Empirical Investigation Into the Consequences of the Banking Sector Cleanup on Microfinance Sustainability in Ghana

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Abstract – The pivotal role of microfinance institutions in poverty reduction and inclusive development has garnered recognition, prompting extensive research into their economic sustainability. While existing studies focus on institutional and client factors, there's a notable gap regarding the impact of regulatory factors on economic sustainability. The recent microfinance sector clean-up by the Bank of Ghana provided an opportunity for this investigation. Using independent t-tests, the study assessed improvements in operating cost, operating income, and operating profit post-clean-up. Results reveal a lack of significant enhancement in operating costs and income, with a decline in operating profit. This suggests that regulatory measures in Ghana have not yet effectively promoted economic sustainability in the microfinance sector, emphasizing the need for a nuanced understanding of regulatory dynamics in fostering lasting impact.

1   Introduction

Microfinance institution through their role of financial intermediation for the poor and low-income earners have greatly contributed to the developmental agenda of many developing countries and have promoted equity in the developmental processes in these countries. In a world where significant number of individual (i.e. over 3 billion people) live in poverty (CGAP, 2011), the process of development in many developing countries would have been stalled without the services of microfinance institutions that ensure that low-income earners and the poor have access to funds to keep them productive. The nature and requirements of the traditional banking sector exclude the poor and low-income earners from having access to funds. It is in this regard that Cull et al (2009) argued that the high prevalence of poverty was an indication that many people would not have access to financial services because of their low-income levels and lack of collateral with the presence of microfinance which operate outside the requirements of traditional banking. Similar to this, Ledgerwood (1999), asserted that micro-finance as development-oriented organizers is there to serve the unserved and the underserved markets.

Microfinance institutions play a pivotal role in alleviating poverty, empowering women, and supporting other marginalized groups within the population. Additionally, they contribute to the development of new businesses, as highlighted by Ledgerwood (1999) and the work of Littlefield, Morduch, and Hashemi (2003). This means microfinance institutions are one of the other alternatives to reducing poverty levels (Otero and Rhyne, 1994; Yunus, 1997). For this reason, microfinance institutions are essentially expected to promote the most crucial objective of development which is poverty reduction (World Bank, 2000). This expectation from microfinance institutions has been well met in certain parts of the world. There has been evidence of poverty reduction through borrowing from microfinance institutions by women in parts of Bangladesh (Khanker, 1998) and by participants in microfinance institution in Peru, where net income, asset and employment increased (Dunn and Arbuckle, 2001a & 2001b). Apart from this other many other studies have showed the capacity of microfinancing to increase in income in communities in Bolivia, Indonesia, India and Ecuador (Hulme and Mosley, 1996; Chen and Snodgross, 2001; Banegas, 2002).

In another breadth, the successes of microfinance institutions can be seen in their demand and utilization levels. The substantial oversubscription, reaching 13 times, of Banco Compartamos, a Mexican Microfinance institution's IPO in 2007 (Rhyne & Guimon, 2007), demonstrates the extensive utilization of microfinance. Even interesting is the fact that early microfinance institutions have shown that poor people are credit worthy because their rate of repayment has exceeded that of traditional banks (Bhatt & Tang, 2001). The level of recognition given to microfinance institutions as development agents in Ghana is not different from the worldview. Such importance attached to the need for microfinancing can be identifies in changes in the financial regulatory framework of the country over the years. The financial liberalization in the

1980s and relaxation of the regulatory environment in which microfinance institutions operated has a lot to tell. Due to these policy measures, there was notable expansion and proliferation of microfinance institutions throughout the country (Steel and Andah, 2003). Alongside the same vision of seeing microfinance institutions as agents of development to serve the excluded, the Bank of Ghana undertook the deregulation of the financial services in the country in 2011 (Lassoued, 2017).

Notwithstanding the issue of sustainability of microfinance institutions has become paramount. The question of sustainability has gained traction in the aftermath of diverse crises within the microfinance sector in Ghana. Be-cause of these crises, there has been a pervasive decline in the viability of promising microfinance institutions in the country (Boateng et al., 2016; Osei-Fosu & Osei-Fosu, 2017). This, in part, supports the contention made by Screiner (2000, p. 425) and Ganka (2010) that it might be preferable to lack microfinance institutions than to possess ones that are not sustainable (Ganka, 2010). The rationale behind this perspective lies in the financial imprudence leading to crises, resulting in the loss of investments and, at times, the means of livelihood for the impoverished when microfinance institutions collapse (Boateng et al., 2016; Osei-Fosu & Osei-Fosu, 2017).

There are several factors that bring such crisis. Among others, this could be general economic conditions, internal factors, or regulatory requirements (Osei-Fosu & Osei-Fosu, 2017). In the case of Ghana, regulatory requirements were seen as crucial to reversing the crisis in the financial sector in general and microfinance institutions in particular. This can be seen in the motive for the recent Banking sector clean-up exercise that was started in 2017 (BOG, 2019). As part of this initiative, the Bank of Ghana annulled the licenses of more than a hundred microfinance institutions that had become unsustainable. These entities exhibited indications of financial distress, having become insolvent or non-operational. Fundamentally, the issues faced by these institutions included undercapitalization, elevated operational costs stemming primarily from unsustainable interest rates provided to depositors, inadequate investment practices leading to associated losses, diversion of deposits into private, unprofitable, and speculative ventures, deficient corporate governance, weak internal controls, fraud, and non-compliance with prudential norms, among other challenges (BOG, 2019).

The revocation of the license therefore left behind 137 microfinance institutions which were to be followed up by measures that will ensure that they become sustainable financially (BOG, 2019)..

1.1 Problem Statement

The importance of microfinance institutions in the developmental process, especially in bringing the poor and excluded to share in the benefits of development has been copiously laid bare in the background to the studies. This special role of microfinance institutions has attracted lots of research.

Focus of the enough research works in this area can broadly be put under two categories. In the first group are authors who are interested in the outreach of microfinance institutions. They try to assess the breadth and depth of reach and the impact on the poor. In this category, the impact of microfinance on the poor, their income, assets, and consumption levels has been given attention the world over (Khanker, 1998; Dunn and Arbuckle, 2001a & 2001b; Hulme and Mosley, 1996; Chen and Snodgross, 2001; Banegas, 2002; Anane, 2012). The second set of researchers has concentrated on examining elements that impact the financial viability of microfinance institutions. In this regard strategies for ensuring sustainability in the face of crisis by managers (Ahiafor, 2019); and the impact of firm characteristics, financial structure and client information on microfinance sustainability have also been studied (Kinde, 2012; Aveh et al, 2013, Chikalipah, 2017). The third group of researchers has tried to investigate the interplay between outreach and sustainability. These researchers do not view outreach and sustainability of microfinance as exclusively competitive but rather complementary and interdependent. They have therefore studied how outreach impact sustainability (Kinde, 2012) and the tradeoff between outreach and sustainability of microfinance institutions (Borbora, 2011).

In spite, there is little or no research on the impact of regulatory practices on sustainability of microfinance institutions. In this vein the regulatory practices of the Bank of Ghana in a financial clean-up exercise to promote microfinance sustainability (BOG, 2019) provides a good ground for research. The extent to which this exercise has promoted microfinance sustainability can fill a significant knowledge gap in many respects. Both short-term and long-term consequences need to be considered to maximize the overall impact.

This study therefore sought to assess that impact of the microfinance clean up exercise by the central bank on sustainability of microfinance in Ghana, albeit in the short run. This was achieved by comparing key sustainability variables like operating cost, operating income, and operating profit in the period before and after the clean to determine if statistical difference could be established and if so to determine the direction in which the variables pointed.

1.2 Objectives of the Study

The main objective of this study is to assess how the Bank clean-up exercise has enhanced Microfinance sustainability in Ghana. The specific objectives are:

- To assess whether operating profits of microfinance institutions in Ghana are higher in the post bank cleaning era.
- To assess whether operating income of microfinance institutions in Ghana is higher in the post bank cleaning era.
- To assess whether operating cost of microfinance institutions in Ghana is lower in the post bank cleaning era.

2   Theoretical Framework

2.1   Concept of Microfinance and its Advancement in Ghana

Microfinance is perceived in various ways, with no universally accepted definition. It is commonly viewed to uplift the impoverished who lack access to traditional banking services, providing financial support to small-scale business owners and traders in developing countries' rural and urban areas. Robinson (2001) defines microfinance as banking activities catering to small, collateral-free loans and accepting small deposits.

Otero (1994) sees microfinance as serving economically challenged individuals, including the self-employed, while Ledgerwood (1999) emphasizes that financial services encompass not only savings and credit but also payments and insurance. Microfinance enables the economically risky to obtain credit, filling the void left by traditional banks. Microcredit, synonymous with microfinance, offers small, uncollateralized loans based on trust, not legal procedures.

Yunus (2007) adds that microfinance goes beyond credit to encompass savings, payments, insurance, and other financial services. In the 1980s, microfinance institutions reached a critical point without relying on donors, and they grew exponentially in the 1990s, transitioning into a thriving industry.

Furthermore, the microfinance sector expanded its offerings beyond loans to include savings, insurance, and pension plans, realizing the poor's demand for diverse financial resources (MIX, 2005). Now, the focus shifts to sustainability and outreach as the microfinance industry continues to thrive, garnering interest from the developed world.

Microfinance has been a well-established tradition in the Ghanaian economic landscape., dating back to its inception, where individuals offered credit to friends and family, earning interest on the repayments. Nevertheless, empirical research suggests that a considerable segment of the population in developing nations, numbering less than 14%, remains without access to conventional formal financial services provided by banks. Aryeetey and Gockel (1991) conducted research revealing that these underserved groups resort to self-financing their investments through personal networks and limited savings, which often proves insufficient. This situation perpetuates vulnerability and keeps the marginalized trapped in poverty. In Ghana, diverse legal frameworks, such as the Moneylenders Ordinance (1940 and 1957), Co-operative Decree (1968), NLCD 252, Banking Law 1989 (PNDCL 225), and Non-Banking Financial Institutions (NBFI Law 1993, PNDCL 328), are in effect to oversee the activities of microfinance institutions and establish stability in the financial sector of the nation. These regulations play a crucial role in managing and governing the operations of microfinance institutions in Ghana.

2.2   Microfinance Sustainability and Subsidy

The sustainability of microfinance institutions hinges significantly on their financial viability. This refers to their ability to cover all expenses using inter-

nally generated operating income, free from external support or subsidies (Thapa et al., 1992). Dunford (2003) further elucidates that financial sustainability involves advancing towards microfinance goals without continual dependence on donor assistance. These definitions underscore the im-portance of self-reliance and the potential for profitability.

The evaluation of financial sustainability comprises two stages: operational sustainability and financial self-sufficiency. Operational sustainability indicates that the institution can meet its operational expenses through generated income, irrespective of subsidies (Meyer, 2002). On the other hand, financial self-sufficiency indicates that microfinance institutions can independently pay running and borrowing costs, including market-rate subsidies, from their own generated income.

It is crucial to emphasize that an MFI exhibiting inadequate financial performance would not be deemed financially sustainable. Similarly, a profit-generating MFI that depends on subsidized services to offset certain costs would also not be considered financially sustainable. True financial sustainability requires complete self-sufficiency and profitability without external aid.

The long-term success of microfinance institutions heavily relies on financial sustainability. It pertains to their ability to cover all expenses through internally generated operating income, without depending on external support or subsidies (Thapa et al., 1992). Dunford (2003) further emphasizes that financial sustainability entails working towards microfinance objectives without ongoing reliance on donor assistance. These definitions underscore the importance of self-reliance and the potential for profitability.

The evaluation of financial sustainability involves two key aspects: operational sustainability and financial self-sufficiency. Operational sustainability means the institution can fund its day-to-day expenses solely from operating income, regardless of subsidies (Meyer, 2002). On the other hand, financial self-sufficiency signifies that microfinance institutions can autonomously cover operational and borrowing costs, even with market-rate subsidies, using their internally generated revenue.

It is crucial to acknowledge that an MFI demonstrating subpar financial performance cannot be considered financially sustainable. Similarly, a profit-generating MFI dependent on subsidized services to cover specific costs would also lack financial sustainability. True financial sustainability necessitates complete self-sufficiency and the ability to thrive without external financial support.

2.3 Breadth and Depth of Outreach

According to Hishigsurem (2004), the scope of outreach in microfinance is characterized as the quantity of impoverished individuals served by a microfinance institution. Numerous studies, including those conducted by Ganka (2010), Mersland and Strom (2009), and Harmes et al. (2008), have employed the number of borrowers as an indicator of outreach. The prevailing notion is that greater outreach suggests catering to a larger number of borrowers.

Interestingly, LOGOTRI (2006) found that a greater number of borrowers is a key factor contributing to sustainability. However, Ganka's (2010) study of microfinance institutions in Tanzania uncovered a significant and negative association between outreach scope and financial sustainability. Ganka suggests that an upsurge in the number of borrowers might not necessarily bolster the financial sustainability of microfinance institutions, potentially leading to inefficiencies due to the expanded client base.

In contrast, Hartarska (2005) found no significant impacts on financial sustainability based on the number of borrowers. These differing findings highlight the complexity of the relationship between outreach and financial sustainability in the context of microfinance institutions.

Hulme and Musley (1996) conducted a study suggesting that micro-finance institutions (MFIs) lose their unique identity without serving the poor. They argue that outreach should not be measured by the overall number of clients but rather by the number of clients considered to be poor. On the other hand, Ledgerwood (1999) contends that measuring outreach solely based on the number of borrowers fails to consider their relative level of poverty. Instead, some studies have used the average loan size as a proxy measure of depth of outreach, if smaller loans indicate poorer customers.

In contrast to the prevailing notion that small loans carry higher risks and are linked to reduced financial sustainability, Woller and Schreiner (2002) identified a positive correlation between the depth of outreach and financial self-sustainability. Cull et al. (2007) similarly noted that institutions providing small loans are no less profitable than those offering larger loans. Paxton (2003) supports this observation by revealing a negative connection be-tween the depth of outreach and dependency on subsidies, underscoring the positive relationship between profitability and outreach depth.

2.4 Capital Structure of Microfinance Institutions

The composition of capital sources can significantly impact the profitability and sustainability of microfinance institutions. These sources encompass loans, savings, deposits, and shares (Woller and Schreiner, 2002). Several studies have explored whether the capital structure plays a role in determining microfinance institutions' sustainability.

Kyereboah (2007) finds that highly leveraged microfinance institutions are better equipped to handle moral hazards and adverse selection than those with lower leverage. In contrast, Ganka (2010) suggests that while the capital structure does influence financial sustainability, having diverse sources of capital does not necessarily enhance it. Ganka highlights equity as a relatively cheaper funding source, which can contribute to increased financial sustainability.

Understanding the interplay between different capital sources and their effects on profitability and sustainability is crucial for microfinance institutions to optimize their financial performance and serve their clients effectively. Further research in this area can provide valuable insights for enhancing the long-term viability of microfinance operations

2.5   Efficiency

Efficiency in microfinance refers to the ability to achieve maximum output with a given input level, especially in delivering small loans to the very poor. It involves minimizing costs and maximizing income while operating effectively, thereby impacting the financial sustainability of microfinance institutions. Efficiency can be assessed through productivity dimensions (e.g., number of borrowers per employee) and cost management (e.g., cost per borrower) (Woller, 2000).

Woller's (2000) research on village banking's financial viability revealed that variables like the number of borrowers and cost per borrower are close-ly linked to financial sustainability. Woller and Schreiner (2002) also found efficiency to be a significant determinant of profitability in their analysis of financial sustainability determinants. Conversely, a study by Ganka (2010) on Tanzanian rural microfinance reported a negative and statistically significant association between the number of borrowers per employee and financial sustainability. This suggests that inefficiency among rural microfinance staff leads to difficulties in managing borrowers as their numbers increase, resulting in unsustainable microfinance institutions.

However, Christen et al. (1995) did not find a correlation between productivity and financial sustainability. Moreover, Ganka (2010) documented that the association between cost per borrower and financial self-sustainability was statistically insignificant.

These varied findings highlight the complexity of understanding the relationship between efficiency measures and financial sustainability in micro-finance institutions. Further research is essential to gain a comprehensive understanding of how efficiency impacts the long-term viability of micro-finance operations.

2.6   Empirical Literature

Chikalipah's (2017) study delves into the determinants of financial sustainability among 324 microfinance institutions (MFIs) operating in 33 sub-Saharan African countries from 2003 to 2014. Utilizing a rigorous Generalized Method of Moments (GMM) estimation methodology, the research un-equivocally establishes that the return on assets (ROA) stands as the primary indicator of financial sustainability for MFIs in the region. The study underscores the crucial role of achieving higher net income from the loan port-folio in maintaining their financial health. Consequently, it emphasizes the need for MFIs to adopt robust pre-loan evaluation processes to assess lenders' creditworthiness, thereby mitigating default levels of loans and ensuring continued sustainability.

Similarly, Kinde's (2012) analysis focuses on understanding the factors influencing the financial sustainability of MFIs specifically in Ethiopia. The study employs a qualitative approach with data collected from a representative panel of 14 Ethiopian MFIs spanning the years 2002 to 2010, comprising a total of 126 findings. The study reveals that the breadth of micro-finance out-

reach, depth of outreach, dependence ratio, and expense per borrower significantly impact the financial sustainability of Ethiopian MFIs. On the other hand, the microfinance capital structure and workers' efficiency demonstrate only marginal impacts during the research period.

Considering the findings, Kinde (2012) offers valuable recommendations to enhance the financial sustainability of MFIs in Ethiopia. The study suggests increasing the number of borrowers (breadth of outreach) to augment loan volume, coupled with successful follow-up mechanisms to maintain favorable returns and cost-efficient operations. Additionally, raising the aver-age loan size can contribute to sustainability, though it requires careful management to minimize uncertainty surrounding loan defaults.

Turning our attention to the Ghanaian context, Osei-Fosu and Osei-Fosu (2017) investigate the proliferation and collapse of Savings and Loan Companies in Ghana, particularly in the Kumasi Metropolis. The study gathers data from 10 Savings and Loan Firms, including inputs from 160 people, 101 workers and managers, and 8 owners. Employing a descriptive and qualitative methodology, the authors identify factors such as profitability, low financial criteria for establishment, and lax regulatory standards as driving the spread of these companies. However, numerous collapses are attributed to issues like high employee turnover, inadequacy of finance practitioners, customer attrition, high loan default rates, and manipulative practices by owners.

To address the situation, Osei-Fosu and Osei-Fosu (2017) propose hiring and retaining trained workers, stringent regulatory oversight, support for defaulting clients, and prosecution of financial institution owners who fail to adhere to Central Bank regulations.

Similarly, Boateng et al. (2016) explore the development and collapse of four microfinance organizations in the Ashanti region of Ghana. The collapse is attributed to risky, unethical, and illicit activities, mismanagement, lack of due diligence, and external factors such as macroeconomic volatility and anxious withdrawals. The researchers advocate for measures to safeguard MFI customers and the public against unscrupulous financial practices.

In a broader context, Petti (2003) warns about the loss of systemic legitimacy in the financial sector, which can lead to liquidity crises. The loss of public trust in MFIs in Ghana has resulted in panic withdrawals and a decline in deposits.

In conclusion, these studies highlight the critical importance of financial sustainability for microfinance institutions and the need for robust strategies to ensure their stability and continued positive impact on the communities they serve. Addressing factors such as creditworthiness assessment, regulatory oversight, and ethical practices is crucial in fostering the long-term viability of MFIs.

3 Research Methodology

3.1 Research Design

The study adopted Ex Post Facto Research Design. This is research conducted after variation in the variable of interest has already been determined in the natural course of events. This means that such studies are conducive where experiments cannot be conducted. In the case of this study, the regulatory change seen in microfinance clean-up and other associated measures had already taken place. Otherwise, it would have been beyond the control of the researcher to manipulate the regulatory variable which is of interest in the study. Even if the researcher had the power to effect changes, it would have been unethical to do so just for experimental rea-sons.

The challenge with this design is internal validity since most internal processes can change over the course of time. To minimize this, the research-er used a homogenous group which existed of 137 microfinance institutions which existed both in the pre and post regulatory change phase. The use of the same microfinance institutions would place greater control on internal variables like managerial and client characteristic that are amenable to variability.

Also, in controlling for other third-party external variable like impact of the economy (inflation interest rate etc.), the period that was selected was a stable period for the macroeconomy where inflation and interest rate were stable. In view of this, the COVID-19 era was excluded from the studies. Further, not too long a period before and after the regulatory change was used. Hence, the selection of the period August 2018 to March 2020 for the study.

After ensuring internal validity and external validity in this manner, any statistical changes that were observed in the sustainability indicators could comfortably be associated with the regulatory variable.

3.2 Sample

The researcher for convenience and availability of data selected all the 137 microfinance institutions that survived the microfinance sector clean-up for the study. This was done to avoid biases associated with sampling.

Also, due to considerations with regards to the research design for the study, a period of 20 months was used. This period was relatively short to allow for seriously fluctuations in both the internal and external factors of that could taint the reliability of our findings. Most important this period did not enter in the COVID-19 restrictions era.

The period from August 2018 to May, 2020 was considered as the pre regulatory change era whereas the period from June, 2019 to March, 2020 was seen as the post COVID-19 era.

3.3 Data and Source

The data was monthly data on microfinance institution obtained from the Bank of Ghana. The data covered the variables: operating cost, operating income, and operating profit.

The Bank of Ghana calculated operating income by adding interest on investments, interest on loans and other operating income after which interest expense was deducted. This means that high interest expense will affect operating income. From operating income operating profit was obtained by subtracting operating cost and risk provisions (including charge-offs).

In this way a fall in operating profit is an indication of a decline in operating sustainability. Most importantly, risky ventures were penalized through the risk provision. It must be noted that due to the relatively short nature of the period under study and the low and stable inflation rate over the period, inflation was not adjusted for.

4 Results

The data is analyzed in this section and findings and results are presented.
Research Question 1:

IS OPERATING PROFITS OF MICROFINANCE INSTITUTIONS IN GHANA HIGHER IN THE POST BANK CLEANING ERA?

Table 1 presents descriptive statistics of operating profit. It is divided into two groups for the period before and the period after the clean-up exercise of microfinance institutions.

Table 1: Descriptive statistics of operating profit

	Bank Clean-up	N	Mean	Standard Deviation	Standard Error
	Before Bank Clean-up	1192	-3739.83	96050.95	2782.04
Operating Profit					
	After Bank Clean-up	1264	-21452.12	197404.45	5552.43

It is seen from Table 1 that operating profit of the existing 137 microfinance institutions has not become better after the clean-up exercise. In fact, the average operating profit worsened from -3,739.84 for the ten months before the exercise to -21,452.12 for the ten months after the exercise.

Table 2 is presented to help us determine whether the observed difference in mean of operating profit is statistically significant or not.

Table 2: Descriptive statistics of operating profit

		Levene's Test for Equality of Variances		T-test for equality of means			
		F	Sig	t	df	Sig. (2-tailed)	Std. Error Difference
	Equal variances not assumed	13.066	0.0	2.801	2454	0.005	6323.85
Operating Profit							
	Equal variances not assumed			2.852	1852.91	0.004	6210.41

The Levene's test for equality of variance in Table 2 shows that the two samples do not have equal variances as the F-test is statistically significant at the 5% level of significance. As a result of this the t-test is conducted on the assumption that the variances are not the same.

Observing from Table 2, the t-test is statistically significant at the 5% level of significance. This means that the observed difference in mean in Table 1 is not by chance.

Thus, operating profits of microfinance institutions in the ten-month period after the clean-up exercise have fallen when compared with its value in ten-months period before the exercise.

Research Question 2:

IS OPERATING INCOME OF MICROFINANCE INSTITUTIONS IN GHANA HIGHER IN THE POST BANK CLEANING ERA?

Table 3: Descriptive Statistics of Operating Income

	Bank Clean-up	N	Mean	Standard Deviation	Standard Error
	Before Bank Clean-up	1192	71600.40	147519.99	4272.80
Operating Profit					
	After Bank Clean-up	1264	64619.78	144480.11	4063.82

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In table three the operating income of microfinance institutions remained higher in the ten-months period before the clean-up exercise at 71,600.40 than after the exercise where it fell to 64,619.78.

This observed difference in mean can result from chance and Table 4 helps us to judge in this direction

Table 4: T-test of equality of means for Operating Income

		Levene's Test for Equality of Variances		T-test for equality of means			
		F	Sig	t	df	Sig. (2-tailed)	Std. Error Difference
	Equal variances not assumed	0.258	0.611	1.185	2454	0.236	5893.13
Oper-ating In-come							
	Equal variances not assumed			1.184	2438.56	0.237	5896.73

The Levene's test for equality of variances is not significant and therefore the analysis is done on the assumption that variances are equal. Against this assumption, the t-test is not statistically significant and therefore the observed difference in mean in Table 3 is by chance. Hence, operating income have remained the same after the clean-up exercise of microfinance institutions of the Bank of Ghana.

Research Question 3:

IS OPERATING COST OF MICROFINANCE INSTITUTIONS IN GHANA HIGHER IN THE POST BANK CLEANING ERA?
The operating cost of microfinance institutions in Ghana after the clean-up exercise is compared with its value before the exercise in Table 5

Table 5: Descriptive statistics of operating cost

	Bank Clean-up	N	Mean	Standard Deviation	Standard Error
	Before Bank Clean-up	1192	63321.28	114134.14	3305.80
Operating Profit					
	After Bank Clean-up	1264	62872.55	119442.51	3359.58

Table 5 shows that operating cost of microfinance institutions in Ghana has fallen slightly from 63,321.29 over the ten-month period before the clean-up exercise to 62,872.55 over the ten-month period after the exercise.

Table 6 provides us with the significant level of this difference in mean.

Table 6: T-test of equality of means for operating cost

		Levene's Test for Equality of Variances		T-test for equality of means			
		F	Sig	t	df	Sig. (2-tailed)	Std. Error Difference
	Equal variances not assumed	0.25	0.875	0.095	2454	0.924	4719.57
Operating Cost							
	Equal variances not assumed			0.095	2453.52	0.925	4713.29

As seen from Table 6 the variances are not equal since the Levene's test is significant at the 5% level of significance. Following this guide, the t-test is found not to be significant at the 5% level of significance and hence the means are equal. Thus, there is no statistical evidence to show that operating cost in the post Bank clean-up era is lower for microfinance institutions in Ghana. This means that operating costs of microfinance institutions have not changed after the clean-up exercise.

5   Discussion

In addressing the first research question, which investigates whether the operating profits of microfinance institutions in Ghana increased in the post-Bank cleaning era, our findings, as presented in Table 1, reveal a surprising decline. Despite the anticipation of improvement, the average operating profit for the 137 microfinance institutions worsened from -3,739.84 to -21,452.12 in the ten months following the clean-up exercise. Statistical analysis, as seen in Table 2, supports the significance of this change, indicating that the observed difference is not a random occurrence. These results align with the conclusions drawn by Gwatiringa (2020), who found a similar trend in his study.

Moving on to the second research question regarding the operating income of microfinance institutions in the post-Bank cleaning era, Table 3 presents a decrease from 71,600.40 to 64,619.78 in the ten months after the exercise. However, the statistical analysis in Table 4, indicating non-significant results from the t-test due to equal variances, suggests that this observed difference is likely by chance. These findings echo the research of Fosu and Fosu (2017), supporting the notion that operating income has remained consistent after the clean-up exercise.

Turning our attention to the third research question concerning operating costs in the post-Bank cleaning era, Table 5 displays a marginal reduction from 63,321.29 to 62,872.55 over the ten-month period after the exercise. Contrary to expectations, the statistical analysis in Table 6 indicates non-significant results from the t-test due to unequal variances. Consequently, there is no statistical evidence supporting a change in operating costs after the clean-up exercise, aligning with the conclusions drawn by Aveh and Dadzie (2013)

In summary, our study highlights nuanced trends in the financial performance of microfinance institutions in Ghana following the Bank cleaning era. The unexpected decline in operating profits, the stability of operating in-come, and the lack of significant change in operating costs underscore the complexity of the post-clean-up financial landscape for these institutions.

6   Conclusion

The main objective of this study is to investigate the aftermath of the Banking Sector Cleanup on Microfinance Sustainability in Ghana. In this attempt the Ex Post Facto design was adopted to assess how sustainable the 137 microfinance institutions that survived the clean-up exercise have become. This was done by comparing key sustainability variables like operating cost, operating income, and operating profit.

After applying independent sample t test technique, it was found out that: operating income and operation cost remained statistically the same over the period of study. This could be the result of the short period after the regulatory change since the period under study extended to only ten months after the regulatory change. In this regard the expectation was that operating profit

would also remain the same statistically. Although the short period could be a factor as monetary policies usually have pronounced lags, there is a cause for worry as operating profit of the microfinance institutions have significantly fallen. With operating income and operating costs being statistically the same, the only variable that would account for this fall in operating profit is the provision for risk (including charge-offs).

Policy makers should therefore ensure that the proposed measures to be implemented after the clean-up in the microfinance sector that were out by BOG (2019) are fully followed. This will help to avoid rending the clean-up exercise a worthless activity.

7 Author

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