Does it (Re)pay to be Female? Considering Gender in Microfinance Loan Officer-Client Pairs

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Note that this is the open-access version of the paper. The final version of the paper will be published in the Journal of Development Studies

Abstract

This paper examines the effect of the gender combination of client-loan officer pairs on loan repayment in an Ecuadorian microfinance institution. We show that among the four possible client-loan officer gender pairs i.e., female client-female loan officer, female client-male loan officer, male client-male loan officer and male client-female loan officer, the most favorable pairs in terms of repayment are those with female loan officers whereas the least favorable are those with male loan officers. We also show that repayment is even further enhanced for all client-loan officer pairs when the client's previous loan officer was a woman. Our findings point to relational differences between male and female loan officers when interacting with microfinance clients, which is also highlighted by our qualitative insights from the field.

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1. Introduction

In microfinance, the relationship between a loan officer and a client is often underlined as being critically important. Compared to other financial firms, microfinance clients tend to be informationally opaque; thus, many microfinance institutions (MFIs) rely on a business model that emphasizes a close and trust-based loan officer-client relationship (Afonso, Morvant-Roux, Guérin, & Forcella, 2017) as it facilitates both the *ex ante* screening and *ex post* monitoring stages.

In this paper, we focus on the influence of the client-loan officer gender pairing on repayment outcomes. The high focus on female clients by MFIs makes it interesting to study the impact of the gender combination of the client-loan officer pair on loan repayment. Many studies in microfinance have examined the influence of clients' gender on loan repayment and find higher repayment rates for female clients than for their male counterparts (D'Espallier, Guérin, & Mersland, 2011; Morduch 1999). The effect of loan officers' gender on loan repayment has also been examined, but with contradictory findings depending on the context. For example, Beck, Behr, and Guettler (2013) find that female loan officers in an Albanian bank exhibit better loan portfolio quality and have a 4-5 percent lower likelihood of default than men, whereas van den Berg, Lensink, and Servin (2015) find evidence to the contrary in a Mexican MFI.

In addition to considering the gender of both parties in the relationship separately, one should also take the gender combination of the pair into account. Arguments drawn from the similarity-attraction paradigm (Byrne, 1971), or from self-identity and self-categorization theories (Tajfel, 1972; Turner, 1982), suggest that same-sex[1] pairs are better able to build trust, which may translate to better performance, compared with opposite-sex pairs. However, evidence from empirical studies is far from unanimously supportive of better performance in same-sex pairs.

This paper therefore seeks to determine the impact of client-loan officer gender combinations on repayment performance in MFIs. Accordingly, we look at four different pairs:

male client-female loan officer, female client-female loan officer, female client-male loan officer, and male client-male loan officer. In a further analysis on clients who have experienced a change of loan officer, we also examine the potential moderating effect of the gender of the client's previous loan officer. In doing so, we seek to obtain a clearer view of whether clients respond to a change of loan officers' gender in terms of loan repayment.

Our results show that female client-female loan officer and male client-female loan officer pairs exhibit the highest performance in terms of loan repayment. They highlight that loan repayment is not necessarily better in same-sex pairs. Additional findings highlight the importance of considering the effect of the gender difference between two successive loan officers on clients' loan repayment. We find that, rather than consistency in relational style, having previously dealt with a female loan officer strengthens repayment performance even further, and this finding seems to hold for all client-loan officer pairs. A client's experience with a female loan officer at any point in time i.e., either currently or previously, is thus beneficial for loan repayment.

This paper contributes not only to the microfinance and financial inclusion literature, but also to the broader development literature. After all, financial inclusion is recognized to act as a facilitator for 5 out of the 17 Sustainable Development Goals, such as poverty, gender, hunger, growth and infrastructure (Mader, 2018). This study also contributes to the gender literature. To our knowledge, it is one of the first to focus on the effect of the gender combination of the client-loan officer pair on loan repayment. Since the relationship between the client and the loan officer is the basis of the business model of most MFIs, the gender of both parties is of high importance to better understand the outcome of lending transactions. Yet, existing studies in microfinance have focused on either the client's gender (Boehe & Cruz, 2013; D'Espallier et al., 2011) or the loan officer's gender (Beck et al., 2013; van den Berg et al., 2015) and hardly any on the gender combination of the client-loan officer pair with the exception of Blanco-Oliver, Reguera-Alvarado,

and Veronesi (2021). To our knowledge, this paper is the first to focus on the effect of gender difference in successive loan officers on clients' loan repayment. Since empirical studies have shown numerous negative effects of loan officer turnover (Canales & Greenberg, 2016; Servin, Lensink, & van den Berg, 2011), it is essential to examine in which conditions such a turnover induces the least negative outcome. We show that one of these conditions is probably related to the loan officer's gender. In doing so, we also contribute to the human resource literature in the financial sector. Finally, our paper contributes to the literature on similarity-attractiveness and other social categorization theories.

2. Theoretical framework

The importance of the loan officer-client relationship in microfinance

To understand the advantages of high-quality relationships between clients and loan officers, the social embeddedness framework developed by Granovetter (1985) is useful. Social embeddedness is defined as 'the degree to which commercial transactions take place through social relations and networks of relations that use exchange protocols associated with social, non-commercial attachment to govern business dealings' (Uzzi 1999, p. 482). Social embeddedness appears to be critical in encouraging trust and discouraging improper behaviors (Granovetter, 1985; Uzzi, 1999). We focus in this paper on relational embeddedness, namely, 'personal relationships people have developed with each other through a history of interactions' (Nahapiet & Ghoshal, 1998, p. 244).

In banking, the importance of the relationship between lenders and borrowers has its roots in relationship lending. Relationship lending is a lending technique mostly used in SME financing (Uchida, Udell, & Yamori, 2012) and in the funding of other informationally opaque clients. By developing a close, long-term, trust-based relationship with borrowers, the lender, and particularly the loan officer, is able to collect and produce qualitative information that can only be acquired

through multiple contacts with the borrower and their entourage, such as family, community, suppliers, and so on (Berger & Udell, 2002; Moro & Fink, 2013; Rajan, 1992). This so-called 'soft information' helps increase credit availability for small firms (Elsas & Krahnen, 1998; Scott & Dunkelberg, 1999), while decreasing moral hazard (Paravisini & Schoar, 2012) and the risk of loan default.

In microfinance, individuals and microenterprises are generally informationally opaque and have little or no collateral to pledge (Serrano-Cinca, Gutiérrez-Nieto, & Reyes, 2016). It is therefore crucial for the loan officer to establish a close relationship with the client. To this end, microfinance has built its business model on relationship lending (Afonso et al., 2017). Since microfinance loans are characterized by short maturity and high repayment frequency, the extent of the interactions between the client and the MFI is substantial. There is some evidence that, in microfinance, the length and the intensity of the relationship between the lender and the borrower improves access to credit (Behr, Entzian, & Güttler 2011), reduces the time of the loan approval process (Behr et al., 2011), and decreases default rates (Schrader, 2009). However, for all the advantages that it may bring, a close loan officer-client relationship may also have some negative effects, such as the screening out of other qualified clients and risks of fraud (Beisland, D'Espallier, & Mersland, 2019; Godfroid, 2019).

Loan officers represent the main interface between the client and the MFI (Canales & Greenberg, 2016). Microfinance loan officers are required to visit clients at their home, to interact with them frequently, and to develop contacts with their community in order to collect and produce soft information. Beyond their role of advisors, microfinance loan officers also have to act as debt collectors (Siwale & Ritchie, 2012), and this main difference between microfinance and banking makes trust-based client-loan officer relationships even more important in the microfinance industry than in the traditional banking sector.

Two studies on the consequences of microfinance loan officer turnover for clients demonstrate the importance of the benefits brought by a close relationship between both parties. Drexler and Schoar (2014) show that when a loan officer is replaced, their clients are less likely to get new credit either because they are less likely to request it or because they are more likely to be denied access to follow-up credit. In addition, such clients are also more likely to default. Along similar lines, Canales and Greenberg (2016) show that clients are more likely to miss a payment when a loan officer is rotated during the course of a loan. However, the same authors find that the effect of loan officer turnover on loan repayment is moderated by the consistency in the relational style adopted by the succeeding loan officer. Based on these studies and on the relationship-lending as well as microfinance literature, we argue that a change of loan officer may affect clients' loan repayment, particularly when the successive loan officers are of different genders. As we will explain in the next subsection, male and female loan officers may adopt different attitudes and behaviors throughout the lending process.

The effect of the gender of the client-loan officer pair on clients' loan repayment

To better comprehend the influence of the gender combination of a client-loan officer pair in terms of clients' loan repayment, two main strands of literature can be drawn on: the literature on gender differences in terms of personality traits, attitudes, and behaviors; and the literature on similarity attraction. It should be noted that the first strand may help to explain the effect that the loan officer's gender and the client's gender separately may exert on clients' loan repayment, while the second one may be used to examine the gender combination of the client-loan officer pair.

Gender differences. The psychology literature has highlighted several differences in attributes and attitudes based on gender. While early scholars attributed these differences to biological factors, social role theorists have recently argued that these differences should rather be

explained by gender-role expectations induced by the division of labor (Akinola, Martin, & Phillips, 2018; Putrevu, 2004). By being exposed to such gender role expectations from an early age, women end up adopting more 'communal' values – qualities associated with social relationships with others such as helpfulness, kindness, and sympathy – whereas men mostly adopt 'agentic values' – qualities associated with goal achievement such as assertiveness and aggressiveness (Rudman & Phelan, 2008). Women also tend to avoid competitive situations (Gneezy, Leonard, & List, 2009; Gupta, Poulsen, & Villeva, 2013) and to be less aggressive in negotiations (Amanatullah & Morris, 2010). However, this does not mean that women are poor negotiators. Indeed, the outcome of a negotiation may also be linked to traits that are stereotypically feminine, such as good listening skills (Kray, Galinsky, & Thompson, 2002), and to the higher tendency of women to behave ethically (Kray & Kennedy, 2017).

The above gender differences may explain why male and female clients adopt different attitudes and behaviors toward loan repayment. In microfinance, there is a lot of evidence showing that female clients are more likely to repay their loans than male clients (D'Espallier et al., 2011; Yunus, 1999), but the reasons behind this remain unclear (Aggarwal, Goodell, & Selleck, 2015). According to some scholars, women tend to manage their loans better than men (D'Espallier et al., 2011) and to use or invest the money they receive more carefully (Todd, 1996), whereas males are more likely to become over-indebted (Schicks, 2014). Others argue that women tend to be more honest (Armendáriz & Morduch, 2005; Boehe & Cruz, 2013), but this argument is sometimes challenged and not necessarily confirmed empirically (Godquin, 2004). Women may also face greater difficulties in finding a credit alternative than men, forcing them to repay their loans in order to obtain subsequent loans from the same MFI (Armendáriz & Morduch, 2005; Boehe & Cruz, 2013). Finally, some scholars argue that the higher propensity of female clients to repay their

loans comes from their higher sensitivity to intimidation (Goetz & Gupta, 1996; Karim, 2008). Based on the above findings, we suggest the following hypothesis:

Hypothesis 1: Client-loan officer pairs with a female client exhibit better performance in terms of clients' loan repayment than those with a male client.

Similarly, gender differences may explain why female and male loan officers in banking may adopt different attitudes and behaviors, leading them to have different relational styles when dealing with clients. Some scholars argue that women are more restrictive than men when granting loans to new clients (Bellucci, Borisov, & Zazzaro, 2010), based on the assumption that women are more risk averse (Charness & Gneezy, 2012; Croson & Gneezy, 2009), even if this assumption is today being called into question (Nelson, 2015). But are female loan officers better than male loan officers in terms of their client's loan repayment? While some studies address this particular question, the findings are contradictory. Beck et al. (2013), examining a large commercial bank in Albania serving micro, small, and medium enterprises, show that defaults are lower for loans screened and monitored by female loan officers than for loans screened and monitored by male loan officers, probably because female loan officers are better able to foster trust with their clients. On the other hand, van den Berg et al.'s (2015) findings based on data from a Mexican MFI reveal that male loan officers have loan portfolios with lower defaults because of men's higher authority to enforce loan repayment, particularly over female clients. Adding to this, Blanco-Oliver et al. (2021) show that loan portfolio risk increases when the representation of women in loan officer positions of MFIs is higher.

Since the literature is not clear on the effect of the loan officer's gender on clients' loan repayment but two studies on this topic seem to hinge towards better performance for male loan officers, we suggest the following hypothesis:

Hypothesis 2: Client-loan officer pairs with a male loan officer exhibit better performance in terms of clients' loan repayment than those with a female loan officer.

Similarity attraction. Similarity-attraction theory states that individuals are attracted to others with whom they share similarities (Smith, 1998). The similarity-attraction effect implies that individuals favor 'similar others' in terms of social attributes over 'dissimilar others'. Based on the similarity-attraction paradigm, relational demography theory argues that similarities among people may affect work-related outcomes (Foley, Linnehan, Greenhaus, & Weer, 2006; Sacco, Scheu, Ryan, & Schmitt, 2003). Specifically, similarities are believed to foster communication (Avery, McKay, Tonidandel, Volpone, & Morris, 2012) and trust, leading to an improvement in performance (Lincoln & Miller, 1979; Tsui, Egan, & O'Reilly, 1992). Social identity and social categorization theories can also explain why demographic similarities affect performance outcomes. These theories argue that individuals have the tendency to create classifications about themselves and others based on social categories such as gender, age, and religion (Foreman & Whetten, 2002; Tajfel & Turner, 1986), and that they derive a sense of belonging from the group that they belong to (Hornstein, 1976). Social identity is strengthened by making favorable attributions to the in-group members and unfavorable attributions to the out-group members (Kramer, 1991).

Numerous empirical studies on the effect of gender in pairs have led to contradictory results. Some studies lend support, at least partially, to the similarity-attraction paradigm, social identity theory, and self-categorization theory. In an ultimatum game conducted in a laboratory, Eckel and Grossman (2001) show that agreements are easier to reach in female-female pairs, but that men are more likely to accept an offer from a woman than from a man. In a trust game, Slonim and Guillen (2010) show that when individuals are given the choice of selecting a partner to whom they will give money, they prefer selecting someone of the same sex.

On the other hand, the results of other studies run counter to the predictions of the similarity-attraction paradigm, social identity theory, and self-categorization theory. Ben-Ner, Kong, and Putterman (2004) show that in a dictator game, women tend to give less money to other women than to men or to a recipient whose gender is unknown. In a two-person bargaining game, Sutter, Bosman, Kocher, and van Winden (2009) find a higher level of competition leading to lower efficiency in same-sex pairs.

In microfinance, Beck, Behr, and Madestam (2018) find that new clients associated with a loan officer of the opposite sex tend to receive smaller or shorter loans as well as less favorable conditions in terms of interest rates. Moreover, they are less likely to request a second loan, this effect being stronger when they are associated with loan officers who are not used to working with clients of the opposite sex. However, loan arrears do not seem to be affected. Ahmad (2002) shows that female clients tend to prefer association with female employees when receiving both financially and non-financially related services from an NGO in India. Similar findings were obtained from a study of MFIs in Uganda offering financial services to rural women (Banthia, Greene, Kawas, Lynch, & Slama, 2011). Blanco-Oliver et al. (2021) examine multiple MFIs and show that while a higher proportion of female loan officers in a MFI leads to higher loan portfolio risk, this effect is negatively mediated by the percentage of female borrowers in the MFI. Nevertheless, unlike our study, they do not directly examine the effect of a client-loan officer pair on the clients' repayment.

Based on the similarity-attraction theory and on empirical findings in microfinance, we may argue that female clients prefer dealing with female loan officers and that male clients prefer dealing with male loan officers, and that same-sex client-loan officer pairs engender a higher level of trust. We therefore suggest the following hypothesis:

Hypothesis 3: Same-sex client-loan officer pairs exhibit better performance in terms of clients' loan repayment than opposite-sex pairs.

As in Beck et al. (2018), we examine how loan repayment may be affected by the gender combination of the borrower-loan officer pairs. However, our study differs from theirs in several aspects. While Beck et al. (2018) are particularly interested in first-time borrowers, we also consider borrowers in successive loan cycles, namely the different loans that a particular client has received since their entry in the MFI. This is necessary to examine the potential moderating effect of the gender of the client's previous loan officer on the relationship between the gender combination of the client-loan officer pair and loan defaults. Moreover, Beck et al. (2018) mainly focus on opposite-sex client-loan officer pairs while we consider same-sex pairs as well. Beck et al. (2018) also adopt the loan officer's point of view by suggesting that the loan officer's previous experience with clients of the opposite sex acts as a moderator in the relationship between the gender composition of the client-loan officer pairs and several outcomes such as loan approvals, credit conditions, and so on. By contrast, we adopt the client's point of view as we want to determine whether loan repayments are affected when a client is rotated from one loan officer to another loan officer of the opposite gender. Since the client-loan officer relationship is key to fostering trust between the two parties, examining how clients are affected by a change of loan officer appears to be compelling and constitutes another contribution to the study conducted by Beck et al. (2018).

In this context, examining the effect of a difference in the gender of successive loan officers makes sense. Indeed, we can view gender as a proxy for relational style regardless of the theoretical position we take: the one adopted by early scholars that men and women have 'different orientations toward interpersonal relationships' or the one adopted by more recent, social role scholars that men and women differ in the way they 'construe themselves in relation to others'

(Curhan, Neale, Ross, & Rosencranz-Engelmann, 2008, p. 194). We can thus rely on Canales and Greenberg's (2016) arguments that the negative effect of loan officer turnover on clients' loan repayments is weakened when successive loan officers adopt consistent relational styles. Therefore, we argue that it be may easier for clients to trust a loan officer of the opposite sex when their previous loan officer was also of the opposite sex, and that this higher trust may lead to fewer loan defaults. We therefore suggest the following hypothesis:

Hypothesis 4: Clients' repayment is enhanced when two succeeding loan officers are of the same sex.

3. Data and variables

Data collection

We draw on a unique dataset from Banco D-Miro, an MFI offering financial services to the underprivileged in Ecuador. As a fully licensed bank, Banco D-Miro has to comply with all regulatory requirements as any other commercial bank in Ecuador. With an average portfolio at risk of around 5% (except in 2016 after Ecuador was hit by an earthquake) and over 50% percent female clients, Banco D-Miro, like other MFIs, is characterized as seeking to achieve social objectives while maintaining financial sustainability. Banco D-Miro consists of 13 branches located in the coastal regions in Ecuador. The D-Miro loans analyzed in this study are individual loans running from 6 to 36 months with a monthly repayment frequency and offered to both men and women who run a business.

In what follows, we determine the impact of the different gender combinations of the client-loan officer pair on client loan default and whether a change in gender between two successive loan officers matters for this relationship.

Our database consists of quarterly client-loan officer observations starting in the second quarter of 2012 and ending in the third quarter of 2016. Our final sample consists of an unbalanced panel of 727,563 quarterly client-loan officer observations with which to conduct our econometric specifications.

Further information regarding data collection can be found in the Appendix.

Dependent Variable

Default_days. This variable[2] corresponds to the number of days of defaults for client *i* in quarter *t*. In other words, it refers to the number of days a client extends beyond the predetermined due date. It acts as an indicator of the risk associated with a certain loan as more days of default signify higher credit risk. Indeed, when the days of default are increasing, the risk that the client will not repay at all is also increasing. [3]

Independent Variables

The dummy variables *Femaleclient-femaleloanofficer, Femaleclient-maleloanofficer, Maleclient-femaleloanofficer*, and *Maleclient-maleloanofficer* are our main independent variables representing the different client-loan officer gender pairs**.** That is, *Femaleclient-femaleloanofficer (Maleclient-maleloanofficer)* takes the value of 1 if a female (male) client is associated with a female (male) loan officer and 0 otherwise, while *Femaleclient-maleloanofficer* (*Maleclient-femaleloanofficer*) takes the value of 1 if a female (male) client is associated with a male (female) loan officer. We perform econometric specifications on all gender combinations of client-loan officer pairs except the male client-male loan officer pair, which we consider to be the reference pair to avoid the

dummy variable trap. Thus, the impact of the different client-loan officer pairs on repayment is analyzed in comparison to the male client-male loan officer pair.

Moderating role of previous loan officer's gender

We test the potential moderating effect of the gender of the client's previous loan officer since we argue that the gender of the two successive loan officers a client has dealt with matters to understand loan repayment. This moderator, denoted by *Female previouslo*, is a dummy variable that takes the value of 1 if the previous loan officer was female and 0 otherwise. The moderator variable is included in our analysis as an interaction term with the gender combination of the client-loan officer pair. We thus consider the gender of the current and previous loan officer as a proxy for relational style.

Control variables

In our analyses, we control for the effects of different client and loan officer characteristics as well as firm-related and loan-related variables. That is, we control for clients' age, marital status, and education level.

We also control for the loan amount received by the client. Indeed, the loan amount may differ according to the clients' gender, as female clients tend to ask for or obtain smaller loans (Agier & Szafarz, 2013) than their male counterparts. This variable was rescaled and transformed to logarithm in our econometric analyses. Additionally, we include a control variable for the current loan cycle of the client. It indicates the number of loans that a particular client has received since starting to contract with the MFI. These controls are necessary to isolate the influence of the gender

combination of the client-loan officer pairs on days in default from a gender-differential in loan-amount and loan cycle.

Regarding loan officers, we control for their age and level of education. In the moderator analysis, we also control for the rate at which the loan officer is re-assigned to and from clients, denoted by 'percentage incoming clients per loan officer' and 'percentage outgoing clients per loan officer', respectively. 'Percentage of incoming clients per loan officer' is the rate at which a loan officer obtains new clients from another loan officer in the MFI whereas 'Percentage of outgoing clients per loan officer' is the rate at which a loan officer transfers clients to another loan officer or has client drop-out[4]. These client changes among loan officers are not part of the firm's policy and may instead occur due to employee turnover or client drop-out as opposed to formal rotations that arise from the need to prevent unacceptable behavior from loan officers such as discrimination and corruption. The aim here is to control for the likely impact of the dynamics of change within the client-loan officer pair on loan repayment.

Finally, branch dummies have been included as control variables. Indeed, it can be observed in the field that default may depend on managerial practices used in an MFI branch. More especially, two branches of D-Miro situated in the same geographical area may have different default rates.

Descriptive statistics are presented in the Supplementary Material of this paper.

4. Method

To determine the impact of the client-loan officer gender combination on repayment and the moderating role of the gender of the previous loan officer, we first perform random effects regressions where the number of days in default is regressed against the different client-loan officer

gender pairs in combination with all controls discussed above. Subsequently and in order to further test the consistency of our results, a number of other estimation methods (Negative Binomial, Tobit, Probit, Cox Hazard) have been performed that take into account specific features surrounding the distribution of our dependent variable (see Supplementary Material). It should be noted that the panel structure has been considered in all types of estimations. Further description about respective estimation methods appears in the Supplementary Material.

5. Results

Results obtained from the analysis of the effect of the gender combination of the client-loan officer pairs on the number of days of loan defaults, using random effects regressions, are presented in Table 1. Model 1 tests whether female clients are associated with lower default days irrespective of the loan officer's gender. Model 3 tests whether female loan officers are associated with lower default days irrespective of the client's gender. Model 5 includes both loan officer's and client's gender dummies thus investigating whether female clients have lower default days, holding constant loan officer gender and vice versa. Models 2, 4 and 6 take the interaction terms of loan officer and client gender into account and thus more directly test the hypotheses evoked in our paper on the client-loan officer gender pairs. Model 2 includes the client's gender dummy alongside client-loan officer pair interactions while Model 4 includes the loan officer's gender dummy alongside client -loan officer pair interactions. Model 6 only includes the interaction terms of client and loan officer gender without any clients' or loan officers' gender dummy.

- Insert Table 1 about here -

From Table 1, Model 1 and Model 3 show respectively that female clients exhibit lower default days than male clients irrespective of loan officers' gender and that female loan officers exhibit lower default days than their male counterparts irrespective of client's gender. Model 5

confirms such enhanced repayment performance of female clients, controlling for gender of the loan-officer and vice versa.

The other models exploiting the interaction-term analyses (Model 2 and Model 4) consistently point towards a lower likelihood of default in female client-female loan officer pairs, male client-female loan officer pairs and female client-male loan officer pairs, compared to the benchmark-category which is the male client-male loan officer pair. Furthermore, the magnitude of the observed coefficients suggests enhanced repayment in both pairs with female loan officers compared to both pairs with male loan officers.

Model 6 taking up all interactions simultaneously further confirms superiority of female loan officer pairs compared to pairs with male loan officers.

Based on these findings, we reject Hypothesis 1, namely, that pairs with female clients are necessarily better in terms of repayment than pairs with male clients. We find that, although female clients exhibit better repayment when ignoring the loan officer's gender, the combination male client-female loan officer tends to outperform the combination female client-male loan officer. Furthermore, the results also show that pairs with female loan officers are consistently the best in terms of repayment, in opposition with Hypothesis 2. Our results thus differ from those of van den Berg et al. (2015), who conclude that male loan officers obtain lower default rates from both female and male clients but align with Beck et al. (2013) who also observe lower defaults for loans screened and monitored by female loan officers.

Finally, when economically interpretating our coefficients in Model 6, our results highlight that opposite-sex pairs are more likely to exhibit fewer days of default than same-sex pairs composed of a male client and a male loan officer; that is, 3 days less for opposite-sex pairs compared to male client-male loan officer[5]. Therefore, in this case, the arguments developed by

the similarity-attraction paradigm, social identity theory, and self-categorization theory as predicted in Hypothesis 3 do not seem to hold.

Model 6 allows us to present a ranking of the different client-loan officer pairs in terms of repayment, which we summarize in Table 2. It can be seen that the best performing pairs, in order of ranking, are female client-female loan officer, male client-female loan officer, female client-male loan officer, and male client-male loan officer. We conducted a Wald test after the random effects regressions in Model 6 which confirms that the coefficients for the different pairs are statistically different (Chi2 (2) = 329.31; Prob>Chi2=0.0000).

- Insert Table 2 about here -

Turning towards control variables, our results highlight that older clients tend to exhibit lower default rates. Additionally, single clients and more educated clients tend to exhibit a higher number of default days. This may be partly explained by the fact that more educated individuals are more empowered and aware of their rights and hence cannot easily be coerced to repay their loans in the event of a default. The client's loan cycle and the approved loan amount also matter in terms of repayment as a higher loan cycle is associated with a lower number of default days. This suggests that clients in higher loan cycles and who receive a higher loan amount are more capable of repaying their loans. The intuition for this result is that MFIs prefer to keep offering credit to clients who are able to repay. By the same token, since numerous MFIs use the technique of progressive lending, one would expect a larger loan to be associated with a lower number of days of default which is indeed confirmed in our findings.

Results from alternative estimation methods that account for specific features of the distribution of our dependent variable are presented in the Supplementary Material.

Moderating role of previous loan officer gender

In Table 3, we report the results from the random effects models when considering the potential moderating effect of the gender of the client's previous loan officer.

- Insert Table 3 about here -

Results from Table 3 show that the interaction terms are negative and significant for the female client-female loan officer, female client-male loan officer and male client-female loan officer pairs, respectively. In other words, any client-loan officer gender pair active in a given quarter within the observed sample period seems to benefit from having dealt with a female loan officer in a previous instance in terms of enhanced repayment. These results are therefore not in support of Hypothesis 4 predicting that a 'consistent relational style' proxied by the same gender of successive loan officers, would foster enhanced repayment. Rather we find that any client-loan officer pair, including those with a male loan officer, display better repayment numbers when the client has previously transacted with a female loan officer. Consistency in relational style, therefore, seems to be less of a predictor for repayment than the actual gender of the loan officer. In other words, a client's experience with a female loan officer at any point during their time in the MFI (i.e., previously, or currently) has the potential to lead to lower default.

Since both male and female clients paired with a female loan officer report stronger repayment rates, our results further emphasize the role of female loan officers in ensuring favorable repayment.

6. Conclusion

The business model of most microfinance institutions is based on privileged relationships between loan officers and clients. Yet, despite this, the client-loan officer relationship remains

poorly documented in the development and the microfinance literature. This study thus aims to bring a deeper understanding of such a relationship.

We focus in this paper on the gender combination of the client-loan officer pairs and its impact on clients' loan repayment. While the impact of gender on defaults has been analyzed for both parties separately in microfinance, the studies conducted by Beck et al. (2018) and Blanco-Oliver et al. (2021) are, to our knowledge, the sole ones to examine the effect of the gender of both parties concurrently on different lending outcomes.

Beck et al. (2018) find in their study that first-time borrowers associated with a loan officer of the opposite sex receive less favorable credit conditions in terms of loan size and interest rates than their counterparts associated with a loan officer of the same sex, but they do not find any significant impact on clients' defaults. However, given that clients are less likely to default when they develop a trust-based relationship with their loan officer, and that the level of trust partially depends on the combination of the pair in terms of gender, we argue that the gender of both parties of the relationship should affect clients' loan repayment. We also go one step further by arguing that this effect may be moderated by the gender of the client's previous loan officer in relation to their current loan officer.

Using a database of 727,563 quarterly client-loan officer observations from an Ecuadorian MFI, our results show that contrary to our expectations, the effect of the gender combination of the pair on defaults does not depend entirely on the level of trust induced by similarities in terms of gender. Even if our findings show that the best-performing pair in terms of repayment is the female client-female loan officer pair, they also show that the least-performing pair is the male client-male loan officer pair, which seems to contradict the similarity-attraction paradigm (Byrne, 1971).

Along the same lines, our findings from discussions with loan officers in Banco D-Miro[6] reveal that the client-loan officer relationship between two women involves trust and empathy. Our

results also show that female loan officers are better in terms of inducing repayment than male loan officers. Some loan officers talk about the existence of 'chemistry' in describing their relationship with clients. Moreover, female loan officers tend to 'understand the situation of female clients better' than male loan officers. Finally, female loan officers, in contrast to their male counterparts, tend to discuss topics that go beyond the professional relationship, and they find it easier to do so with another woman as they both share the same types of concerns. Indeed, women have the 'tact to start broader conversations' with their clients, particularly with other women. When presented with male clients, female loan officers can also perform relatively well in terms of loan monitoring and debt recovery since women 'are careful not to rush male clients'. On the contrary, the relationship between a male client and male loan officer was described as being very 'volatile' as there tends to be more friction and conflict between two men. Some even described the relationship as being 'colder' compared to that between two women. Additionally, and this may be an effect of the national culture of Ecuador, male clients behave differently when interacting with female loan officers than with male ones. Indeed, male clients 'like to receive the attention of women' and view their relationship with women as 'flirting'.

A subsequent interaction analysis shows that repayment is further enhanced when the client's previous loan officer was also a woman. And this result seems to hold for all client-loan officer pairs, thus including those with a male loan officer. Consistency in relational style, therefore, seems to matter less for repayment than the gender of the previous loan officer, and a previous female loan officer is clearly beneficial for repayment performance. Taken together with our baseline results, we conclude that a client's experience with a female loan officer at any point during their time in the MFI (i.e., previously, or currently) has the potential to lead to lower default.

Our study contributes to the literature in several ways. First, it contributes to the development literature by focusing on financial inclusion which is a major facilitator of achieving

some of the UN sustainable development goals. Furthermore, the development literature arguably attaches insufficient importance to the relationship between clients and loan officers which is at the core of microfinance and tends to examine the two parties of the lending relationship separately. Second, it contributes to the banking and microfinance literature by looking at the potential moderating effect of the gender of the previous loan officer on the relationship between the gender combination of the client-loan officer pair and loan repayment. To our knowledge, this is the first paper to consider such a moderating effect. Third, it contributes to the extensive literature on gender pairing by supporting the empirical studies that show that attraction to individuals of the same gender is far from generalizable across different contexts.

A practical implication of our findings mainly concerns MFIs that have set up a rotation policy or are confronted with a high staff turnover. Indeed, we suggest that managers of such organizations consider both the gender of the loan officer who left or is rotated and the gender of the client when reassigning clients to another loan officer. More precisely, we argue for pairing female clients with female loan officers. Nevertheless, MFIs should also improve male loan officers' interactions with clients of both gender. Furthermore, the results also suggest the importance for MFIs to focus on employee attributes such as empathy and conversational skills, particularly since the job of loan officer requires a close interaction with clients.

Further research could consider the role that national culture plays in influencing the client-loan officer relationship in terms of repayment performance by, for instance, considering differences in impact due to aspects such as gender-related beliefs and practices. Additionally, client perspectives on the different gender combinations of the client-loan officer pair could shed more light on how they influence repayment outcomes. Finally, it would be interesting to consider the degree of risk aversion of the loan officer and study its relation with the loan officer's gender.

Notes

1. In our study, we use the terms “gender” and “sex” interchangeably.
2. A full distribution graph of the dependent variable both unconditional and conditional on default is presented in the supplementary material to this paper.
3. Number of days in default is a dynamic variable that accumulates over the loan cycle. So, if clients on the first repayment are 2 days late but then repay, the 2 days sticks with them. Then, if the clients, in the next repayment, pay on time, they still have 2 days accumulated in default. So, on the third repayment if they pay 4 days late, they will now have 6 days in default and so on.
4. Let us consider a loan officer who has 100 clients in a given quarter (T). In the next quarter (T+1), 5 of their clients are leaving the MFI D-Miro and 10 will stay in D-Miro but will be served by a new loan officer. At the same time, this loan officer gets 3 new clients in T+1 and 4 clients that were already clients of D-Miro but were served by another loan officer. In this example, the “ Percentage of incoming clients per loan officer” rate in quarter T will be of 10/100= 10% since 10 clients are rotating away from this loan officer but stay in D-Miro. The “Percentage of incoming clients per loan officer” for quarter T+1 will be : 4/92= 4,3%, with 92 in the denominator coming from 100-5-10+3+4.
5. We acknowledge that this effect may appear small. Nevertheless, any increase in default days is an indicator of increased risk in non-repayment.
6. During a seven-day visit to Banco D-MIRO in September 2019, we conducted informal discussions with different staff members in order to gain more insights on the quantitative findings. This entailed 4 group discussions with about 5 to 11 loan officers in a group, from which the loan officers were encouraged to give their opinions. Some discussions were also held with key informants like the CEO, 2 branch managers and heads of some departments like credit, HR, and recovery, to mention a few.

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Appendix

Appendix 1: Data collection - More details

It is valuable to note that the studied MFI does not employ a formal rotation strategy for loan officers. Nevertheless, in the event of loan officer turnover, a reassignment of loan officers to other clients may be possible. It is also worth mentioning that the average length of the relationship between the client and the firm is 6.2 quarters. As far as loan allocation to loan officers is concerned, Banco D-Miro practices 'zonification' which involves random assignment of a branch's loan officers to individual geographical zones where they can serve clients. This aspect therefore hinders any potential endogeneity resulting from reversed causation or self-selection in the sense that loan officer allocation is irrespective of gender, age or experience.

Appendix 2: Method -More details

To obtain the final sample, we combine three datasets from Banco D-Miro, two containing information on loan officers and one containing information on clients (individual characteristics, financial history, and loan characteristics including repayment history). In addition to the loan officer-client rotation data, our sample also includes turnover information on loan officers (voluntary and involuntary turnover), which is also useful for studying the effect of the change of loan officers on clients. Anonymity of data has been ensured in compliance with the General Data Protection Regulation (GDPR).

We dropped all observations for which we did not have any information regarding the loan officer responsible for the loan. This lack of information seems to have arisen from potential inputting errors by the MFI and not because of drop-out of clients in default. Although debt collection is often a task assigned to the managing loan officers, some MFIs, such as the one we study, also hire employees appointed to manage debt collection for clients in extreme defaults. Even in the rare event that the firm allocates such clients to 'debt-holder' loan officers, the data is still present in our dataset. It is worth noting, however, that because of regulatory issues, Banco D-MIRO charges none or very low financial penalties. Rather, the assessments from 'debt-collector' officers may result in defaulting clients being denied future loans from Banco D-Miro or any other formal financial institution since their credit rating is affected. We also cleaned our dataset and trimmed outliers in the top 5% for the outcome variable.

Tables

Table 1: Effect of Gender Combination of the Pair on Days of Default – Random Effects

VARIABLES	(1) Default_days	(2) Default_days	(3) Default_days	(4) Default_days	(5) Default_days	(6) Default_days
Female client	-4.435***	-3.519***			-4.345***	
	(0.733)	(0.761)			(0.731)	
Female loanofficer			-4.645***	-3.576***	-4.637***	
			(0.230)	(0.344)	(0.230)	
Femaleclient female loanofficer		-5.382***		-1.933***		-8.901***
		(0.300)		(0.597)		(0.765)
Maleclient female loanofficer		-3.621***				-3.621***
		(0.349)				(0.349)
Femaleclient maleloanofficer				-0.884		-3.519***
				(0.587)		(0.761)
Client age	2.094***	2.083***	2.087***	0.492***	2.083***	2.083***
	(0.031)	(0.031)	(0.031)	(0.024)	(0.031)	(0.031)
Single client	12.09***	12.07***	11.23***	4.114***	12.07***	12.07***
	(0.729)	(0.728)	(0.714)	(0.547)	(0.728)	(0.728)
Client no education	-21.87***	-21.84***	-21.84***	-17.81***	-21.86***	-21.84***
	(2.426)	(2.421)	(2.422)	(1.811)	(2.421)	(2.421)
Client primary education	-13.12***	-13.20***	-13.19***	-8.772***	-13.20***	-13.20***
	(0.754)	(0.752)	(0.753)	(0.563)	(0.752)	(0.752)
Loan cycle	0.268***	0.270***	0.240***	-5.865***	0.272***	0.270***
	(0.080)	(0.080)	(0.080)	(0.085)	(0.080)	(0.080)
Log approved amount	-3.263***	-3.296***	-3.216***	-15.93***	-3.293***	-3.296***
	(0.205)	(0.205)	(0.204)	(0.205)	(0.205)	(0.205)
Loan officer secondary education	6.417***	6.040***	6.042***	5.977***	6.036***	6.040***
	(0.263)	(0.263)	(0.263)	(0.261)	(0.263)	(0.263)
Loanofficer college education	1.558***	0.239	0.238	2.151***	0.242	0.239
	(0.374)	(0.379)	(0.379)	(0.381)	(0.379)	(0.379)
Loanofficer age	0.679***	0.691***	0.691***	0.211***	0.690***	0.691***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Constant	-61.65***	-59.65***	-61.96***	102.3***	-59.18***	-59.65***
	(2.291)	(2.294)	(2.248)	(2.086)	(2.291)	(2.294)
Observations	668,355	668,355	668,355	668,355	668,355	668,355
Number of clients	86,305	86,305	86,305	86,305	86,305	86,305
Branch controls	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2: Hierarchy of the Gender Pairs in terms of Repayment

	Female loan officer	Male loan officer
Female client	1	3
Male client	2	4

Scale: 1=the best gender pair and 4=the worst gender pair

Table 3: Moderating Effect of the Gender of the Previous Loan Officer

VARIABLES	(1) Default_days	(2) Default_days	(3) Default_days	(4) Default_days
Femaleclient femaleloanofficer	-8.901***	-6.896***	-8.994***	-8.671***
	(0.765)	(0.898)	(0.855)	(0.847)
Femaleclient maleloanofficer	-3.519***	-4.128***	-2.354***	-4.877***
	(0.761)	(0.812)	(0.881)	(0.813)
Maleclient femaleloanofficer	-3.621***	-3.514***	-3.561***	-1.723***
	(0.349)	(0.574)	(0.574)	(0.637)
Femaleclient femaleloanofficer_femalepreviouslo		-3.465***		
		(0.829)		
Femaleclient maleloanofficer_femalepreviouslo			-4.237***	
			(0.719)	
Maleclient femaleloanofficer_femalepreviouslo				-6.133***
				(0.960)
Client age	2.083***	-0.089***	-0.089***	-0.090***
	(0.031)	(0.033)	(0.033)	(0.033)
Single client	12.07***	6.419***	6.394***	6.378***
	(0.728)	(0.749)	(0.749)	(0.749)
Client no education	-21.84***	-7.746***	-7.774***	-7.829***
	(2.421)	(2.569)	(2.569)	(2.569)
Client primary education	-13.20***	-5.856***	-5.868***	-5.849***
	(0.752)	(0.770)	(0.770)	(0.770)
Loan cycle	0.270***	-0.659***	-0.657***	-0.661***
	(0.080)	(0.137)	(0.137)	(0.137)
Log approved amount	-3.296***	-5.421***	-5.474***	-5.474***
	(0.205)	(0.463)	(0.463)	(0.463)
Loanofficer secondary education	6.040***	6.281***	6.544***	6.277***
	(0.263)	(0.461)	(0.461)	(0.460)
Loanofficer college education	0.239	0.714	0.444	0.722
	(0.379)	(0.663)	(0.664)	(0.663)
Loan officer age	0.691***	0.232***	0.241***	0.229***
	(0.019)	(0.035)	(0.035)	(0.035)
Percentage of incoming clients per loan officer		2.222***	2.326***	2.231***
		(0.529)	(0.529)	(0.529)
Percentage of outgoing clients per loan officer		-0.400	-0.375	-0.386
		(0.733)	(0.733)	(0.733)
Constant	-59.65***	54.07***	54.45***	55.17***
	(2.294)	(4.089)	(4.089)	(4.094)
Observations	668,355	56,697	56,697	56,697
Branch controls	YES	YES	YES	YES

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, femalepreviouslo is a dummy variable of value 1 when the client's previous loan officer was female and 0 when male.