
Bukavu	0.359558	0.275435	0.192	-0.18028	0.899401
Bukavu 2	-0.59467	0.177985	0.001	-0.94352	-0.24583
Goma	0.093691	0.184635	0.612	-0.26819	0.455568
Gombe	1.086191	0.25346	0.000	0.589419	1.582964
Katuba	0.224544	0.150017	0.134	-0.06948	0.518571
Kintambo	0.336159	0.149478	0.025	0.043188	0.629129
Kisangani	-0.12273	0.224181	0.584	-0.56212	0.316656
Kolwezi	0.837516	0.143835	0.000	0.555604	1.119428
Likasi	0.366165	0.132863	0.006	0.105759	0.626571
Limete	0.32411	0.181297	0.074	-0.03123	0.679446
Lubumbashi	0.433317	0.13322	0.001	0.17221	0.694424
Masina	0.459824	0.166608	0.006	0.133278	0.786369
Matete	0.171104	0.166949	0.305	-0.15611	0.498319
Mbuji-mayi	0.423852	0.204778	0.038	0.022494	0.82521
Ndjili	0.365029	0.161551	0.024	0.048395	0.681662
R.P NGABA	0.082211	0.176267	0.641	-0.26327	0.427689
Victoire	0.416744	0.181678	0.022	0.060663	0.772825
agender#cgendeer					
1 1	0.575611	0.155983	0.000	0.269889	0.881333
aage_cage	0.000122	0.000154	0.429	-0.00018	0.000425
_cons	1.968002	0.253592	0.000	1.47097	2.465034

Table 7 and Table 8 expand on the analysis in table 6 and analyze effects separately for transactions done at female agents and those done at male agents. This investigates possible differences in the explanatory factors depending on agent gender. From the results, it is evident that the coefficient for agent gender is significant and negative for transactions done at male agents (coef= -0.597, $p<0.001$) suggesting that female clients engaged in transactions which were significantly lower value than those of their male counterparts. Interestingly, the coefficient reverses sign and becomes statistically insignificant (Table 8) for transactions performed at female agents (coef= 0.0089, $p>0.1$). Despite males transacting larger

amounts on average, female clients conduct transactions of almost the same value as male clients when at female agents. This result supports the above findings, suggesting that female clients prefer to transact with female agents when amounts are larger.

Tables 7 and 8 highlights that currency continues to be an important factor for transactions both at male and female agents, with USD transactions being of higher value than those in local currency. The level of financial development of the local market as well as the agent branch represent additional factors determining the value of transactions. Age of the agent, customer, and the interaction were again insignificant (p>0.1), highlighting that age is no major factor in determining where customers conduct high value transactions.

Table 7: Factors affecting the value of transactions at male agents

Log(amount)	Coef.	Robust Std. Err.	P>z	[95% Conf.	Interval]
Customer gender-F	-0.59685	0.076135	0.000	-0.74607	-0.44763
Currency-USD	2.166277	0.048781	0.000	2.070668	2.261886
Cash Withdrawal	1.712294	0.108557	0.000	1.499526	1.925063
Funds Transfer	1.52846	0.196649	0.000	1.143036	1.913884
School Fee Payme	-0.83851	0.78404	0.285	-2.3752	0.69818
Cooperative	0.633538	0.172827	0.000	0.294804	0.972273
Bel Air-ref	-	-	-	-	-
Binza/UPN	0.397779	0.215584	0.065	-0.02476	0.820316
Boma	-0.27805	0.169826	0.102	-0.6109	0.054803
Bukavu	0.516416	0.287432	0.072	-0.04694	1.079774
Bukavu 2	-1.10866	0.222718	0.000	-1.54518	-0.67214
Goma	0.214858	0.212078	0.311	-0.20081	0.630523
Gombe	1.108775	0.276432	0.000	0.566978	1.650572
Katuba	0.256874	0.164033	0.117	-0.06462	0.578373
Kintambo	0.456747	0.167398	0.006	0.128654	0.784841
Kisangani	-0.06209	0.24710	0.802	-0.54639	0.422221
Kolwezi	0.871918	0.154983	0.000	0.568156	1.17568
Likasi	0.404587	0.144653	0.005	0.121072	0.688101
Limete	0.345706	0.19889	0.082	-0.04411	0.735524
Lubumbashi	0.29575	0.148549	0.046	0.004599	0.586901
Masina	0.515242	0.17954	0.004	0.16335	0.867133
Matete	0.038348	0.167964	0.819	-0.29086	0.367553
Mbuji-mayi	0.502161	0.228493	0.028	0.054323	0.949998
Ndjili	0.279239	0.166897	0.094	-0.04787	0.606351
R.P NGABA	0.18362	0.215046	0.393	-0.23786	0.605102
Victoire	0.442802	0.206706	0.032	0.037666	0.847937
Customer age	-0.00352	0.007236	0.627	-0.0177	0.010664
Agent age	0.004145	0.006912	0.549	-0.0094	0.017693
aage_cage	0.000147	0.000193	0.445	-0.00023	0.000524
_cons	1.885912	0.308306	0.000	1.281644	2.49018

Table 8: Factors affecting the value of transactions at female agents

Log(amount)	Coef.	Robust Std. Err.	P>z	[95% Conf.	Interval]
Customer gender	0.008854	0.1463566	0.952	-0.278	0.295708
Currency-USD	1.778122	0.0517317	0.000	1.67673	1.879514
Cash Deposit-ref	-	-	-	-	-
Cash Withdrawal	1.869798	0.2112699	0.000	1.455716	2.283879
Funds Transfer	1.336443	0.3402518	0.000	0.669562	2.003324
School Fee Payment	-0.0637	0.4067504	0.876	-0.86092	0.733514
Cooperative	0.521554	0.1624639	0.001	0.203131	0.839978
Bel Air-ref	-	-	-	-	-
Binza/UPN	0.266536	0.2382505	0.263	-0.20043	0.733499
Boma	-0.0835	0.1855358	0.653	-0.44715	0.280139
Bukavu	0.161518	0.2850037	0.571	-0.39708	0.720115
Bukavu 2	0.134108	0.1766109	0.448	-0.21204	0.480259
Goma	-0.13332	0.1931737	0.49	-0.51193	0.245297
Gombe	0.889375	0.168299	0.000	0.559515	1.219235
Katuba	-0.02178	0.1443287	0.88	-0.30466	0.261095
Kintambo	-0.01215	0.1394547	0.931	-0.28548	0.261175
Kisangani	-0.4767	0.2082369	0.022	-0.88484	-0.06857
Kolwezi	0.731217	0.1686358	0.000	0.400697	1.061737
Likasi	0.242734	0.1646944	0.141	-0.08006	0.565529
Limete	0.180381	0.1630751	0.269	-0.13924	0.500003
Lubumbashi	0.598858	0.1399705	0.000	0.324521	0.873195
Masina	0.169413	0.1616303	0.295	-0.14738	0.486203
Matete	0.363782	0.2344518	0.121	-0.09573	0.8233
Mbuji-mayi	-0.01904	0.1989342	0.924	-0.40894	0.370867
Ndjili	0.479575	0.2417966	0.047	0.005662	0.953487
R.P NGABA	-0.13501	0.1614339	0.403	-0.45142	0.18139
Victoire	0.278727	0.1501696	0.063	-0.0156	0.573054
Cage	0.003083	0.0067216	0.647	-0.01009	0.016257
Aage	-0.00144	0.0066312	0.828	-0.01444	0.011556
aage_cage	1.57E-05	0.000164	0.924	-0.00031	0.000337
_cons	2.156695	0.3089159	0.000	1.551231	2.762159

5. Robustness checks

A potential threat to validity of our findings is that we include all markets in our analysis even the ones with very low representation of female agents. The share of female agents can be as low as 5% in some markets (see Figure 4). It could be argued that males and females in these markets have insufficient choice to determine if they prefer agents of their gender. To address this concern, we restrict our analysis to markets where at least 25% of agents are female. The results presented in Table 9 in the Appendix show that our earlier findings are robust to using this subsample of markets. Females are 15% more likely to transact with female agents (compared to 16% in the full dataset). Hence, female clients

prefer female agents, regardless of how easy they are to access. The finding of female customers making lower value transactions than males overall but higher value transactions when transacting with female agents is also maintained when using the restricted dataset (Table 10 in the Appendix).

6. Discussion

Our results provide two pieces of evidence for gender mattering in agent banking transactions. First, we observe a 16% preference of female clients to transact with female agents (and an analogous preference of male clients to transact with male agents). Second, female clients are more likely to make high-value transactions when at a female agent. The first finding establishes the relevance of gender while the second shows that preferences become more pronounced with increased salience (i.e. when the transaction values are larger). This section draws upon the literature presented in Section 2.3 to explore potential explanations for the observed behavior.

Agent banking transactions can be conceptualized as a one-sided matching market allowing for the study of characteristics that matter for a customer's decision to decide to transact with a specific agent. Our findings show that there is *assortative gender matching* for both male and female customers. The study also tests an alternative matching mechanism; age – rejecting the hypothesis of assortative age matching. Importantly, assortative gender matching seems largely unimpacted by variations in availability of female agents. When we restrict our analysis to markets where at least 25% of agents are female, gender matching does not increase as would be expected if convenience were the driving mechanism. This suggests that gender matching is not mainly driven by what Barr et al. (2012) describe as 'opportunity', i.e. the availability of female agents. The observed behavior is consistent with the notion of 'homophily' as customers exhibit a stable preference to transact with agents of their gender. However, assortative matching based on homophily cannot fully account for our results since it would imply that matching should be unimpacted by the amounts transacted.

Gender-based trust and risk perceptions are second candidate mechanism. Men and women having higher trust in agents of their gender is consistent with the observed 16% gender preference as well. At the same time, the trust and risk explanation provides a better account of the impact of transaction amounts on preferences than can homophily-based assortative gender matching. Figure 8 in the Appendix shows that both men and women transact higher median amounts when at agents of their gender (men USD$51 and women USD$50). When at agents of their opposite gender, men transact USD$ 44 and women USD$30. If we assume that median transaction values at male and female agents are indicative of the perceived riskiness of transactions, this suggests that trust and risk perceptions drive clients to transact with agents of their gender. However, the effect appears to vary between men and women as both regression and descriptive results highlight a differential effect of value on agent choice: In the regression in Table 8, the gender dummy becomes insignificant at female agents, showing that women's transaction values match those of men only at female agents, being significantly lower otherwise. In the descriptive analysis in Figure 8 in the Appendix, the difference between men's median transaction values at male and female agents is just USD$6 while the analogous value for females is much more pronounced, amounting to USD$20. This provides a second piece of evidence that the effect of gender is significantly stronger for women than for men. A potential reason for this may be that women have lower trust in men than vice versa or that they perceive transactions at male agents as much riskier than men do perceive transactions at women agents. Such behavior aligns with the literature presented in Section 2.3. which finds that women are more risk-averse in a large variety of environments and tasks than men.

Finally, *intra-household dynamics* may play a role in explaining the trust differential of men and women in agents of their opposite gender. Given the large gender inequalities in DR Congo, it is plausible to assume that women have stronger incentives to disguise their financial situation from men than vice versa. Since agents know a customer's balance when s/he makes a transaction, there is a risk of financial information being passed on. For women, visiting a female agent can be a strategy to mitigate this risk since women are less likely to pass on information to other men than male agents. This explanation would be consistent with our finding that female's preferences for transacting with female agents are retained even under conditions of low availability of female agents. However, given that we lack further demographic and household information, we are unable to further substantiate this rather speculative hypothesis.

Implications for practice

The research findings have practical implications for financial service providers. The preference of female customers for female agents and the fact that only 23% of agents are female implies that female customers will have to travel further on average to transact with an agent of their gender. The underrepresentation of female agents may thus represent a barrier, contributing to the persistent gender gap in financial access. Conversely, making steps towards a gender balance in agent networks can potentially increase uptake and usage of DFS by female customers. Further research is needed to test this conjecture. Another implication is the importance of investigating the root causes of female underrepresentation among agents. While recruitment criteria of agents based on business or asset ownership are gender-blind when taken at face value, they may de facto exclude females from becoming agents given the greater difficulty of fulfilling these criteria under present gender disparities. A better understanding of the gender-lensed impacts of existing hiring procedures could thus contribute to policies and procedures that facilitate a more equitable participation of women in agent networks.

Implications for research

Research on mechanisms driving female's preferences for female agents is an important area for future research. This paper presents evidence for the existence of gender differences in transaction behavior. What is needed are careful causal identification strategies that isolate the precise pathways through which the observed effects operate. The literatures on assortative gender matching, trust and gender, culture and gender, and intrahousehold dynamics have contributions to make. Yet, they have often been disparate in the past. Testing the relative importance of different candidate mechanisms and attempts to integrate and relate concepts to each other may advance the development of a more coherent body of scientific knowledge on this topic.

Besides understanding causes, another fruitful strand of research is the investigation of consequences of gender-patterned behavior. A nascent literature investigates factors contributing to the emergence of gender pay gaps in different country contexts (Diamond et al. 2018; Hardy and Kagey, 2018; Campos et al. 2017). Investigating the effects of gendered agent choice could make contributions to this field of research. A limitation in many instances is the difficulty to account for different prices and products

offered. Given that agents have fixed prices and offer the same products, analyzing the effect of gendered agent selection on earnings may help to elucidate our understanding of gender pay gaps.

8. Conclusion

The study investigates the role of gender on customer transaction behavior at agents. We utilize a unique dataset which contains a full record of all 1.2 million transactions of FINCA customers in DRC generated between 2017 and 2018. The results show significant gender differences in many facets of agent banking. First, females represent two fifths of the MFIs customers and one fifth of all agents. In FINCA's male-dominated agent network, both male and female clients transact overwhelmingly with male agents. Our regression results show that female clients are 16% more likely to choose to transact with female agents than male clients, indicating a clear gender preference. Interaction effects show that females have a stronger preference for female agents when making high-value transactions. The fact that both male and female clients prefer to transact with agents of their gender provides evidence for assortative gender matching in agent banking transactions. Our preferred interpretation for the observed pattern of females transacting with female agents for high-value transactions is that trust and risk perceptions may lead female clients to seek out these agents for higher stake transactions. Our results also show that both female agents and clients were associated with lower value transactions than males. The research highlights that the underrepresentation of female agents may represent a barrier which contributes to the persistent gender gap in financial access. Conversely, making steps towards a gender balance in agent networks may help to increase uptake and usage of DFS by women. MFIs have the potential to contribute to women's financial inclusion if they ensure that women have access to agents of their gender.

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Conflict of interest
None of the authors has conflict of interest to declare.

Appendix

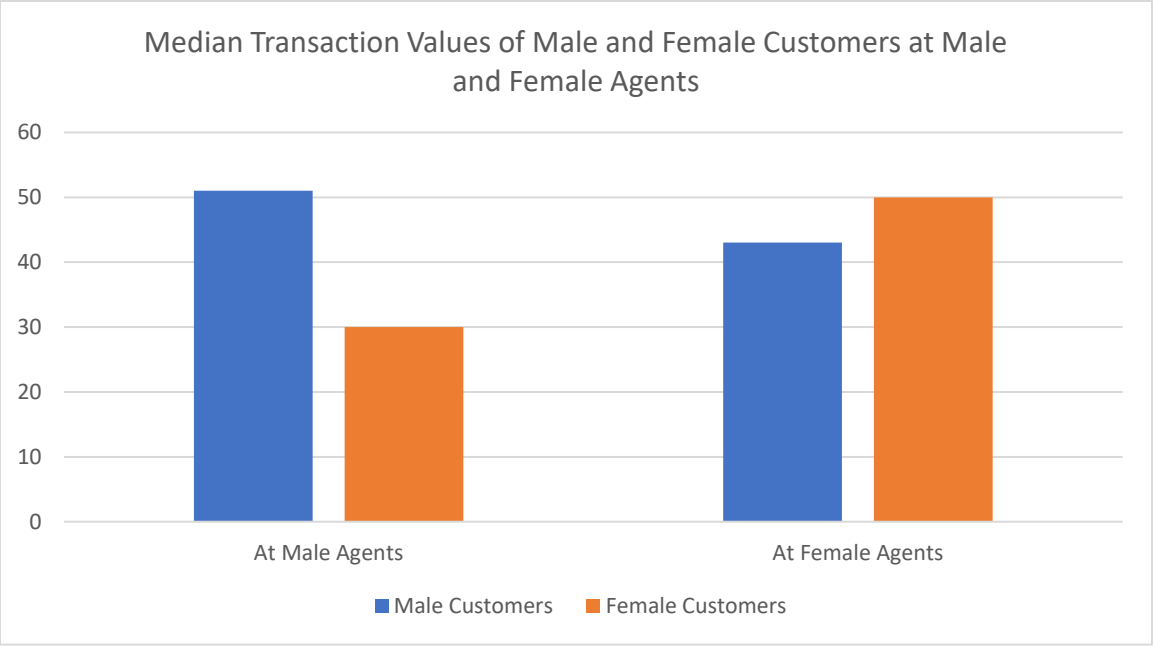
Table 9: Factors influencing the choice of an agent's gender (restricted dataset)

Agent gender	Odds Ratio	Robust Std. Err.	P>z	[95% Conf. Interval]	
Currency-USD	1.043256	0.031148	0.156	0.9839592	1.106127
Customer gender	1.152849	0.03424	0.000	1.087656	1.221951
Cash Deposit-ref	-	-	-	-	-
Cash Withdrawal	1.14949	0.1631	0.326	0.8704209	1.518033
Funds Transfer	0.575378	0.208057	0.126	0.2832426	1.16882
School Fees Payment	0.702193	0.111174	0.026	0.5148618	0.957685
Log(amount)	0.970226	0.009634	0.002	0.9515269	0.989292
Customer age	0.999998	0.000561	0.997	0.9989	1.001098
Bukavu	-	-	-	-	-
Goma	0.909802	0.070463	0.222	0.7816674	1.05894
Kintambo	0.684604	0.045642	0.000	0.6007448	0.780168
Masina	0.28121	0.021174	0.000	0.2426273	0.325927
Matadi	0.307148	0.022513	0.000	0.2660455	0.3546
Matete	0.793101	0.066206	0.005	0.6733985	0.934082
Mbuji-mayi	0.35665	0.041166	0.000	0.2844423	0.447189
Ndjili	0.788076	0.058674	0.001	0.6810747	0.911888
R.P NGABA	1.440127	0.105865	0.000	1.246891	1.663309
Victoire	0.663804	0.047009	0.000	0.5777767	0.76264
_cons	0.709836	0.047097	0.000	0.6232776	0.808416

Table 10: Factors affecting the value of transactions (restricted dataset)

Log(amount)	Coef.	Robust Std. Err.	P>z	[95% Conf. Interval]	
Agent gender-F	-0.2763403	0.0432888	0.000	-0.36118	-0.191500
Customer gender-F	-0.5023604	0.0962967	0.000	-0.6911	-0.313620
Currency-USD	2.264896	0.0559552	0.000	2.155225	2.374566
Cash Withdrawal	1.857549	0.1461864	0.000	1.571029	2.144069
Funds Transfer	1.504859	0.1943782	0.000	1.123884	1.885833
School Fee Payment	-0.3350408	0.8415342	0.691	-1.98442	1.314336
Customer age	0.0006333	0.001345	0.638	-0.002	0.003269
Agent age	0.0015736	0.0023684	0.506	-0.00307	0.006216
agender#cgendeer					
1 1	0.5365387	0.1871427	0.004	0.169746	0.903332
Bukavu-ref		-	-	-	-
Goma	-0.3045867	0.2981458	0.307	-0.88894	0.279768
Kintambo	-0.5919767	0.2654605	0.026	-1.11227	-0.07168
Masina	-0.4476912	0.275023	0.104	-0.98673	0.091344
Matadi	-0.2581577	0.2684611	0.336	-0.78433	0.268016
Matete	-0.7543805	0.2804569	0.007	-1.30407	-0.2047
Mbuji-mayi	-0.519548	0.3018507	0.085	-1.11117	0.072068
Ndjili	-0.5185937	0.2747927	0.059	-1.05718	0.01999
R.P NGABA	-0.8283522	0.2782325	0.003	-1.37368	-0.28303
Victoire	-0.4986411	0.2821068	0.077	-1.05156	0.054278
_cons	2.916817	0.2956755	0.000	2.337304	3.49633

Figure 8. Transaction value and gender



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