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REGULAR ARTICLE

Financial inclusion and business practices of microbusiness in Colombia

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Abstract

Financial inclusion is known to be relevant for improving the growth perspectives of microbusinesses. This research has three aims. First, to explore how adopting business practices can impact the usage of financial products and services of these firms. Second, to determine if higher levels of microbusinesses' formalization mediate the impact. Third, to establish if there are differences according to gender and education level. A structural equation model was estimated to test these hypotheses while considering the potential endogeneity of the main variables of interest. The model includes latent variables modeled in the form of confirmatory factor analysis. Estimates are based on self-reported information collected through a survey of 1542 microentrepreneurs in 10 Colombian cities in 2019. The results show that microentrepreneurs who adopt (more) business practices have more financial inclusion. No specific category of business practices drives the results. The effect is larger for men than women and is not present for microentrepreneurs of low education levels. Furthermore, personal initiative, a psychological construct, indirectly relates to being more financially included by increasing the adoption of business practices. Finally, there is no evidence that this is driven by higher levels of formalization regardless of the specific set of requirements that are considered. Our findings support efforts to improve business skills in microentrepreneurs and call for more comprehensive public policy strategies. These findings open the door to using soft skill-based training programs that enhance business practices, to improve microbusinesses' financial inclusion.

Keywords Financial inclusion · Business practices · Formality · Personal initiative · Microbusiness

JEL Classification C30 · D22 · O17

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1 Introduction

The importance of financial inclusion to micro, small and medium enterprises (MSMEs) has been increasingly investigated by scholars of different fields and has been on the agenda of policymakers. The MSMEs comprise over 95% of firms around the world. In low and middle-income countries, these firms are responsible for a significant percentage of total employment; more than 50% of workers are employed by companies with fewer than 100 employees (Ayyagari et al., 2014). Financial inclusion helps alleviate MSMEs' growth constraints and increases their access to external sources of financing, thus helping to level the playing field between firms of different sizes (Beck & Demirgüç-Kunt, 2006; Brixiová et al., 2020; Nizam et al., 2021). Yet, even in developed countries, financial inclusion is not straightforward, especially for microbusinesses. For instance, three-quarters of microbusiness in the UK reported problems in obtaining finance, constituting an obstacle to business growth (Lewis & Lindley, 2015). Hence, how to trigger financial inclusion for these firms is a central public policy need, but how to do it is still an open question. As a result, most microbusinesses remain small because their owners cannot turn their know-how into a commercial success (Wangmo, 2015).

Stiglitz and Weiss (1981) pioneered the literature on small businesses' access to financial services by highlighting that MSMEs often lack access to such services due to information asymmetries between credit providers and small business applicants. Recent literature has focused on small and medium-sized enterprises (Allen et al., 2016; Demirgüç-Kunt, 2013; Gabor & Brooks, 2017; Ouma et al., 2017; Zins & Weill, 2016; Wang & Guan, 2017), and focus on classic determinants of financial inclusion such as formality (Dabla-Norris & Koeda, 2008; De Mel et al., 2013; McKenzie & Sakho, 2010; Rodríguez Zamora, 2018), gender (Fowowe, 2017; Zins & Weill, 2016), education (Ahmad et al., 2020; Allen et al., 2016; Fungáčová & Weill, 2015; Ghosh & Vinod, 2017; McKenzie & Woodruff, 2017; Wang & Guan, 2017; Yan & Qi, 2021; Zins & Weill, 2016), among others (Geraldes et al., 2022; Salignac et al., 2016). Less is known about the specific case of microbusinesses, which face particular conditions compared with the other MSMEs (Prijadi et al., 2020). First, at the entrepreneurial stage, most financing needs are solved through family and friends; later, loans come from the supply chain or through business networks. Second, owners of microenterprises often lack fundamental business skills or knowledge related to financial reporting and marketing, limiting their ability to convince banks and investors (Allen et al., 2016). Third, owner's preferences might prioritize aspects different from firm growth, resulting on non-aligned incentives with traditional investors (Clark & Douglas, 2014).

An unexplored potential reason for the low access to financial services is the lack of adoption of well-known business practices that are acknowledged predictors of firms' performance (Fabling & Grimes, 2007; Forth & Bryson, 2019; McKenzie & Woodruff, 2017). Some of the reasons for this low level of adoption are a lack of knowledge regarding their potential benefits and their inappropriate use or implementation (Bloom et al., 2010).

The aim of the paper is threefold. First, to fill the gap in the literature on how adopting business practices can impact the usage of financial products and services by microbusinesses[1]. Second, to study if higher levels of microbusinesses' formalization mediate the impact between business practices and financial inclusion. Formality is a central economic policy concern in low and middle-income countries since it is argued that formalization contributes to firms' growth and survival (Ulyssea, 2020). Third, to analyze if such differences vary according to gender and education level, which are well-known predictors of financial inclusion. We do so by estimating the causal effect of business practices on financial inclusion using a structural equation model (SEM) approach. As some of the concepts are constructs based on several observed measures, we develop a measurement system using a confirmatory factor analysis (CFA) which is jointly estimated with the SEM. The SEM includes exclusion restrictions for identification to deal with potential endogeneity in terms of becoming formal and adopting business practices. As instruments, we consider (i) beliefs about the overall formality of the local economic sector and (ii) personal initiative of the owners, respectively. The underlying identification restrictions of these instruments will be discussed later in detail.

We focus on Colombia, where about 83% of microbusinesses did not apply for loans and only 72% applied for bank loans. Microbusinesses' low demand for credit and savings products is explained by factors associated with self-exclusion (Zuleta, 2018), the level of firms' formality, and adverse credit risk reports (Camara-Comercio-Bogota, 2019). We used information from a National Study of Entrepreneurship of Shopkeepers (ENET, acronym in Spanish) covering 1542 microbusinesses in 10 cities, which was conducted in 2019 (Gutiérrez et al., 2020).

The paper contributes mainly to the financial inclusion literature by showing that microentrepreneurs in Colombia that adopt more business practices use more financial products and services on average. These results are not valid for the less educated microentrepreneurs (e.g, primary education only), and the impact is lower for women than for men. Moreover, once business practices is considered, a business's formality status does not explain its level of financial inclusion. These results are relevant as several studies show it is possible to train entrepreneurs in soft skills (e.g., personal initiative) to encourage businesses to adopt business practices (Campos et al., 2017). Thus, this study's conclusions can help improve policies aimed at training microentrepreneurs to help them manage their resources better, adopt business practices, and thus prevent them from going out of business due to challenging environments[2].

The remainder of this study is organized as follows. Section 2 presents the conceptual framework and the hypotheses. In Sect. 3, we explain the data used. In

[1] In this study, we adopt the general convention of defining microbusinesses as those firms with less than ten paid employees.

[2] Our unit of analysis is the microentrepreneur. However, there were some cases in which the respondents of the survey were not the owner of the business but a person who identified as the manager (30 percent of the sample). To be consistent throughout the paper, we refer to both indistinctly as 'microentrepreneur'.

Sect. 4, we present our methodology. Section 5 presents the results. Section 6 provides a discussion based on our hypotheses, and Sect. 7 concludes the analysis.

2 Conceptual framework and hypotheses

Financial inclusion, business practices, and personal initiative are three new concepts that have emerged in the extensive literature on entrepreneurship, development economics, and the psychology of organizations. Financial inclusion as a multidimensional notion refers to firms' usage of accounts with formal financial institutions that allows them to save and borrow money formally, request and obtain borrowing, have contract insurance, and use any type of payment service, including digital ones (e.g., Geraldes et al., 2022; Kabakova and Plaksenkov, 2018; Zins and Weill, 2016). The concept of business practices is the implementation by firms of a set of practices in the areas of marketing, record keeping, financial planning, and stock control (e.g., Anderson and McKenzie, 2022; McKenzie, 2021; McKenzie and Woodruff, 2017). Last, personal initiative (PI) is a psychological process that looks to provide entrepreneurs with a proactive mindset, i.e., that entrepreneurs be self-starting, have future thinking, and be able to overcome barriers (e.g., Campos et al., 2017; Fay and Frese, 2001; Frese and Gielnik, 2014; Grant and Ashford, 2008; Mensmann and Frese, 2019). We propose a model that links the adoption of business practices and financial inclusion. We carefully define these concepts and their construction below. In the following section, we present each concept's definition and state the model's relationships and hypotheses.

2.1 Financial inclusion

Financial inclusion was first put on the Development Agenda at the G20 meeting in Seoul in 2010 (Zins & Weill, 2016). Since then, it has become part of the economic policies of many countries, particularly developing ones. Academic research has shown that lack of financial access can lead to poverty, inequality, and underdevelopment (Barajas et al., 2020; Beck et al., 2007; Churchill & Marisetty, 2020; Dabla-Norris et al., 2021; De Haan & Sturm, 2017; Demirgüç-Kunt & Levine, 2009; Honohan & King, 2013; Levine, 2005).

Despite its economic and political relevance, and perhaps due to its multidimensional nature, there is no consensus on the term's meaning. Some researchers suggest that the most basic definition should be that a person or firm owns an account at a formal financial institution (Zins & Weill, 2016). Others Kabakova and Plaksenkov (2018, p. 199) regard it through the characteristics implicit in the terms, i.e., financial inclusion is a phenomenon with i. uniform availability of financial services, ii. regular usage, iii. good quality of financial services, and iv. potential for increased welfare. Another more compelling definition is provided by Zins & Weill (2016), as cited in Geraldes et al. (2022), who say, "when people maintain accounts with formal institutions that allow them to save and borrow money formally, contract insurance, or use payment service, they can be considered financially included"

(p. 6). Financial inclusion has also been promoted as a means for MSMEs to enter into formalization (Cotler, 2017).

Undoubtedly, the phenomenon of financial inclusion has been studied from both sides of the market: the supply and the demand side. From the supply side, offering formal financial services matters (Cámara & Tuesta, 2014). The most commonly analyzed factors affecting financial inclusion are information asymmetries and transaction costs. Stiglitz & Weiss (1981, 1992) showed that information asymmetries lead to either adverse selection or moral hazards between borrowers and lenders, which produce the access to credits and other financial services for some agents to be denied or reduced. Transaction costs lead to monetary costs and pecuniary barriers that prevent persons and firms from opening and keeping financial services (Geraldes et al., 2022). From the demand side, one of the main factors inhibiting people and firms from having access to financial services is their financial illiteracy. Some other forms of financial exclusion people and firm must experience are: "(a) access exclusion, when segments of population is excluded due to the remoteness of financial facilities and providers; (b) condition exclusion, when there are barriers related to the socio-economic conditions of groups of population (e.g. exclusion from targeted marketing and sales of financial products, financial illiteracy, excessive documentation required for some individuals); (c) price exclusion, due to the presence of prohibitive fees or unaffordable prices of financial products for some segments of the population and (d) self-exclusion, that occurs when groups of people exclude themselves from the formal financial system owing to psychological barriers" (Nuzzo and Piermattei, 2020, p. 766).[3]

Technological innovation has also broadened the scope of financial inclusion. In one of the first uses of the Global Findex Data of the World Bank, Demirgüç-Kunt (2013) suggested including a new financial means in constructing an index of financial inclusion. The M-Pesa experience in Kenya with mobile money led these researchers to argue that "the spread of mobile money products, the increasing proliferation of bank agents, and the increasing movement toward dispensing government payments via formal accounts all offer potential to significantly alter the ways in which people manage their finances" (Demirgüç-Kunt, 2013, p. 283). Millions of people in countries in Africa, Asia, and China have entered into the financial systems via mobile money.[4]

Following conceptual frameworks, researchers (Allen et al., 2016; Cámara & Tuesta, 2014; Demirgüç-Kunt, 2013) have constructed measures of financial inclusion as a multidimensional index that captures information on various aspects of financial inclusion such as banking penetration, availability of banking services, and usage of the banking system, mobile or digital money, among other means. Demirgüç-Kunt (2013) set some initial insights. They proposed to include indicators of (a) ownership and use of an account at a formal financial institution, (b) saving behavior, and (c) borrowing from formal financial institutions. A lot of research has been

[3] See also Salignac et al. (2016); Allen et al. (2016) for more insights of why people - or firms - choose to be financially excluded.

[4] See, Badran (2017); Gabor and Brooks (2017); Ouma et al. (2017). For a recent review of the literature related to digital money, see Adrian and Mancini-Griffoli (2021).

conducted that has followed and enriched those sets of indicators, some related to access, others to availability, and the remaining to usage (Barajas et al., 2020; Girón et al., 2021; Nuzzo & Piermattei, 2020).

Research on how financial inclusion (or, more properly, exclusion) affects the performance of firms, individuals, and countries is very rich (Beck & Demirgüç-Kunt, 2006; Fowowe, 2017; Gorodnichenko & Schnitzer, 2013; Levine, 2005; Nizam et al., 2021; Van et al., 2021; Wellalage & Locke, 2016). Findings support the positive relationship of having a broader inclusion of households and firms inside the formal financial systems.

In this study, we understand **financial inclusion** *as the situation when a microbusiness maintains accounts with formal financial institutions that allow them to save and borrow money formally, request and get borrowing, have personal, family, or firm contract insurance, and use any payment service including digital ones*.

2.2 Business practices

The recent focus in the organizational, development economics and entrepreneurship literature on managerial capital has arisen due to its importance in explaining firms and countries' productivity differentials between developed and developing countries (see, e.g., Bloom et al. 2010; Bloom and Van Reenen, 2010). As Bruhn et al. (2010, p. 629) vehemently argue, "the lack of managerial capital has broad implications for firm growth as well as for the effectiveness of other input factors." One way the presence of managerial capital can affect a firm's production function is through "its effects on the amount and type of physical and labor inputs that a firm buys or rentals." Bruhn et al.'s (2010) insight is that having good management practices firms can successfully face capital constraints and reduce the burden of accessing bank finance or of being financially excluded.

Managerial capital has been studied mainly by examining a set of management practices firms adopt (Bloom & Van Reenen, 2007; McKenzie & Woodruff, 2017). In the organizational literature, two different though related concepts have been used. The seminal research was promoted by Bloom and colleagues. These researchers adopted a practice evaluation tool developed by a leading management consultancy firm. The evaluation uses eighteen practices, and Bloom and Van Reenen (2007) grouped them into four areas: operations, monitoring, targets, and incentives. This set of practices is since named *management practices*. Those areas reflect the potential agency and incentive problems that arise in (medium) large and very large corporations and the issue of human resources (HR) management.

McKenzie and Woodruff (2017), on their part, have pioneered research on (experimental) studies that focus on the management side of micro and small firms. As they concisely assert, micro and small firms can implement business practices rather than management practices since HR management is less important. They argue that the focus of the practices by microbusinesses and small firms is on marketing, recordkeeping, financial planning and stock control. Several recent studies have used this set of practices (or some of them) and related them to sales, productivity, personal initiative, and other variables of interest (Anderson & McKenzie, 2022;

Campos et al., 2017; Fabling & Grimes, 2007; Forth & Bryson, 2019; Maes et al., 2005; McKenzie & Puerto, 2021; McKenzie & Woodruff, 2017).

In this study, following, Campos et al. (2017) and Anderson and McKenzie (2022), we interpret **business practices** *as the set of practices in the categories of marketing, inventory, sales and purchases, financial planning, and communications that microbusinesses have implemented.* In Table A2 in the appendix, we define and explain the metrics of every item of each of the five groups of practices.

Surprisingly, one critical effect of having sound business practices that Bruhn et al. (2010) highlighted on having good managerial capital has not, to the best of our knowledge, been studied. How, in the context of a developing country and microbusinesses, having (more) business practices can induce greater financial inclusion. As a result, we propose the following hypothesis.

H1: Microentrepreneurs that adopt more business practices will use more financial services.

2.3 Formality

Formality refers to the company's legal registration, tax compliance, and the standardized presentation of business accounts. For financial inclusion, formality is relevant as it provides greater transparency of the businesses, which allows banks to assess risk and increases financial institutions' interest in these customers (Cámara & Tuesta, 2014; Farazi, 2014; Babbitt et al., 2015).

Many studies focus on the consequences of formal status on firms' outcomes, including profits, productivity, employment, and investment. However, the literature on the effects of formality on firms' financial inclusion is sparse and non-conclusive. On the one hand, there is evidence that informal firms use fewer external credits than formal ones (Dabla-Norris & Koeda, 2008; Wellalage & Locke, 2016), and that tax compliance increases access to credit (Gatti & Honorati, 2008). Moreover, there is also evidence that some entrepreneurs formalize to get access to credit (Babbitt et al., 2015), and others became informal and less financial included at the same time when the costs of formality increased (Rodríguez Zamora, 2018). On the other hand, McKenzie and Sakho (2010) and De Mel et al. (2013) found that externally induced formalization did not significantly affect the use of trade credit or the likelihood of having a bank account.

Following the extant research on firms' formalization, we construct a *composite index of formalization that is characterized by whether a firm: (i) has an operating permit, (ii) keeps accounting records, (iii) has a commercial registry in a chamber of commerce, (iv) is registered with the tax authority, and (v) has social security for its employees.* Hence, we formulate the next hypothesis:

(H2) Business formality is associated with greater use of financial products.

Business formality might be viewed as a legal requirement to access formal financial services; therefore, the relationship above could be considered mechanic. However, it is possible to access certain financial services without complying with all formality requirements. For instance, accepting electronic payments or obtaining

micro-loans. In this scenario, the connection between the two concepts is the role of managerial capital as an input that helps to overcome financial constraints (Bruhn et al., 2010). In this sense, firms with more business practices will become formal as they realize that they might get better financial terms with the financial sector under this scenario, as well as be prepared to take advantage of opportunities where having certain financial products is a requirement (e.g. to contract with large companies or the public sector).

From the review of the literature on business practices, formalization, and financial inclusion, we present the following hypothesis regarding a derived effect of adopting business practices on financial inclusion:**(H3)** *A potential channel for H1 is via formalization: microentrepreneurs who adopt more business practices will be more formal, and this triggers higher financial inclusion.*

2.4 Personal initiative

Viewing a microbusiness as a form of entrepreneurship and following the motivational theories of Albert Shapero, the personal initiative corresponds to an entrepreneurial event (Shapero & Sokol, 1982), which involves the individual, business, and social conditions needed to create a new enterprise and maintain its ongoing operation, and which is defined by five interrelated characteristics: initiative, resources, administration, autonomy, and risk. The personal initiative is a behavioral syndrome of individuals who take an active and self-motivated approach to work towards goals and completing tasks and persist in overcoming barriers and setbacks (Frese et al., 1997). The personal initiative is based on the fundamental idea that human beings are influenced by their environment and influence themselves (Frese & Fay, 2001; Frese et al., 2016). The personal initiative also notes that people and businesses must adjust to social and environmental changes (Frese & Fay, 2001; Glaub et al., 2014; Nsereko et al., 2018); having personal initiative can play an important role in adopting business practices (Glaub et al., 2014). Therefore, in our analysis, we consider personal initiative and other personality traits that are known predictors of adopting business practices and we hypothesize that:

(H4) *Microentrepreneurs who adopts more personal initiative will have more business practices.*

2.5 Beliefs on formality of the local economic sector

The levels of business formality are associated with individual and group behaviors of microentrepreneurs. Focusing on individual factors, the standard model of individual behavior assumes that individuals are fully aware of these costs and benefits that depend on elements such as the probability of punishment (fines, closures), opportunities lost by not being formal (proper invoicing), and the costs of maintaining a formal operation (salaries, taxes, registrations, etc.). Regarding group factors, there is evidence that microentrepreneurs are motivated by aspects that arise from group considerations, for instance, fairness, altruism, reciprocity, empathy, trust,

guilt, shame, morality, patriotism, and social norms (Alm, 2019). In particular, we focus on social norms, which are informal rules of beliefs about what kind of behavior is acceptable in a given situation (Muldoon, 2022). Different authors have analyzed the effect of social norms on formality, considering some categories of formal status such as tax compliance and keeping accounting records (Bani-Khalid et al., 2022; Bobek et al., 2007; Khan, 2022; Kung et al., 2015; Sastararuji et al., 2022).

Entrepreneurs have varying perceptions of formality level (i.e., the percentage of firms that are formal businesses) in their economic sector based on their network of contacts. These contacts provide the entrepreneur with an idea of the ruling social norm. This results in a 'friendship paradox' (Jackson, 2019)[5]: if an entrepreneur has contacts with high levels of formality relative to the overall firms in the sector, their perception of formality of the overall sector will be upward-biased. Therefore, they will behave as if the social norm of being formal is stricter than what it actually is.

Therefore, our next hypothesis is as follows:

(H5) *Microentrepreneurs' beliefs on the formality level of other firms in the same economic activity in their city are associated positively with their level of formality.*

2.6 Heterogeneity

Regulated and non-regulated financial services can be partially attributed to differences in socio-economic variables such as gender, employment, education level and household status. One of the most studied scenarios refers to the gender gap. It has been shown that female-owned MSMEs underperform compared with MSMEs owned by males, determining their lower financial inclusion (Fowowe, 2017; Zins & Weill, 2016). Gender differences in financial inclusion are considered one of the factors affecting female entrepreneurs' underperformance (Allen et al., 2014; Asiedu et al., 2013; Dupas & Robinson, 2013; Kairiza et al., 2017). A recent report by a think thank lists the main barrier that MSMEs led by women face to access finance: "(a) Legal barriers to women owning and inheriting property, (b) Inadequacies in the credit infrastructure to incorporate women-led MSMEs' capacity and financing needs, (c) Mobility barriers hampering the exploitation of business opportunities for women-led MSMEs, (d) Deficiencies in financial and business skills of women-led MSMEs, (e) Lack of formal identification required to access bank financing, (f) Lack of sex-disaggregated data, (g) Distance to financial institutions and bank branches, and (h) Financial service delivery" (Kamarun & Azman, 2021, p. 3). Higher levels of education are associated with higher financial inclusion (Atkinson & Messy, 2013; Ghosh & Vinod, 2017).

As the literature on financial inclusion shows, there exists a gender gap between women and men; we formulate the following hypothesis:

[5] Following Feld (1991), Jackson (2019) shows that more popular people can lead people to perceive more engagement than exists in the overall population.

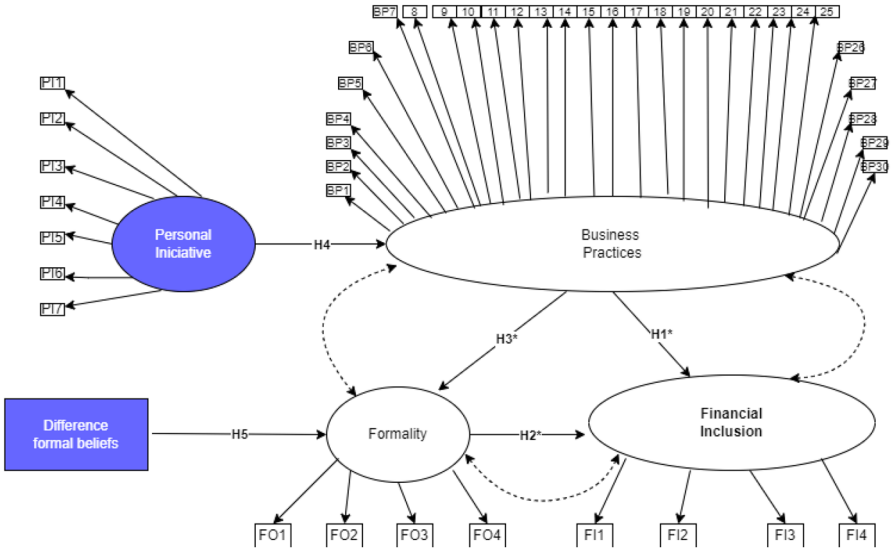

Fig. 1 Structural model framework. *Notes:* One-way solid arrows correspond to the direction of causality and two-way dashed arrows represent covariances. Variances are omitted as well as error terms from the diagram. Observed variables are represented in rectangles, and latent variables in ovals. The variables with a blue background are instrumental variables. We consider a model that includes as controls other observed characteristics in regressions H1, H2, H3, H4 and H5, which are omitted from the diagram for simplicity. We also omit error terms under this consideration. *The magnitude varies according to gender and education (H6 and H7)

(H6) *The effects of the usage of business practices on financial inclusion will be lower for women than for men.*

Several factors help explain the use of financial services by people and firms. One of the factors that have shown to be relevant is users' education (Ahmad et al., 2020; Allen et al., 2016; Fungáčová & Weill, 2015; Ghosh & Vinod, 2017; McKenzie & Woodruff, 2017; Wang & Guan, 2017; Yan & Qi, 2021; Zins & Weill, 2016). Allen et al. (2016) found for a sample of more than 140 countries, that having a bank account is higher for people with at least 8 years of education than for those with lower years. Fungáčová and Weill (2015) studied factors affecting financial inclusion in BRIC countries and China and found a positive relationship between the years of education and the likelihood of being financially active. McKenzie and Woodruff (2017) argue that it seems more likely that more educated people will find easier to learn and adopt business practices. Yan and Qi (2021) who examine family education and individuals' decisions to open bank accounts for a sample of 27 emerging economies interestingly found that family education improves positively the likelihood of family individuals opening bank accounts. A recent review by Ahmad et al. (2020) on mobile money highlights the contribution of education in the decisions of individuals to use this increasingly important financial instrument.

Since education has become a crucial determinant to improving financial inclusion for individuals, we propose the following hypothesis.

(H7) *Microentrepreneurs with a higher level of education will be more financially included.*

To test the hypotheses, Fig. 1 illustrates our analytical framework, which considers the possible mechanisms underlying the effects of business practices on financial inclusion. We seek to disentangle the impact of business practices on financial inclusion by considering formalization as the main channel for this effect (Fig. 1). We also explore a specific mechanism through which business practices affect financial inclusion, complying with formal requirements for a firm's operation. Given the potential endogeneity of these relationships (represented in the diagram by the dashed lines), we exploit an exogenous variation in business practices and formality. For the case of business practices, we consider the levels of personal initiative of the microentrepeneurs; and for formality, we consider their beliefs about other firms' levels of formalization. These two variables are our instrumental variables (IV), presented in blue in the diagram. The analysis considers some additional control variables not illustrated in the diagram for simplicity. As financial inclusion, formality, business practices and personal initiative are latent variables (represented as ovals in the diagram) observed only through a set of measures (observable variables in rectangles).

3 Data

This study uses data from the ENET survey collected in 2019 from microbusinesses in Colombia, such as grocery stores, prepared food shops, bars, hairdressers, health services, and other businesses that do not belong to a franchise or retail chain (Gutiérrez et al., 2020). It was conducted in 10 Colombian municipalities[6][7] in neighborhoods close to the locations of a Colombian university[8]. The survey's areas include a mixture of traditional commercial zones and residential areas with households of low and medium socioeconomic levels. The study captures various aspects of the businesses surveyed, including basic characteristics of the enterprise, its degree of formality, relationship with the financial system, employment practices, training, use of information and communications technology, and other items.

3.1 Measures of the main variables of interest

Financial inclusion (FI): We build an financial inclusion index whose value is based on the business having a separate banking account, and the use of bank loans, electronic wallets, and insurance (Table A1).

[6] Bello, Barranquilla, Bogota, Bucaramanga, Girardot, Ibague, Neiva, Pereira, Soacha and Zipaquira

[7] The ENET survey is part of the macro project Alianza EFI that studies and promotes the social and productive inclusion of microbusinesses in Colombia.

[8] The Corporacion Universitaria Minuto de Dios. This College was selected given it has locations in several Colombian cities. Although the neighborhoods were not randomly selected, microbusinesses were selected randomly following statistical criteria.

Business Practices (BP): For business practices, we construct an index based on questions derived by McKenzie and Woodruff (2017). We use a set of 30 questions that measures business practices in marketing, buying and stock-keeping, record-keeping, and financial planning (Supplementary Table A2).

Formality (FO): We build an index that averages the following legal requirements for a business: operating permit, accounting records, commercial registry, tax registry, and social security payments for workers (Table A1).

Personal Initiative (PI): We measure personal initiative as an index based on the degree to which an individual takes an active, self-starting approach to work goals and tasks and persists in overcoming barriers and setbacks. To construct this index, we used the questionnaire by McKenzie and Woodruff (2017) (Table A1).

The difference in formality beliefs (DFB): Based on the EMICRON (acronym in Spanish) survey from DANE (official statistical department in Colombia)[9], we calculate a formality index for each economic activity, by city[10]. We then take the difference between the formality index as calculated and the entrepreneur's perception of the formalization of the sector. We elicit perceptions using a scale from 0 to 1, where 1 indicates the microentrepreneur believes every business in the sector is formal and 0 when they believe none of them are formal.

3.2 Summary statistics

A total of 1542 surveys were conducted. Table B1 in the Appendix presents descriptive statistics showing that 51% of respondents were women, the average age of the microentrepreneurs in the sample was 43 years old, 66% were between 31 and 58 years old, and 35% of the respondents had a high school diploma. Regarding the characteristics of the businesses, the average number of workers was 1.4, indicating that most of the businesses are self-employed or run solely by the owners. While the ENET survey was not designed to be representative at the city level, Table B2 shows key characteristics of this survey are similar to those found in two nationally representative surveys[11].

According to the reflective and intuitive cognitive indicators, it is evident that microentrepreneurs use more intuitive thinking (0.61) compared to more complex reflective thinking (0.21). Also, mathematical questions were asked with varying difficulty levels to assess mathematical skills so that many could be answered quickly, placing the index at 0.58.

We also check correlations among the measures FI and FO (Appendix Tables D1 to D3). Overall, all the components of the FI are positively correlated among them

[9] International Standard Industrial Classification two digits.

[10] We construct this index as the simple sum of whether a microbusiness had commercial and tax registries.

[11] The first one is the Microbusinesses Survey (Encuesta de Micronegocios - EMICRON), an annual survey carried out by National Administrative Department of Statistics (DANE) and the second is the Large Survey to Microenterprises implemented by the Colombian Associations of Financial Institutions (ANIF).

apart from having a bank loan. Yet, correlations are not high (between 0.07 and 0.30). This is also the case for FO and BP, with positive and significant correlations between 0.05 and 0.63. These correlations suggest that while there is a common ground for summarizing the variance into single indices, each measure conveys relevant and independent information on its own. This observation is reinforced when we perform a principal component analysis (PCA), suggesting retaining more than one factor per set of variables. In appendix D.2, we explore alternative results with multiple versions of the indices.

4 Methods

The econometric analysis involves two main components. First, a measurement system to obtain the latent variables corresponding to FI, FO, BP, and PI; for which we consider a CFA. The second, is a system of equations that allows the SEM to evaluate multivariate causal relationships. This tool is widely used in the social sciences, including economics (Bollen, 1989; Duncan, 2014). This study aims to assess the multivariate causal relationships affecting financial inclusion. The SEM approach differs from other modeling approaches because it permits simultaneous analysis and decomposition of correlations for studying direct (not mediated) and indirect effects on preassumed causal relationships.

The measurement system (CFA) and the SEM are jointly estimated using maximum likelihood. We use the Lavaan package (version 0.6-11) for R (4.1.2) (Rosseel, 2012).

In appendix C.2, as a reference, we show the results of a simpler model (in which BP does not affect FO) which can be estimated via two-stage least squares. In this version, we show traditional statistics for the instrumental variables.

4.1 Measurement system

We consider a dedicated measurement system in the form of a classical CFA (Gorsuch, 2003). Under the CFA, a set of observed variables -or measures- are considered noisy measures of an underlying latent variable -or factors-. As presented in Fig. 1, each observed measure (rectangles) is based on a single latent variable (ovals). Appendix D.3 presents further details.

The system of equations above is jointly estimated with the structural equations described below. As a result, it is unnecessary to estimate the latent variables to test the hypotheses. However, to get a glimpse of the variables of interest, we derive the indices by predicting the factors and standardizing them between 0 and 1.

In the appendix, we consider alternative approaches for deriving these indices. First, we consider simple averages of the observed variables in appendix D.1. This will be a special case of the CFA where factor loadings are the same for all measures. Second, a principal component analysis is considered in appendix D.2. In general, results are qualitatively the same.

4.2 Structural equations regression model

In line with Fig. 1, the structural equation for BP is

$$FI_i = \beta_1 BP_i + \beta_2 FO_i + \boldsymbol{X_i'\gamma_1} + \epsilon_{1i} \quad (1)$$

where FI_i is the financial inclusion index for each microbusiness i, BP_i indicates the business practices index, and FO_i represents formality index. X_i is a vector of control variables including gender, education, age, number of workers, whether the owner had a previous business, and cognitive variables, such as reflective or intuitive thinking, financial mathematical skills, and perseverance; the vector of control variables also includes activity fixed effects and municipality fixed effects[12]. Finally, ϵ_{1i} is a disturbance term representing the cumulative effect of unobserved omitted variables. The equation does not include an intercept as the mean of the latent factors is normalized to 0, due to the identification restrictions of the CFA + SEM model.

Under equation 1, rejecting $\beta_2 = 0$ will validate H2. For H1, there are both direct and indirect effects. They will be discussed in detail in the mediation analysis subsection below.

The main problem in estimating equation 1 is the potential for endogeneity between FI, BP, and FO. In Fig. 1, this is represented by the correlation between error terms (unobservable variables) of equations 1, 2, and 3. In this model, the explanatory variables may not be exogenous, and reverse causality could be a potential source of endogeneity, which could arise under the following channels.

First, while we argue that BP increases microbusinesses' use of financial services, there might be a reverse causality. For example, using financial products implies the owner understands their costs and how to use them. In such cases, a microentrepreneur who is offered and uptake a new financial product will need to better understand the business's cost and benefits structure. As a result, the microentrepreneur will need to understand which areas of the business can be improved in their performance; this action is one of the components of BP (financial planning).

Second, with respect to formality, we argue that formal firms are more likely to have access to financial products as they have official records that prove income and meet collateral requirements. However, if firms already use basic financial products, a way to obtain more complex financial services is to become more formal.

To address the endogeneity problem, we adopt an instrumental variable (IV) approach: we consider variations of FO and BP that can be considered as exogenous from unobserved variables that can drive the link between these two variables and financial inclusion (Eide & Showalter, 2012; Angrist & Pischke, 2008). The instrumental variable gives this variation, and the stated exogeneity conditions are known as the exclusion restrictions. We proposed to use PI as an instrument for BP, and

[12] A detailed description of these variables is presented in the Table A1 and Table A3.

DFB as an instrument for FO, as highlighted in blue in Fig. 1. The structural equations for these endogenous variables are:

$$BP_i = \beta_3 PI_i + \boldsymbol{X_i'\gamma_2} + \epsilon_{2i} \tag{2}$$

$$FO_i = \beta_4 DFB_i + \beta_5 BP_i + \boldsymbol{X_i'\gamma_3} + \epsilon_{3i} \tag{3}$$

where BP_i is the BP index of each microbusiness i, PI_i is personal initiative, FO_i is the formality index, DFB_i is the difference in the formality beliefs of a given microbusiness in a municipality and the formality index of that municipality, X_i is the same set of variables of equation 1. Finally, ϵ_{2i}, and ϵ_{3i} are disturbance terms that represent the cumulative effects of unobserved omitted variables. Here, rejecting $\beta_4 = 0$ would validate H5, and $\beta_4 = 0$ would do so for H3.

The instrument for BP is PI, which is H4 in Fig. 1. The validity of the model is supported by statistical tests of validity and the relevance of the instruments. According to Glaub et al. (2014), an increase in behaviors shows that PI contributes to entrepreneurial success. In our model, PI increases BP (relevance). The following example illustrates the relationship between PI and BP: Assume a microbusiness is concerned with obtaining better results and the owner takes the initiative to adopt some types of BP, for instance, creating a marketing strategy to reach prospective consumers. This kind of BP, achieved through PI, does not imply the business will obtain financial services (exclusion). The PI benefits firms because it increases organizational and individual efficacy (Fay & Frese, 2001), which is achieved in our case through the adoption of BP.

Regarding the instrument for FO, we use a variable based on social norms. We estimate the level of formalization in each economic sector in each of the cities in the study using data from a national statistical survey. The survey used for this study includes perceptions of the level of formality of the sector in which the entrepreneur is involved (ranging from 0, 'nobody is formal', to 10, 'everyone is formal'). Our instrument is the difference between the individual entrepreneur's perception of the degree of formalization of a sector in that city compared to the level reported in the data (H5). Conditional on the sector and city, a perception of a higher degree of formality among the entrepreneur's peers will result in the entrepreneur believing that formality is a requirement for successful operation. Thus, this entrepreneur will take steps toward formalization. Any actions related to accessing more financial services will not be related to those steps, and as a result, the exclusion restriction is likely to hold.

4.3 Mediation analysis

As shown in Fig. 1, our model includes mediational relationships. Mediation analysis offers insights into the mechanism of how implementing BP can drive FI. These insights can motivate alternative strategies to assist microbusinesses in accessing and using financial services.

Table 1 Statistics on predicted factors

Factor	(1) Mean	(2) Std dev	(3) Min	(4) Max
Panel A. Statistics on predicted factors				
Financial inclusion (FI)	0.282	0.195	− 0.014	1.100
Formality (FO)	0.175	0.158	− 0.288	0.356
Business practices (BP)	0.172	0.147	− 0.178	0.415
Personal initiative (PI)	0	0.431	− 1.877	0.570
Panel B. Statistics on normalized indices				
Financial inclusion (FI)	.2666415	0.1755119	0	1
Formality (FO)	.719863	0.2462036	0	1
Business practices (BP)	.5921732	0.2480803	0	1
Personal initiative (PI)	.7671156	0.1764387	0	1
	FI	FO	BP	PI
Panel C. Correlation matrix of predicted factors				
Financial inclusion (FI)	1.0000			
Formality (FO)	0.4163	1.0000		
Business practices (BP)	0.6305	0.4133	1.0000	
Personal initiative (PI)	0.1381	0.0524	0.2376	1.0000

The formality mechanism is captured by the increase in *FI* driven by the increase on *FO* (β_2 in Equation 1) due to the higher *BP* (β_5 in Equation 3). Thus, the magnitude of the FO *mediation path* is $\beta_2 \cdot \beta_5$. Other mechanisms that link *BP* and *FI* are captured by the *direct path* β_1 in Equation 1. Finally, the *total* effect of the instruments on financial inclusion can be expressed as $\beta_1 + \beta_2 \cdot \beta_5$

4.4 Heterogeneity

We explore if the validity of the hypotheses and their magnitude differ across subpopulations. This is done simply by estimating the entire model on each sub-population of interest.

5 Results

5.1 Measurement system

As described in the methods, the measurement system - a CFA - is estimated jointly with the SEM. Table D10 in the appendix presents the estimated coefficients for this measurement system. Given the joint estimation of the full model parameters, it is enough to consider the factors FO, FI, PI, and BP as latent variables of the model for

testing the hypotheses. However, here we predict these factors to describe them and their correlations.

Panel A of Table 1 presents the mean, standard deviation, minimum and maximum values of the predicted factors, and in the appendix Figure D1 presents the densities. We exploit substantial variation in this exercise, especially on the personal initiative variable. For ease of interpretation, in Panel B we standardize the indices to the interval 0 to 1. Given the nature of the measures, an index of 0 would be equivalent to non-complying with any condition of the index, and 1 to comply with all of them.

Regarding FI, given the factor loadings in Table D10, the index is driven primarily by the existence of a separate account for the business, and then for bank loan and family insurance. Lastly, the usage of electronic wallets plays no role. The mean of the standardized index is 0.26 which shows the low adoption of financial services by microbusinesses in the sample (Panel B, column 1 of Table 1). For the case of FO, the presence of accounting records is the most important measure, followed by the tax registry and having employees under a formal contract. Lastly, the presence of an operation permit and a commercial registry. The normalized index of formalization is 0.72 meaning that microbusinesses were prone to comply with most of regulations we include as full formal. The last two indices are BP and PI, whose factor loadings are relatively homogeneous across measures, with just a few of them with coefficients below 0.5 or above 2. For this reason, the main results of our analyses are relatively stable either by using CFA, PCA, or just a simple average (see Appendix D.3). The mean of business practices is fairly good 0.63. Microentrepreneurs showed a high level of being pro-active, self-motivated, and persisting in overcoming barriers and setbacks, i.e., with high PI.

Finally, Panel C of Table 1 presents the correlation among the predicted factors. There is a positive association between BP and FI (H1, 0.630), FO and FI (H2, 0.416), and BP and FO (H3, 0.413). Between BP and PI (H4) is not as large, but still positive (0.237). The high correlation between FI and BP is present as well if we consider a non-linear regression (see Figure D2 in the appendix). While this is evidence in favor of (H1), it is important to remember the potential endogeneity issue, which is the reason for implementing the SEM approach.

5.2 Structural equations

The main results of structural equations are presented in Table 2. The table presents the estimated coefficients and their standard error for the model needed to test the hypotheses H1 to H5. These estimates are presented with and without controls. Table C1 in the Appendix presents the full set of coefficients. As results with and without controls are similar, we continue the analysis only referring to the version with controls.

First, (H4) and (H5) are related to the instruments for FO and PI. It shows that both instruments are relevant. Hence, $\beta_3 = 0$ and $\beta_4 = 0$ are both rejected with a 99% confidence level. These results are corroborated with a slightly simpler model

Table 2 Main results

	(1) No controls	(2) Controls
Panel A. Main estimated coefficients		
β_3: Personal Initiative → Business practices	0.069***	0.060***
	(0.011)	(0.010)
β_5: Business practices → Formal	0.071	0.071
	(0.153)	(0.179)
β_4: Difference formal beliefs → Formal	0.171***	0.155***
	(0.017)	(0.017)
β_2: Formal → Financial Inclusion	0.231	0.229
	(0.138)	(0.166)
Panel B. Paths from BP to FI		
$\beta_1 + \beta_2 \cdot \beta_5$: Business practices $\overrightarrow{Total}$ Financial inclusion	1.115***	1.069***
	(0.297)	(0.344)
	[100%]	[100%]
β_1: Business practices $\overrightarrow{Direct}$ Financial inclusion	1.099***	1.053***
	(0.297)	(0.346)
	[98.6%]	[98.5%]
$\beta_2 \cdot \beta_5$: Business practices → Formal → Financial inclusion	0.016	0.016
	0.037	0.043
	[1.4%]	[1.5%]
Observations	1542	1542
RMSEA	0.069	0.057
SRMR	0.075	0.060
P-value (Chi-square)	0.000	0.000
Comparative fit index (CFI)	0.659	0.598
Tucker-Lewis index (TLI)	0.641	0.573

Notes: The model, is a estimation of the structural equation model jointly with the measurement system via maximum likelihood using Lavaan package for R. Complete regression parameter estimates are presented in table C1 in the appendix. Standard errors in parentheses. Percentage of the total effect in brackets, in Panel B. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

which allows for a traditional two-stage least squares estimation method for equation 1 instead of using the SEM. Further details are presented in Appendix C.2.

Second, (H2) studies the link between FO and FI. We find that formality status does not affect FI (we cannot reject $\beta_2 = 0$), so H2 is not validated. If we did not consider the endogeneity of FO in the FI equation, the relationship would be positive and significant instead (see appendix C.2). Thus, such a relationship is largely driven by omitted variables or reverse causality as discussed in the methods section. Not taking into account this endogeneity would result in an upward bias estimate.

Third, (H1) and (H3) describe the main causal hypothesized link between BP and FI. When we consider only the formalization mechanism (H3), the results from (H2) already told us that once we consider endogeneity, this channel is not relevant: we

estimate that less than 2% of the total effect of BP on FI is through this channel. Moreover, higher levels of BP do not seem to imply higher FO ($\beta_5 = 0$ cannot be rejected). Hence, the 'direct' channel linking BP and FI is explained through other mechanisms. These findings are irrespective of considering alternative definitions of formalization and financial inclusion (see Appendix E).

Regarding the direct BP impact on FI, results show a strong positive and significant association between greater BP adoption and higher FI (1.053), supporting the causal effect between BP and FI **(H1)**. In terms of standard deviations (SDs), an extra SDs of BP results in 0.79 SDs of FI. If we consider the normalized version of the indices (Panel B of Table 1), 1 SD of BP is 40.6% of its mean and increases of roughly 51.6% of the mean of FI.[13] This means that as more BP are implemented, businesses will tend to use more financial services, such as maintaining a separate bank account. Given that the items we used in the indices could be potentially independent (in fact, the correlations were not particularly high), it is important to assess if the main results are different if we consider each item separately. Moreover, FO is a complex phenomenon with several dimensions, and studies have proposed different versions of it (Maloney, 2004)

First, we explore alternative definitions of FI in Table E11 in the appendix. We consider using only the bank account variable (column 1), bank loan (column 2), family insurance (column 3), and electronic wallet (column 4). BP is positively associated with all items separately and is statistically significant for bank account and family insurance. The results are smaller in magnitude for electronic wallets and bank loans and not statistically significant.

Second, Table E13 in the appendix considers each item of the FO index separately to establish if the main results vary. Results are similar regardless of the definition of formality.

Finally, a relevant consideration is the specific categories of BP. Anderson and McKenzie (2022), Campos et al. (2018), and McKenzie and Woodruff (2017) considered these categories separately. Following this reasoning, we construct categories of the BP index to determine whether any of they drives the results: merchandising; inventory, sales and purchases; financial planning and communication. The results are not driven by a particular category (Table E12 in the appendix).

Regarding the model's fit, first the root mean square error of approximation (RMSEA) is 0.057 lower than 0.06 which could be considered acceptable, and the SRMR=0.06 indicates a more than acceptable fit when it produces a value smaller than 0.10 (Hu & Bentler, 1999). Second, sadly both the CFI and the TLI are well below the commonly used cutoff criterion for the goodness of fit 0.95. The sample size of 1542 observations could explain this.

[13] The coefficient is equivalent to 5.38 (=1.053/0.195) SDs of FI. If we consider a variation of 1 SD of BP (0.147) instead of a unit of BP, the coefficient becomes 0.79 (=5.38*0.147).

Table 3 Heterogeneous effects

	(1) Female	(2) Male	(3) Primary	(4) High school	(5) College
Panel A. Main estimated coefficients					
β_3: Personal Initiative → Business practices	0.078***	0.042***	0.063***	0.070***	0.039***
	(0.018)	(0.012)	(0.020)	(0.019)	(0.013)
β_5: Business practices → Formal	− 0.115	0.470	0.066	− 0.268	0.274
	(0.226)	(0.355)	(0.285)	(0.245)	(0.279)
β_4: Difference formal beliefs → Formal	0.131***	0.202***	0.204***	0.124***	0.057***
	(0.022)	(0.028)	(0.040)	(0.027)	(0.017)
β_2: Formal → Financial Inclusion	0.284	0.190	− 0.172	0.347	1.167
	(0.287)	(0.174)	(0.122)	(0.337)	(0.939)
Panel B. Paths from BP **to** *FI*					
$\beta_1 + \beta_2 \cdot \beta_5$: Business practices $\overrightarrow{Total}$ Financial inclusion	0.759*	1.524**	-0.113	1.207**	2.530**
	(0.444)	(0.620)	(0.304)	(0.478)	(1.174)
	[100%]	[100%]	[100%]	[100%]	[100%]
β_1: Business practices $\overrightarrow{Direct}$ Financial inclusion	0.792*	1.435**	-0.101	1.300***	2.210**
	(0.443)	(0.618)	(0.309)	(0.501)	(1.199)
	[104.3%]	[94.1%]	[89.4%]	[107.7%]	[87.3%]
$\beta_2 \cdot \beta_5$: Business practices → Formal → Financial inclusion	− 0.033	0.089	− 0.011	− 0.093	0.320
	(0.072)	(0.105)	(0.050)	(0.123)	(0.412)
	[− 4.3%]	[5.8%]	[10.6%]	[− 7.7%]	[12.7%]
Observations	786	756	382	534	626
RMSEA	0.059	0.057	0.061	0.059	0.058
SRMR	0.065	0.063	0.073	0.066	0.066
P-value (Chi-square)	0.000	0.000	0.000	0.000	0.000
Comparative fit index (CFI)	0.588	0.597	0.594	0.559	0.544
Tucker-Lewis index (TLI)	0.563	0.572	0.570	0.532	0.516

Notes: The model, is a estimation of the structural equation model jointly with the measurement system via maximum likelihood using Lavaan package for R. Standard errors in parentheses. Percentage of the total effect in brackets, in Panel B. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5.3 Heterogeneous effects

Table 3 presents the results that test hypotheses H6 and H7. Regarding heterogeneous effects by gender, columns (1) and (2) show that the direct effect of BP on FI for women (0.792) is about half the effect for men (1.435). However, the path from BP to FI through FO is not important for either women or men. Last, women's perceptions of how formalization among their peer businesses in their locations influence their decisions to formalize are also lower than for men. All in all, the findings corroborate H6.

Regarding H7, the differential effects of educational level in the relationship between BP and FI, clearly columns (3), (4), and (5) show that the higher the level of education of the microentrepreneurs, the stronger the impact of having more business practices is on FI. For micro-entrepreneurs with only basic education (primary), no effect is found at all, either for the direct or for the indirect paths of BP to FI.

6 Discussion

The need for finance is a function of the business' life-cycle, but the real access is also a function of the size of the business (Berger & Udell, 1998). In the beginning, firms that cannot convince investors or lenders of their quality can rely on internal finances; that is, the business owner's resources and trade credit (Lawless et al., 2015). Yet, as financial needs grow with the businesses, the lack of access to external sources determines firms' growth potential. Microfirms are generally in a bad position: private markets do not consider these firms on their own -because of the opacity of firms' information or lack of credit history- and turn into the owners' creditworthiness and require personal collateral. To respond to the resulting credit constraints, informal markets (money lenders) and formal markets (microfinance) were developed (Banerjee, 2013). Yet, another input seems essential to determine financial inclusion and business' growth: managerial capital.

Managerial capital can contribute to firm growth (Anderson & McKenzie, 2022; Bloom et al., 2010, 2012; McKenzie & Woodruff, 2017). Here we contribute to the entrepreneurship and management literature by showing evidence of an unexplored mechanism: it is easier for firms to access financial markets if they adopt more business practices. No specific category of business practices drives this effect. We have shown that this relationship is beyond understanding the purely mechanical element of becoming formal as a requirement to get loans. It is not just the financial constraint restraining micro-entrepreneurs from flourishing and becoming self-sustainable. Along with capital, they need entrepreneurial skills, human resources, exposure to markets, and other interpersonal skills for sustainable enterprise development. For instance Wirdiyanti et al. (2022) explore the role of novel marketing strategies, such as adopting e-commerce, increases financial inclusion without being connected to the credit constraints argument.

Concerning specific financial services, there is clear evidence for using separate banking accounts for business purposes and insurance uptake. The link is weaker for the uptake of bank loans and electronic wallets usage. One reason that can explain the no association is that most of the microentrepreneurs in the sample simply reported that they do not need any loan. The no association between business practices and electronic wallets is expected since getting this type of financial service has no requirement (e.g, only having a mobile phone). It is not linked to entrepreneurs adopting too many business practices.

We found that increasing 1 SD of BP increased 0.79 SD of FI (mainly bank account ownership). As a reference, Campos et al. (2017) intervention increased 0.31 standard deviations of their index. We can compare our results to the literature

that promotes financial inclusion in MSMEs, beyond reducing credit constraints.[14] Financial education for MSMEs is an important tool for promoting financial inclusion. In Ssekakubo et al. (2022) model, 1 SD of financial education increased their financial index in 0.16 SD.[15] Another strategy is financial education but at the population level (Atkinson & Messy, 2013). In Laos, 1 SD increase in a financial literacy score increases 0.39 SD in a financial index that involves both ownership of products and usage (Morgan & Long, 2020).[16] Hence, our findings are in line with this literature, with the caveat of the comparability between derived indexes, and the wide variety of contexts.

Our results on the link of business practices with financial inclusion add inputs to the managerial and organizational capital. Ever since the influential papers by Bloom and Van Reenen (2007) and Bruhn et al. (2010), the adoption of (good) management/business practices by firms has been proclaimed as the factor of production that explain differences in productivity across countries and firms. McKenzie and Woodruff's (2017) review provides further and robust evidence that microbusinesses that adopt more business practices have better firm performance in sales, productivity, and growth. We add that the beneficial effects of business practices also contribute to microbusinesses' adoption of more financial services.

A second strand of the literature we contribute is development economics and the role of microfinance. In the development economics literature, one of the reasons to promote firms' formalization is that being formal would allow firms to get access to formal financial institutions like banks. Hence they will overcome the main constraint they face to make their business grow. Yet, this might not be enough as firms might face credit constraints that limit their (or their owners') access to formal credit markets, motivating the microfinance industry.

We find that more formal microbusinesses are not more willing to use more financial services, as in McKenzie and Sakho (2010). This finding is despite the existence of an important microfinance industry in Colombia (Romero, 2021; Patiño & Salcedo-Pérez, 2022). Several studies (Banerjee et al., 2015; Bika et al., 2022; Bruton et al., 2015; Karlan et al., 2014; Newman et al., 2017; Banerjee, 2013) indicated that the impact of microfinance on entrepreneurial development is not as successful as it was initially expected. Yet, our analysis does not consider if entrepreneurs' beliefs on the microfinance industry and its products are biased or not, and if they are not fulfilling a need due to poor financial literacy (Kim et al., 2019; Lusardi, 2001; McKenzie et al., 2022). This is a line open for future research.

[14] There are several strategies for promoting financial inclusion among MSMEs. Microcredit is a well-known option, but also strategies such as partial credit constraints help to reduce the burden of asymmetries of information (Barajas et al., 2020).

[15] Another relevant study estimates that Nigerian microentrepreneur women have 49% greater odds of accessing credit facilities if they have prior knowledge about micro credit benefits (Metu & Nwogwugwu, 2022).

[16] A good reference for several countries is Grohmann et al. (2018), which find that one percentage point increase in the proportion of financial literate people in a country, increases ownership of bank account by 0.511 percentage points.

Lastly, our study gives support to the field of organizational psychology. The research on the concept of personal initiative by Frese and associates (See Frese et al., 1997; Fay & Frese, 2001; Frese & Fay, 2001; Frese et al., 2016) and its use as an alternative or complementary teaching method for microentrepreneurs has shown to be not only effective but also superior to other (more) traditional teaching methods (Campos et al., 2017, 2018; Glaub et al., 2014). We add content to the literature on personal initiative by providing perhaps the first empirical evidence that microentrepreneurs with more personal initiative seem to adopt more financial services via the higher uptake of business practices.

7 Conclusions

Our study sheds new light on the potential implications of programs aiming at training microentrepreneurs to adopt good business practices and other soft skills' based programs. We summarize them as managerial and policy implications.

The fundamental hypothesis of this study is that microbusinesses that implement (more) business practices will have greater access/usage to financial services. We do validate the hypothesis. Microentrepreneurs and, in general, owners and managers of micro and small-sized firms should realize that adopting more and better business practices will give them tools and elements to assess the utility of using a more ample and diverse set of financial services. And, since the literature above reviewed provides theoretical and empirical support to the arguments at the macroeconomic level that more financial inclusion helps to have more economic development and at the microeconomic level, more financial inclusion is crucial to firm growth in sales and productivity and employment. Then for microentrepreneurs the message is direct: implementing more and better business practices. Furthermore, the implementation of business practices was enhanced by adopting a personal initiative mindset. In this regard, these same decision-makers should be aware that having such a mindset can contribute to adopting more financial services and then have better performance.

The validation of H1 and H4, on the one hand, gives support to the current programs and policies undertaken by NGOs, think thanks, multi-lateral agencies (i.e., World Bank, IMF, IADB) and governments promoting financial inclusion; and 'supporting training' to MSMEs on the other hand. However, despite those efforts, there has been a kind of detachment between those two endeavors. Financial inclusion has been mainly addressed via the enhancement of the financial literacy of individuals and firms' owners and managers. Business training has focused on providing some basic or general business tools to owners and managers. Our results show that supporting training (i.e., programs for improving personal initiative and similar goals) could be sufficient for more microbusinesses to approach financial institutions without the need for the emphasis on financial literacy.

Furthermore, financial literacy programs alone tend to leave aside psychological and cultural factors from the private and public programs, initiatives, and policies that intend to increase financial inclusion (Siba, 2019).

Some limitations of the present study must be recognized. First, the selection of cities and the neighborhoods where microentrepreneurs were surveyed were not randomly chosen. Hence the results cannot extrapolate to the complete population of microentrepreneurs. Second, we only use data from a year, so we can say nothing about the direction of results when having two or more firm-year observations. Third, we do not consider the potential effects that personal initiative can directly have on financial inclusion.

Our findings imply compelling avenues for future research: First, are business practices relevant to the use of complex financial products? Second, which psychological and social factors preclude (more) the usage of financial services by microentrepreneurs? Third, how to overcome certain entrepreneurial behavior motivations and types which inhibit microentrepreneurs from using financial services? We already showed that the effect of adopting business practices on financial inclusion is smaller for women and for microentrepreneurs who have low education levels. It is relevant to know how training programs could overcome such gaps. Fourth, although formalization did not affect microentrepreneurs decision to adopt financial services, it could be that the type of financial services asked for in the survey had not been the ones that required firms to formalize. Lastly, future studies might extend the study sample and investigate the long-term effects of adopting more and new business practices permanently. To achieve the ultimate goal of public policy: microbusiness growth in size and prosperity, we echo the words of Siba (2019, p. 1): "The emerging evidence from psychology and experimental economics on agency, mindset, and leadership show that for successful interventions to be transformative, they need to move beyond basic access to financial and human capital and also tackle central psychological, social, and skills constraints on women entrepreneurs". Consequently, a comprehensive policy approach is needed, including psychology-based 'mindset' training and financial inclusion initiatives that address microentrepreneurs's differentiated constraints.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Code availability Code will be available upon publication in GitHub.

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