

# Intellectual capital: mediator of board of directors' effectiveness and adoption of International Financial Reporting Standards

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## Abstract

**Purpose** – The purpose of this paper is twofold: to test whether intellectual capital mediates the relationship between board of directors' effectiveness and adoption of International Financial Reporting Standards (IFRS) and to examine the contribution of the specific elements of intellectual capital and board of directors' effectiveness to adoption of IFRS.

**Design/methodology/approach** – This study is cross-sectional. Usable questionnaires were received from 67 microfinance institutions (MFIs) that are members of the Association of MFIs of Uganda. The data was analyzed using Statistical Package for Social Sciences and MedGraph program (Excel version).

**Findings** – Results indicate that intellectual capital mediates the relationship between board of directors' effectiveness and adoption of IFRS. Results further indicate that board independence and board meetings contribute significantly to the adoption of IFRS unlike board size and board committees. Results also indicate that in the intellectual capital elements, only structural capital and human capital significantly contribute to the adoption of IFRS unlike relational capital.

**Originality/value** – This study provides more insights on our understanding of the relationship between intellectual capital, board of directors' effectiveness and adoption of IFRS. Specifically, it provides first time evidence of the mediation effect of intellectual capital in the relationship between board of directors' effectiveness and adoption of IFRS using evidence from an African developing country – Uganda. Further, this paper adds to existing literature on corporate governance and reporting practices, as it provides more

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insights on the contribution of specific elements of board of directors' effectiveness and intellectual capital to adoption of IFRS.

**Keywords** Uganda, Intellectual capital, Adoption of IFRS, Microfinance institutions, Board of directors' effectiveness

**Paper type** Research paper

## 1. Introduction

Globally, the adoption of International Financial Reporting Standards (IFRS) at national level is on the increase, especially among listed firms. Little is known on whether private entities with less concern for attraction of capital prepare financial statements that are IFRS compliant, especially on the African scene. Of course, there is no doubt on firms that prepare financial statements that are IFRS compliant to be leveraged as compared to those that do not. In countries that adopted IFRS at national level, it is expected that all firms prepare IFRS compliant financial statements depending on the respective country accountancy regulator, although in some jurisdictions it is not always the case (Pignatell and Tchuigoua, 2020). The adoption of IFRS comes with improved comparability and transparency of the financial statements (Bassemir, 2018; Rezaee *et al.*, 2010; Phan *et al.*, 2018). It is undoubtedly clear that the usage of IFRS reduces earnings management and increases faithful representation and relevance of financial information (Nalukenge, 2020). Whereas microfinance institutions (MFIs) relied on donor funding, such arrangements have faded out, and it is upon them to seek external funding through the usage of IFRS in preparation of financial statements (Nalukenge *et al.*, 2018). Financial statements not based on IFRS disclosure requirements are less trustworthy, less useful and less relevant.

Several factors for the adoption of IFRS for both unlisted and listed companies exist in literature. For example, André and Kalogirou (2019) document that if the parent company is preparing to issue more debt in future, then the subsidiary is likely to adopt IFRS in preparing financial statements. In their study of cross-country determinants of IFRS for SMEs adoption, Damak-Ayadi *et al.* (2020) found that the law enforcement quality, culture, trading networks, economic growth and institutional pressures are positively associated with IFRS adoption for SMEs. In another study, Bananuka *et al.* (2019a) found that intellectual capital and board of directors' effectiveness have significant associations with adoption of IFRS among MFIs in Uganda. Relatedly, Bananuka *et al.* (2019b) found that audit committee effectiveness, isomorphic forces and managerial attitude significantly contribute to IFRS adoption in Uganda's MFIs. Further, Nalukenge *et al.* (2018) conducted a study on IFRS compliance and found that corporate governance, ethical culture and internal controls over financial reporting each make significant contribution to IFRS compliance among MFIs in Uganda. In the same study, the authors document that the IFRS compliance levels among Uganda's MFIs is low. This is further confirmed in a study by Nalukenge (2020) that IFRS compliance level in Uganda's MFIs is 45.6% suggesting that the compliance level is below average. Nalukenge (2020) attributes such low compliance levels to board role performance.

While notable studies exist on adoption of IFRS, majority of the studies such as Alfraih (2016) ignore the use of a questionnaire and opt for content analysis. Content analysis studies are largely known for providing accurate data and documenting those indirect managerial motivations for adoption of IFRS. On the other hand, a questionnaire is powerful in documenting those direct managerial motivations for decisions related to the adoption/usage of IFRS. For those studies that have used a questionnaire, their focus has been at obtaining direct relationships among the study variables and neglected to test for

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mediations (see [Bananuka et al., 2019a](#)). This study therefore uses a questionnaire to obtain those direct managerial motivations for IFRS adoption decisions.

The existing literature has not paid much attention to the contribution made by the specific attributes of board of directors' effectiveness to adoption of IFRS. Not all the specific elements of board of directors' effectiveness may be important for IFRS adoption. The most commonly known measures of board of directors' effectiveness are board size, board independence, board meetings and board committees. While there are studies such as [Alfraih \(2016\)](#) that found board size to be significantly associated with mandatory disclosure compliance in Kuwait, it all depends on the composition of the board. In fact, a large board size may waste time in arguments and fail to make compelling resolutions. A smaller board size with the necessary expertise maybe more effective than a large sized board ([Boubaker et al., 2012](#)). For board independence, this study argues that an independent board from management will pass those resolutions that are respected by management. Board meetings are equally important because it is in those meetings that decisions regarding adoption of IFRS are passed. For the committees, the boards of MFIs need to have various committees such as the finance committee with the necessary expertise to handle specific areas such as quality of disclosures.

The contribution made by intellectual capital attributes to adoption of IFRS has been neglected in the literature. Majority of the studies such as those of [Bananuka et al. \(2019a\)](#) have examined the contribution of intellectual capital to adoption of IFRS without testing whether the human, structural and relational elements of intellectual capital individually contribute to adoption of IFRS. By intellectual capital, we refer to the sum of all the intangible and knowledge-related resources an organization uses to create value. Our argument is such that, first, the usage of IFRS in preparation of financial statements require well trained and knowledgeable human resources who are capable of interpreting the various standards such as IFRS 9: *Financial instruments*. Second, the adoption of IFRS requires clear systems for example, there should be policies in place regarding the usage of IFRS. Finally, because of the complexity in interpretation of IFRS, MFIs need to relate with each other or employees relating with each other so that more knowledge on the usage of IFRS is sought.

We note that the mediating role of intellectual capital in the relationship between board of directors' effectiveness and adoption of IFRS has been ignored in the existing literature. The board may be of an appropriate size with the necessary expertise, may be independent of management, holds meetings and has all the necessary committees, but it may only pass those resolutions whose implementation may never be realized unless there is a high level of intellectual capital. A high-level intellectual capital especially the human capital is capable of interpreting the requirements of IFRS and follow them in the preparation of financial statements in the presence of properly documented systems. In the event that interpretation of some IFRS becomes difficult, then knowledge regarding their interpretation may be sought from other organizations or individuals. This may not be done by the board but rather the managers and employees who form the human capital of the organization. The board in this case may only approve the budget in case it involves some costs. This study therefore argues that intellectual capital is very critical in ensuring that an organization adopts IFRS. However, for IFRS to be adopted by MFIs, the board has to put in place an environment that is conducive. Such an environment may include having an intellectual capital base with the necessary expertise and systems.

The key question of this study is whether intellectual capital mediates the relationship between board of directors' effectiveness and adoption of IFRS or it is rather a belief. Also, what is the contribution of the specific attributes of board of directors' effectiveness and

intellectual capital to adoption of IFRS? These two overarching questions are answered in this study through a questionnaire survey of 67 MFIs where the chief finance officers or general managers are the units of inquiry. We find that first, intellectual capital mediates the relationship between board of directors' effectiveness and adoption of IFRS. Second, board independence and board meetings contribute to the adoption of IFRS unlike board size and board committees. Finally, human and structural capital contribute significantly to adoption of IFRS unlike the relational capital.

The present study results provide important insights for the academia, practitioners and policymakers. We build on existing literature such as that for [Bananuka et al. \(2019a\)](#) by documenting that the specific elements of board of directors effectiveness that are critical to adoption of MFIs are board independence and board meetings. Also, human and structural capital elements of intellectual capital are important for the adoption of IFRS in Uganda's MFIs. Further, the findings are useful to regulators of MFIs in Uganda, the Microfinance Regulatory Authority (UMRA) in encouraging the adoption of IFRS among MFIs. The regulators of MFIs may use this study results to encourage owners of MFIs to have effective boards in place who are independent of management and are capable of having at least four meetings per annum. It is also important that the board appoints managers with skills and knowledge of IFRS usage especially in the finance or accounting department so that the reporting quality is improved.

The remainder of the paper is structured as follows. Section 2 discusses the study setting and this is followed by a discussion on theoretical and empirical literature in Section 3. Section 4 shows methodology where the research design is outlined. Section 5 has results and lastly, discussion and concluding remarks in Sections 6 and 7.

## 2. Study setting

This study was conducted in Uganda's MFIs. MFIs are popular for financing the informal sector which is the largest sector in Uganda. MFIs are largely categorized as small and medium enterprises and are among firms that do not prepare financial statements that are IFRS compliant ([Nalukenge et al., 2018](#)). Some MFIs are profit making while others are not for profit making ([Beisland and Mersland, 2014](#)). [Beisland and Mersland \(2014\)](#) indicate that not for profit making MFIs have challenges with financial reporting. According to [Pignatel and Tchuigoua \(2020\)](#), MFIs that are established for commercial purposes will adopt IFRS as compared to those with a different agenda. [Pignatel and Tchuigoua \(2020\)](#), further note that in some jurisdictions, regulators pay less attention to the enforcement of IFRS usage. This is true for Uganda especially in the MFIs where regulators have not enforced the use of IFRS in the preparation of financial statements. To attract funding, all MFIs need to prepare financial statements that are IFRS compliant because such MFI financial statements will be comparable to others, relevant and faithfully represented.

The accountancy profession in Uganda is regulated by the Institute of Certified Public Accountants of Uganda (ICPAU) which adopted IFRS in 1998 and requires all financial services firms including MFIs to apply full IFRS in preparation of financial statements. However, ICPAU has not been able to enforce the usage of IFRS among MFIs. ICPAU has left the issue of compliance with accounting frameworks to the specific regulators of a given industry or to those charged with governance of particular firms. This has given a leeway for the MFIs to continue to prepare financial statements without following IFRS.

According to the [AMFIU Directory \(2017/2018\)](#), MFIs are categorized as Tier IV (MFIs and Savings and Credit Cooperative Societies) with the Microfinance and Money Lenders Act of 2016 as their law. In this law, every MFI must have a committee which constitutes its governance committee and as such, must have the board of directors. This is not clearly

pronounced as it is the case with the companies Act and the Cooperative Societies Act. Given that the companies Act of 2012 is supreme over the Microfinance and Money Lenders Act, it is therefore mandatory for every MFI to have a board of directors in place because the Companies Act requires so. Section 108 of the Tier IV Microfinance and Money Lenders Act stipulates that the requirements for liquidation of a Tier IV MFI are those enshrined in the Companies Act. MFIs in Uganda may be registered under the Companies Act of 2012 or the Cooperatives Societies Act of 1991. Both the companies Act, the Tier IV microfinance and money lenders Act, and the Cooperative Societies Act require that an MFI has board of directors in place.

Other Uganda's financial institutions are categorized as Tier I (commercial banks), Tier II (credit institutions) and Tier III (micro deposit taking institutions) and are regulated by Bank of Uganda. The Microfinance and Money Lenders Act provides for UMRA which is expected to come up with policies expected to streamline the operations of MFIs. one such policy is to require MFIs to have an effective board of directors that is capable of ensuring that management prepare financial statements that are IFRS compliant.

### 3. Literature review

#### 3.1 Theoretical foundation

We invoke the diffusion of innovations (DOI) theory to explain IFRS adoption among MFIs in Uganda. The theory defines diffusion as a process by which an innovation is communicated through various channels among members of the system (Rogers, 1995). An innovation is an idea, practice or project that is perceived as new by an individual or other unit of adoption (Rogers, 2003). In respect to this study, the IFRS are seen as an innovation in the field of financial accounting and reporting. While the IFRS are not new in Uganda, they may be perceived as new among the MFIs given that these MFIs in Tier IV have not been under pressure to use IFRS in their reporting practices. The adoption of IFRS among MFIs can be possible if the intended adopters are knowledgeable in IFRS and are aware of the benefits of adopting IFRS. Rogers (2003) argues that for an innovation to be adopted, there must be change agents (individuals in responsible positions capable of taking decisions to influence others). Thus, the board of directors as heads of the MFIs are responsible for the adoption of IFRS.

The board of directors of an MFI are known for taking strategic decisions, but this is not always obvious. In certain situations, the board may be reluctant on some strategic paths especially when the board committees are poorly constituted and lack independence. The board is expected to be of an appropriate size as enshrined in the applicable laws and is able to meet at least four times annually. If the board of an MFI can have such attributes, then it is deemed effective and is capable of ensuring that the respective MFI use IFRS in the preparation of financial statements. Intellectual capital can be at the forefront of adoption of innovations for example, the DOI theory as proposed by Rogers (1995) suggests that for an innovation to be adopted, the human capital of the entity adopting the innovation is very crucial. DOI also recognizes that systems and networks of an organization are critical for the adoption of innovations. It may be difficult to adopt innovations when there are no systems in place. Innovations may be adopted on demand and thus if client's relationships with the firm are not up to date, the firm may not know what their clients are interested in. So, relational capital of a firm is equally important as it enables management to understand what their clients and other stakeholders are interested in.

However, for the innovations to be adopted, there must be some pressures in place. Accordingly, the institutional theory can better explain why certain innovations are adopted and others not in different settings. The institutional theory as propounded by DiMaggio

and Powell (1983) and Meyer and Rowan (1977) suggests that institutions do not operate in a vacuum. Therefore, various pressures such as coercive, mimetic and normative can shape organization's activities and practices. In terms of IFRS adoption in Uganda's MFIs, institutional pressures such as mimetic and regulatory pressures force MFIs to use IFRS in the preparation of financial statements. For example, the Tier IV Microfinance and Money Lenders Act of 2016 requires MFIs to submit their audited annual financial statements to their regulator – UMRA. As such, MFIs are under pressure to prepare financial statements that are IFRS compliant. This means that, for MFIs to be able to manage such pressures, there is need for an effective board that will pass strategic decisions and issue directives to management to meet the requirements of the regulators such as submission of audited financial statements. This means that, management will be forced to hire and train its employees in the usage of IFRS, design programs that aim at promoting stakeholder relations and put in place systems that enable the preparation of financial statements based on the applicable IFRS. However, the extent of the pressures exerted on to management of MFIs determines how fast or better the MFIs can prepare financial statements that are IFRS compliant. Prior to the release of Tier IV MFIs and Money Lenders Act of 2016, MFIs were not under pressure to use IFRS because there was no law that required them to prepare and submit their annual accounts. Therefore, under the current pressures, it is important that MFIs have effective boards and a high level of intellectual capital to meet the regulatory requirements.

### *3.2 Board of director's effectiveness and adoption of International Financial Reporting Standards*

As suggested by the DOI theory, the adoption of an innovation requires change agents or leaders to spearhead such an innovation. This means that the leaders of MFIs who in this case include the board of directors need to be effective for IFRS adoption to take shape in such MFIs. Boubaker and Nguyen (2014) argue that good corporate governance requires the presence of independent directors or remuneration committees on the board. Boubaker and Nguyen (2014) further indicate that corporate governance calls for transparent information disclosure. This means that, to achieve good corporate governance among MFIs, there is a need for an independent board of directors and transparent information disclosure. In another study, Boubaker *et al.* (2012) indicate that an effective board should not be of a larger size as this negatively impacts on decision-making. It then follows that the board size need not to be too small and too large. The authors also argue that board independence improves firm value. Further, Boubaker and Nguyen (2012) argue that the board of directors ensures the integrity of accounting and financial reporting systems and one such way is the application of relevant IFRS in the preparation of financial statements.

Studies such as Bin-Ghanem and Ariff (2016) and Bananuka *et al.* (2019a) described board of director's effectiveness as board meetings, board independence, board committees and board size. Frequent board meetings reflects an active board in monitoring management and therefore improving their supervision role (Chen and Rezaee, 2012). Board independence was found to have a strong influence on both mandatory and voluntary compliance with IFRS (Verriest *et al.*, 2013). The independent board members are believed to have knowledge on the benefits of improving the quality of information disclosed in the firms' annual reports (Navarro and Urquiza, 2015). According to Alfrah (2016), board size has a significant and positive effect on the level of compliance to IFRS. Agyei-Mensah (2017) and Taurigana and Chithambo (2016) indicated that the size of the board significantly influences the extent of compliance with IFRS 7. Further, the board audit committee ensures high compliance with financial reporting standards (Tawiah, and Boolaky, 2019). In another

study, [Bananuka et al. \(2019a\)](#) correlation analysis results indicate a positive and significant association between board committees and IFRS adoption among MFIs.

All the above studies indicate that the board of directors' effectiveness is critical for improving financial reporting practices of a company. It may not be wrong for one to argue that, those firms that prepare financial statements without strict observance of IFRS have ineffective boards in terms of inappropriate sizes, lack independence from management, do not conduct fully constituted meetings and do not have the sufficient and appropriate board committees. This study tests whether effective boards in terms of size, frequency of meetings, independence and appropriate board committees can influence IFRS adoption among Uganda's MFIs. We then hypothesize as follows:

- H1.* There is a positive relationship between the overall board of directors' effectiveness and IFRS adoption.
- H1a.* The individual components of board of directors' effectiveness are positively related to IFRS adoption.

### *3.3 Intellectual capital and adoption of International Financial Reporting Standards*

Like the DoI theory suggests, for any innovation to take shape, it is important that systems and human capital are in place. The intellectual capital of a company especially the human and structural capital are critical for the adoption of IFRS. If there are pressures to the MFIs to use IFRS in their accounts, the MFIs will be forced to train their employees in different IFRS and also ensure that there are resources such as the non-human store houses of knowledge in organizations such as databases, organizational charts, process manuals, strategies, routines and anything whose value to the company is higher than its material value. So, MFIs with a high level of intellectual capital have the capacity to prepare financial statements based on the IFRS disclosure requirements as compared to those without.

The empirical literature that links intellectual capital to IFRS adoption among MFIs is scarce except for [Bananuka et al. \(2019a\)](#) whose study investigated the contribution of board of directors effectiveness and intellectual capital to adoption of IFRS using evidence from Uganda's MFIs. [Bananuka et al. \(2019a\)](#) study found that intellectual capital is positively and significantly associated with IFRS adoption. Other studies have linked intellectual capital to innovation generation and adoption ([Dost et al., 2016](#)), Internet financial reporting ([Bananuka, 2020](#)) and financial reporting quality ([Darabi, 2012](#)). [Dost et al. \(2016\)](#) examined the impact of intellectual capital on innovation generation and adoption and found that organizational (structural) capital and social (relational) capital significantly impact on both the innovation generation and adoption, while human capital had no significant influence on innovation generation. [Bananuka \(2020\)](#) indicated that intellectual capital predicts Internet financial reporting among financial services firms in an emerging economy. Also, [Darabi \(2012\)](#) investigated the effect of different intellectual capital components on the financial reporting quality using evidence from Tehran Stock Exchange and concluded that human capital efficiency has a significant and positive impact on financial reporting quality. [Darabi \(2012\)](#) further indicated that financial reporting quality and structural capital have negative significant relationship. Intellectual capital has also been linked to performance. For example, [Kaawaase et al. \(2019\)](#) indicate that intellectual capital is positively associated with performance of small and medium audit practices. Also, [Kamukama and Tumwine \(2017\)](#) indicate that both human, relational and structural capital are positively associated with competitive advantage of Uganda's microfinance industry.

In this study, we argue that, MFIs with well-trained employees in IFRS, have documents such as IFRS standards and finance manuals that are developed in line with IFRS disclosure requirements in place may find it easier to use IFRS in the preparation of financial statements. Also, MFIs with good relations with their stakeholders such as clients may acquire more techniques for improving their reporting practices as compared to those with no good relations. Given the mixed findings on the role of intellectual components in promoting reporting practices and improving performance, we hypothesize the following:

*H2.* There is a positive relationship between overall intellectual capital and IFRS adoption.

*H2a.* The individual components of intellectual capital are positively related to IFRS adoption.

One of the major focus of this study is to provide evidence on the mediating role of intellectual capital in the relationship between board of directors' effectiveness and adoption of IFRS. There is no empirical evidence that supports this argument except that for [Bananuka et al. \(2019a\)](#) whose correlation analysis results show that board of directors' effectiveness and intellectual capital are significantly associated. However, from the institutional theory, it can be argued that the several pressures that may be exerted on to MFIs to adopt IFRS may force the board of directors to be effective. Effective board will discuss financial statements in their meetings and also have various committees such as audit committees and finance committees to review those financial statements. Such board of directors will require an efficient management team with proven skills. This will thus imply that the board of directors will recruit managers especially the finance manager who is a member of the ICPAU.

The Uganda's Accountants Act of 2013 requires one to be a full member of ICPAU only if he or she has passed the ICPAU qualifying examinations, or if he or she is a full member of any other accountancy professional body recognized by ICPAU such as the Association of Chartered Certified Accountants and has three years of practical experience. Once the board of directors has attracted efficient and competent managers, the level of intellectual capital of such an MFI improves and this in turn leads to increased usage of IFRS in the preparation of financial statements. We therefore hypothesize that:

*H3.* Intellectual capital mediates the relationship between board of directors' effectiveness and adoption of IFRS.

## 4. Methodology

### 4.1 Design, population and sample

This study was cross sectional and correlational involving a questionnaire survey of all 85 AMFIU member MFIs ([AMFIU Directory, 2017/2018](#)). The MFIs under AMFIU were selected because they are organized, and their location details are provided in the AMFIU Directory of 2017/2018 unlike the other MFIs whose addresses could not reliably be found as there was no source document to provide such information. MFIs under AMFIU have a code of conduct which among other things requires every member MFI to have a board of directors whose members have a good reputation. The code of conduct of AMFIU member MFIs also require member MFIs to ensure transparency in the maintenance of the books of accounts and reporting/disclosure of financial statements ([AMFIU](#)

Directory, 2017/2018). The unit of analysis was the MFI represented by either chief finance officer (CFO) or manager of the MFI as a unit of inquiry. The choice of the CFO and manager was based on the fact that they have sufficient knowledge on the operations of the board and management.

The final usable questionnaires received were 67 MFIs out of the 85 AMFIU member MFIs, representing a response rate of 79%. The high response rate was because of the adequate time provided to the respondents to fill the questionnaires. In each MFI, we picked one questionnaire as either the CFO or the Manager would fill the questionnaire. The male respondents were 43 (64%), whereas female respondents were 24 (36%). Majority of the respondents were of 30 years of age and below, representing 55% of the respondents, whereas 45% were between 30 and 39 years of age. The implication of such a finding is that in Uganda, the MFIs are more managed by the youth. In terms of work experience, 96% of the respondents had a work experience of 10 years and below. Out of these 74% (50 respondents) had a bachelor's degree, 20% were diploma holders and only one respondent had a PhD degree. In terms of professional qualifications, majority (61%) were certified public accountants implying that the respondents had the required knowledge to understand the questions asked in the questionnaire (Table 1).

Background information	Frequency	(%)
<i>Gender</i>		
Male	43	64
Female	24	36
Total	67	100
<i>Age of the respondent</i>		
Less than 30 years	37	55
30 to 39 years	30	45
40 years and above	0	0
Total	67	100
<i>Experience</i>		
Less than 5 years	32	48
5 to 10 years	32	48
10 to 15 years	3	4
Total	67	100
<i>Professional qualification</i>		
CPA	41	61
ACCA	6	9
Others	20	30
Total	67	100
<i>Education</i>		
Diploma	14	20
Bachelor's degree	50	74
Master's degree	1	2
PhD	1	2
Others	1	2
Total	67	100

**Table 1.**  
Sample  
characteristics

**Source:** Primary data

#### 4.2 Questionnaire and variables measurement

This study used a questionnaire survey. The questionnaire was used because it is capable of covering a larger sample and the information supplied in it is independent of the researchers' opinions/biases unlike an interview guide. Also, the use of annual reports to check whether an MFI has used IFRS or not would be more appropriate but the information provision culture in Uganda is far from desirable (Nkundabanyanga, 2016). The use of panel data does not take into consideration the direct managerial motivations for the IFRS adoption decisions. The questionnaire can be in open answer format or closed answer format. This study used the closed answer format because it aimed at obtaining the mean ratings of every statement. We used a questionnaire on a six-point Likert scale. The questionnaire was developed after a careful review of literature on the study variables. We measure the study variables as under:

- Adoption of IFRS which we define as a process through which an individual or firm chooses to take up an innovation by having full knowledge of what is being adopted and by being aware of the benefits of taking on such an innovation. From this definition of adoption, it then follows that adoption of IFRS involves the understanding of various IFRS and the benefits of applying IFRS in preparation of financial statements. We therefore operationalize adoption of IFRS using the knowledge level of IFRS by management and directors and perceived benefits of preparing financial statements that are IFRS compliant (Bananuka *et al.*, 2019a; Bananuka *et al.*, 2019b; Phan *et al.*, 2018; Phan and Mascitelli, 2014). Respondents were required to indicate their degree of agreement on a six-point Likert scale on statements such as "Financial statements of MFIs that are prepared in accordance with IFRS requirements are reliable."
- Board of directors' effectiveness was operationalized in terms of board size, board meetings, board independence and board committees. The conceptualization of board of directors' effectiveness was based on the works of Bin-Ghanem and Ariff (2016) whose study used a content analysis of annual reports of sampled companies in the Gulf Cooperation council states. However, given that Bin-Ghanem and Ariff (2016) did not use a questionnaire survey, scale items were difficult to develop in this study. We therefore used those item scales used in Bananuka *et al.* (2019a) study. On factor analysis as indicated in Table 3, the Kaiser-Meyer-Olkin (KMO) values and cumulative percentages of variance were low but acceptable. This was tenable given that this was one of the initial studies to use a questionnaire survey of board of directors' effectiveness among MFIs in Uganda.
- Intellectual capital was measured in terms of human capital, structural capital and relational capital (Bontis, 1998; Nkundabanyanga, 2016; Kamukama and Tumwine, 2017). The item scales used in this were those used by Kamukama and Tumwine (2017). However, these item scales had been used on commercial banks in Uganda whose regulator is different from that of MFIs.

We also control for confounding factors such as capital and ownership structure to minimize endogeneity in our study and to ensure that our hypotheses are not rejected when they should have been accepted (Bartov *et al.*, 2000; Sande, and Ghosh, 2018). Bananuka *et al.* (2019a) and Bananuka *et al.* (2019b) found that ownership structure and capital structure are not significant predictors of IFRS adoption. However, Alnaas and Rashid (2019) suggest that ownership structure increases the level of compliance with IFRS. The operationalization of the main study variables as well as control variables are presented in Table 2.

**Table 2.**  
Operating definitions  
of the study  
variables

Global variable	Acronym	Dimensions	Measurement	Definition	Sample item scale
Adoption of IFRS	IFRS	Knowledge level of IFRS	Respondents' mean rank of items of information included in the questionnaire on a six-point Likert scale	The use of IFRS in the preparation of financial statements. The usage of IFRS in preparation of financial statements is possible only if the preparers have the knowledge of IFRS and are aware of the benefits of IFRS	I am aware of the requirements of various IFRS
Intellectual Capital (IC)	RC	Perceived benefits of IFRS compliant financial statements	Respondents' mean rank of questionnaire of a six-point Likert scale	Intellectual capital is the sum of all the intangible and knowledge-based resources an organization uses to create value such as the human, structural and social/relational capital	Financial statements of MFIs prepared in accordance with IFRSs are reliable
		Relational capital	Respondents' mean rank of the fifteen items of information on a six-point Likert scale		We have a well-defined organizational structure that enable interactions among employees
		Human Capital	Respondents' mean rank of the fourteen items of information included in the questionnaire on a six-point Likert scale		Level of commitment of our staff to work is high
Board of Directors Effectiveness	BOD	Structural Capital	Respondents' mean rank of the three items of information included in the questionnaire on a six-point Likert scale		There are available materials that guide us on the application of IFRS.
		Board Meetings	Respondents' mean of the twelve items of information included in the questionnaire on a six-point Likert scale	Board of directors' effectiveness is the ability of the board to be independent, hold meetings, and maintain the various board sub-committees at an appropriate size as determined by the appropriate laws	Board meeting resolutions are implemented by management.
		Board committees	Respondents' mean rank of the six items of information included in the questionnaire on a six-point Likert scale		Our compensating committee members have been members of such committees in other institutions.
		Board independence	Respondents' mean rank of the seven items of information included in the questionnaire on a six-point Likert scale		None of our board members currently has any loan amount advanced to him or her outstanding

*(continued)*

Global variable	Acronym	Dimensions	Measurement	Definition	Sample item scale
		Board size	Respondents' mean rank of the four items of information included in the questionnaire on a six-point Likert scale A dummy variable coded as 0 if the firm is financed by equity, 1 if the firm is financed by equity and loans, 2 if the firm is financed by donations, 3 if the firm is financed by debt and 4 if the firm is financed by other sources		Our board has a minimum of three non-executive directors.
Capital structure			A dummy variable coded as 0 if the firm is financed by equity, 1 if the firm is financed by equity and loans, 2 if the firm is financed by donations, 3 if the firm is financed by debt and 4 if the firm is financed by other sources		
Ownership structure			A dummy variable coded as 0 if the firm is owned by indigenous Ugandans, 1 if the firm is owned by foreign investors, 2 if the firm is owned by both indigenous Ugandans and foreign investors, and 3 if the firm is owned by others		
			Constant		
			Error term		
			$\beta_0$		
			$\varepsilon_j$		

Table 2.

**Table 3.**  
Rotated component  
matrix for board of  
director's  
effectiveness

Item	Component		
	Board meetings	Board committees	Board independence
Board meetings resolutions are implemented by management	0.848		
Board meetings are always chaired by the board chairman	0.820		
During the meetings, all reports from management are discussed thoroughly and decisions taken	0.817		
The board secretary is always present in the board meetings	0.804		
Board members meeting allowances are paid immediately after or during the meeting	0.752		
All board meetings are held at the institution's premises	0.683		
Minutes of the previous meetings are always available before the next meeting	0.657		
Our board is comprised of more than one committee	0.656		
Our board conducts meetings quarterly	0.655		
Board members arrive on time for the meeting	0.611		
The national politics do not interfere with the appointment and operations of the institution's board	0.591		
There is a schedule for board meetings which is known by all board members	0.546		
Our compensating committee members have been members of such committees in other institutions		0.917	
Our nominating committee members have been members of such committees in other institutions		0.904	
Our audit committee members have been members of the same committee elsewhere		0.854	
Our nominating committee members have been board members elsewhere		0.788	
Our nominating committee is comprised of only non-executive directors who are independent of one another		0.717	
Our compensation committee is comprised of human resource experts		0.677	
None of our board members currently has any loan amount advanced to him or her outstanding			0.737
We have a dominating board chairman			0.720
Our board chairman does not hold substantial shares in this institution			0.682
Our board members are appointed on a contract basis			0.681
The tenure of our board members is well defined			0.598
Our managers reward board members through unconditional loan approvals			0.575
Our board can be split into three committees with no members appearing on more than one committee			0.510
Our board has the required size of both executive and non-executive directors			0.861
Many of our board members are non-executive directors			0.812
Our board has a minimum of three non-executive directors			0.799
Our board has a minimum of two executive directors			0.664
Eigenvalues	7.41	5.39	2.44
Percentage of variance	22.36	15.65	11.86
Cumulative %	22.36	38.01	49.87
KMO = 0.675; Bartlett's test of Sphericity: Approx. Chi square = 1394.13, df = 406, Sig = 0.000			
Extraction Method: Principal Component Analysis			
Rotation Method: Varimax with Kaiser Normalization			

**Source:** Primary data

Item	Relational capital	Component Human capital	Structural capital
We have a well-defined organizational structure that enable interactions among employees	0.788		
Our networks with our customers have made this firm what it is	0.777		
Our firm displays her services nearer to our customers	0.770		
This firm has many clear openings to its customers	0.765		
We have good network systems with our customers	0.762		
Our customers help us to enroll or get new customers	0.755		
Our employees have good relationship with the customers	0.750		
This firm promotes a culture of teamwork	0.739		
This firm has clear values that guide its employees	0.733		
Customers help this firm to improve or update its services	0.730		
We work as a team in this firm	0.681		
We usually get new ideas on compliance through our customers	0.615		
Our customers appreciate the use of IFRS	0.608		
Employees in this firm are result oriented	0.598		
Our systems make it easy to access relevant information	0.520	0.848	
Level of commitment of our staff to work is high		0.755	
Our employees provide technical skills to our customers		0.717	
Our employees can with stand pressure from work		0.717	
When an employee leaves the firm, we do have a succession training		0.683	
This firm's employees are knowledgeable about their work		0.688	
We have self-driven employees		0.677	
Our employees are always a source of new ideas		0.647	
This firm usually employs staff who are highly qualified		0.618	
Most of our employees are more creative		0.609	
Most of business ideas are initiated by our employees		0.596	
Our employees have the required competences to prepare financial statements that comply with IFRS		0.590	
Our employees are experts in their jobs and functions		0.577	
Employees in this firm are socially competent		0.515	
Employees in this firm always search for knowledge			0.856
There are available materials that guide us on the application of IFRS			0.842
This firm updates us on the new developments of IFRS			0.813
Our transaction processes are usually fast			(continued)

**Table 4.**  
Rotated component  
matrix intellectual  
capital

Table 4.

Item	Relational capital	Component Human capital	Structural capital
<i>Eigenvalues</i>	11.96	4.38	2.47
<i>Percentage of variance</i>	25.50	21.79	11.51
<i>Cumulative percentage</i>	25.50	47.30	58.81

KMO = 0,765; Bartlett's test of Sphericity: Approx. Chi square = 1880,35, df = 496, Sig = 0,000  
 Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.

**Source:** Primary data

### 4.3 Validity and reliability

We used exploratory factor analysis based on principal component analysis to examine the reliability and validity of the scales/measures of board of directors' effectiveness and intellectual capital. Exploratory factor analysis was done to reduce the data to manageable level while retaining the original information (Field, 2009). Also, principal component analysis using Varimax rotation was run for each variable to test for convergent validity. Factor loadings below 0.5 coefficients were suppressed to avoid extracting factors with weak loadings. In addition, the appropriateness of data for factor analysis was assessed before performing the principal component analysis using sample size adequacy: the KMO and Bartlett tests. The results revealed the KMO values as follows: Board of directors' effectiveness is 0.675, whereas intellectual capital is 0.765. Bartlett test of sphericity in all scales was statistically significant ( $p < 0.05$ ) (Tabachnick *et al.*, 2007). Factor analysis results are presented in Tables 3 and 4.

### 4.4 Model

The study used a hierarchical regression analysis in examining the contribution of the main study variables and the specific elements of intellectual capital and board of directors' effectiveness to adoption of IFRS. These models were separated into two. Panel A regressions test the contribution of board of directors' effectiveness and intellectual capital to adoption of IFRS. The constitution of these two variables include their measures. Panel B regressions test the contribution of the specific attributes under each global (main study) variable to adoption of IFRS.

Panel A: Global variables regressions

$$\text{IFRS} = \beta_0 + \beta_1\text{OWN} + \beta_2\text{CAP} + \varepsilon_j \quad (1)$$

$$\text{IFRS} = \beta_0 + \beta_1\text{OWN} + \beta_2\text{CAP} + \beta_3\text{BOD} + \varepsilon_j \quad (2)$$

$$\text{IFRS} = \beta_0 + \beta_1\text{OWN} + \beta_2\text{CAP} + \beta_3\text{BOD} + \beta_4\text{IC} + \varepsilon_j \quad (3)$$

Panel B: Specific attributes regressions

$$\text{IFRS} = \beta_0 + \beta_1\text{OWN} + \beta_2\text{CAP} + \varepsilon_j \quad (1)$$

$$\text{IFRS} = \beta_0 + \beta_1\text{OWN} + \beta_2\text{CAP} + \beta_3\text{SIZE} + \beta_4\text{IND} + \beta_5\text{MET} + \beta_6\text{COM} + \varepsilon_j \quad (2)$$

$$\text{IFRS} = \beta_0 + \beta_1\text{OWN} + \beta_2\text{CAP} + \beta_3\text{HC} + \beta_4\text{SC} + \beta_5\text{RC} + \varepsilon_j \quad (3)$$

where IFRS is IFRS adoption,  $\beta_0$  is a constant,  $\varepsilon_j$  is the error term, BOD is board of directors' effectiveness, IC is intellectual capital, CAP is capital structure, OWN is ownership structure, SIZE is board size, IND is board independence, MET is board meetings, COM is board committee, HC is human capital, SC is structural capital and RC is relational capital.

## 5. Results

### 5.1 Descriptive statistics

Results in [Table 5](#) represents a summary of descriptive statistics for the adoption of IFRS, board of directors' effectiveness, IC and the specific elements of the main study variables. The mean values for IFRS adoption, intellectual capital and board of directors' effectiveness were 4.62, 4.68 and 4.29, respectively, whereas the standard deviations were 0.77, 0.73 and 0.76, respectively. Mean values for board meetings, board independence, board committees and board size were 4.82, 4.02, 3.97 and 3.89, respectively, whereas standard deviations were 0.94, 1.02, 1.21 and 1.37, respectively. Intellectual capital attributes had mean values of 4.71, 4.68 and 4.62 for human capital, structural capital and relational capital, respectively, with standard deviations of 0.82, 0.86 and 0.963. According to [Field \(2009\)](#), the means and standard deviation values are reported because the means represent the summary of the data, whereas standard deviations show how well the means represent the data. Based on our descriptive statistics, the standard deviations are small compared to mean values and this means that the calculated means highly represent the observed data. The format in which the descriptive statistics results are presented in this study follows previous accounting studies presentations such as [Nalukenge et al. \(2018\)](#), [Bananuka et al. \(2019b\)](#) among others. We also tested for normality of data in [Table 5](#) by running skewness and kurtosis because this study used Pearson correlation coefficients. We found that all the skewness and kurtosis values lie within the range of  $-3.29$  to  $3.29$  and are closer to zero ([Field, 2009](#)) except for the control variables which is acceptable. [Field \(2009\)](#) argues that the closer the skewness values are to zero, the normality of the data.

### 5.2 Correlation analysis

We conducted a Pearson's correlation analysis to examine the associations between the dependent and independent variables which is indicated by  $r$ . Results in [Table 6](#) show that there is a positive significant relationship between the overall board of directors' effectiveness and adoption of IFRSs ( $r = 0.594^{**}$ ,  $p < 0.01$ ) as well as the specific elements of board of directors' effectiveness: board meetings ( $r = 0.437^{**}$ ,  $p < 0.01$ ), board independence ( $r = 0.503^{**}$ ,  $p < 0.01$ ), board size ( $r = 0.407^{**}$ ,  $p < 0.01$ ) and board committees ( $r = 0.336^{**}$ ,  $p < 0.01$ ). There is a positive and significant relationship between intellectual capital and adoption of IFRSs ( $r = 0.699^{**}$ ,  $p < 0.01$ ). The three elements of IC have a positive and significant relationship with IFRS adoption: Human capital ( $r = 0.531^{**}$ ,  $p < 0.01$ ), structural capital ( $r = 0.694^{**}$ ,  $p < 0.01$ ) and relational capital ( $r = 0.521^{**}$ ,  $p < 0.01$ ). For the control variables, none was significant, and this means that our main study results are not affected by confounding factors.

### 5.3 Hierarchical regressions

We carried out hierarchical regression analysis consistent with [Aiken and West \(1991\)](#) and entered variables simultaneously within each hierarchical group. We used the tool of hierarchical regression because of its usefulness in evaluating contributions of predictors above and beyond previously entered predictors, as a means of statistical control, and for examining incremental validity. The use of hierarchical regression analysis has been used by previous scholars in the accounting literature such as [Kaawaase et al. \(2019\)](#), [Bananuka \(2020\)](#), [Bananuka et al. \(2019b\)](#) among others. Our regression analysis results are presented in [Tables 7](#) and [8](#). We ran two sets of regression models. The first set focused on main study variables and the second set focused on the specific elements of the main study variables. In [Table 7](#), we ran three models. Model 1 is the baseline model with only control variables. The

Variable	n	Minimum		Maximum		Mean		SD		Skewness		Kurtosis	
		Statistic	Std error	Statistic	Std error	Statistic	Std error	Statistic	Std error	Statistic	Std error	Statistic	Std error
Adoption of IFRS	67	3.05	0.29	6.00	0.29	4.62	0.29	0.77	0.29	-0.23	0.29	-0.95	0.58
Knowledge level	67	2.24	0.29	6.00	0.29	4.34	0.29	0.87	0.29	-0.41	0.29	-0.55	0.58
Perceived benefit	67	2.89	0.29	6.00	0.29	4.89	0.29	0.90	0.29	-0.54	0.29	-0.83	0.58
Board of director's Effectiveness	67	1.33	0.29	5.93	0.29	4.29	0.29	0.76	0.29	-0.58	0.29	2.25	0.58
Board size	67	1.00	0.29	6.00	0.29	3.89	0.29	1.37	0.29	-0.36	0.29	-0.70	0.58
Board independence	67	1.00	0.29	6.00	0.29	4.02	0.29	1.02	0.29	-0.36	0.29	0.12	0.58
Board meetings	67	1.27	0.29	6.00	0.29	4.82	0.29	0.94	0.29	-1.00	0.29	1.86	0.58
Board committees	67	1.57	0.29	6.00	0.29	3.96	0.29	1.21	0.29	-0.19	0.29	-0.82	0.58
Intellectual capital	67	3.00	0.29	6.00	0.29	4.67	0.29	0.73	0.29	-0.23	0.29	-0.82	0.58
Human capital	67	3.00	0.29	6.00	0.29	4.71	0.29	0.82	0.29	-0.26	0.29	-0.91	0.58
Structural capital	67	3.00	0.29	6.00	0.29	4.68	0.29	0.86	0.29	-0.29	0.29	-1.08	0.58
Relational capital	67	2.30	0.29	6.00	0.29	4.62	0.29	0.93	0.29	-0.34	0.29	-0.86	0.58
Ownership structure	67	0.00	0.29	3.00	0.29	0.37	0.29	0.71	0.29	2.14	0.29	4.46	0.58
Capital structure	67	0.00	0.29	4.00	0.29	0.76	0.29	0.78	0.29	2.03	0.29	7.29	0.58

Source: Primary data

**Table 5.** Descriptive statistics of adoption of IFRS, board of directors' effectiveness, intellectual capital

**Table 6.**  
Zero order  
correlations between  
board of directors'  
effectiveness,  
intellectual capital  
and adoption of IFRS

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Adoption of IFRSs (1)	1													
Knowledge level (2)	0.864**	1												
Perceived benefit (3)	0.872**	0.508**	1											
Board of director's effectiveness (4)	0.594**	0.586**	0.449**	1										
Board size (5)	0.407**	0.459**	0.251*	0.704**	1									
Board independence (6)	0.503**	0.544**	0.333**	0.812**	0.607**	1								
Board meetings (7)	0.437**	0.332**	0.425**	0.686**	0.296*	0.351**	1							
Board committees (8)	0.336**	0.370**	0.216	0.653**	0.405**	0.397**	0.119	1						
Intellectual capital (9)	0.699**	0.633**	0.581**	0.593**	0.387**	0.403**	0.521**	0.349**	1					
Human capital (10)	0.531**	0.479**	0.445**	0.304*	0.134	0.162	0.378**	0.125	0.757**	1				
Structural Capital (11)	0.694**	0.661**	0.546**	0.645**	0.392**	0.412**	0.529**	0.467**	0.903**	0.574**	1			
Relational capital (12)	0.521**	0.445**	0.460**	0.519**	0.423**	0.416**	0.394**	0.273*	0.832**	0.357**	0.676**	1		
Ownership structure (13)	0.175	0.267*	0.040	0.131	0.241*	0.035	0.009	0.190	0.167	0.160	0.211	0.055	1	
Capital structure (14)	0.004	0.179	-0.167	0.043	0.201	-0.044	-0.038	0.112	0.117	0.154	0.150	0.000	0.407**	1

**Notes:** \*\* Correlation is significant at the 0.01 level (2-tailed), \* Correlation is significant at the 0.05 level (two-tailed)

**Source:** Primary data

**Table 7.**  
Hierarchical regression analysis of board of directors' effectiveness and intellectual capital on to adoption of IFRS

Item	Model 1	Model 2	Model 3	Tolerance	VIF
Constant	4.593	2.124	0.856	na	na
Board of directors' effectiveness		0.581**	0.268**	0.645	1.549
Intellectual Capital			0.537**	0.637	1.571
<i>Control variables</i>					
Ownership structure	0.208	0.129	0.094	0.817	1.224
Capital structure	-0.080	-0.073	-0.109	0.829	1.206
<i>Model summary</i>					
Model <i>F</i>	1.199	12.192**	18.998**		
<i>R</i> <sup>2</sup>	0.036	0.367	0.551		
Adjusted <i>R</i> <sup>2</sup>	0.006	0.337	0.522		
<i>F</i> Change	1.199	32.979**	25.306**		
<i>R</i> <sup>2</sup> Change	0.036	0.331	0.183		
Durbin Watson			2.082		

**Note:** \*\*Significant at 0.05  
**Source:** Primary data

**Table 8.**  
Hierarchical regression analysis of specific elements of board of directors' effectiveness and intellectual capital on to adoption of IFRS

Item	Model 1	Model 2	Model 3	Tolerance	VIF
Constant	4.593	2.054	1.264	na	na
Board size		0.056		0.534	1.872
Board independence		0.305**		0.542	1.844
Board meetings		0.294**		0.861	1.161
Board committee		0.137		0.782	1.278
Human capital			0.212**	0.664	1.505
Structural capital			0.510**	0.396	2.508
Relational capital			0.096	0.529	1.892
<i>Control variables</i>					
Ownership structure	0.208	0.146	0.085	0.807	1.240
Capital structure	-0.080	-0.057	-0.140	0.818	1.223
<i>Model summary</i>					
Model <i>F</i>	1.199	6.018**	13.817**		
<i>R</i> <sup>2</sup>	0.036	0.376	0.531		
Adjusted <i>R</i> <sup>2</sup>	0.006	0.313	0.493		
<i>F</i> Change	1.199	8.159**	21.462**		
<i>R</i> <sup>2</sup> Change	0.036	0.340	0.495		
Durbin Watson		2.011	2.209		

**Note:** \*\*Significant at 0.05  
**Source:** Primary data

control variables are all non-significant but contribute to 0.6% of the variance in the IFRS adoption. In Model 2, we enter board of directors' effectiveness and its standardized beta coefficient is 0.581. The contribution of board of directors' effectiveness to adoption of IFRS is 33.7%. In Model 3, we introduce intellectual capital and the contribution to adoption of IFRS increases to 52.2% meaning that intellectual capital comes with an additional 18.5%. The standardized beta coefficient

for intellectual capital in Model 3 is 0.537. However, in Model 3, when intellectual capital is introduced into the model, the standardized beta coefficient for board of directors' effectiveness reduces to 0.268 but remains significant at 0.05. Therefore, *H1 (There is a positive relationship between the overall board of directors' effectiveness and IFRS adoption)* and *H2 (There is a positive relationship between overall intellectual capital and IFRS adoption)* are both supported.

In our second set of regression models as presented in [Table 8](#), we also run three models and Model 1 is the baseline model where ownership structure and capital structure are treated as control variables. In Model 2, we introduce board of directors' effectiveness dimensions/elements. We find that only board independence and board meetings are significant. The standardized beta coefficients for board independence and board meetings are 0.305 and 0.294, respectively. Board size and board committees were not significant. Therefore, *H1a (the individual components of board of directors' effectiveness are positively related to IFRS adoption)* is partially supported. In Model 3, the intellectual capital elements were regressed. Only human capital and structural capital were found significant. The standardized beta coefficients were 0.212 for human capital and 0.510 for structural capital. Relational capital was found not to be significant with IFRS adoption. So, *H2a (The individual components of intellectual capital are positively related to IFRS adoption)* is partially supported.

We performed diagnostic tests. We ran the Durbin Watson test in both panels and found that its value is closer to 2. This means that, there are no serial correlations in the model as [Field \(2009\)](#) suggests that a good Durbin Watson test should generate a value closer to 2. Further diagnostic procedures do not reveal a multicollinearity problem, and none of the VIFs are greater than 2.5 yet [Field \(2009\)](#) cited a benchmark VIF of 10. The correlations were both positive and negative and small to moderate. This finding indicates that the variables are suitably correlated with the dependent variable and as such multiple regressions can be undertaken with sufficient reliability.

#### 5.4 Mediation path analysis

The main objective of this study was to examine the mediating role of intellectual capital in the relationship between board of directors' effectiveness and adoption of IFRS among MFIs in Uganda. This was achieved by conducting a mediation path analysis following [Baron and Kenny \(1986\)](#) guidelines as indicated below:

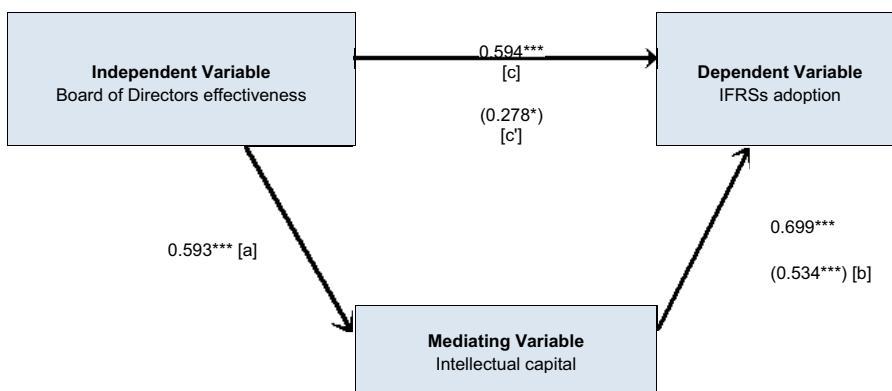
- There must be a direct and significant relationship between the independent variable and the dependent variable. Board of directors' effectiveness is positively related to IFRS adoption ( $\beta$  coefficient = 0.594;  $p < 0.05$ ).
- There must be variations in the independent variable that significantly account for variance in the presumed mediator. Board of directors' effectiveness and intellectual capital are significantly related ( $\beta$  coefficient = 0.593;  $p < 0.05$ ).
- There must be variations in the mediator that significantly account for variance in the dependent variable; IC significantly affects IFRS adoption ( $\beta$  coefficient=0.699;  $p < 0.05$ ).
- The effect of the independent variable on the dependent variable significantly reduces when the mediator is included in the equation. The effect of board of directors' effectiveness towards IFRS adoption reduced from 0.594 to 0.278 up on the inclusion of IC.

The significance of the mediation was tested using Jose’s medigraph to conduct a Sobel test, it was found that intellectual capital mediates the relationship between board of director’s effectiveness and IFRS adoption ( $Z = 3.861$ ) and therefore supporting  $H3$  which states that intellectual capital mediates the relationship between board of directors’ effectiveness and adoption of IFRSs. The model further indicates that 46.8% (0.278/0.594) is the direct effect of board of directors’ effectiveness towards the IFRS adoption while 53.3% (0.316/0.594) is through intellectual capital. Figure 1 results indicate that the correlations between the independent variable and the dependent variable reduced from 0.594\*\*\* to 0.278\* but remained significant. Bananuka *et al.* (2019b) argues that if the reduction in correlations between the predictor and the outcome variables remain significant, then it’s a partial type of mediation (Figure 1).

### 6. Discussion

Our study found that intellectual capital partially mediates the association between board of directors’ effectiveness and IFRS adoption among MFIs in Uganda. These results imply that

<b>Type of mediation</b>	Significant	
<b>Sobel z-value</b>	3.861337	$p = 0.000113$
<b>95% Symmetrical Confidence interval</b>		
Lower	<b>0.15663</b>	
Higher	<b>0.47956</b>	
<b>Unstandardized indirect effect</b>		
a*b	<b>0.31809</b>	
se	<b>0.08238</b>	
<b>Effective Size measures</b>		
<u>Standardised Coefficients</u>		
Total:	<b>0.594</b>	
Direct:	<b>0.278</b>	
Indirect:	<b>0.316</b>	
Indirect to Total ratio	<b>0.533</b>	



**Figure 1.** Mediation effect of Intellectual capital on the link between Board of Directors’ effectiveness and adoption of IFRS

Source: Primary data

while there is a direct impact of board of directors' effectiveness on adoption of IFRS, the presence of intellectual capital takes the center stage. Intellectual capital provides the MFIs with features of efficiency, information technology, internal and external organizational relations which enable the adoption of IFRS. MFIs with good information systems and well skilled and knowledgeable management team stand a chance of having financial statements prepared on the basis and guidelines of IFRS requirements. In the presence of only the board of directors, it may not be easy for an MFI with no good level of intellectual capital to adopt IFRS. Therefore, intellectual capital is the conduit through which board of directors' effectiveness can influence the adoption of IFRS among Uganda's MFIs.

Our results also show that board of directors' effectiveness and intellectual capital significantly contribute to IFRS adoption. This finding is consistent with that for [Bananuka et al. \(2019a, 2019b\)](#) who also documented that both board of directors' effectiveness and intellectual capital significantly contribute to adoption of IFRS. Our study further tested the contribution of individual elements of board of directors' effectiveness to IFRS adoption and found that only board meetings and board independence are significantly associated with IFRS adoption while board size and board committees are not. Our results are consistent with scholars who indicated that board independence significantly impacts on the IFRS compliance levels of a firm ([Verriest et al., 2013](#); [Navarro and Urquiza, 2015](#); [Tauringana and Chithambo, 2016](#); [Agyei-Mensah, 2017](#)). [Boubaker and Nguyen \(2014\)](#) also documented that corporate governance calls for information disclosure which means that an effective board has to ensure that there is information disclosure.

In Uganda and other countries whose environment is similar to that for Uganda, it is expected that an effective board has its meeting resolutions implemented by management. For an effective board, it is expected that board meetings are always chaired by the chairperson of board and the board secretary is always present in the board meetings. Board meetings need to be conducted at least quarterly and board members arrive for the meeting in time. An effective board has a clear plan for all of its meetings and all the members are aware of such scheduled meetings. Effective boards have minutes of previous meetings available before the next meeting and all the meetings take place at the MFI's premises. None of the board members should have a loan within the same MFI. An effective board need to have a dominating chairman but who does not hold substantial shares in the MFI.

Our regression results indicated that intellectual capital is very important for the MFIs to adopt IFRS in the preparation of financial statements. We run six models in trying to get a plausible relationship between adoption of IFRS and our study independent variables, we found that a more plausible model to predict IFRS adoption among MFIs in Uganda is that model which incorporates intellectual capital. It can be concluded that having an effective board of director is not enough to have MFIs adopt IFRS if the MFI has no intellectual capital in place. There is need to improve on the human capital and structural capital in MFIs to adopt IFRS. The present study results are consistent with those of [Bananuka et al. \(2019a\)](#) who investigated the contribution of intellectual capital on the IFRS adoption and found significant positive relationship between intellectual capital and IFRS adoption among MFIs in Uganda. Also, these study results are partly consistent with those of [Kamukama and Tumwine \(2017\)](#) who found that both human, relational and structural capital are positively associated with competitive advantage.

It is important that MFIs attract and maintain those employees whose level of commitment to work is high through assessing them on achievement of targets (for those who have been in the MFI). MFIs may also require the new applicants to have clear recommendations from reputable personnel. MFIs need to ensure that their employees are knowledgeable in what they do, and this may be possible through training and provision of

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information that is necessary to develop employees. For example, MFIs may buy the IFRS standards books for the accounting department and seek external services of those knowledgeable in the area. Innovative employees with competence have an upper in the drive to achieve IFRS adoption because preparation of IFRS compliant financial statements may be seen as an innovation. Further, MFIs need to ensure that employees are updated on the recent developments in the various standards. For example, in the past three or four years, several standards such as IFRS 15 which combined IAS 11 and IAS 18 became effective on 1 January 2018. Such information needs to be availed to the accounting staff.

### 7. Concluding remarks

The objective of this study was to test whether intellectual capital mediates the relationship between board of directors' effectiveness and IFRS adoption and, whether the specific elements of board of directors' effectiveness and intellectual capital have a contribution on IFRS adoption. Using a questionnaire survey of 67 MFIs, results indicate that intellectual capital mediates the relationship between board of directors' effectiveness and adoption of IFRS. Also, board meetings and board independence contribute significantly to adoption of IFRS as compared to board size and board committees. In addition, it was found that human capital and structural contribute significantly to variances in IFRS adoption unlike relational capital.

This study results have several implications. The academic community are now aware that it is not a matter of board of directors or simply intellectual capital for a firm to use IFRS in the preparation of financial statements. What matters is the independence of the board from management and the conduct of meetings of the board. The size of the board and the number of committees are not as relevant for purposes of IFRS usage among MFIs accounting systems. Also, bundling intellectual capital together is unfair given that, it's only the human and structural capital which matter more for adoption of IFRS as compared to relational capital. Most importantly, the academia is now aware that, for an MFI to use IFRS in their accounting and financial reporting systems, the level of intellectual capital should be high because, the board in their capacity may not prepare financial statements that are IFRS compliant unless the MFI has an appropriate level of intellectual capital. The board of directors may pass valid decisions regarding IFRS adoption, but implementation may fail if there is no appropriate level of intellectual capital. Those in practice now have a reason to train their employees and ensure that robust accounting systems based on IFRS are in place. The practice is aware that IFRS improve financial reporting quality and this is key to attraction of more capital. Further, the findings are useful to regulators of MFIs in Uganda, the UMRA in encouraging adoption of IFRS because the regulators are aware of what should be improved in the MFIs to achieve quality financial reports.

Our study results should be interpreted with caution. This study used a questionnaire where one cannot rule out the problem of unobserved heterogeneity. Also, the current study lacks cross validation because of the limited literature on the mediation of intellectual capital in the relationship between board of directors' effectiveness and adoption of IFRS in a developing country setting. Also, the conceptualization of board of directors' effectiveness may not be robust especially in the context of perception-based studies. We therefore encourage future researchers to conduct more studies on mediation of intellectual capital in the relationship between board of directors' effectiveness and IFRS disclosure practices. Future perception-based studies may also focus on providing a more understanding of board of directors' effectiveness. None the less, the findings of this study remain useful in contexts such as those of Uganda's MFIs.

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**Further reading**

ICPAU (2016), *The adoption of international financial reporting standards*, Kampala.

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