

February 2022

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Recommended Citation

Nakabugo, Mary Juliet; Muathe, Stephen; and Mwasiiji, Evans (2022) "Microfinance Services and Government Regulations: Reflections on Performance of Small Holder Coffee Entrepreneurs in Uganda," *The Journal of Entrepreneurial Finance*: Vol. 24: Iss. 1.

DOI: <https://doi.org/10.57229/2373-1761.1413>

Available at: <https://digitalcommons.pepperdine.edu/jef/vol24/iss1/1>

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Cover Page Footnote

My profound thanks go to Kreditanstalt Fur Wiederaufbau (KfW), Inter-University Council of East Africa, and Adroit International for sponsoring my degree.

Microfinance Services and Government Regulations: Reflections on Performance of Small Holder Coffee Entrepreneurs in Uganda

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Abstract

Small-scale enterprises are lauded around the world for their contribution to economic development. Resources and capabilities play an important role as accelerators of entrepreneurial activity and also increase enterprise performance. This research strived to understand how Microfinance services affect the performance of smallholder coffee entrepreneurs but also examine government regulations as a moderating variable for the association between microfinance and the performance of smallholder coffee entrepreneurs. The study was guided by the resource-based view supported by dynamic capability and contingency theories. Data on 400 Ugandan coffee entrepreneurs was gathered and statistically tested using a multiple linear regression model. Study scores noted that financial training, microcredit, saving mobilization, and farm inputs positively influence the performance of smallholder coffee entrepreneurs. The findings also established that government regulations negatively moderate the association between microfinance services and the performance of smallholder coffee entrepreneurs. The study contributes to the growing agricultural entrepreneurship literature by demonstrating the performance of coffee entrepreneurs amidst microfinance and strict government regulations.

Keywords

Government Regulations, Microfinance services, Performance, Coffee, Entrepreneurs

1.0 Introduction

The entrepreneurial challenges associated with capital and value creation, such as the changing business environment, insufficient knowledge and operational inefficiencies have heightened the demand for evaluating entrepreneurial performance to indicate their business position periodically (Mazzarol & Reboud, 2020; Yusuf *et al.*, 2007). Entrepreneurial performance is also a vital indicator of the business's consistency (Yusuf *et al.*, 2007) and a measure of success of the firm against objectives set in an efficacious and systematic manner (Muchemi, 2014; Talaja *et al.*, 2017). Furthermore, according to Sebikari (2019), the entrepreneurial performance makes use of the existing opportunities to expand the business idea. Globally, small-scale entrepreneurs are crucial to the economic progress of their countries since they engage in a variety of innovative activities (Amin *et al.*, 2003; Mazzarol & Reboud, 2020). Small scale enterprises (SMEs) contribute 55 percent to Gross Domestic Product (GDP) and 65 percent to employment in advanced economies (Zafar & Mustafa, 2017). Similarly, SMEs account for 70% of GDP in emerging nations and provide 95% of employment (Hallam *et al.*, 2017). Despite their contribution to economic development, the performance of small-scale entrepreneurs in developing countries has declined over the years (Abdullahi & Sulaiman, 2015; Hafeez *et al.*, 2013; TechnoServe, 2018) due to the obstacles along the value chain, such as lack of funds, unreliable supply and expensive manufacturing inputs, all of which impair the production of goods and services (Omer *et al.*, 2016). According to reports, up to 40% of new businesses fail during the first two years of operation in various countries (Vivarelli, 2013) and it is largely explained by the low entrepreneurial performance. As such, promoting entrepreneurial performance and supporting business ventures is a major strategy of governments to pave the way for economic growth (Bernard, 2015).

Although resources and capabilities play an important role as accelerators of entrepreneurial activity and contribute to the increase of firm performance, acquiring resources and achieving sustainability is a major challenge for SMEs (Alumasa & Muathe, 2021; Brau *et al.*, 2015). Entrepreneurs in resource-poor developing nations lack access to basic production factors such as land, labor, and capital, making it risky for them to scale up production (Juliet Nakabugo *et al.*, 2021). When this is combined with the reality that entrepreneurs operate in a constantly changing external environment, establishing long-term business success becomes a challenge (Tahseen, 2021). The government regulations, political, economic, and social issues, among others all affect the performance of the entrepreneurs (Islam & Hu, 2012).

Microfinance has been touted for its potential to facilitate entrepreneurial activity (Alumasa & Muathe, 2021; Brau *et al.*, 2015; Usama & Yusoff, 2019) and expand SMEs (Bruton *et al.*, 2011). Unfortunately, typical microfinance research has mostly ignored the agriculture industry, and the impact of microfinance services on agricultural entrepreneurs' performance has largely gone unexplored (Khan *et al.*, 2021). Concurrently, smallholder farmers are being urged to use microfinance services to improve their farms, since they lack resources to access farm inputs and skills like financial management (Khan *et al.*, 2021). In this dynamic and complex situation, microfinance services can be an important factor to explain farmers' performance. Accordingly, it is important to know how microfinance affects smallholder farmers' performance (Juliet Nakabugo *et al.*, 2021). More recently, microfinance services, have been pronounced to positively influence the performance of SMEs, youth, and women-owned enterprises (Irene *et al.*, 2015; Amran & Mwasiaji, 2019). As such, microfinance is perceived as an invention gadget that extends suitable financial services to entrepreneurs that suit their demands (Sawant, 2017). Microfinance Institutions (MFIs) provide a valuable alternative to the products and services offered by formal financial institutions but the scale, method of delivery and nature of clients differ (Brau & Woller,

2004). At present, MFIs provide microcredit, saving mobilization, micro-insurance and leasing, among others, that uplift business operations (Sawant, 2017).

The Resource-Based View (RBV) and Dynamic Capabilities (DC) theories are used to dissect microfinance services, while the Contingency theory is used to analyze the external context in which entrepreneurs operate. Microfinance services are seen by the RBV as commercial resources that can be used to obtain a competitive advantage (Jones & Hill, 2009). RBV further highlights that resources are heterogeneous, immobile, valued, and non-substitutable, all of which describe microfinance services (Crook *et al.*, 2008; McKelvie & Davidsson, 2009). The DC's inclusion follows RBV's weaknesses in not articulating how enterprises will obtain a competitive edge in a dynamic environment (Eisenhardt & Martin, 2000). As such, because enterprises operate in a continually changing environment, DC incorporates aspects that explain resource acquisition and sustainability (Teece, 2007). The contingency theory describes how the firm selects strategies that fit its environment since the relationship between microfinance and the performance of the entrepreneur occurs in a changing external environment (Gareth, 1986). When combined, the three theories demonstrate that an enterprise's performance is influenced by the alignment of internal variables such as resources and structure with external factors such as the environment. (Feng *et al.*, 2017; Islam & Hu, 2012; Ogot, 2014).

We limit this research to four services of microfinance which include microcredit, financial training, saving mobilization and farm inputs. Microcredit service is an important part of microfinance and is the basis for MFIs (Alhassan *et al.*, 2016). It has the potential to serve as seed capital for poor entrepreneurs to operate simple businesses designed to feed the family, pay school dues and provide adequate housing (Brau *et al.*, 2015). Microcredit is always extended without traditional collateral as MFIs concentrate on utilizing social collateral, through group lending since most borrowers lack physical assets (Brau & Woller, 2004). Similarly, MFIs aggregate savings for their clients through saving mobilization. Savings are a portion of business income, but entrepreneurs keep it with MFIs on a preferred basis, which can be weekly, daily, or monthly and it accumulates in the entrepreneur's account. Savings are integral to poor households' risk management strategies; they are the first defensive mechanism that enables entrepreneurs to cope with external shocks, emergencies and they play a vital role in permitting the poor entrepreneurs to take advantage of productive investment opportunities (Grosh & Somolekae, 1996; Pålsson, 2019).

Concurrently, MFIs conduct financial training for SMEs for efficient usage of resources, business management and basic accounting techniques. Depending on the nature and scale of the businesses, MFIs organize financial training on a case-by-case basis. During these training, MFIs provide solutions to the challenges entrepreneurs face that would limit business performance (Gyimah & Boachie, 2018). It is only recently that farm inputs have become an integral service offered by microfinance institutions in developing countries to attract and retain agricultural customers (Girabi & Mwakaje, 2013). Farm inputs are well known in agricultural sciences for increasing production since the Green Revolution of 1960 (Dethier & Effenberger, 2012) and they include fertilizers, improved seeds, agricultural chemicals among others. Fertilizers and improved seed loans were noted to increase agricultural output, resulting in higher incomes for entrepreneurs (Girabi & Mwakaje, 2013; Mwefyeni, 2014). Literature is scarce on the impact of microfinance farm inputs on entrepreneur performance due to the novelty of integrating farm inputs into microfinance services. Consequently, this research investigated the effect of microfinance services, particularly, financial training, microcredit, saving mobilization, and farm inputs on the performance of smallholder coffee entrepreneurs in the central region of Uganda. Similarly, a few

studies have concentrated on the external environment that influences the relationship between microfinance and agricultural entrepreneur performance. These studies focused on income tax (Otwani *et al.*, 2017), legal framework (Mwasiaji, 2019) and government regulations (Amoah & Mungai, 2021). We add to this body of research by looking at how government regulations affect the relationship between microfinance and coffee entrepreneurs' performance. The study focuses on coffee because of its economic significance as the world's most important tropical export commodity. Uganda provides an interesting research context since smallholder coffee entrepreneurs are very significant in the economic development of the country and their contribution to Uganda achieving its middle-income status by 2040 can not be overlooked (Kagame, 2014).

The study responded to the following research question; Do microfinance services and government regulations affect the performance of smallholder coffee entrepreneurs? In order to provide an answer, we first regress the four microfinance services on the performance of coffee entrepreneurs. We hypothesize that; Microfinance services (i.e. farm inputs, microcredit, financial training and saving mobilization) have no significant effect on the performance of smallholder coffee entrepreneurs. Secondly, we regress government regulations on the relationship between microfinance services and the performance of smallholder coffee entrepreneurs. We hypothesize that government regulations have no significant moderating effect on the relationship between microfinance services and the performance of smallholder coffee entrepreneurs.

The study's contribution to the growing body of agricultural entrepreneurship research is twofold. Firstly, it laid the groundwork for demonstrating a significant positive link between microfinance services and the performance of coffee entrepreneurs, an area which has been very little studied. This would ultimately facilitate microfinance institutions to model appropriate services and products for the agricultural entrepreneurs to boost their performance. Secondly, it gave a foundation to understanding the negative effect of government regulations on the association between microfinance services and the performance of coffee entrepreneurs. Uganda's government regulations are strict, hampering coffee entrepreneurs' operations and limiting their performance. This holds back the transition from subsistence to commercial agriculture, as well as inclusive growth and poverty alleviation. As a result, we recommend that policymakers encourage coffee entrepreneurs to seek microfinance services to improve their performance and that MFIs boost their visibility among agricultural entrepreneurs. Second, the government should improve the working environment for agricultural enterprises by decreasing taxes or subsidizing farm inputs as well as streamlining the coffee trade license application procedure.

The remainder of the paper is organized in the following manner. First, we examine the literature on Resource-Based view, Dynamic Capability, and Contingency theories to present the three theories that underpin the study. Second, we go over an empirical review of the four microfinance services as well as government regulations. The methodology and statistical analysis are then discussed. The study's findings are then presented, indicating the impact of microfinance services on coffee entrepreneurs' performance as well as the moderating effect of government regulations on the link between microfinance services and coffee entrepreneurs' performance. The discussion is based on a dialogue between the research results and past research. Finally, the data are summarized with key takeaways, potential implications, and study limitations.

2.0 Review of literature

This chapter concentrated on scrutinizing different literature related to the features of microfinance services, government regulations and the performance of smallholder entrepreneurs alongside their

critiques and research gaps. Additionally, it addresses three theories on which this study is anchored.

2.1 Theoretical review

2.1.1 Resource-based view theory (RBV)

Penrose (1959) propounded the aforesaid theory and suggests that the critical elements of a business or a firm are its resources and capabilities. Capabilities simply refer to skills used in organizing the resources of the firm and placing them to productive use. A venture can be perceived as a collection of resources that can be transformed into strengths or weaknesses of an enterprise by the responsible authority. This theory is based on four important resource assumptions, which include heterogeneity, immobility, valuable, and non-substitutable. Heterogeneity is concerned with different skills, capabilities and resources that firms possess and such resources differ from one company to another. Therefore, RBV assumes a competitive advantage is obtained by firms due to the use of different bundles of resources (Bowman & Ambrosini, 2003; Grunert & Hildebrandt, 2004).

Immobility emphasizes that resources do not move from one firm to another in the short run. Because of this condition, firms are incapable of copying resources such as skills and strategies employed by their competitors as they are intangible and immobile (Jones & Hill, 2009). Resources should be valuable, difficult to obtain, impossible to duplicate and irreplaceable (Makhija, 2003). These resource features resonate well with microfinance services that allow businesses to get a competitive advantage by leveraging strategic resources, which is a solid strategy for surviving. Microcredit is an example of a valuable resource that coffee entrepreneurs require to obtain other business physical assets such as land and motorcycles to improve their business performance. Saving mobilization is a rare capability that is valuable and gives a company a unique strategy over its competitors. Savings improve business capital, assist in dealing with risks, and help to accumulate business assets. Financial skills, such as budgeting and financial negotiations enhance the intellectual capacity and human capital of entrepreneurs, which is an inimitable and non-substitutable resource. As such, competitive advantage can be exploited if entrepreneurs can organize and place these resources into actual mass (McKelvie & Davidsson, 2009).

RBV, according to Crook *et al.* (2008) is the best theory for describing how resources influence enterprise performance, however, Eisenhardt & Martin (2000) argue that the theory does not explain how firms will gain a competitive edge in a dynamic market. RBV is appropriate for this study because it suggests that strategies such as microcredit and farm inputs used by entrepreneurs can create new resources and capabilities, thereby promoting higher firm performance. The theory continues to suggest that intangible resources, such as financial training, provide knowledge assets and capacities to smallholder coffee entrepreneurs, and this is an origin of higher performance.

2.1.2 Dynamic capability theory

RBV theory is very vital in addressing the use of resources like microfinance services to attain competitive advantage, but it overlooks elements leading to sustainability and acquisition of the resources. Teece *et al.* (1997) put forward the dynamic capabilities theory (DC), which aims at making up, merging, and reconfiguring resources for absolute utilization. DC theory was extracted from RBV theory to cover up the limitations of RBV theory, especially in describing sustainable

competitive advantage and higher performance in the changing environment.

Helfat (2007) described DC theory as the capability of a firm to design, broaden and remodel its resource center using conscious decision. Teece (2007) noted that in a rapidly changing environment, resources are never in existence waiting for exploitation by firms to achieve competitive advantage. Even if these resources like microfinance services are available from different institutions, coffee entrepreneurs must make purposeful decisions about recognizing and applying for these services to employ and fulfill their venture needs. Timely usage and application of resources like farm inputs are needed for better results since their application starts at the beginning of every season and adequate financial resources are vital in achieving competitive advantage.

Ambrosini & Bowman (2009) observed that firms can regenerate their resources within rapidly changing environments but they should carefully choose capabilities that will enable them to succeed. Firms can only perform efficiently and effectively if they adjust to new ways of operating within a changing environment. Microfinance services are recent trends whose usage and accessibility by coffee entrepreneurs can change their performance. Nevertheless, the theory has received criticism. For example, Barney (1991) argues that DC theory puts emphasis on an organization's ability to design, extend, and remodel resources to achieve a competitive advantage, but this can't apply to small firms, which can't create such unique resources.

Tahseen (2021) supports the argument by demonstrating that while the DC places management capability at the center of gaining a competitive advantage, it is unattainable for small firms that rely on owner-based control. Although these criticisms are vital, this theory could not be overlooked by this study since it describes quick adoption in the dynamic environment which favors small firms compared to big firms.

2.1.3 Contingency theory

Contingency theory was put forward by Gareth (1986) and it suggests that firms select strategies to carry out different actions to set up a fit with their environments. Firm performance is determined by the fit between its inner factors, for example, resources, structure, and the outside surrounding factors. These include government regulations, political, economic, and social issues, among others. The major assumption of this theory is fitness which is observed when the inner and outside factors of the firm are equal. Van de Ven & Drazin (1985) support this by noting that the performance of the firm relies on fit amongst different factors.

Contingency theory is very vital in comprehending the behavior of the firm by showing how contextual factors or macroeconomic factors like government regulations greatly influence firm operations and its structure (Islam & Hu, 2012). According to Lawrence & Lorsch (1967), there are different ways of obtaining performance and the most appropriate approach relies on the surroundings in which a firm is found. Harsh environmental conditions like poor government regulations in terms of high taxes, inflation, and insecurity reduce the profits of entrepreneurs, hence retarding their performance. Friendly environmental conditions promote performance since they increase the chances of earning more profits. Such conditions include low taxes and a stable political climate.

Dut (2015) acknowledged that environmental conditions like bribery accelerate the performance of SMEs, but they retard performance when they are too high. Bribery enables SMEs to use government resources or fulfill government regulations on time, reduces red tape and increases firm performance. This, therefore, shows that these factors are vital in a firm's context and in determining its performance. Contingency theory aims at linking competitive strategies to

environmental conditions and therefore, any strategy that a firm chooses is influenced by its context (Ogot, 2014). Feng *et al.* (2017) conceded that firm capabilities for example, research and development, operations and markets operate to positively or negatively influence the performance of the firm, but effects depend on different market conditions.

A suitable fit amidst a firm's business-government relation strategy and structure enhances business performance (Martin & Johnson, 2005). Martin & Johnson (2005) still observed a positive alliance between business-government relation structures and business-government relation performance. Contingency theory was used in this study since it explains and supports the moderating effect in this study that's to say, government regulations, which are an example of environmental conditions.

2.2 Empirical review

In this section, numerous studies on microfinance services and their influence on the performance of rural entrepreneurs are evaluated. Microcredit, financial training, savings mobilization, farm inputs, and government regulations have all been examined concerning the performance of SMEs and rural businesses.

2.2.1 Financial training and performance of smallholder coffee entrepreneurs

Usama and Yusoff (2019) probed the influence of financial literacy on business performance in Nigeria, considering a sample of 500 entrepreneurs. The findings affirmed that financial literacy has a favorable effect on the performance of firms. Moreover, 65.6% of the changes in business performance were explained by changes in financial literacy. This demonstrated that financial literacy is an important aspect of the knowledge entrepreneurs need to make sound financial decisions to boost their performance in this modern society. In Kenya, Mwangi (2015) in a study amongst small-scale farmers in Kiambu county sought to investigate the effect of microfinance services on the economic empowerment of entrepreneurs. Study scores revealed that equipping smallholder entrepreneurs with financial literacy positively influenced their economic empowerment. Economic empowerment was found to be mostly influenced by access to finance, followed by financial literacy and market access.

On the contrary, Fitria & Rahman (2018), affirmed that financial literacy had no impact on the sustainability of SMEs in the handicraft industry in Padang, Indonesia. A sample of 150 entrepreneurs selected by purposive sampling was used in the study. Findings revealed that even at average levels of financial literacy, there was no influence on SMEs' survival and continuity. This revealed how financial literacy isn't crucial for a company's survival and continuity, contrary to Acharya's (2015) recommendations, which advocated for financial literacy to improve a company's long-term viability. The fact that inconsistent findings do exist signals the need to investigate the effect of financial training on the performance of smallholder coffee entrepreneurs. The first hypothesis was generated based on the research gaps noted above, as shown below.

H₀₁: Financial training has no significant effect on the performance of smallholder coffee entrepreneurs in the central region of Uganda.

2.2.2 Microcredit and performance of smallholder coffee entrepreneurs

Microcredit has also been found to influence the performance of entrepreneurs (Ofeimun *et al.*, 2018; Solomon *et al.*, 2016), particularly in the context of SMEs where it serves as a source of seed capital (Brau *et al.*, 2015; Martha & Sakwa, 2017). In specific, Alumasa & Muathe (2021)

assessed the effect of mobile credit on the performance of MSEs in Kenya and noted that the four variables of mobile credit had a significant effect on the performance of MSEs. Notably, mobile credit access, loan amount of mobile credit and regulation of mobile credit had a favorable effect, yet the cost of mobile credit had a substantially detrimental effect. The study, therefore, affirmed that mobile credit is very vital in uplifting the performance of MSEs in Nairobi City County, and therefore, policymakers should consider mobile credit factors to easily access financing for MSEs.

Similarly, Madafu (2015) noted that rural entrepreneurs who obtained microcredit attained higher levels of farm productivity. The study concluded that access to microcredit was effective in enhancing the production and livelihood levels of entrepreneurs, as proven by increases in income, land size, productivity, savings, and children's schooling. This signifies that microfinance plays an essential part in lifting smallholder entrepreneurs out of poverty and upgrading their socioeconomic status. Nevertheless, contradictory results have been reported for some indicators of microcredit. Amsi *et al.* (2017) inspected the influence of microfinance credit on the financial performance of SMEs in Kenya and noted a weak negative correlation between credit repayment period and financial performance, but other aspects of microfinance credit had a reasonably positive impact on SMEs' financial performance. Based on the research gaps noted above, it is instructive to investigate the influence of microcredit on the performance of smallholder coffee entrepreneurs in the central region of Uganda and the second hypothesis was developed as shown below.

H₀₂: Microcredit has no significant effect on the performance of smallholder coffee entrepreneurs in the central region of Uganda

2.2.3 Saving mobilization and performance of smallholder coffee entrepreneurs

Concerning saving mobilization, several studies indicate that savings influence the growth of enterprises (Gyimah & Boachie, 2018; Juliet Nakabugo *et al.*, 2021; Wambui, 2015). Omondi & Jagongo (2018) sought to understand how microfinance services impact the financial performance of youth SMEs in Kenya. The scores disclosed that savings had a considerable and favorable impact on SMEs' financial performance. The study employed a descriptive design and sampled 135 youth SMEs that were operating in the seven sub-counties of Kisumu County. Microfinance loans and saving products have significantly improved the level of entrepreneurial activities in the Zaria metropolis (Zhiri, 2017). Zhiri (2017) argued that micro-saving is significant and positively linked to business performance. The study used a cross-sectional and descriptive design, with 300 SMEs sampled and data analyzed using the regression approach. The results implied that SMEs can easily weather tough economic times if they use MFI-provided savings products.

Peprah (2015) probed the effect of microfinance programs on beneficiaries in Ghana. To get primary data, the author employed questionnaires and interviews. Descriptive data analysis disclosed that 59% of the respondents had been attracted to MFIs by the savings products offered. This demonstrated that saving is a major service an entrepreneur pays attention to and expects from MFIs. Scores disclosed that some of the recipients realized growth in their savings, although, the standard of living and business size never changed. Following the realized gaps, the third hypothesis was developed and presented below.

H₀₃: Saving mobilization has no significant effect on the performance of smallholder coffee entrepreneurs in the central region of Uganda

2.2.4 Farm Inputs and performance of smallholder coffee entrepreneurs

In a study contrasting credit beneficiaries (CB) and non-credit beneficiaries (NCB) in Tanzania, Girabi and Mwakaje (2013) probed the influence of microfinance on smallholder farm output. The application of fertilizers and hybrid seeds significantly increased agricultural yields for credit beneficiaries, but not for non-credit beneficiaries. The deviation in the yields was realized because Credit beneficiaries had access to more inputs than non-Credit beneficiaries. In Zambia, Mwefyeni (2014) probed the impact of agricultural service supply on the performance of smallholder farmers. Scores established that hybrid seed use, timely availability of fertilizers and their application had an impact on maize output and farmer performance. The study gathered data from 8,094 households in 393 standard Enumeration Areas using a stratified three-stage sampling technique.

Furthermore, there is a particular lack of research into farm inputs as a service offered by the microfinance sector, however, the effect of farm inputs is well documented in research about agricultural enterprises and findings suggest their preference for enhancing agricultural yields (Alameraw, 2020; Liu *et al.*, 2021). In a recent study, Ciesielczuk (2019) investigated the efficacy of coffee spent grounds and biomass ash-based organo-mineral fertilizer. The study found that regardless of the type of fertilizer used, yields increased by about 29% when contrasted to a sample group that did not use fertilizers. The research was based on a six-plot field experiment in which several types of fertilizers and agricultural seeds were identified and employed. The fourth hypothesis was developed based on the above-mentioned research gaps.

H₀₄: Farm Inputs have no significant effect on the performance of smallholder coffee entrepreneurs in the central region of Uganda.

2.2.5 Microfinance, government regulations, and performance of smallholder coffee entrepreneurs

Otwani *et al.* (2017) probed how corporate income tax affected the financial performance of Kenyan companies listed on the Nairobi stock exchange (NSE). According to the findings of the study, corporate income tax has a favorable impact on the financial performance of companies. Secondary data was obtained from the NSE database, journals, and other publications, and the study used both qualitative and quantitative methodologies. Mwasiaji (2019) investigated the impact of the legal framework on the performance of medium-sized manufacturing businesses (MSMEs) in Kenya. Manufacturing businesses face several obstacles as a result of the intricate regulatory framework, tough customs and trade laws, expensive tax regimes, rigorous monetary and credit policies, corruption in the workforce, and labor regulations, all of which have a detrimental impact on performance. Recognizing the centrality of MSMEs in generating income and creating jobs, the study suggested that the Kenyan government should develop more specific legislative efforts and policies to help them. The study's recommendations are consistent with Masau *et al.* (2018) who concluded that Kenya's commanding authorities, such as the Central Bank of Kenya, are responsible for establishing good policies to govern and monitor the financing sector so that it performs effectively and maintains financial stability.

Other researchers point to the moderating effect of government regulations on the link between microfinance services and the financial performance of SMEs (Amoah & Mungai, 2021). The study followed an explanatory approach and a sample of 260 SMEs was selected by stratified random sampling. According to the findings, government rules had a minor negative impact on the link amidst the two study variables. This showed that current limits were unable to strengthen microfinance services, negatively impacting the financial performance of SMEs. Consequently, the study argued the Ghanaian government to embrace appropriate ways to strengthen

microfinance services to improve the financial health of SMEs. The fifth hypothesis was developed based on the aforesaid research gaps.

H₀₅: Government regulations have no significant moderating effect on the relationship between microfinance services and the Performance of Smallholder coffee entrepreneurs in the central region of Uganda.

3.0 Research methodology

3.1 Survey instrument and sample

A structured questionnaire was developed and distributed to 400 smallholder coffee entrepreneurs in Uganda's Central region to capture respondents' opinions. Both open-ended and closed-ended questions provided structured feedback that enabled quantitative analysis, hypothesis testing, and conclusion formation. A multi-stage random sampling approach was used because the study was conducted in 5 widely dispersed districts in Uganda's central region. Stage one involved a random selection of five districts from the twenty-five districts in Uganda's central region, which included Luweero, Mityana, Masaka, Kalungu, and Bukomansimbi. Following the selection of districts, two sub-counties were chosen from each district using a simple random sampling method, yielding a total of ten sub-counties. Stage three involved using a simple random sampling approach to select 40 smallholder coffee entrepreneurs from each sub-county. This resulted in a total of 400 smallholder coffee entrepreneurs, which served as the study's sample size. The target population encompassed coffee entrepreneurs totaling 611,782 smallholder coffee entrepreneurs, according to the International Coffee Council report (2019).

The questionnaire included questions about the biodata and farm characteristics of coffee entrepreneurs, the microfinance services they have used, and how they view farm performance in the context of microfinance services and government regulations. An individual farmer served as the unit of observation. The literature was reviewed to learn about the key concepts and scales for measuring microfinance services, government regulations, and farm performance. The survey instrument was created in stages, based on the constructs and assumptions presented by the three theories that underpin the study (RVB, Dynamic capability and Contingency theory). To reduce executive response time and effort, five-point Likert scales were used. The questionnaire included 26 claims covering four microfinance services (microcredit, financial training, saving mobilization, and farm inputs), government regulations, and farm performance.

3.2 Variables and measures

Performance. Performance is a multifaceted notion that is often divided into financial and non-financial measures (Chong, 2008). Financial performance is objective, easy to understand and compute, but it has a limited scope, is historical, unavailable, and erroneous and profits can be readily manipulated and misread, and it is well suited to the private sector (Ongeti, 2014; Kimiti & Kilika, 2018). Non-financial indicators, on the other hand, are too subjective yet provide a larger picture of resource usage, competitive position, and an organization's readiness to operate in a changing business environment (Chong, 2008). To overcome the problem of relying on only one measure of performance, this study used Chong's (2008) hybrid technique, which combines both measures to provide more reliable outcomes. For non-financial measures, the study used three items in the questionnaire that report about the type and number of employees as well as the ability to hire more employees. For financial performance, the study asked the respondents to self-report about their net profit using three items; ability to meet all operational costs, overall profitability

and increase in net profits. Respondents used a scale ranging from 1 “strongly disagree” to 5 “strongly agree” to rate the items ($\alpha=0.767$). All items were combined into a composite measure of performance which was then averaged.

Microfinance includes financial services designed to accommodate small-scale entrepreneurs who are typically from lower socioeconomic groups and can not get formal banking services, to uplift and enable them to become self-sufficient (Carmela, 2018). This study considered 4 microfinance services; Microcredit; Financial training; saving mobilization and farm inputs. We used self-reported measures from the questionnaire to assess the entrepreneur’s satisfaction with the different microfinance services. Respondents used a scale ranging from 1 “strongly disagree” to 5 “strongly agree” to rate the items. Moreover, saving mobilization had the highest coefficient ($\alpha=0.800$), followed by microcredit ($\alpha=0.788$), farm inputs ($\alpha=0.775$), and financial training ($\alpha=0.715$).

Government regulations. Rules put in place by the government to control, guide, and restrict business operations for example taxes and licenses. The study asked the respondents to self-report about their satisfaction with government taxes and licenses using six items. Respondents used a scale ranging from 1 “strongly disagree” to 5 “strongly agree” to rate the items ($\alpha=0.881$). The items were averaged to get a composite value for government regulations.

Control variables. Distinct sizes of coffee farms may have different features, which might affect performance. The same holds for the farmer's age, gender, and marital status. We used these factors as controls in the analysis to see if there was any potential for confounding due to their influence. Dummy variables were created for marital status and gender, with 1 indicating married and 1 indicating female.

3.2 Description of Data

The data collection yielded 396 completed questionnaires, which corresponded to a 99% response rate. **Table 1** shows the percentage of the participants by the district of residence, marital status, gender, and farm size. Districts of Masaka, Luweero, and Kalungu had the same number of responses (20.2%), while districts of Bukomansimbi and Mityana had 19.9% and 19.4%, responses respectively. The data were representative of all five districts. About 78.0 percent of the respondents were married, 13.4% were single, 5.3 percent were widowed, 1.8 percent were divorced, and 0.8 percent were both widowers and separated. Wanyeki (2003) discovered that married people, rather than singles, are the designated farm owners, so the respondents' civil status reflected that of a typical farmer.

About 71.0% of the participants were men, while women made up 29.0%. This indicates that both genders were represented in this study, despite the fact that men are more involved in the coffee industry than women because men own more land, which justifies Ntabo's (2011) gender bias in coffee farming. Moreover, 39.1% of the participants were over 50 years of age, 28.8% were 41-50 years, 19.9% were 31-40 years, 11.6% were 21-30 years, and 0.5% were below 20 years. The majority of the respondents were typically as old as the average coffee farmer at the age of over 50 years (Ngeywo *et al.*, 2015). Approximately 66.4% of respondents had 1-4 acres of land, 19.4% owned 5-9 acres, 9.1% owned less than one acre, and 5.1% owned more than 9 acres. There is an over-representation of respondents with 1-4 acres of land as the majority of coffee entrepreneurs in Uganda are smallholders with small plots of land, and so low productivity continues to be the norm (Ngeywo *et al.*, 2015).

Table 1

Descriptive statistics. Percentage of respondents (N=396) by the district of residence, Marital status, Age, Gender and Farm size.

Response	Frequency	Percent
Filled in and Returned	396	99
Non-Returned	004	01
Total	400	100.0
District of residence		
Luweero	80	20.2
Masaka	80	20.2
Kalungu	80	20.2
Bukomansimbi	79	19.9
Mityana	77	19.4
Total	396	100.0
Marital status		
Single	53	13.4
Married	309	78.0
Divorced	7	1.8
Separated	3	0.8
Widow	21	5.3
Widower	3	0.8
Total	396	100.0
Age		
Below 20	2	0.5
21-30	46	11.6
31-40	79	19.9
41-50	114	28.8
Over 50	155	39.1
Total	396	100.0
Gender		
Male	281	71.0
Female	115	29.0
Total	396	100.0
Farm size		
Less than one acre	36	9.1
1-4 acre	263	66.4
5-9 acres	77	19.4
Above 9 acres	20	5.1
Total	396	100.0

Source: Survey Data (2021)

3.3 statistical Analysis

Quantitative data were analyzed using descriptive and inferential statistics. Descriptive was employed to abridge the nature of each variable in the study statistics and these include frequencies, mean and standard deviations. Inferential statistics encompassed the utilization of a multiple linear regression model to inspect the effect of control variables and microfinance services

on the performance of smallholder coffee entrepreneurs and also the moderation effect. The association was measured using the regression equation presented below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + e$$

Where:

Y = Dependent variable (Performance of smallholder coffee entrepreneurs); X₁ = Gender, X₂= Age, X₃ = Farm size, X₄ = Marital status, X₅ = Financial training, X₆= Micro credit, X₇ = saving mobilization, X₈ = Farm inputs; β₀= Constant; e=Error term

To test for the moderation effect, the researchers used the two steps put forward by Whisman & McClelland (2005). This test determines if the coefficient of the interaction term (microfinance services *government regulations) is strictly distinct from zero. This co-efficient strengthens and directs the moderator. The moderation model predicted whether the bivariate link amidst the independent and dependent variables was linear, but was influenced by a third variable. The following are the two equations:

$$Y = \beta_0 + \beta_1 X_i + \epsilon \dots \dots \dots (1)$$

$$Y = \beta_0 + \beta_1 X_i + \beta_{12} Z + \beta_{13} XZ + \epsilon_i \dots \dots \dots (2)$$

Where;

Y = Performance of smallholder coffee entrepreneurs (Dependent variable); Z = Government Regulations (Moderator); X_i = microfinance services (Independent variable); β₀ = Constant, ε = the error term; β₁ = coefficient relating the independent variable, X_i, to Y, when Z = 0; β₁₂= coefficient relating the moderator variable, Z, to Y, when X = 0; β₁₃ = coefficient relating to the interaction effects (XZ) between the moderator and the independent variable.

The results from the given equations above informed the moderation effects with the coefficient β₁₃.

4.0 Findings and discussion

This section contains information on quantitative data and inferential statistics.

4.1 Test of hypotheses

The five hypotheses in this study were assessed using regression analysis, and inferences were drawn using a 95 percent confidence interval. Specifically, the first four hypotheses, which comprised financial training, microcredit, saving mobilization, and farm inputs, were regressed on coffee entrepreneurs' performance thus yielding a direct link shown in tables below.

Table 2 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.739 ^a	0.546	0.536	0.48929

a. Predictors: (Constant), Gender, Age, Farm size, Marital status, Farm input, Financial training, Saving mobilization, Microcredit

Source: Survey Data (2021)

Table 3 ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	104.452	8	13.057	54.538	.000 ^b

Residual	86.903	363	.239
Total	191.356	371	

a) Dependent Variable: Performance of smallholder coffee entrepreneurs
b) Predictors: (Constant), Gender, Age, Farm size, Marital status, Farm input, Financial training, Saving mobilization, Microcredit

Source: Survey Data (2021)

Table 4 Regression coefficient^a

Model		Unstandardized		Standardized	T	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	-1.503	.287		-5.238	.000
	Gender	.013	.061	.008	.213	.832
	Age	.093	.054	.063	1.725	.085
	Farm size	-.206	.128	-.058	-1.607	.109
	Marital status	.016	.067	.009	.236	.814
	Financial training	.474	.041	.446	11.601	.000
	Microcredit	.245	.046	.196	5.312	.000
	Saving mobilization	.424	.049	.337	8.674	.000
	Farm input	.214	.061	.136	3.536	.000

a. Dependent Variable: Performance of smallholder coffee entrepreneurs

Source: Survey Data (2021)

From the model summary (Table 2), R squared = 54.6% and it's the correlation coefficient of determination. In this case, Adjustments in control variables and microfinance services accounted for 54.6% of the changes in the performance of smallholder coffee entrepreneurs in the central region of Uganda.

The ANOVA findings are provided in Table 3. A 2-tailed test was used to determine the model's significance at a 5% level. F was 104.452 with a p-value of 0.000, which is less than the crucial value in a 2-tailed test at the 5% level thus the overall model is significant. This suggests that in Uganda's central region, a considerable link between microfinance services and the performance of smallholder coffee entrepreneurs exists.

The results of the effect of individual Microfinance services on the performance of smallholder coffee entrepreneurs in the central region of Uganda are summarized in Table 4. The significance of the coefficients was tested at the 95 percent confidence level, and all of the variables had a significance value below 0.05 hence rejecting the null hypothesis. The regression model is presented below.

Performance of coffee entrepreneurs = -1.503 + .013Gender + .093Age - .206Farm size + .016Marital status + .474Financial training + .245Microcredit + .424Saving mobilization + .214Farm inputs

Additionally, regression analysis stipulated that the performance of smallholder coffee entrepreneurs would be at -1.503 if control variables and microfinance services were equal to zero. Although none of the control variables are statistically significant, female farmers ($\beta = 0.013$, $p = 0.832$) and married farmers ($\beta = 0.16$, $p = 0.814$) performed better. Similarly older farmers achieved higher performance ($\beta = 0.093$, $p = 0.085$), whereas farm size has a negative effect on performance ($\beta = -0.206$, $p = 0.109$). The regression coefficient for financial training is 0.474, and a p-value of 0.000, which is below 0.05, indicating that financial training has a positive significant effect on the performance of coffee entrepreneurs in the central region of Uganda. The outcomes are compatible with those of Mwangi (2015), who stated that financial literacy has an impact on small-scale farmers' economic empowerment. The scores are also coherent with the findings of Haider *et al.* (2017), who claimed that financial training boosted the performance of SMEs. Conversely, the scores contradict Fitria & Rahman's (2018) conclusion that financial literacy has no impact on the sustainability of SMEs in Padang City's handicraft industry.

The microcredit regression coefficient is 0.245 and p-value of 0.000 which is lower than 0.05 and shows a significant positive effect. The study's outcome is coherent with the findings of Onwunali, Olasehinde, and Theophilo (2018), who discovered that microloans to smallholder farmers were beneficial and helpful in boosting farmers' production and livelihood levels in Iringa, Tanzania. They also agree with Solomon *et al.*'s (2016) findings that microloans supplied to farmers were favorably associated with small-holder farmers' livelihoods. The study findings, therefore, uphold that providing microcredit to coffee entrepreneurs allows them to make additional investments on their farms, such as purchasing farm inputs and extending their company operations by purchasing extra land, resulting in increased production and income.

Furthermore, with a regression coefficient of 0.424 and a p-value of 0.000, saving mobilization influenced smallholder coffee entrepreneurs' performance positively and significantly. The findings of the study back up Zhiri's (2017) claim that micro saving is important and favorably linked to business performance. They also concur with the findings of Omondi & Jagongo (2018), who found that savings have a favorable impact on the performance of SMEs. The study scores highlight the significance of saving mobilization in uplifting coffee entrepreneurs and therefore concur with the conclusions established by Juliet Nakabugo *et al.* (2021) that saving mobilization enhances the performance of coffee entrepreneurs. On the contrary, results differ from Wambui (2015) who found that micro saving had a minor effect on SMEs' growth and that the majority of SMEs never used microfinance's micro saving services.

Farm inputs are also positively related to the performance of smallholder coffee entrepreneurs, according to the regression model. The regression coefficient was 0.214, with a p-value of 0.000, showing that farm inputs had a significant effect on performance. The study scores are congruent with those of Girabi & Mwakaje (2013), who found that using inputs, such as fertilizers and improved seeds, enhanced farm yields for Credit Beneficiaries while farm yields for Non-Credit Beneficiaries remained unchanged. Findings also agree with Nakasone *et al.* (2021), who found that the use of fertilizers had significantly enhanced rice and maize yields in Tolon-Kumbung, Northern Ghana. Similarly, the study results collaborate with conclusions made by Alameraw (2020) that using approved nitrogen fertilizer and better maize varieties considerably boosted grain output for maize farming in western Ethiopia's mid-latitude region. As a whole, the

study confirms that coffee entrepreneurs who employ farm inputs such as fertilizers, improved variety seedlings, and tarpaulins boosted their productivity, resulting in higher earnings.

4.3 Test of the moderation effect

Two regression models were used to evaluate the moderation effect. Microfinance was regressed on performance in model one. For model two, the performance of coffee entrepreneurs was regressed on microfinance services, government regulations, and the link between microfinance services and government regulations. The results of the regression analysis are displayed below.

Table 5 Model summary for moderation

Model	R	R Square	Adjusted R Square	Std Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.646	.417	.416	.57729	.417	281.944	1	394	.000
2	.764	.583	.580	.48943	.166	78.077	2	392	.000

a. Predictors: (Constant), Microfinance services

b. Predictors: (Constant), Microfinance services, Government regulations, Product of Microfinance services, and Government regulations

c. Dependent Variable: Performance of smallholder coffee entrepreneurs

Source: Survey Data (2021)

Table 6 ANOVA for moderation^a

1	Regression	93.961	1	93.961	281.944	.000 ^b
	Residual	131.305	394	.333		
	Total	225.267	395			
2	Regression	131.367	3	43.789	182.803	.000 ^c
	Residual	93.900	392	.240		
	Total	225.267	395			

a. Predictors: (Constant), Microfinance services

b. Predictors: (Constant), Microfinance services, Government regulations, Product of Microfinance services, and Government regulations

c. Dependent Variable: Performance of smallholder coffee entrepreneurs

Source: Survey Data (2021)

From the model summary for moderation presented in Table 5, model one confirms a significant relationship between microfinance services and the performance of coffee entrepreneurs in the central region of Uganda. Model two highlights the interplay between microfinance services and government regulation. The change in the coefficient of determination (R-square value) = 0.166, F change = 78.077, and estimated probability = 0.000 show that government regulation has a considerable moderating influence on the relationship between microfinance and the performance of coffee entrepreneurs in Uganda’s central region.

Furthermore, ANOVA results presented in Table 6 demonstrate that without the interaction term, regression model one is statistically significant with F (1, 394) = 281.944 and estimated probability = 0.000. Similarly, with F (3, 392) = 182.803 and estimated probability = 0.000, regression model two including the interaction term is statistically significant.

Table 7 Coefficients for moderation

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound	
1	(Constant)	-1.691	.294		-5.759	.000	-2.268	-1.114
	Microfinance services	1.377	.082	.646	16.791	.000	1.216	1.539
2	(Constant)	-2.280	.784		-2.906	.004	-3.822	-.737
	Microfinance services	1.256	.226	.589	5.556	.000	.812	1.701
	Government regulations	.812	.274	1.001	2.967	.003	.274	1.351
	Product of Microfinance services and Government regulations	-.124	.076	-.636	-1.616	.107	-.274	.027

a. Dependent Variable: Performance of smallholder coffee entrepreneurs

Source: Survey Data (2021)

The regression model for the moderating connection was estimated as shown below.

Performance of coffee entrepreneurs =

$$\mathbf{-1.691 + 1.377 \text{ microfinance Services} \dots\dots\dots \text{Model 1}}$$

Microfinance services are statistically significant at $\beta=1.388$; $t = 16.596$; $p = 0.000$, implying that there is a link between microfinance services and coffee entrepreneurs' performance that might be regulated (**Table 7**).

$$\text{Performance of coffee entrepreneurs} = \mathbf{-2.280 + 1.256 \text{ microfinance services} + 0.812 \text{ Government Regulations} - 0.124 \text{ microfinance services} * \text{government regulations} \dots\dots\dots \text{Model 2}}$$

Microfinance services are statistically significant at $\beta = 1.256$; $t = 5.556$; $p = 0.000$. Government regulations are statistically significant at $\beta = 0.812$; $t = 2.967$; $p = 0.003$ while the interaction term is statistically insignificant at $\beta = -0.124$; $t = 1.616$.; $p = 0.107$ as per the regression results for model two (**Table 7**).

Table 8 Decision Criteria for Moderation

Model 1	Model 2	Total effect	Conclusion
$\beta_1 = 1.256$ ($p < 0.05$)	–	–	There is an overall effect to moderate
$\beta_1 = 1.256$ ($p < 0.05$)	$\beta_{12} = 0.812$ ($p < 0.05$)	–	The moderating variable is an explanatory variable

$\beta_1 = 1.256$ ($p < 0.05$)	$\beta_{12} = 0.812$ ($p < 0.05$)	$\beta_{13} = -0.124$	Moderating variable has a moderating effect
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Source: Survey Data (2021)

Government regulations moderate the link between microfinance services and the performance of coffee entrepreneurs, as shown above (**Table 8**). The interaction term's coefficient, $\beta_{13} = -0.124$, means that for every unit increase in government regulations, the slant of microfinance services and the performance of coffee entrepreneurs fall by -0.124 . Therefore, government regulation has a negative moderating effect on the association between microfinance services and the performance of coffee entrepreneurs at a 95% confidence interval.

These results confirm that government regulations, such as taxes and license fees, have a detrimental effect on the performance of coffee entrepreneurs. This implies that the taxes are high and the licenses are difficult to obtain, both of which affect the business earnings. Furthermore, the study's outcomes are coherent with the theoretical propositions of the Contingency theory, which states that harsh environmental conditions such as high taxes, inflation, and insecurity reduce entrepreneurs' profits, thereby slowing their performance (Lawrence & Lorsch, 1967). The study outcomes are compatible with those of Lash & Batavia (2016), who found that taxes and regulations on business and finance lowered MFI microloans. They also agree with Mwasiaji (2019), who found that a complex regulatory environment, rigorous customs and trade laws, high tax regimes, tight monetary and credit policies, and labor regulations all have a detrimental impact on manufacturing firms' performance. Analogously, Amoah & Mungai (2021) found that government rules harmed the association between financial performance and microfinance services. Contrariwise, Otwani *et al.* (2017) found that corporate income tax had a beneficial impact on the financial performance of Kenyan-listed companies on the Nairobi Stock Exchange (NSE).

5.0 Conclusion

The objective of this study was to investigate how microfinance services affected the performance of smallholder coffee entrepreneurs in Uganda's central region. To attain this, the researcher investigated four variables: financial training, microcredit, saving mobilization, and farm inputs. All four variables have a statistically positive effect on the performance of smallholder coffee entrepreneurs in Uganda's central region. Additionally, the study also intended to determine whether government regulations had a moderating effect on the link between microfinance services and the performance of coffee businesses in Uganda's central region. Government regulations, moderate the relationship between microfinance services and the performance of smallholder coffee entrepreneurs in a negative way. Particularly, the study determined that license fees and taxes are high, putting a ceiling on the business earnings and performance of coffee entrepreneurs.

5.1 Policy implications

Although microfinance services had a positive effect on the performance of smallholder coffee entrepreneurs in Uganda's central region, there are still several shortcomings that MFIs and the Ugandan government must solve. MFIs should consider lowering the credit interest rates, removing harsh penalties for default and irregular savings and providing sufficient farm inputs (fertilizer and tarpaulins) for coffee farmers. Furthermore, the government programs that distribute and subsidize farm inputs (OWC & ACDP) should be strict on the quality of inputs, for instance,

farmers should be given clonal coffee seedlings that mature early, are high yielding and resistant to pests and diseases. Finally, the government should consider lowering taxes and license fees that impede coffee entrepreneurs' performance.

5.2 Limitations and future research

Even though this research provides interesting findings on microfinance services and the performance of coffee entrepreneurs, some limitations are to be observed. The study's data came from Ugandan coffee entrepreneurs. Hence the findings should be generalized to a non-comparable population with caution. More so the nature of services offered by Micro Finance Institutions are specific to a particular context and the government regulations on agricultural entrepreneurs vary per country which automatically affects the anticipated relationship with the performance of entrepreneurs.

Moreover, the study disregarded the effect of coffee prices on the performance of smallholder coffee entrepreneurs in the central region of Uganda. As a result, future research should look into how coffee prices affect the performance of smallholder coffee entrepreneurs in the central region of Uganda. Furthermore, various variables such as competition, firm size, and market access that may influence the relationship between microfinance services and the performance of coffee entrepreneurs in Uganda were not taken into account in this study. As such, more research into these aspects concerning the performance of smallholder coffee entrepreneurs is essential.

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