THE CONTRIBUTION OF FINANCIAL TECHNOLOGY COMPANIES TO AGRICULTURE SECTOR FOR COMMUNITY DEVELOPMENT IN MUSANZE DISTRICT

A CASE STUDY OF FINTECH COMPANY IN CYUVE SECTOR (2019 – 2023)

BY

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Thesis Submitted in Partial Fulfilment for the Academic Requirements for the Awards of Master's Degree in Development Studies.

KIGALI INDEPENDENT UNIVERSITY

OCTOBER 2023

DECLARATION

This is a pronouncement by the candidate that: This thesis titled ***"The contribution of financial technology companies to agriculture sector for community development in Musanze district with a case of Fintech Company in Cyuve Sector, 2019 – 2023"*** is my original work, it has never been submitted before for any other degree award to any other University.

Student's Name: **MUTIJANA Corneille**
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Date……

APPROVAL

This report titled ***"The contribution of financial technology companies to agriculture sector for community development in Musanze district with a case of Fintech Company in Cyuve Sector, 2019 – 2023"*** has been done under my (our) supervision and submitted for examination with my (our) approval

Supervisor's Name's: Dr RWABUTOGO Marcel

Signature: …….

Date: ……...

DEDICATION

To my beloved wife;

My dear children;

To my brothers;

To my friends and colleagues;

ACKNOWLEDGEMENTS

I would like to thank Almighty God for his mercy, grace and love; sincere appreciation goes to Prof Balinda RWIGAMBA president of Kigali Independent University. Also, my scientific supervisor Dr RWABUTOGO Marcel, advice and criticism made this research possible. I would also like to thank the Kigali Independent University management team for their tireless efforts to provide quality education. This entails recognition of colleagues, individuals, Sponsors and institutions that supported the research. Many thanks to my family, students and friends who unknowingly contributed to this work.

MUTIJANA Corneille

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ABBREVIATIONS AND ACRONYMS

ADB: Asian Development Bank

AT/ST: All Terrain/ Scout Transport

BNR: National Bank of Rwanda

COSO: Committee of Sponsoring Organizations

CRC: Convention on the Rights of the Child

EFA: Education For All

EICV: Integrated Household Living Conditions Survey

FAWE: Forum For African Women Educationalists

GMO: Gender Monitoring Office

MDG: Millennium Development Goals

MIGEPROF: Ministry of Gender and Family Promotion

NWC: National Women's Council

TRA: Temporary Reserved Area

TRB: Teachers Requirement Board

ULK: Universite Libre de Kigali

UPC: Universal Primary Completion

ABSTRACT

The purpose of this study is to find out the contribution of financial technology companies to agriculture sector for community development in Musanze district. The specific objectives: To identify different activities of Fintech vis a vis to the agriculture in Cyuve sector; to examine the contribution of Fintech to the agriculture sector for community development in Cyuve sector and to determine the challenges faced by financial technology companies to agriculture sector for community development in Musanze district. This study was designed as descriptive study for this study using the survey method; a case study was described the analysis of financial technology companies to agriculture sector for community development, the researcher acquired knowledge regarding the subject under topic. All the respondents from the population of Cyuve sector to respond to research questionnaires. The researcher used questionnaires to collect data. As far as this study is concerned, the population was comprised by 120 people who received loans. To describe target population of a study as the point of focus from which a generalization was made regarding the research findings. Thus, a sample size of 120 people as respondents was considered as the representatives of the total population. The researcher used primary and secondary data to get all information needed in this study, the quantitative and qualitative data was analyzed using descriptive and inferential statistics after running the data collected through the Statistical Package for Social Sciences (SPSS). Results with an adjusted r-squared value of 0.281 (28.1%) indicates that 28.1% of the variation in agriculture sector for community development was attributable to variation in financial technology companies with 95% confidence. Conceptualizing large-scale financing to agriculture as “value chain financing”; organized, systematic investments across a set of actors to create vertically integrated supply chains feeding high-value urban markets (supermarkets) and export markets.

Key words: Financial technology companies, agriculture sector and community development

CHAPTER 1: INTRODUCTION TO THE STUDY

1.0 Introduction

This report was composed by background of the study, statement of the Problem, research questions or hypotheses, general objective, specific objectives, scope, significance, methodology and structure of the study.

1.1 Background of the Study

Worldwide, financial technology companies are an inseparable with community development activities. Every day should be a decision day when managing financial technology, even if portfolio consists in checking account. It's should keep a list of the dates and amounts of expected expenditures and compare them to the expected revenues and cash balances. How long before you will need to spend that for agriculture sector. Two center highlights of agricultural generation are the long time slack between input speculation and benefit realization, and the huge covariate dangers forced on rural generation by climate stuns. Luckily, the mechanical scene for the arrangement of monetary administrations is moving rapidly, and the creating world shows up balanced to jump bequest frameworks in a number of energizing ways. Financial technologies are a key skill in the workplace, and are particularly important if you want to be an effective leader. One of the marks of the executive is the ability to decide. One of the obligations of free men is the willingness to decide (Young, 2016).

United States of America, one of the qualities of effective people is the courage to decide" Young, (2016). Financial technologies involve the selection of the best course of action Emmanuel, Otley & Merchant, (2010). In order to decide on the best option, management has to judge the effectiveness of various alternatives. Therefore they need some guidance that is usually provided in form of data and information Bierman, (2016). For this reason they often rely on financial and economic information gathered by community development such as

management accounting which can be defined as " the process of identification, measurement, accumulation, analysis, preparation, interpretation, and communication of information that assists executives in fulfilling organizational objectives a formal mechanism for gathering and communicating data for the ends of aiding and coordinating collective decisions in light of the overall goals or objectives of an organization" Macintosh, (2015).

United Kingdom, Belgium and German, financial technology tools through wrong and ineffective affect agriculture sector for community development, there is nowadays a vast pool of financial technology available which can be used to support agriculture sector for community development process. Nevertheless financial technology tools applied vary from organisation to organisation. One tool that proved to be very effective in one organisation, might fail in another. Different analysis are required for these diverse purposes, therefore organizations have to focus on different financial technology tools to support their investment decisions process in agriculture sector for community development. Financial technology tools helps managers especially in agriculture sector tasks. Managers with different style of community development began make use of financial technology tools in their own ways Saman (2017).

African countries like Senegal, Nigeria and South Africa, the importance of financial technology is attached to a number of aspects and uses, and there are various ideas which contends that it is vital for a lot of reasons. For instance, Azadnia and Wong (2015) consider that financial technology provides certain kind of information that is needed to make rational business decisions. Abubakar *et al.* (2017) highlighted that more detailed information about business operations and status is easily revealed through the use of accounting information. However, financial technology is composed of several different types of information ranging from costing to managerial accounting. Much of the attention is increasingly being devoted to the study of managerial accounting (Azudin, & Mansor, 2018; Boučková, 2015; Chia, 2005;

Dávila, 2019). Meanwhile, there is a strong positive interaction that exists between the use of financial accounting tools and agriculture sector for community development (Ada & Ghaffarzadeh, 2015). This is because the quality of decisions made by firms relies on the nature and quality of information available. Such information provides a detailed description of activities that have taken place in the organization.

This also includes the operational capacity and financial position of the firm (Bobrysev et al., 2015). This is important especially on the condition that the level of competition being faced by firms in contemporary business situations has greatly evolved (Boučková, 2015). This puts firms under great pressure to make community development that will help to sustain operations and deal with competitive pressure. This is mostly true especially in the telecommunications and financial sectors around the world (Bromwich & Scapens, 2016).

Financial technology in Kenya, there is needed of financial technology to evaluate financial position of the businesses which calls for increased usage of information generated from financial records. In this regard, analysis of the financial records can be described as a method which financial data is made usable for quality measurement by converting financial position to valuable information using different methods that are critical in management. Because of this, it is important to understand current level of quality of a business to help in future management because most managers strive to ensure progress and survival of a company considering the market surrounding it. Scrutiny of financial position should always come before beginning the management process which means that planning process should come after (Nooraie, 2018).

Planning is the critical role in any organization if at all it has an objective of good management. For an organization to have excellent plans in its finances, it must put into considerations the SWOT analysis. Good company features must be identified with reliable financial technology and have it as the major task. Advantages derived from the analysis

could be used to improve planning processes of the organization. A company is also able to recognize its weaknesses and so it can be able to undertake corrective measures. Due to this, management of an organization becomes the key users of financial data (Royaee, & Aseman, 2016).

Beginning of financial technology used for accountant in Rwanda is not well known, there has been an agreement that if any accounting does not give support ought to be clashed. Whether accounting is being used by sub-officers, potential creditors, lecturers or potential workers is very useful. Affiliation is achieved by all users of the accounting data. If there is complete, operative or accurate information, there is high likelihood of conducting correct economic activity. This can also be strengthened by implementing and having control of accounting data. Managers therefore not only require an accounting management that helps in providing required information, but also one that meets their requirements (Iacob & Karim, 2019).

In Rwanda, both the "macro" and "micro" roles of agricultural development are served when a country undergoes a successful structural transformation over the long term, but when we seek to adjust agricultural policy at a moment in time, the levers for these two purposes may be quite distinct. To promote agriculture's role as a sector in the overall economy, policy should be focused on improving value added, export markets, labor productivity, diversification, and the transmission of labor toward more productive sectors. For these purposes, FinTech needs to drive mechanization and processing capacity, as well as manage a complex set of risks that accompany engaging with the world market (quality certification, handling exposure to global commodity price fluctuation, external demand shocks). If instead we focus on the critical micro-level welfare implications of agriculture as a sector employing most of the population below the poverty line, quite a different set of objectives may emerge, particularly in the short term (Dorward, *et al*, 2019).

The array of digital technologies has dramatically decreased the cost of providing services on the margin, allowing them to be offered in smaller packages to poorer customers. This holds out the promise that less developed countries and remote regions could leapfrog legacy systems and use mobile/digital technology to drive agricultural productivity in novel ways. Big data tools allow institutions to target credit more precisely, thereby reaching better borrower pools and expanding access to uncollateralized credit. Better measurement of climate shocks using various types of remote sensing permit a shifting of covariate risk within the agricultural system (Sadoulet, 2016).

This research will provide an overview of the use of FinTech for agriculture in Musanze district. Begin of analysis by providing context for levels of financial penetration, agricultural productivity, and stages in the agricultural transformation within country. We then move to a detailed discussion of credit products, and the way in which novel technologies can target and extend uncollateralized credit in new ways, can allow new types of assets to serve as collateral, and allow for an expansion of agricultural productivity.

1.2. Statement of the Problem

Financial technology companies provide invaluable statistics and evidence on which managers can make informed to agriculture sector for community development. However, some managers do not have information's needed in their tasks to the agriculture sector for community development. This require for managers to be equipped with adequate tools which allow having financial technology tools to help them in day to day management. Nowadays, some companies failed because of lack of financial technology, lack of financial analysis tool to promote agriculture sector for community development. Some managers took decision arbitrary by intuition. Various practices can help leaders to determine potential problem before they occur, (Young, 2016). Having a strong agriculture sector for community development means that the team and the project are able to reach a point that enable them to

take a certain course of action that theoretically is the best interest of the companies. Financial technology is a key element in agriculture sector for community development.

Financial technologies are a good guidance in the management of a settled in Musanze district. The finance department of Fintech Company provides a variety of financial transaction that is helpful in agriculture sector in Cyuve sector for developing community. Budgets are plans for future to the agriculture in Cyuve sector for community development. Managers are able to monitor budgets in order to spot variances and make on-going adjustments of financial technology. In business organisations, financial technology such as investing, saving, and loan processing, is also included in these digital financial services. These financial technologies can be compared with the results achieved by similar companies or in previous time periods to identify areas for improvement especially in agriculture sector for community development. It is observed that lack of saving, poor loan processing, poor financial transactions and lack of awareness of end-users all elements shown above affect negatively agriculture sector for community development. That is why this research intended to find out contribution of financial technology companies on agriculture sector for community development in Rwanda with a case of Fintech Company in Cyuve as one of the companies which are currently using financial technology.

1.3. Research Objectives

The objective of the study was categorized as general and specific objectives as shown below:

1.3.1. General Objective

The general objective of this study is to assess the contribution of financial technology companies to agriculture sector for community development in Musanze district.

1.3.2. Specific Objectives

The specific objectives were the following:

i. To examine different activities of Fintech vis a vis to the agriculture in Cyuve sector;
ii. To examine the contribution of Fintech to the agriculture sector for community development in Cyuve sector;
iii. To determine the challenges faced by financial technology companies to agriculture sector for community development in Musanze district.

1.4 Research Questions

This research responded the following questions:

i. What are the d different activities of Fintech vis a vis to the agriculture in Cyuve sector?
ii. What are the contributions of Fintech to the agriculture sector for community development in Cyuve sector?
iii. What are the challenges faced by financial technology companies to agriculture sector for community development in Musanze district?

1.5 Scope

Scope time of the study was based on scope time, geographical scope and scope content.

1.5.1 Time scope of this study

Research worked on the contribution of financial technology companies to agriculture sector for community development in Musanze district, Cyuve sector as reference with data of 5 years from 2019 to 2023. Due to limited time, the researchers were emphasized on the records of five years from 2019 up to 2023 because they are current years and it is easier to the respondents to find the related data easily.

1.5.2 Geographical scope

The investigate was carried out in Fintech Company at Cyuve sector in Musanze district which located in north province of Rwanda, driving distances from Kigali to Musanze is 95 km.

1.5.3 Content scope

The study was the contribution of financial technology companies to agriculture sector for community development in Musanze district.

1.6 Significance of the study

This study will be great importance to the beneficiaries**,** Researcher, University, agriculture cooperative members and other researchers from Government of Rwanda.

1.6.1 To the community

Through this research, community will be able to know the contribution of financial technology companies to agriculture sector for community development especially citizens of Cyuve sector in Musanze district.

1.6.2 To the beneficiaries

Beneficiaries will enjoy financial technologies in their agriculture activities for development of community especially citizens of Cyuve sector in Musanze district

1.6.3 To the agriculture cooperative members

This research will help cooperative members to know their weakness in using financial technologies in agriculture sector for community development in order to change it

1.6.4 To the local leaders

This research will help the local leaders to know where they need to put effort in awareness of citizens related with financial technology to the agriculture sector for community development.

1.6.5 To the Academicians

The study will be kept in the library and it could be served as reference by scholars of Kigali Independent University and other universities in carrying out their research. As scientific interest, the result findings of this research will be used by other researchers who have to carry out the related research topics. The research also will help the researcher to get enough

knowledge related with my research study and will observe how Fintech Companies implement their strategies as financial technology companies to the agriculture sector for community development in Rwanda. In addition this study could enable the researcher to fulfill the necessary requirements for the award of Master Degree in Development Studies of Kigali Independent University.

1.7 Structure of the thesis

The study is composed by five chapters: Chapter is general introduction which was showed background of the study, problem statement, objectives of the study, research questions, and significance of the study and scope of the study. Chapter two is literature review which presents the conceptual review, theoretical review, review of related literature, conceptual framework and summary of literature review. Chapter three deals with research methodology in terms of research design, population and sample size, sample techniques, measurement of variables, instrument, primary data, secondary data, limitations of the study and ethical consideration of the study. Chapter four comprises of presentation of findings and discussion and chapter five was comprised by summary of findings, conclusion and recommendation.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter discusses and reviews similar or related researches and literature published by other authors' articles, books, journals, reports and previous dissertations related to the topic in question and its variables in order to give an insight into the study as well as expressing the need for this study.

2.1 Conceptual Review

It systematically explains the actions needed in the course of the research study based on the knowledge obtained from other ongoing researches and other researchers' point of view on the subject matter.

2.1.1 Loan provision

The decline in the efficiency of agricultural production in the initial period of reforms was largely the result of unfavorable socio-economic conditions for the functioning of economic entities. Among the main reasons for the current situation, there is a lack of financing for agricultural enterprises, including the fact that lending to the industry does not take into account the particularities of their current financial and economic condition. Historical Russian practice and international experience indicate that the finances of agricultural organizations are distinguished by ascertain specificity and need a constant inflow of borrowed capital. Due to the duration of the production cycle, seasonality of production and the associated nature of the formation of costs and stocks in agricultural organizations there are no sources for continuous funding (Dávila, 2019).

The use of borrowed capital allows you to significantly expand the volume of economic activities of the organization, to ensure a more efficient use of its own funds, to accelerate the renewal of fixed assets, etc. In this regard, the attraction and use of borrowed financial

resources is the most important aspect of the organization's financial activities aimed at achieving high business outcomes. Today, it is difficult for agricultural commodity producers to get a loan from commercial banks, since they are aimed at working with such borrowers who are able to provide a high percentage of credit resources for a short period of time. The relevance of the research topic is determined by the need to improve agricultural lending. Currently, the need for credit resources in agriculture necessitates the development of a specialized system that meets the requirements and conditions of a modern market economy (Dávila, 2019).

The issues of forming and developing a credit system in agriculture are considered in the economic theory and practice of Russia and developed countries in connection with their particular importance in the development of the infrastructure of modern credit relations, forms and methods of lending. The sphere of agricultural crediting is in its infancy due to the imperfection of legislative support, the 4 underdevelopment of the credit products market, and the absence of a number of market infrastructure entities. The solution of this group of problems were contributed to expanding the availability of agricultural producers to credit resources, as well as ensuring stabilization and development of the industry (Dávila, 2019).

There is the concept of a bank loan as a set of relations by the bank and the borrower regarding the provision of a certain amount of funds for targeted use based on timely repayment and receiving a fee for using funds as interest. Due to the insufficient development of the essence of the notion "lending to agricultural enterprises", its detailed specification is necessary. . In our opinion, the crediting of agricultural enterprises can be understood as the provision by banks (credit organizations) of funds to enterprises that store, transport, supply it to consumers, process agricultural products, and provide agriculture with machinery, chemicals and fertilizers serving agricultural production for a certain period. on terms of

repayment, urgency, chargeability and material security. The main distinctive feature of the agrarian sector of the economy is its seasonality and, as a result, dependence on credit resources. But in modern times, there is a reduction in the volume of credit support for rural producers, due to the growing crisis in the financial system, which is detrimental to both banks and the agricultural sector (Dávila, 2019).

Considering the peculiarities of agricultural production related to seasonality, riskiness, the duration of the production cycle, as well as the internal consumption of part of the output, participating in the further technological process, we believe that insurance related to one of the most complex types of business can contribute to mitigating risks in the agricultural sector. Here the object is non-existent property, future harvest. Risks - its shortfall or death due to natural phenomena, for example, destruction by hail. Therefore, in the world, agricultural insurance is not focused on a specific insurance event, but on deviations from the average yield level established for a specific region according to statistical data for 5-15 years. It should be noted that already at present part of the risks are covered by the agricultural producer himself (Dávila, 2019). Of course, the largest chance to get a loan on the most favorable conditions is provided by enterprises engaged in large-scale production by providing liquid collateral, as well as repaying the loan obtained by diversifying production activities, marketing manufactured products while minimizing costs. At the same time, micro and small businesses have advantages over large ones - high mobility, quick response to market conditions.

Active competitiveness, personal interest in the results of the ability to quickly adapt to changing business conditions. But this does not help with access to credit resources, since small forms of management cannot provide collateral suitable for the criteria of security. This

reduces the interest of investors, which is further strengthened by the high costs of providing a loan for the bank, but credit assistance to this business segment is necessary to carry out its activities. Therefore, the state provides subsidies to small forms of economic management of the agro-industrial complex in a large volume. Currently, there are five groups of factors that affect the availability of credit. The first group of factors is related to the adequacy of the normal source of repayment, which means that the company has reason to expect to receive proceeds from the sale of products, allowing after the payment of taxes to cover the principal amount of the debt and interest (Dávila, 2019).

2.1.2 Financial literacy

There has been broad alter to the way buyers perform monetary exchanges in recent a long time. Rising advances and forms have made it conceivable for businesses and consumers to associate with each other in other ways. Changes in these intuitive have been more clear in a few nations than others. For case, in 2012 Sweden had the highest use of card installments per inhabitant than any other nation within the European Union (European Central Bank, 2014). This highlights the inclination for cash choices amongst Swedes when performing budgetary exchanges. Besides, Sweden is positioned third amongst the leading associated and most advancement driven nations within the world (Global Information Technology Report, 2015).

This environment has cultivated the rise of Budgetary innovation (Fintech) companies that ‘‘offer innovations for keeping money and corporate back, capital markets, monetary data analytics, installments and individual budgetary management’’ (Skan, Dickerson & Masood, 2015). Furthermore, agreeing to Skan, Dickerson and Masood (2015) these companies have the ‘‘potential to recoil the part and pertinence of today’s banks’’. Fintech companies within Nordic nations have gotten noteworthy venture in later a long time. In 2014 venture in

Stockholm's Fintech industry come to USD 266 million making it the third biggest European city by venture in this segment (Wesley-James, Ingram, Källstrand & Tiegland, 2015). Now match these advancements in performing monetary exchange, connectedness and investment in Fintech with the concept of believe. Between 2008 and 2013 worldwide believe in banks fell from 56% to 45% (Edelman, 2013). Subsequently, in Sweden, there's a drift in making non-cash monetary exchanges, a decrease in believe of banks, developing venture in Fintech, and Sweden is positioned third of well-connected and most advancement driven nations around the world. These actualities suggest that there can be openings for Alternative Budgetary Exchange Suppliers (AFTP). Be that as it may, believe of these suppliers, within the eyes of buyers, must to begin with be superior understood.

To effectively diffuse elective exchange administrations, it is pivotal to examine how consumers create believe in AFTP (Xin, & Tan, 2015). Concurring to the Oxford word reference believe is the ‘‘firm conviction within the unwavering quality, quality, or truth of someone or something.’’ By it believes shows up to be a basic concept, in any case in an evolving marketplace that incorporates rising innovations and a bunch of benefit suppliers trust becomes a profoundly complex and fragile figure that impacts buyer behavior (Tao, Shin & Kim, 2016). For illustration, trusting convictions impacting believe eagerly and subsequent behaviour (McKnight, 2001). A hole, for which this consider will center, has been found in linking both streams of investigate. That's does the diminish of believe in conventional banks and current trust climate of AFTP speak to an opportunity for these keeping money options.

Furthermore, Swedish Millennials have not been distinguished as the essential center in past research investigated amid the writing audit of this paper. This era has been depicted as

digital locals (Presky, 2001) who are recognizable with electronic innovation. Centering on this group only will serve to assist get it this wonder in exceedingly connected society (Dutta, Geiger & Lanvin, 2015). By picking up distant better; a much better; a higher; a stronger; an improved an improved understanding believe of Swedish Millennials towards AFTP this inquire about may serve as a direct to recognizing believe antecedents while moreover giving other bits of knowledge drawn from the test group.

Early thinks about conceived collaboration as structure between parties, particularly between organizations. This can be an terrible comfort in stating, as organizations cannot collaborate but through their representatives or named agents (Keyton, 2016). Other ponders declared a auxiliary base of collaboration as analysts conceptualized it as symmetrical or hilter kilter (Keyton & Stallworth, 2018), as one substance implanted in another (Stohl & Walker, 2018), or as components that contribute to a soul of collaborative collusion (Heath & Sias, 2019). Administration researchers particularly advanced this see of collaboration. A key suspicion over auxiliary ponders of collaboration was the given part of communication.

Within the administration teach, researchers Lawrence, Phillips, & Tough, (2019) were instrumental in situating collaboration as a digressive approach that reverberates with communication researchers: “effective collaboration comes about from a prepare in which members lock in in discussions that can incorporate not as it were face-to-face discourse but too a assortment of other digressive hones, such as memos, letters, e-mails, and minutes of meetings” (Solid, Lawrence, & Allow, 2015). Within the communication teach, Lewis (2006) advance grasped a prepare point of view: “We don’t have collaboration, nor are we in collaboration; we lock in in collaboration”. Moreover, Keyton and Smith (2018) contended that analysts ought to center on collaborating, not collaboration. Their positions are certified

by Kuhn's (2014) point that "solutions regularly rise from, are recognized in, and are legitimized through communication processes".

Each of these commitments emphasizes the part of the communication prepare in collaborating and positions collaborating as a worldly prepare. From this point of view, collaboration develops from the intuitive of its individuals. In reality, collaborations got to begin some place and with something; most regularly usually structure, as facilitators and organizers frequently start with recognizing the issue and after that recognizing the partners. Structure and handle are in pressure with one another, and in this way are comparable to the assignment and social characteristics of other shapes and settings of communication. Lewis, Isbell, and Koschmann (2017) propose that persuasive hypothesis may be a premise for understanding communication in interorganizational collaboration. Indeed in spite of the fact that a few structure relationship pressures are comparative to those in interpersonal, gather, and organizational communication settings, Lewis, Isbell, and Koschmann contend that a few pressures are particularly characteristic to interorganizational collaboration particularly the inside outside pressure "wherein affectability to outside partners may meddled with inside cohesion or bad habit versa".

It may be that making a collaboration adjusts more closely with basic pressures (e.g., convention versus adaptability), which keeping up a collaboration adjusts more closely with social tensions. One string reverberates uproariously all through the collaboration writing: collaboration is troublesome. To be an compelling collaborator, one must illustrate aptitude in integrator behaviors, such as appearing concern for others and their issues, causes, and positions. Whereas overseeing concern for these assignment issues, one must too illustrate social concern, such as appearing believe, being warm and neighborly, being emphatic, and making conversational space for other individuals of the collaboration to show issues of

concern to them. For these reasons, a few collaboration are encouraged by somebody who isn't a part of the collaboration. Innovation presently permits for collaboration individuals to meet and facilitate their work over geology and time zones. Innovation can offer assistance individuals organize different bodies of data; it can moreover bring individuals who have a wide assortment of aptitudes, capacities, and points of view together for non concurrent or synchronous interaction to make a few work item, whether it is to share information more broadly or to create a choice.

Communication innovations are broadly utilized in peer (i.e., flat) and in inclining systems (Scott et al., 2015). Collaborative innovations may be exceptionally basic but compelling, such as moment informing. Pazos, Chung, and Micari (2013) found IM was utilized more for collaborative than cognitive errands. Representatives detailed IM utilize in collaborative assignments to create plans and concepts, and to total intellective assignments (i.e., assignments with adjust answers) as well as for clarifications, planning, and overhauls. Utilizing technology to collaborate, be that as it may, isn't without its issues. Indeed in spite of the fact that it would appear that technology could move forward coordination among collaborative individuals, usually not continuously the case, particularly when collaboration individuals are communicating through innovation. Walsh and Maloney (2017) found that individuals of a collaboration that utilized innovation to communicate were “particularly inclined to issues of collaboration and misunderstandings”. These issue increments when dialect interpretation must go with message transmission and receipt.

As Cho and Lee (2018) found, in spite of the structure that any innovation forces on a collaboration (i.e., who can associated, how, and when), the social setting or the preexisting social organize, intergroup boundaries, and culture made more limitations on the data stream

over socially differing bunches utilizing computer intervened communication. In spite of the apparently tremendous openings to collaborate through innovation, we cannot befuddle related with collaboration. A group may be utilizing gather innovation that permits collaboration, but in hone may treat it as a one-way data framework from group pioneer to group individuals. Hence, how the innovation is outlined and how collaboration employments a innovation are central to indicating the interaction as a collaboration. In substance, one cannot collaborate without communicating. As with other interaction occasions, collaboration is both assignment and socially situated.

2.1.3 Digital literacy

Basic Computer Skills: These are the skills needed to control digital devices and use them to accomplish simple tasks. Harris (2015) identified them as "turning [digital devices] on and off; keyboarding; using a mouse; using a touchpad; right and left-clicking; double-clicking; and long-pressing knowing how to create, save, locate, and edit computer files as well as how to open, use, and close a variety of computer applications" .Basic applications include e mail, Internet browsers, search sites (e.g., Google.com), maps, and calendars. Harris noted that use of these applications requires some proficiency with language and literacy. Network Literacy: Network literacy emerged from the concepts of search literacy and information literacy, focusing on the skills required to access and curate information as required by social networks (Pegrum, 2010).

It is based on the concept of connectivism, which views knowledge as social and distributed across networks. Access to and participation in the construction of knowledge requires this new skill, as Siemens (2004) contends in his online blog by noting that "The capacity to form connections between sources of information, and thereby create useful information patterns, is required to learn in our knowledge economy." Social media including Facebook,

LinkedIN, SnapChat, and other social websites, has lent weight to one's knowledge of online social networks, how to learn from them and through them, and how to use them to access and disseminate information. Digital Problem Solving: Jacobs and Castek (2018) define this as one's "ability to navigate and use multiple digital resources to accomplish goals across domains, including work, personal interests, educational pursuits, social and professional networking, civic participation, and for future uses not yet conceptualized. The definition expands on the well-known Problem Solving in Technology-Rich Environments, defined as "using digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks (Organisation for Economic Co-operation and Development, 2009, p. 9).

An important distinction in the former is that it recognizes proficiency employing what they call "everyday literacies" like asking questions, making meaning, and drawing on an experience using technology to support future encounters in other contexts. Information Literacy: The American Library Association (1989) defines information literacy as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." We expand this definition in digital literacy as using technology to enhance information. Information literacy has become more complex as the technologies that are used to organize and disseminate information (e.g., library websites, databases, Internet search applications) have become more sophisticated and as more information is available online. Media Literacy: Much like information literacy, media literacy focuses on finding, evaluating, using, and communicating information; however, it emphasizes the range of media found online "from print to video to the Internet," According to the Center for Media Literacy. Media literacy also takes into account production skills, including production of original content and remix, through which learners

contribute to the body of information found online (Bigelow, Vanek, & Abdi, 2017; Knobel & Lankshear, 2008).

Digital literacy development is a critical component of adult basic education instruction. ABE classrooms are filled with adults who may have had interrupted formal education, who might be developing literacy for the first time, or who may be struggling with numeracy or English language proficiency. For these learners, digital literacy can support or accelerate the acquisition of knowledge and the development of proficiency in a range of academic contexts (Harris, 2015). This means that the role of an ABE teacher is two-fold with respect to digital literacy: to ensure that learners have foundational computer skills and to leverage those skills and provide ample scaffolded opportunities to use them in learning. In this way, teachers can not only support the achievement of academic content goals but also can support students' resilience, better preparing learners to nimbly and fluently use technologies as they move through their day. The need is great. A National Skills Coalition study concerning the foundational skills required to perform entry-level service work reported that 73% of workers in these positions lacked digital problem-solving skills (Bergson-Shilcock, 2017, p. 9) and "two out of three workers who struggle to use computers are using them on the job anyway" (Bergson, 2017).

The picture becomes more concerning when expanding this employability lens to middle skills jobs, jobs that require less than a bachelor's degree and yet generally pay a living wage. According to Burning Glass Technologies, these jobs represent 46% of current labor demand, and 82% of them require digital skills like mastery of spreadsheets and word processing. Furthermore, the study found that middle skills jobs that require use of digital technologies pay more and provide a career pathway into middleand high-skill jobs (Burning Glass

Technologies, 2017). A recent Pew Center for Research study hints at the importance of digital literacy outside of the workplace. Although all but 10% of Americans use the Internet, those who do not have Internet access at home tend to have less than a secondary education and live in households earning less than $30,000 a year (Anderson, Perrin, Jiang, & Kumar, 2019). These demographic facts about Internet holdouts align with the demographic data of adults with basic skills and learning needs; because they lack a secondary credential, many adult learners are unemployed or underemployed and do not earn family-sustaining wages.

If these adults do not have the opportunity to learn how to use and then actually make use of the Internet while participating in adult basic education programming, they may not have any opportunity to do so. In addition, lack of digital literacy skills will hamper adult learners at the workforce entry level and may impede or prevent their advance to the middle-skill work so critical to an upwardly mobile career pathway. Finally, digital literacy is a focus in the College and Career Readiness Standards (CCRS), used in adult education programming. Learners need 21st century skills in key areas such as critical thinking, problem solving, communication, and collaboration supported by the creative application of digital technologies to succeed at school and work. These skills are articulated throughout the anchor standards and benchmarks of the CCRS (U.S. Department of Education, 2013).

2.1.4 Income generation

Income Generation interventions attempt to address poverty, unemployment, and lack of economic opportunities to increase participants' ability to generate income and secure livelihoods. These interventions can take a wide variety of forms, including microcredit programs that provide small loans to individuals or groups who would not normally qualify for loans from conventional financial institutions. Microcredit is one form of microfinance, which involves the provision of a wider range of financial services, such as access to savings,

credit, and insurance to poor people. In addition to microcredit, other income generation interventions focus on business and vocational skills training for participants, either for positions within existing industries or to develop small businesses of their own. Both microcredit and vocational skills training programs may include additional components not related to income generation, such as health education, women's empowerment, critical thinking, and communication skills. Many also have strong social support components. Income generation interventions address poverty, which is considered a structural determinant of HIV risk (Kennedy et al, 2017).

Structural determinants include aspects of the social, political, environmental, and economic context that play a role in shaping HIV-related risk. Interventions that address structural determinants have been increasingly viewed as a critical component of the global HIV response. Two primary mechanisms have been proposed to explain how income generation programs might affect HIV-related outcomes. First, these programs are designed to provide economic empowerment to participants. By increasing the ability of participants to generate income, participants may be more able to negotiate safer sex or less likely to exchange sex for money or material goods.2 Second, these programs are often conducted in groups that may build social capital. The formation of supportive groups may provide participants with increased access to material and emotional resources and increased knowledge and self-efficacy for HIV prevention–related behaviors (Kennedy et al, 2017).

In addition, microfinance and vocational skills programs may simply provide a convenient platform for adding HIV education and skills training. Effectiveness of Income Generation Interventions. The Kennedy et al. (2017) systematic review examined the state of evidence for the effect of income generation interventions, including microfinance and vocational skills training, on HIV prevention for participants in developing countries. One individual randomized-controlled trial of tailoring skills and health education for street-based sex

workers in India showed that participants reported significantly fewer sex partners and sex exchange partners (i.e., clients of sex workers). However, there was no significant difference in reported condom use at last sexual exchange or in "always" use of condoms with clients. Another individual, randomized-control study of small enterprise skills training for Ugandan youth showed significant decreases in the number of sexual partners and increases in abstinence and condom use, but no change in whether they were sexually active, for both the intervention and the comparison group. A time-series study training female bar workers in Cambodia for hotel jobs met few of the systematic review's quality criteria and had a small sample size that rendered changes in many outcomes undetectable. Nonetheless, no significant difference in condom use at last sex or in the percent of women suggesting condom use at last sex was reported. Counter to the intervention goals, women who stayed in the program had lower rates of condom use at last sex than those who dropped out (Kennedy et al, 2017).

2.1.5 Saving

The saving rate of American families has declined drastically amid the past decade (Devaney, Anong, & Spin, 2017; Marquis, 2016). Concurring to the Bureau of Financial Examination, the individual sparing rate in 1989 was 7.3%. Ten a long time afterward, in 1998, the rate was 4.3%, and by 2008, the individual sparing rate was 1.8% (BEA, 2019). In general, the individual sparing rate within the United States diminished 5.5% within the past 20 a long time. In spite of the fact that the individual sparing rate declined over time, buyers communicated concerned approximately the ampleness of their investment funds. The Seat Investigate Center (2007) detailed that 77% of Americans always try to spare; in any case, 63% reacted they don't spare sufficient. In another consider, Hurd and Zissimopoulos (2018) detailed that 73% of respondents spared as well small inside the past 20 to 30 a long time. Sixty-eight percent of specialists assessed their sparing rate as well moo (Choi, 2014). As the

infant boomer era resigns, analysts and policymakers have paid closer consideration to the supportability of the Joined together States retirement framework (Venti, 2016). Saving isn't as it was vital for retirement individuals at any age must have adequate money related assets to cover unforeseen costs.

Agreeing to Brobeck (2018), most Joined together States families are not arranged for budgetary crises. Thinks about by the Customer Alliance of America (1999) uncovered that low-income family units accept $1,500 is required to cover money related crises, whereas moderate-income families accept $3,000 is fundamental. Be that as it may, roughly 70% of low-income and more than half of moderate-income, families showed they have less than $500 accessible for money related crises. Insufficient investment funds not as it were contrarily influences budgetary management. Mental well-being is additionally influenced. Brobeck (2018) detailed that family units not having at slightest $500 in crisis reserve funds had trouble paying monthly bills and obtaining good credit histories.

In expansion, these family units tended to have higher credit card equalizations compared to family units with crisis investment funds. Insufficient crisis reserve funds expanded uneasiness among direct- and low-income families (Brobeck, 2018). This frequently leads to wellbeing issues, such as need of rest, particularly among low-income family units. The address remains: Why do shoppers fall flat to spare when they recognize the significance of sparing and the negative wellbeing effect of insufficient investment funds Venti (2016) famous that behavioral and mental variables impact the execution of arrange to spare. A conceivable reason was that monetary data is inaccessible or as well troublesome to get it. Indeed when individuals have sparing plans, they may need the self-control required to effectively execute the arrange since of time-inconsistent inclinations, idleness, or delaying.

O'Neill, Xiao, Bristow, Brennan, and Kerbel (2016) recognized individual qualities such as assurance teach information, positive thinking, and having an objective or arrange as components influencing money related objective victory. Lunt and Livingstone (2011) detailed that determinants of repetitive and add up to reserve funds are distinctive. The analysts found that mental factors best clarified repetitive sparing behavior and statistic factors clarified add up to investment funds.

2.1.6 Education

Education is a process that begins at birth and continues until the end of life. The early stage of life is very crucial since this period affects the following process. However, we are not able to totally control the early stage because children remain under the care of their families until they begin attending school. Even if children study in schools, many factors such as friends in and out of the school affect their educational process. The educational system focuses on children from pre-school until graduate education. Educational gains mainly shift from public to individual gains as they attend a higher level of school each year. That is why education is compulsory in the first 10 or 12 years for children. Otherwise, greater and more costly social problems would occur if we could not educate them to be good citizens. Durkheim (2016) states that "education is the influence exercised by adult generations on those that are not yet ready for social life. In other words, the primary objective of education is to help children develop intellectual skills and improve their physical capabilities.

Additionally, they should be motivated at school to acquire the moral values that are demanded by political society, because society may suffer some social problems and pay more to fix them if we do not help children achieve these objectives. Dewey (2017) believes that education functions properly when there is a relationship between the individual and the environment, and that the purpose of education is to live for today, not to prepare students for

future living. Thus, firstly moral training should be offered and schools should serve "as a form of community". Additionally, education is not a part of life and it should be regarded as "a continuing reconstruction of experience". If children gain experiences at school, then they may be able to learn about real life and become prepared for the future. Therefore, "what kind of experiences will they gain?" and "how should we help them acquire these experiences?" are the questions that should be answered. Specialists study curricula in terms of grades and subjects in order to help children develop the expected behaviors to have a better society.

Moore (2010) explains education in relation to the commitment by society to have a desirable type of individual and the expected values. Thus, children may have some expected characteristics, attitudes, knowledge and skills that society would like to see. The author states that an educated man should have the desired intellectual abilities and at the same time should be very sensitive about moral matters, mathematical efficiencies and have a scientific vision and a historical and geographical perspective. When we look at society, it seems that the educational system has not been successful in training the expected educated man. Russel (2016) explains that education should provide children with a guide to allow them to develop their capabilities and skills. An education system should offer children, be they boys or girls, the opportunity to receive the highest level of education. Furthermore, Durkheim (2016) underlines that the focus and primary function of education is to prepare children for their roles as workers and members of a larger society and identifies the purpose of education as the shaping of the social being.

Formal education (Ngaka, Openjuru and Mazur 2014) denotes a "hierarchically structured and chronologically graded educational system", which starts at pre-school and continues through university and includes "academic studies, a variety of specialized programs and

institutions for full-time technical and professional training. Children, families, and adults voluntarily participate in formal education because they believe that formal education will provide a certificate or diploma for their children, and these official documents will help them receive a higher level of education and to build a better professional career. If unemployment is high and there is high competition for employment, then there will be a higher demand for formal education. Fundamental Concepts of Education. It might be speculated that governments are pleased to see that people demand more formal education and people to see that they get better employment opportunities at the end of formal education. Contrarily, if people cannot get better opportunities and positions when they graduate, they may lose their desire to continue with and participate in formal education. This may cause crucial problems in society.

2.1.7 Access to medical services

Gary, (2018) is one of the foremost cited financial specialists on wellbeing and instruction, known for a few hypothetical and experimental works on the relationship between these two human capital resources. He alludes to the relationship as financial complementarities. His hypothetical models advance expectations for what we ought to anticipate to find in observational investigation. Within the taking after show, Becker (2017) predicts that "an increment in survivorship at afterward ages raises the returns from ventures in instruction since instructive costs come at prior ages and returns at afterward ages." I wish to show this demonstrate and from that point see on the off chance that its forecasts hold. In the event that experimental examination appears that tutoring and wellbeing has complementarities, at that point Becker's expectations can be confirmed. Expect the fetched of instruction happens which the person survives this period. On the off chance that the return of instruction at level of life is spoken to by a better wage rate.

This expectation is well known and intensely backed by prove. The contention that instruction increments wage, which increments investing on wellbeing administrations, is regularly alluded to as the circuitous, or money related, impacts. Becker too states that an increment in instruction raises survival rates specifically, or non-monetary. In fact, prove propose that more taught people oversee their wellbeing superior, indeed with therapeutic costs settled at a given level. Such people are thought to have more beneficial propensities and way of life in numerous ways. For illustration, they visit superior specialists, devour more beneficial diets, and take their medicines as endorsed. Which means, on the off chance that the likelihood of surviving is the consumption on wellbeing. In other words, tutoring raises life anticipation. This explanation is the establishment of Becker's demonstrate. In any case, it ought to not be taken for allowed, but or maybe be treated like a theoretical forecast which able to test observationally and after that offer extra back. The ideal instruction venture condition has two imperative suggestions for the complementarities between tutoring and wellbeing. To begin with, expanded investing in instruction raises riches due to the next wage rate. With expanded riches, the person can increment its life hope by expanded investing on wellbeing.

Moment, instruction increments life anticipation specifically through making the person more profitable in wellbeing speculations, and through actuating a more advantageous way of life. Becker predicts that contributing in instruction raises survivorship. In other words, he predicts that there are complementarities within the relationship between instruction and wellbeing. This proposal sets out to observationally test Becker's forecast that tutoring causes alter in health-related results and health-behavior. It ought to be discernibly clear that much prove recognizes instructive achievement within the least school clearing out age, but a few considers consider the impact of higher instruction on wellbeing. Zhong (2015) finds that a

better instruction extension in China don't cause way better or smoking and drinking behavior. Be that as it may, college instruction may altogether diminish the likelihood of hypertension. The cause of hypertension is regularly considered as genetical, but inquire about has found that it moreover relates to physical action and count calories. Zhong recommend that higher instruction may influence health-related behavior emphatically in these two factors. He emphasizes that the causal impacts of "education on wellbeing could be heterogeneous over levels of instruction, age dispersion, distinctive wellbeing measures, diverse social settings, etc." (Zhong, 2015). That's , a treatment impact in existing prove is as it were evaluated locally. Agreeing to Zhong, we ought to amass nearby impacts from numerous distinctive settings.

Community wellbeing may refer to living well together at a community scale or it the role that community scale aspects of living have in facilitating local individual wellbeing. The definition by Wiseman and Brasher suggests both are of interest and may be mobilised within a community wellbeing framework. This distinction, and the blurring of it conceptually, was also reflected by the CWEP stakeholders who considered community wellbeing to be something greater than the sum of a community's individual members but were less certain whether the outcome of interest was the wellbeing of the community of its individual members (CWEP, 2015). Underpinning this distinction is whether wellbeing is always and only a property of the individual or whether wellbeing may emerge from the relations between individuals, between individuals and place, individuals and cultural values and heritage and so forth. The challenge in designing assessments of community wellbeing is describing and capturing the extra 'something' (Laws, 2006).

The majority of existing processes are premised on the centrality of an autonomous and independently acting or feeling individual and a primary interest in how community aspects of life impact on individual wellbeing tends to be dominant. However, social theory offers alternative understandings of the individual as relational and interdependent with others which aligns with an interest in community and demands different ways of thinking about wellbeing and wellbeing assessments. Community wellbeing can be assessed across a large range of possible domains of life, but almost always includes some variant of health, economy, social relations and security. Four important considerations are often left out that are central to capturing a meaningful concept of community wellbeing; these are sustainability, inequality, considerations of intangible cultural heritage and inter-generational relations.

There are, in turn, complex concepts that can be understood and operationalized in a variety of ways. Individual wellbeing assessments can be made from individuals across individual scale domains through both subjective (eg feelings about life) and objective data (eg level of education, employment status) and aggregated up to the scale of the given community. We propose this aggregated individual wellbeing data should be referred to as population wellbeing. Individuals can also assess community scale domains (eg trust, safety, aesthetic) which when aggregated up to community scale describe an aspect of community wellbeing beyond the individual, albeit assessed by individuals. Finally, information at community scale on local life (eg crime rates, availability of various resources) will already exist or can be collected from key informants (Greenhalgh, 2016).

However, capturing subjective aspects of local life that are not simply individual but reflect the ways in which people function and feel together is more challenging. Alternative forms of data collection grounded in different theories of knowledge offer the potential for this, such

as through deliberative processes or the analysis of narrative and other local cultural outputs. The most important first step in designing a framework for assessing community wellbeing is always to consider its purpose in terms of the options for action that it can assess or distinguish. Whether the purpose is to identify how community scale activities might impact on, or 'nudge', normative desirable individual behaviors, to reduce inequalities between and within communities or across generations, this is not a technical decision but an ideological and political one which needs to be made locally. The development of a framework for assessing and intervening to improve community wellbeing thus needs a series of decisions to be made about the assumptions of the approach taken, the desired end-points and the extent that existing structures of power and voice can be challenged. Key questions for conceptualizing and starting to design frameworks for community wellbeing (Allin, 2014).

2.1.8 Shelter for citizens

According to Davies and colleagues (2019), almost one-third of the parents of youth receiving have less than a high school education, and half of these youth live in households with at least one other person with a disability. Furthermore, youth receiving SSI and their family members often lack basic information on work incentives that could enhance self-sufficiency (Davies, & Wittenburg, 2019). With building evidence, research continues to demonstrate that youth development during the teenage and young adult years does not happen in a vacuum. Family support and engagement can enhance youth's education, employment, independent living, and financial self-sufficiency in adulthood (Sharabi and Marom, 2018; Wehman , 2015). In efforts to enhance family engagement, the need to use culturally sensitive approaches is clear, especially with youth and families from minority backgrounds (Saleeby, 2014). Family supports that consider the local culture can enhance families' expectations and, ultimately, the outcomes of youth with disabilities (Daly, 2015).

The use of trauma-informed approaches that inherently support cultural sensitivity, in combination with the use of evidence-based approaches by FESs with lived disability experience FESs with lived disability experience, , can promote the value and benefits of work. They can also help youth and families navigate support systems, making work possible while ensuring that youth and families have access to necessary services, health care, and support. Community-based approaches can support youth's development by enhancing positive identity, selfsufficiency skills, and supportive relationships. A positive working alliance is crucial for successful outcomes (Lundahl, 2016; Lustig, 2002). Alliances require an ongoing, balanced exchange of communication. Many contemporary evidence-based and promising practices focus on promoting alliances through engagement (Lequerica, 2006).

Engagement involves helping people express their perspectives clearly, as well as helping them to assess their satisfaction with their life situations, or their wish to make changes, and to examine their options for making change. Some of the greatest challenges for youth include feeling motivated to change and believing that one has the capacity to be successful. Iwanaga and colleagues (2019) found that motivation and outcome expectancies positively influence engagement in the VR process. People, including teenagers transitioning from school to adulthood, approach life changes differently.

The Transtheoretical Stages of Change model combines key constructs from other theories into a comprehensive theory with flexible application across a variety of populations and settings. Given that only an estimated percent of individuals are ready for action at any given time (Norcross, Krebs, and Prochaska 2011), change theory focusing solely on action is misguided and misses opportunities for earlier engagement. The key stages of change are precontemplation (not ready in next six months; presents as resistant or unmotivated),

contemplation (intending action in next six months; presents as ambivalent), preparation (ready to engage), action (engaged), and maintenance (persistent engagement). Evidence-based strategies such as motivational interviewing, person-centered planning, and trauma-informed care are effective in supporting movement from earlier stages into action (Schlegelmilch, 2020). Motivational interviewing, person-centered planning, and trauma-informed care can increase the employment expectations and engagement of youth. Motivational interviewing, for example, can increase youth's likelihood of seeing the potential of creating change, including getting a job.

When implemented with fidelity, motivational interviewing can prompt youth to talk more about why they want to work, which increases their likelihood of working (Miller & Rose 2009). Motivational interviewing is a person-centered approach, increasing the working alliance between youth and the professionals providing employment services (Torres and Tansey, 2019). Person-centered planning adapts to culturally diverse youth, ensuring that career planning focuses on their goals and desires, thus discovering jobs that align with their skills and interests and further increasing their motivation to work. Finally, trauma-informed care aims to provide a safe, comfortable environment by removing possible trauma triggers for youth or members of their families who have experienced one or more types of trauma (Costello, 2017; Ko, 2018). Experiences of trauma are more likely for youth and families living in poverty and coming from minority backgrounds (Marcin, 2019). The use of trauma-informed approaches emphasizing respect, empowerment, and community connections in public programs has also been shown to improve outcomes for populations facing multiple and complex challenges (Bombard, 2018).

Community cooperation as a concept has been started since the 1980s. Tragically, Community cooperation brings advancement of partners have set out on applying it at some

point as of late having a clear understanding of what it really is and what it includes. Such approaches to enhancement are creating from participation of the accomplices at a speedy rate and they are getting to be the channel for passing on headway help, (Sweel, 2014). “Community participation has been connected to individuals wanting to form choices influencing their claim lives. More critically they want to require portion in venture recognizable proof, arranging, execution and observing and assessment of their activities short interference from untouchables. Community interest in ventures is basic because it improves advancement at the grass root level which is basic for economical improvement” (Goom, 2016).

“Concurring to Armitage (2018) citizen interest may be a handle by which citizens’ act in reaction to open activities, voice their suppositions approximately choices that influence them, and take obligation for changes in their community. Oakley and Marsden (2017) characterized as community support as the method by which people, families, or communities expect duty for their claim welfare and create a capacity to contribute to their claim and community’s improvement in common. The consider recognizes presence of different definitions but will receive the taking after definition by (Hackin, 2019). “Beneficiaries participation refers to an active process whereby beneficiaries influence the direction of community and execution of development projects rather than merely receive a share of project benefits for community”.

The study, “Community is in the development project which has a profit for community”. “The consider isn't concerned around cooperation in political forms in spite of the fact that it recognizes that participatory shapes of government emphatically impact community interest in ventures, (World Bank, 2016). Community’s cooperation is intuitively and involves

consistent exchange between key partner bunches, venture accomplices and nearby organization. It cannot happen once as permitting individuals to voice their suppositions takes time. It ought to be display all through the extend cycle and there ought to at slightest be an opportunity for partner input in each phase"(Krumbag, 2017). "The concept of Rwandan's improvement methodologies shows that Rwandan that has grasped advancement worldview shifts to reflect changes in worldwide considering; from technocratic, trickle-down procedures of the 2000s and 2010s to more participatory ones in later times. In show disdain toward of these advancements, there's inadequate stakeholder support within the whole prepare of conception, plan, execution and administration".

"The proof of Fintech Company community participation to protect water project where everyone gain the interests of welfare through of getting clean water, but work that's accessible proposes that professionals may be overoptimistic and naïve approximately the benefits of the approach (Mansuri, 2016). A survey of the experimental writing on support appears that the encounters organizations have had with the approach don't always match what has been idealized within the reading material. For different reasons the benefits don't continuously materialize. Owing to the reality that they are expensive and time devouring it is judicious to get it how support influences venture supportability. As a matter of truth, (Mansuri, 2016) concluded that not much is known approximately the impacts of recipient support on ventures sustainability".

2.2. Theoretical Review

The theoretical literature review helps to establish what theories already exist, the relationships between them, to what degree the existing theories have been investigated, and to develop new hypotheses to be tested.

2.2.1 Technology Acceptance Theory

Davis, and Warshaw (2019) propose Technology Acceptance Theory to explain the conceptual model that users' intention or acceptance degree towards information system or new technology. Technology Acceptance Theory is constructed on the foundations of perceived usefulness and perceived ease of use. Perceived usefulness refers to individual belief to improve the degree of job performance through using particular new technology and information system. Perceived ease of use indicates how easy an individual learns how to operate or use new technology or information system Davis *et al*, (2019); Gefen *et al*, (2016). The model places more emphasis on how perceived ease of use would positively affect perceived usefulness. Exogenous variables such as environment are also the antecedent that induces perceived usefulness and perceived ease of use. Thus, Technology Acceptance Theory is based on both important perceptive factors as perceived usefulness and perceived ease of use. Technology Acceptance Theory is widely applied on the research of information technology.

Liu and Arnett (2014) examined the significant variables to build a successful website based on Technology Acceptance Theory. Gefen, (2017) combined Technology Acceptance Theory and rust to propose an integrated model for explaining online consumer behavior. Pavlou, (2018) proposes e-commerce acceptance model of online consumers by separating and applying experiment designs and survey. Follow-up studies such as Horst, Kuttschreuter and Guttering (2017) discusses whether or not the government of Netherlands should serve the public with electronic government like other countries do. The study integrates Technology Acceptance Theory factors, the experiences of the public, perceived risk and faith. The empirical results show that the principle of e-government is that people fully trust the governmental organization and that they highly identify with information technology. As a

result of the empirical study, scholars find that Technology Acceptance Theory does not only apply to examine new information technology accept intention or behavior, but also ensures that Technology Acceptance Theory is suitable for the explanation of online user behavior issues (Liu & Arnett, 2016).

2.2.2 Theory of Planned Behaviour

Early studies mainly focus on theory of reason action (TRA) as identified by (Fishbein &Ajzen, 2015). TRA is based on the fundamental variables of attitude and subjective norm. The two variables are seen to have a positive effect on individuals' behavioral intentions, which positively induce individuals' actual action. Attitude is an individual's positive or negative evaluation of self-performance of a particular behavior. The concept is the degree to which performance of the behavior is positively or negatively valued. Subjective norm is an individual's perception about particular behavior, which is influenced by the judgment of significant others (e.g., parents, spouse, friends, teachers). Behavioral intention is an indication of an individual's readiness to perform a given behavior and it is assumed to be immediate antecedent of behavior. However, the basic hypothesis of TRA states that the occurrence of behavior is based on volitional control of one's willpower (Fishbein & Ajzen, 2015). Thus, the behavior occurs mostly from one's willing. Thus, Aladwani, (2011). modifies TRA and further proposes the theory of planned behavior (TPB). Aladwani, (2011). proposes TPB to explain and predict human behavior patterns. TPB extends the theoretical framework of TRA and adds perceived behavioral control to account for individuals' uncontrollable factors.

TPB is founded on the three factors as perceived behavioral control, attitude, and subjective norms. Hence, behavioral intention is influenced by perceived behavioral control, attitude, and subjective norms. Actual behavior is, in turn, determined by behavioral intention. Among

all, perceived behavioral control refers to individual's perceived ease or difficulty of performing the particular behaviors. In recent years, the use of internet has been widespread and has been more diversified. Studies on TPB applying on electronic commerce have increased. Tan and Teo (2012) integrate TPB and diffusion of innovation theory to investigate the factors that affect people's intention towards using internet. Empirical results show that attitude and perceived behavior control would positively affect people's intention to use internet banking. In the subsequent studies, Huanget, (2016) find that TPB indeed can explain the people's behavioral intention of on-line tax filing.

Hsu, (2016) review users' continual behavior towards internet shopping by longitudinal investigation, which not only employ TPB factors (attitude, subject norms and perceived behavior control) but also integrate expectation disconfirmation theory to construct the research model. The empirical results show that subjective norms, attitude, and perceived behavior control are the major factors affecting consumers' continuous intention of internet shopping. In addition, equity concept which is respected by accounting scholars (Jackson and Milliron, 2016) is also omitted in the pre-factors. To sum up, the empirical results of the above- mentioned literatures prove that TPB could be applied to explain the behavioral process of human being engaged in or accepted information technology.

2.2.3 The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) which was formulated in 1975 by Fishbein and Ajzen has been used extensively in marketing research. TRA has been applied to explain the behavior beyond the acceptance of technology and includes four general concepts: behavioral attitudes, subjective norms, intention to use and actual use. It argues that individuals evaluate the consequences of a particular behavior and create intentions to act that are consistent with their evaluations. More specifically, TRA states that individuals' behaviour can be predicted

from their intentions, which can be predicted from their attitudes and subjective norms. Following the chain of prediction further back, attitudes can be predicted from an individual's beliefs about the consequences of the behavior. Subjective norms can be predicted by knowing how significant other individuals think the behavior should or should not be done.

A particularly helpful aspect of TRA from a technology perspective is its assertion that any other factors that influence behavior do so only indirectly by influencing attitude and subjective norms. Such variables would include, amongst others things, the system design characteristics, user characteristics (including cognitive styles and other personality variables) and task characteristics. Hence, TRA is quite appropriate in the context of predicting the behavior of using multimedia technology. Although TRA, is a very general theory and as such does not specify what specific beliefs would be pertinent in particular situations. Nevertheless, the inclusion of subjective norm represents an important variable, which is not even included in more popular models.

2.2.4 Economic and conflicting theories

“Economic theory was developed by Lewis (2015) in his efforts to explain how the concept of marginal utility a traditional microeconomic theory could be used to determine the relative financial value of goods to substantiate allocation of resources that in the aggregate would improve financial performance of a corporate”. “This theory emphasizes on procedures applicable for budgeting while considering all resources as scarce and appropriate for attaining the financial performance. Due to the scarcity of financial resources in regard to demand, the basic financial test which could be applied is that every expenditure would be worth its return and every financial costs would be equal to all its sacrificed alternatives in order to attain financial targets (Wicker, 2016). Incremental analysis is necessary on every budget for effectiveness achieving specific financial objectives”.

When reviewing the literature, the researcher established that, though there were no strong conflicting theories in the area of monitoring and evaluation, there are still some areas where different authors had divergent emphasis in regard to the importance of monitoring and evaluation systems and tools to enhancing project sustainability. Gizachew (2015) dwelt much on specific type of monitoring and evaluation where he says that, for monitoring and evaluation to be successful, it has to be participatory. Mackay, (2017) on the other hand, without specifying the type of monitoring and evaluation to be employed, emphasized the four importance of monitoring and evaluation concepts; project durability, policy development, management of the projects and accountability.

Monsalve, (2014) shared the same views with Mackay, and had two more important aspects of monitoring and evaluation where he said that, it provides data for planning future resource needs and advocacy. Bambarger, (2016) like other authors acknowledges the importance of beneficiaries participation in project monitoring and evaluation tools for sustainability of project, but used a different approach where he said that, it's a powerful tool for learning about what works, what does not, and the reasons why. It is important to note however, that, though sometimes used divergent wording and ideas, there common words that keep coming when talking about the importance of monitoring and evaluation tools in project management.

2.3 Review of related literature

According to Larsson (2016), Cash management is not a new phenomenon and organizations have always considered how their liquid capital in the best way should be managed. Even though managing liquid capital always have been done, the term cash management has brought new light managing liquid capital with focus on the time dimension of cash flow. During the fifties the first cash management-model were presented and the concept cash

management was taken in use. Larsson (2016) holds that cash management can be defined as "theories and methods for handling liquid capital".

According Larsson (2016) financial transactions for internal Control Policies and Procedures Manual is primarily concerned with cash receipts; however, that does not change its basic meaning in a financial setting. Internal controls are to safeguard assets, record financial transactions, and set standards for implementing financial policies and procedures that promote productivity and efficiency in the organization. COSO describe Internal Control as follow. Internal controls are the methods employed to help ensure the achievement of an objective. In accounting and organizational theory, internal control is defined as a process affected by an organization's structure, work and authority flows, people and management information systems, designed to help the organization accomplish specific goals or objectives. It is a means by which an organization's resources are directed, monitored and measured.

According to Clark (2017), some of the factors in internal controls are those factors to ensuring about atmosphere of strong internal control throughout all agencies. These factors are: Reasonable assurance: Internal control systems are to provide reasonable assurance that management objectives are accomplished. A sound system recognizes that the cost of internal control should not exceed the benefits achieved, and reasonable assurance equates to a satisfactory level of confidence given the considerations of costs, benefits and risks. Supportive attitude: This standard requires that management and employees maintain and show a supportive attitude toward internal control at all times. Attitude affects the quality of performance and the quality of internal control. A positive and supportive attitude is started and fostered by management. Competent personnel: Managers and employees are to have

personal and professional integrity. They are to be qualified to perform their assigned duties, as well as to understand the importance of ensuring sound internal controls.

According Larsson (2016) Internal control is accomplished through procedures designed to safeguard assets, generate appropriate accounting data, and ensure efficient productivity. Controls are established primarily to prevent and minimize errors and fraud. Strong systems of internal controls ensure that an organization achieves its goal and objectives both long term profitability targets and maintain reliable financial and managerial reporting. In the course of studying the essence and concept of lending to agricultural enterprises, it was revealed that a loan is defined as a relationship, as money, as a loan or a loan, as trust, as an action. Views about the nature of the loan are quite different and many authors consider its individual elements in this concept. In the course of the study, we proposed to consider the loan in the aggregate of its components: as, first of all, the movement of loan capital in which free money accumulates and, therefore, the system of relations of participants in the production process (state, population, producers, as well as buyers, banks, lenders and borrowers).

The thesis substantiates the proposition that it is not enough to consider the role of a loan only in the context of its functions. Thus, we consider it necessary to investigate the role of credit, as a process: ensuring the continuity of capital circulation, which is achieved through the regular sale of finished goods and implies active commercial lending, the availability of bank lending to entrepreneurs, the presence of a sufficiently developed consumer credit. To achieve sustainable continuity of the cycle, it is very important to timely purchase of raw materials, materials, renewal of fixed capital; accelerating the concentration and centralization of capital, which is a prerequisite for economic growth and stable development,

allows us to expand the boundaries of individual accumulation. The use of credit can significantly reduce the time to expand the scale of production, update products and improve production efficiency and labor. It should be recognized that agricultural credit is a special form of credit relations in the economy, characterized by the provision of funds to various categories of agricultural producers by banks and non-bank institutions for fixed and circulating capital in combination with government assistance and regulation.

The specificity of an agricultural loan, as compared with other forms of credit is: firstly, to provide money to both legal entities and individuals acting as producers of agricultural products; secondly, creditors can be both banks and other credit and financial institutions; thirdly, the loan can be provided for current purposes, as well as investment purposes; fourthly, crediting of agriculture is carried out mainly on preferential terms as compared with other sectors of the economy, which requires strict accounting and control over the budget and extra budgetary resources spent for these purposes (Koschmann, 2017). Practically in all developed countries the specialized system of agricultural credit operates. In the process of research, the theoretical and methodological foundations of the industry specifics, which determine the features of its lending mechanism, were developed and supplemented.

At the present stage, the development of a bank loan in Russia is not highly dynamic, which does not ensure the acceleration of the development of the national economy and does not contribute to the development of mutually beneficial relations between banks and the real sector of the economy. In this regard, the state needs to create favorable conditions for the development of agriculture, banks conditions for obtaining long-term and short-term bank loans acceptable to borrowers, as well as ensuring a favorable investment climate in agriculture. In the process of researching the market of bank crediting of agriculture in the

Russian Federation, the author established the current trends in its development, and also identified external and internal factors that influence it (Ford &Smith, 2018).

2.4 Research Gap

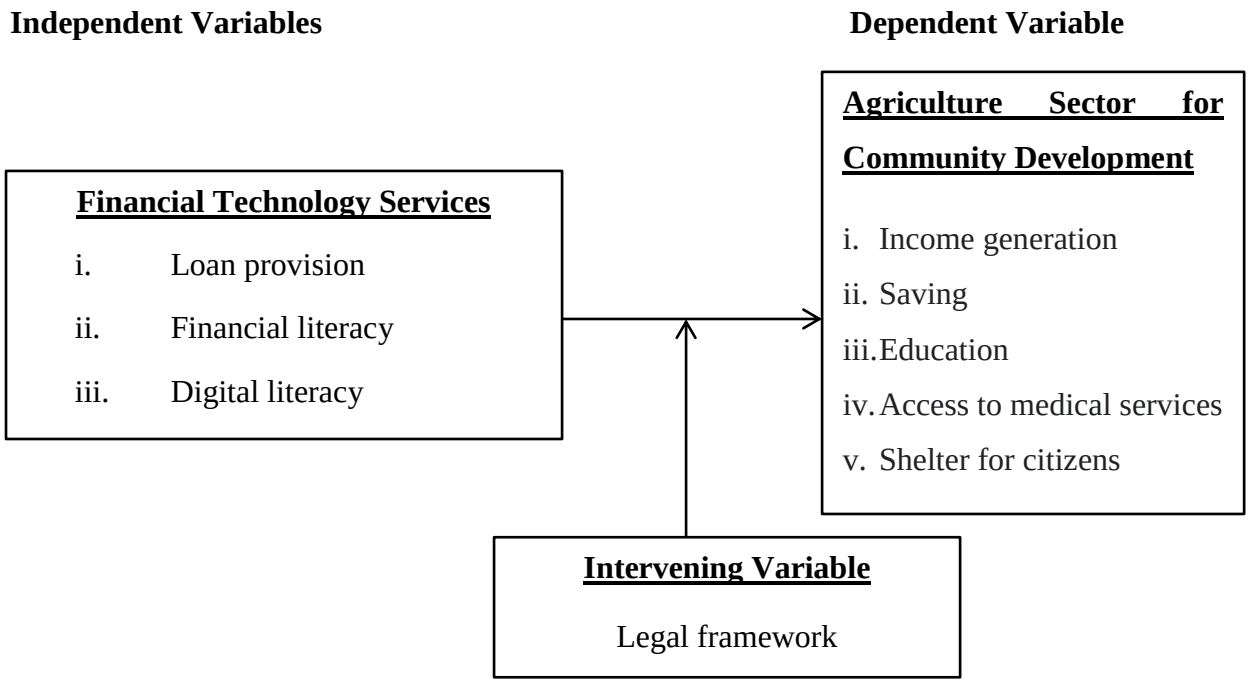
The government has established structures for building through National Bank of Rwanda a foundation for effective financial technology companies to agriculture sector for community development in Rwanda. And it has created a well done, long-term reform strategy that informs all of the country's short-term development goals. The government has worked to meet the effective financial technology companies on agriculture sector for community development by streamlining regulatory processes involved in starting every step in financial technology companies. Beyond undertaking legal and administrative reforms, the government has invested in training for professionals in financial technology to ensure proper effective reforms. Recognizing the benefits of a diverse knowledge base, Rwanda need also imported technical expertise from other countries, to replicate good practices and build capacity. And the government has involved technology sector in the reform process and maintained an open line of communication to keep citizens, civil society and other as well as agriculture sector for community development (BNR Report 2014).

All these efforts are showing results in Rwanda's regulatory performance in agriculture sector and community development and Rwanda's dedication to local government reforms development, in triggering positive legal reforms, has contributed substantially to its overarching goal of promoting the effective financial technology companies on agriculture sector for community development in Rwanda with prosperity. This study aims to fill that gap. This chapter provides information from previous literatures regarding criteria of an effective financial technology companies on agriculture sector for community development. This includes review of perspective of competitiveness towards a service offered.

2.5 Conceptual Framework

A conceptual framework is a diagrammatical research tool intended to assist the researcher to develop awareness and understanding of the contribution of financial technology companies to agriculture sector for community development in Rwanda from this study. The diagram of conceptual framework used in this study to show possible study of action or to present preferred methods to an idea or thought. It can be defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. The interconnection of these blocks completes the framework for certain expected outcomes. An independent variable is one that is presumed to affect or determine a dependent variable. It can be changed as required, and its values do not represent a problem requiring explanation in an analysis, but are taken simply as given. The fundamental aim of financial technology is to generate a perspective on the way in which critical issues related to community development in Rwanda.

Figure 2. 1: Conceptual framework



Source: Researcher, 2023

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This chapter dealt with ideas on how the research was conducted. It was dealt with research strategy, the purpose of the study, the methods of sample selection, collection of data, analysis of data, and the discussion of validity and reliability of the research.

A research design refers to the plan of action the researcher intends to use to answer the research questions formulated out of specific objectives of the study. It includes all the steps to be followed by the researcher from the point of coming up with a research proposal to the final point of analyzing the data in the questionnaires (Sukamolson, 2007). Odoh and Chinedum (2014), define a research design as an arrangement aimed at providing answers to the research questions raised in the study.

3.1 Research Design

This study was descriptive research with Cyuve sector as case study using the survey method. Descriptive case study research was used to describe characteristics of a phenomenon being studied Duttolph (2011). The researcher described the situation or processing detail. Therefore, both quantitative (questionnaires) and qualitative (interviews) research techniques was used by researcher in order to collect data (information) related to the objectives of the study. According to Odoh and Chinedum (2014), a case study was described and analyzes the contribution of financial technology companies to agriculture sector for community development in Musanze district, assuming that the researcher can acquire knowledge regarding the subject under review to descriptive research design of a single case. It is a qualitative analysis that involves careful observation of a situation.

3.2 The Population of the study

Population is the people from which the researcher can obtain information. Sarah (2012) said that population is a group of people of organization, objects or events, about which the

researcher wants to, draw a conclusion. Thus, the researcher has the total number of 202 populations in Cyuve sector as members and employees of Fintech Company Musanze Branch from Buruba and Bukinanyana cells.

Table 3. 1: Representatives employees

Unit	Population
Members of General Assembly	192
Board committee	5
Supervisory committee	3
Manager	1
Agronomist	1
Total	**202**

Source: Researcher, 2023

3.3 Sampling

Creswell, (2004) said that a sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design may as well lay down the number of items to be included in the sample i.e., the size of the sample.

Sample design is determined before data was collected. There are many sample design from which a researcher can choose. Some design is relatively more precise and easier to apply than others. Sample design is the set of methods and procedures to be used in collecting and analyzing measures of the variables specified in the problem research.

3.3.1 Sample Size

There are many ways of calculating sample size, but the researcher may not need to calculate the necessary sample size for a different combination of levels of precision, confidence, and variability because a researcher dealt with members who are using loan of the cooperative. Therefore, a sample size was 120 respondents from Fintech Company Musanze Branch as members who are using loans from Fintech Company.

Sampling procedure

Where population embraces a number of distinct categories, the frame was organized into separate "strata." Each stratum is then sample as an independent sub-population, out of which individual elements can be randomly selected. Every unit in a stratum has same chance of being selected. Using same sampling fraction for all strata ensures proportionate representation in the sample. Adequate representation of minority subgroups of interest can be ensured by stratification & varying sampling fraction between strata as required. Finally, since each stratum is treated as an independent population, different sampling approaches were applied to different strata.

3.4 Data Collection Methods and Tools

Data is facts or things certainly known and from which conclusions may be made. The main sources of data collection referred to when conducting this study was primary and secondary sources of data. For the purpose of this research, and in order to achieve the objectives data was collected and both primary and secondary data was used to perform the study. The survey questionnaire was used as the main data collecting instrument, and the secondary data was gathered from books, research articles and appropriate websites that are relevant to this study.

3.4.1 Questionnaires

Primary data was collected using the questionnaire of multiple choice questions, open-end and open question (where clear and simple answers were required). This decision was based upon the type of information to collect and the proposed manner of data collection, as well as the time frame allotted for the study, and the cost considerations of the research project. A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case, (Galton, 1911).

In this research, the researcher used questionnaires to collect the information related to research topic. Questionnaires were both closed and open ended questions. The closed ended questions require simple answers from the respondents “YES” or “NO”, while open ended questions requires respondents to give fully their opinions and views regarding questions being asked in the study. This method was adopted because it is free from bias of the interviewer, and answers are in the respondent’s own words. Respondents have adequate time to give out answers, and furthermore, the respondents who are not easily accessible can also be reached at their convenient time.

3.4.2 Interview technique

According to Krlinger (2017), interview is a conversation from which the researchers try to get information to the interviewees. Qualitative questions were asked in relation with the research objectives and this helps the researchers to get direct information from respondents; therefore, this technique allowed the researcher to collect information related to the contribution of financial technology companies to agriculture sector for community development in Musanze district through oral communication with selected staff of Fintech company and Cyuve sector and the researcher approach respondents in order to see the agriculture sector for community development in Musanze district.

3.4.3 Documentation Method

In collecting secondary data, the researcher used documentation review method. This is the data collection process that is based on reading textbooks, documents and other sources which include internet, report, newspapers, journals, government papers and the dissertations with information related with the research study.

3.5 Validity and Reliability Test

The issues of validity and reliability are critical to the overall results of any research project. To ensure content is valid, the researcher set up and administered adequate questionnaires to

selected respondents considered as the best for the purpose of this study. Thereafter, all questions were checked to detect possible errors and eliminate unnecessary information. In addition, in order to ensure that the survey instrument was designed to collect the necessary data for the research questions, a draft of the survey instrument was given to the supervisor of the research for review so as to avoid potential ambiguities and wording which might lead to unwanted answers.

The computation of the frequencies and percentages of respondents to all questionnaires were done. The high rank percentages of respondents were considered as a real response to the research's questionnaires. The secondary data was obtained from the head office of Fintech companies.

3.6 Data processing

The data collected was processed and analyzed. This involved data coding, editing and tabulation especially quantitative data. The purpose of all these is to make the information clear and understandable for other people.

3.6.1 Coding

To ensure that all answers are coherently and logically recorded to provide consistent information in order to facilitate the understanding of phenomenon and cross check the data collected, the process of editing and coding was considered. The responses to the questionnaire were analyzed descriptively and reported as frequency of responses and percentages and later is analyzed and interpreted using tables.

3.6.2 Editing

The editing helps the researcher to examine data, detect any errors and omission, and to correct them where possible. This was done through checking, inspection, correcting and modifying collected data to ensure the completeness, accuracy, uniformity and comprehensiveness.

3.6.3 Tabular Presentation

Tabular presentations were used for presentation of data inform of frequency and percentages. The graphs indicate the number of occurrence of responses to particular questions statically. The data and the presentations were in form of tables and graphs. Graphical presentations gives clear understanding of the research interpretations for clear and easy understanding of the phenomenon studied.

3.7 Methods of data analysis

After the researcher collected the information from the respondents, the analysis was made in line with research objectives and questions. The statistical instruments that was used for research analysis was mainly descriptive and inferential statistics such as correlation analysis and multivariate (generalized linear model) was used to analyze the data. The data in this study was computed and analyzed using Statistical package for Social sciences (SPSS) which is software for data analysis.

3.7.1 Descriptive statistics

Descriptive statistics were used to describe the basic features of the data in the study in the tendencies and then replicated in tabular manner. It involves use of percentages, frequencies, mean and standard deviation.

3.7.2 Correlation analysis

Correlation analysis was developed to measure the strength and closeness of the relationship between each independent variable to dependent variable which is the contribution of financial technology companies to agriculture sector for community development in Musanze district. Multiple regression analysis was then applied to test in this research study particularly on agriculture sector for community development of Fintech Company in Cyuve Sector the extent of variance in the dependent variable as a result of unit change in the

independent variable as indicated by the coefficient of determination factor (R2). Multiple regression analysis was used in this study.

3.8 Limitations of the study

During research, researchers have to use their time for collecting the information from the various sources, there is a problem related to computerization which researchers generally face. A researcher can't find the data for the research because of lack of computerization, so this is also one of the problems that were faced by researcher. Library management and functioning is not satisfactory at many places and much of the time and energy of researchers were spent in tracing out the books, journals, reports, etc., rather than in tracing out relevant material from them. There is insufficient interaction between the university research departments on one side and business establishments, government departments and research projects on the other side. The lack of a scientific training in the methodology of research, this causes unnecessary delays in the completion of research studies.

3.9. Ethical consideration

This study was conducted in a good manner while considering personal values. A researcher was only deal with the subject matter where as she observes and keeps all issues outside the study at the field. The responsibility of ensuring that a respondent was respected, thus personal matters were avoided to the great extent and the information provided by the interviewees were used for research purposes.

CHAPTER 4: PRESENTATION OF THE FINDINGS AND DISCUSSION

4.0 Introduction

This chapter presents and discusses the detailed findings of the study. Data was collected from the field using questionnaires and interviews. These data were later analyzed using the Statistical Package for Social Sciences (SPSS) version 20. In SPSS, the indicators of financial technology companies to agriculture sector for community development in Musanze district were measured on a nominal scale and the mean and standard deviation of the responses was derived to this analysis. The frequencies and percentages of the responses on a 5-point likert scale from 5=strongly agree to 1=strongly disagree were also derived from this analysis for the different indicators of financial technology companies to agriculture sector for community development in Musanze district for Fintech Company in Cyuve Sector. The analysis led to the findings of the background of the financial technology companies or respondents from Fintech Company in Cyuve Sector. The Pearson correlation was also used to establish a relationship between the independent variable, agriculture sector for community development at 0.01 significance level, 2-tailed test.

4.1 Profile of Respondents

Under this section the profile of respond of questionnaire is presented. Researcher describes mainly the gender, marital status, education level and activity at Fintech Company in Cyuve Sector, experience of respondents from contribution of financial technology companies to agriculture sector for community development in Musanze district. Frequencies and percentages have been used to show the responses from the respondents in Fintech Company in Cyuve Sector.

4.1.1 Gender of the respondents

The respondents were required to mention their genders, male or female. The table 4.1 summarizes the gender of the respondents.

Table 4. 1: Gender of the respondents

Gender	Frequency	Percent
Male	76	63.3
Female	44	36.7
Total	**120**	**100**

Source: Primary data, (2023)

Table 4.1 shows that, 63.3% of the respondents were male and 36.7% female. This implies that the view collected in the research is relatively free of gender bias since view of both males and female were considered in Fintech Company in Cyuve Sector.

4.1.2 Marital status of the Respondents

This sub section concerns the evaluation of the marital status of the respondents that participated in this study.

Table 4. 2: Marital status of the Respondents

	Frequency	Percent
Single	8	6.6
Married	69	57.5
Divorced	8	6.6
Widow	35	29.1
Total	**120**	**100.0**

Source: Primary Data (2023)

The findings in table 4.2 shows that 8 representing 6.6% of respondents are single and 69 representing 57.5% of the respondents are married, 8 of respondents with 6.6% are divorced and 35 of respondents with 29.1% are widow/widower. It implies that in Fintech Company in Cyuve Sector majorities are married and mean that married are a lot to take a loans as responsible of family.

4.1.3 Educational level of the Respondents

This sub section shows the findings of the educational qualification of the respondents in terms of five categories, namely, bachelors' degree, masters and others.

Table 4. 3: Educational level of the Respondents

	Frequency	Percent
No formal education	7	5.8
Primary	20	16.6
High school	65	54.1
Undergraduate	18	15
Postgraduate	10	8.3
Total	120	100.0

Source: Primary Data (2023)

The results in table 4.3 showed that 7 representing 5.8% are no formal education, 20 of respondents with 16.6% have done primary school, 65 representing 54.1% of the respondents have done high school, 18 representing 15% of the respondents have done bachelors' degree while 10 representing 8.3% of the respondents hold masters qualification. These findings indicated that the respondents come from different categories of educational background from primary school, high school, Bachelors' degree to master’s degree and also from other categories. This indicated that Fintech Company in Cyuve Sector have different members who have different skills by different categories of the respondents with diverse groups of educational background for using a loan gotten from Fintech Company in Cyuve Sector.

4.1.3 Activity at Fintech Company in Cyuve Sector

This shows the findings of activity at Fintech Company in Cyuve Sector of respondents in terms of different categories.

Table 4. 4: Shows activity at Fintech Company in Cyuve Sector

	Frequency	Percent
Agribusiness	80	66.6
Business activities	34	26
Employees	6	4.5
Total	120	100.0

Source: Primary Data (2023)

The results in table 4.4 shows that 80 respondents with 66.6% are doing agribusiness, 34 respondents with 28.3 % are doing business activities of selling sweet potatoes, 6 respondents with 5 % are employees of the Fintech Company in Cyuve Sector. This implies that majority of respondents are dealing with agribusiness as main activity of the cooperative.

4.1.4 The period of being a member of the cooperative

A cooperative is a user/owner (democratically) controlled form of business; however, in most cooperatives.

Table 4. 5: Shows the period of being a member of the cooperative

	Frequency	Percent
Less than 1 year	10	8.3
1- 3 years	20	16.6
4-6 years	50	41.6
7 years and above	40	33.3
Total	**120**	**100.0**

Source: Primary Data (2023)

The results in table 4.5 shows that 10 respondents with 8.3% have been a member of the cooperative in the period of less than 1 years, 20 respondents with 16.6% have been a member of the cooperative in the period of 1-3 years, 50 respondents with 41.6% have been a member of the cooperative in the period of 4-6 years while 40 of respondents with 33.3% are

the members of the cooperative 7 years and above. This implies that majority of respondents are the members for many years.

4.2 Presentation of Findings Related to the Research Objectives of the Study

This section showed the perceptions of the respondents based on the following objectives and research questions: The general objective of this study is to identify different activities of Fintech vis a vis to the agriculture in Cyuve sector; to examine the contribution of Fintech to the agriculture sector for community development in Cyuve sector and to determine the challenges faced by financial technology companies to agriculture sector for community development in Musanze district as follow in the different tables.

4.2.1 Different activities of Fintech vis a vis to the agriculture in Cyuve sector

Fintech refers to the integration of technology into offerings by financial services companies to improve their use and delivery to consumers and agriculture sector for community development in Musanze district.

Table 4. 6: The different activities of Fintech vis a vis to the agriculture in Cyuve sector

Indicators		**D**	**N**	**A**	**SA**	**Total**	**Frequency**	
							Mean	**SD**
Fintech finance different firms and creating new markets	N %	0 0%	12 10%	51 42.5%	57 47.5%	120 100%	4.47	0.513
There is facilities for members of cooperative to access a loans	N %	3 2.5%	20 16.6%	48 40%	49 40.8%	120 100%	4.42	0.821
It is embraced the goal of promoting innovation and growth of the digital economy	N %	7 5.8%	20 16.6%	48 40%	49 40.8%	120 100%	4.33	0.816
Fintech helps businesses to rely on mobile money and electronic payments	N %	6 5%	10 8.3%	49 40.8%	55 45.8%	120 100%	4.28	0.872

SD = strongly disagree, D= disagree, N= Not sure, A= agree, SA= strongly agree.

Source: Primary Data (2023)

Table 4.6 for each indicator shows the percentage and frequency shows the mean and standard deviation of the responses elicited from the respondents. The findings show the extent for Fintech finance different firms and creating new markets for agriculture products in Cyuve sector. None of the respondents disagreed nor strongly disagreed to strengthen the Fintech finance different firms and creating new markets for agriculture products in Cyuve sector. The neutral responses comprised of 12(10%), 51(42.5%) respondents agreed that Fintech finance different firms and creating new markets for agriculture products in Cyuve sector while 43(46.7) strongly agreed that Fintech finance different firms and creating new markets for agriculture products in Cyuve sector with a mean of 4.47 and standard deviation of 0.513 as shown. It further depicts that 3(3.2%) of the respondents each disagreed and were neutral to the fact that Fintech of Cyuve sector facilities different members of cooperative to access a loans. 20(16.6%) are neutral, 48(40%) agreed while 49(40.8%) strongly agreed, with a strong mean and standard deviation of 4.42 and 0.821 respectively. This also means that the members of cooperative are working with Fintech of Cyuve sector facilities different members of cooperative to access loans.

From the tables, 7(5.8%) of the respondents disagree that Fintech not embraced development with the goal of promoting innovation and growth of the digital economy especially for agriculture products in Cyuve sector, 20(16.6%) are neutral, 48(40%) of the respondents each agreed and 49(40.8%) strongly agreed that Fintech embraced development with the goal of promoting innovation and growth of the digital economy especially for agriculture products in Cyuve sector as shown in the table with a strong mean of 4.33 and standard deviation of 0.816 showing that they all have heterogeneous responses or varying perceptions and there is a very significant level of Fintech embraced development with the goal of promoting innovation and growth of the digital economy especially for agriculture products in Cyuve sector.

Furthermore, none of the respondents strongly disagreed that there is not Fintech helps businesses to rely on technology especially mobile money and electronic payments for agriculture products in Cyuve sector, 6(5%) disagree that there is not Fintech helps businesses to rely on technology especially mobile money and electronic payments for agriculture products in Cyuve sector, 10(8.3%) are neutral to this, 49(40.8%) agree and 45(48.9%) strongly agreed that Fintech helps businesses to rely on technology especially mobile money and electronic payments for agriculture products in Cyuve sector, with a mean of 4.28 and standard deviation of 0.872.

Credit and risk are pivotal dimensions of agriculture everywhere in the world. Two core features of agricultural production are the long time lag between input investment and profit realization, and the large covariate risks imposed on agricultural production by weather shocks. These two dimensions create a set of interlocking problems both on the supply side (financial institutions face large and systemic risks in providing credit to agriculture) and on the demand side (farmers face many risks beyond their control in trying to finance the investments necessary to increase productivity). Fortunately, the technological landscape for the provision of financial services is shifting quickly, and the developing world appears poised to leapfrog legacy systems in a number of exciting ways. This paper summarizes recent advances in the technology that can be used to underwrite credit and risk in agriculture, places in context the gaps in coverage in Asia, and concludes with a set of policy recommendations as to the types of interventions that appear most promising across the highly varying national contexts of Asia. The potential for digital financial services to increase growth in Asia, particularly among excluded segments of the population, is substantial. Financial technology (FinTech) is generating new ways to target and collateralize credit, to price and spread risk, and to organize agricultural value chains. A 2017 ADB report

finds that digital payment systems could close 40% of the unmet need for payment services and 20% of the need for credit.

The same report finds that widespread implementation of digital financial services could increase GDP growth in Indonesia and the Philippines by 2%–3% per year, and in Cambodia by as much as 6% (ADB and Oliver Wyman 2017). Indeed, worldwide we see that innovative financial technologies often take off precisely in economies that have certain enabling features but do not have well-developed legacy systems. Thus, microfinance has taken off in Indonesia and mobile banking in the Philippines, both of which have relatively poorly developed formal financial systems, and digital currencies dominate in the People's Republic of China (PRC) where low credit card penetration does not permit credit card use in online commerce. Therefore, FinTech represents a space where innovation can be made to serve the marginalized in ways that generate both welfare and economic growth. Information and communication technology is changing agriculture in many dimensions beyond financial services. Clearly, global access to mobile phones is fundamentally changing the way that farmers access price information, search for buyers, and build brands as they attempt to move up the value chain. That said, a large number of rigorous studies conducted on the use of specific technology platforms to transmit price information or to conduct agricultural extension have arrived at surprisingly mixed results.

Recent innovations in risk sharing, such as the use of index insurance, have largely fallen flat due to lack of demand. Some of the excitement around novel FinTech solutions for agriculture, such as the use of the blockchain, is still largely unproven. Hence, in this paper we also provide a summary of the recent rigorous empirical evidence from field studies as to the success of FinTech innovations, and try to point the way forward for the most promising financial technologies. The centrality of credit and risk may be clearest when we consider

agriculture as a part of the overall economy, and consider the central role played by farming in the broader Agricultural Transformation and the subsequent Structural Transformation. Most developing economies begin with a very large share of the population engaged in smallholder agriculture, farming small plots with low capital intensity and trading little of their output. To become a direct contributor to economic growth, agriculture must become more capital intensive so as to allow it to bolster exports and contribute to overall productivity. This process requires heavy investments to be made in the farming sector which will in general amplify the financial risks faced by farming households. To permit these investments to be made, then, we must consider both the access to finance enjoyed by agricultural households and the tools at their disposal to control the risks they face in making production more capital intensive.

Agricultural land itself is the most important store of value that can be used to collateralize this investment, which creates an integral tie between land ownership rights and the apportionment of default risk in agriculture. FinTech is being used both to enhance the ability of farmers to use collateral and to permit new forms of more flexible, uncollateralized credit. Two particularly important and quite distinct motivations are apparent. The first is its "macro" role in the AT/ST: in order to liberate the labor that drives urbanization and industrialization, agriculture must engage in a set of labor-saving investments that boost overall productivity. For poorer countries, the development of agricultural processing and export businesses typically represents a critical step on the path toward a modern economy. The second is its "micro" role as the sector in which the large majority of the low-income population works, meaning that aggregate poverty and inequality are likely to be driven strongly by changes to the nature of agricultural production, particularly at low levels of overall development.

Both the “macro” and “micro” roles of agricultural development are served when a country undergoes a successful structural transformation over the long term, but when we seek to adjust agricultural policy at a moment in time, the levers for these two purposes may be quite distinct. To promote agriculture’s role as a sector in the overall economy, policy should be focused on improving value added, export markets, labor productivity, diversification, and the transmission of labor toward more productive sectors. For these purposes, FinTech needs to drive mechanization and processing capacity, as well as manage a complex set of risks that accompany engaging with the world market (quality certification, handling exposure to global commodity price fluctuation, external demand shocks). If instead we focus on the critical micro-level welfare implications of agriculture as a sector employing most of the population below the poverty line, quite a different set of objectives may emerge, particularly in the short term. Here, we may see smallholder farming more as a necessary reality to be confronted, and hence interventions that generate marginal improvements in risk adjusted profits for households can have substantial welfare consequences, even in the absence of any macro-level transformation.

4.2.2 The contribution of Fintech to the agriculture sector for community development in Cyuve sector

FinTech plays a number of critical roles in driving the ability to provide mass-scale agricultural finance, particularly in developing countries where access may be far from universal.

Table 4. 7: Fintech to the agriculture sector for community development in Cyuve sector

Indicators		SD	D	N	A	SA	Total	Frequency	
								Mean	SD
It drives down the cost of financial services to the agriculture sector for community development	N %	0 0%	0 0%	12 10%	58 48.3%	50 41.6%	120 100%	4.26	0.855
There is ability to send and receive payments securely and gain access to savings, credit for agriculture	N %	0 0%	4 3.3%	10 8.3%	56 46.6%	50 41.6%	120 100%	4.22	0.039
Fintech fills the gaps between banks and financial institutions for agriculture	N %	0 0%	8 6.6%	10 8.3%	40 33.3%	62 51.6%	120 100%	4.01	0.126
FinTech raises labor productivity, definitely fosters agriculture activities	N %	2 1.6%	3 2.5%	5 4.1%	70 58.3%	40 33.3%	120 100%	3.90	0.062

Source: Primary data (2023)

Table 4.7 for each indicator shows the percentage and frequency shows the mean and standard deviation of the responses elicited from the respondents.

The findings shows that the 120 respondents, that 50(41.6%) strongly agreed and 58(48.3%) agreed that Fintech helps to drive down the cost of financial services to the agriculture sector for community development in Cyuve sector where 12(10%) neutral and none of strongly disagreed to this fact and disagreed with the statement. The strong mean and standard deviation of 4.26 and 0.855 respectively, implies that Fintech helps to drive down the cost of financial services to the agriculture sector for community development in Cyuve sector .

Most of the respondents also confirmed that Fintech offers the ability to send and receive payments securely and gain access to savings, credit for agriculture within community development in Cyuve sector as it can be seen where 56 (46.6%) agreed and 50(41.6%) strongly agreed that Fintech offers the ability to send and receive payments securely and gain access to savings, credit for agriculture within community development in Cyuve sector. The strong mean and standard deviation of 4.22 and 0.039 respectively, implies that Fintech

offers the ability to send and receive payments securely and gain access to savings, credit for agriculture within community development in Cyuve sector.

Fintech is defined as using technology to fill the gaps between banks and financial institutions for agriculture within community development in Cyuve sector 62(51.6%) are strongly agreed and agree 40(33.3%) all show that some of the respondents are neutral on 10 (8.3%) and 8(6.6%) are disagreed respectively. The strong mean with standard deviation 4.01 and 0.126, further shows that Fintech is defined as using technology to fill the gaps between banks and financial institutions for agriculture within community development in Cyuve sector. Also, 40(33.3%) strongly agreed and 70(58.3%) agreed that FinTech raises labor productivity, which refers to output per worker or per hour worked, and definitely fosters agriculture activities for community development in Cyuve sector. The total number of respondents, 5(4.1%) were neutral to this, 3(2.5%) disagreed and 2(1.6%) strongly disagreed, with a response mean of 3.90 and standard deviation of 0.062. This shows that the respondents are all in line to this statement.

Financial technology (Fintech) is used to describe new technology that seeks to improve and automate the delivery and use of financial services. At its core, Fintech is utilized to help companies, business owners and consumers better manage their financial operations, processes, and lives by utilizing specialized software and algorithms that are used on computers and, increasingly, smartphones. The possibility now looms that, entities driven by Fintech may emerge as competitive alternatives to traditional financial intermediaries, markets, and infrastructures. The widespread adoption of modern technologies offers advantages but also poses risks.

Fintech may spur efficiency gains in the financial sector, offer better and more targeted products and services, and deepen financial inclusion in the developing world. However, it

may also pose risks, if its application undermines competition, trust, monetary policy transmission, and financial stability. The objective of this paper is therefore to provide an introductory note on how Fintech changed financial industry and made the wider economy efficient. The paper is divided into seven sections. Section I provides historical evolution of Fintech. Section II discusses historical evolution of the payment system. Section III considers how Fintech has changed financial industry. Section IV provides the impact of Fintech on global economy. Section V elaborates why Big Data is crucial in Fintech. Section VI highlights the regulatory implications of Fintech.

4.2.3 The challenges faced by financial technology companies to agriculture sector for community development in Musanze district

Many members of cooperatives in Rwanda face huge challenges including mismanagement and other governance issues like fraud as well as lack of sustainable markets and capacity to operate efficiently.

Table 4. 8: The challenges faced by financial technology companies to agriculture sector for community development in Musanze district

Indicators		SD	D	N	A	SA	Total	Frequency	
								Mean	SD
Fintech companies and financial institutions to experience severe liquidity	N %	0 0%	0 0%	0 0%	70 58.3%	50 41.7%	120 100 %	4.11	0.613
Financial technology faced with the challenges of credit risk	N %	0 0%	8 6.6%	10 8.3%	46 38.3%	56 46.6%	120 100 %	3.99	0.532
The challenge faced by financial technology companies to agriculture	N %	0 0%	0 0%	9 7.5%	50 41.6%	61 50.8%	120 100 %	3.87	.111
The challenge faced by financial technology system vulnerabilities and Malware attacks	N %	4 3.3%	6 5%	10 8.3%	51 42.5%	49 40.8%	120 100 %	4.22	0.621

SD = strongly disagree, D= disagree, N= Not sure, A= agree, SA= strongly agree.

Source: Primary data (2023)

Table 4.8 for each indicator shows the percentage and frequency shows the mean and standard deviation of the responses elicited from the respondents.

The findings shows that the 120 respondents, table 4.8 show that 50(41.7%) strongly agreed and 70(58.3%) agreed that overreacting to a rapid market occurrence can cause Fintech companies and financial institutions to experience severe liquidity, solvency issues and digital identities. None were neither neutral nor strongly disagreed to this fact and disagreed with the statement. Most of the respondents witnessed that overreacting to a rapid market occurrence can cause Fintech companies and financial institutions to experience severe liquidity, solvency issues and digital identities. The strong mean and standard deviation of 4.11 and 0.613 respectively, implies that overreacting to a rapid market occurrence can cause Fintech companies and financial institutions to experience severe liquidity, solvency issues and digital identities.

Most of the respondents also confirmed that financial technology companies faced with the challenges of credit risk, liquidity and leverage risk to the agriculture sector for community development in Musanze district as it can be seen from table 4.8 where 46 (38.3%) agreed and 45(48.9%) strongly agreed that financial technology companies faced with the challenges of credit risk, liquidity and leverage risk to the agriculture sector for community development in Musanze district, 8 (6.6%) are disagreed and 10(8.3%) are neutral with the statement.

The strong mean, 3.99 and 0.532 standard deviation further shows that there is financial technology companies faced with the challenges of credit risk, liquidity and leverage risk to the agriculture sector for community development in Musanze district. From the findings shows that 9 of respondents with 7.5% are neutral, 50 of respondents with 41.6% are agree that the challenge faced by financial technology companies to agriculture sector for community development in Musanze district is the user retention and experience while 61 of

respondents with 50.8% are strongly agree that the challenge faced by financial technology companies to agriculture sector for community development in Musanze district is the user retention and experience. 49(40.8%) strongly agreed and 51(42.5%) agreed that the challenge faced by financial technology companies to agriculture sector for community development in musanze district are system vulnerabilities and malware attacks. The total number of respondents, 10(8.3%) were neutral to this, 6(5%) disagreed and 4(3.3%) strongly disagreed, with a response mean of 4.22 and standard deviation of 0.621. This shows that the respondents are all in line to this statement.

Rural and agricultural finance are among the most challenging fields of banking, which have notoriously been lagging behind in the overall development of financial systems. Earlier attempts during the 1960s and 1970s based on subsidised and directed agricultural credit did not achieve the desired results in a sustainable way. Then, during the 1980s and 1990s, the attention of the governments and donors shifted away from agricultural credit towards overall financial systems development and microcredit. Financial liberalisation and the closure of agricultural development banks led to a contraction of rural and agricultural finance in many parts of the developing world, which has not yet been fully reversed by new entrants. Although there has been significant progress in overall financial systems development since then, large segments of the rural population remain without access to essential financial services, such as loans for productive and consumptive purposes, deposit facilities, payment services and insurance.

Even the ‘microfinance revolution’ has had limited impact in rural areas and has largely bypassed the agricultural sector. Moreover, existing rural financial services are often of low quality and do not respond adequately to the demand of diverse rural markets. Given the importance of the rural economy and the agricultural sector for economic growth and poverty reduction, rural and agricultural finance are now being widely acknowledged as the main

frontiers of financial systems development. Moreover, the recent food price crisis forcefully evidenced the consequences of decades of underinvestment in agriculture and rural infrastructure. Given that about 70% of the poor in the developing world still live in rural areas, rural and agricultural development is essential for achieving the Millennium Development Goals. Finance has an important role to play as it helps rural households and enterprises in making productive investments, smoothing consumption, managing risks and coping with shocks. This paper provides an overview of the current state of rural finance, summarising recent advances and highlighting the remaining gaps and challenges.

It is targeted at a broader audience of policy-makers, experts and practitioners in the fields of rural and agricultural development, financial sector development and microfinance who want a quick overview of the subject. This is highlighting the specific issues and challenges of financial services provision in rural areas. This is followed by a brief overview of the changing approaches to rural finance over the past few decades and a snapshot of the current status and recent trends in different regions. The areas and hotspots of rural finance development, which have been in the spotlight over the last decade and highlights the main issues, achievements and challenges ahead. These areas are grouped into three broader categories: Advances in financial products and services development, advances in developing institutions and delivery mechanisms to expand sustainable rural outreach.

4.2.4. Is there any contribution of financial technology companies in your life?

Positive Social Impact, beyond profit, the Fintech industry has the potential to drive positive social impact. From sustainable investment platforms to charitable crowd funding campaigns, Fintech offers avenues for individuals to align their financial decisions with their values and contribute to a better world.

Table 4. 9: Views of contribution of financial technology companies in the life

Views of the respondents	Frequency	Percent
Yes	110	91.6
No	10	8.4
Total	**120**	**100.0**

Source: Primary data, 2023

From the finding shows that 110 of respondents with 91.6% said yes that there is a contribution of financial technology companies in the life while 10 of respondents with 8.4% said no that there is no contribution of financial technology companies in the life.

Finance sector has a key role to play in allowing my agriculture to contribute to economic growth and poverty reduction in my family. A rapidly evolving technological landscape is opening up new possibilities to target and price credit, share risk, and harness information technology to expand agricultural productivity. At the same time, many obstacles are not technological, so it is important to look for strategic places where policy and investment can help to improve outcomes for agricultural households. Financial technology (better known as Fintech) is used to describe new technology that seeks to improve and automate the delivery and use of financial services. At its core, Fintech is utilized to help companies, business owners, and consumers better manage their financial operations, processes, and lives. It is composed of specialized software and algorithms that are used on computers and smartphones. Fintech, the word, is a shortened combination of "financial technology."

When Fintech emerged in the 21st century, the term was initially applied to the technology employed at the backend systems of established financial institutions, such as banks. From 2018 or so to 2022, there was a shift to consumer-oriented services. Fintech now includes

different sectors and industries such as education, retail banking, fundraising and nonprofit, and investment management, to name a few.

The most talked-about (and most funded) Fintech startups share the same characteristic: They are designed to challenge, and eventually take over, traditional financial services providers by being more nimble, serving an underserved segment of the population, or providing faster or better service. For example, financial company Affirm seeks to cut credit card companies out of the online shopping process by offering a way for consumers to secure immediate, short-term loans for purchases. While rates can be high, Affirm claims to offer a way for consumers with poor or no credit a way to secure credit and build their credit history.

Similarly, better Mortgage seeks to streamline the home mortgage process with a digital-only offering that can reward users with a verified pre-approval letter within 24 hours of applying. GreenSky seeks to link home improvement borrowers with banks by helping consumers avoid lenders and save on interest by offering zero-interest promotional periods.

For consumers with poor or no credit, Tala offers consumers in the developing world microloans by doing a deep data dig on their smartphones for their transaction history and seemingly unrelated things, such as what mobile games they play. Tala seeks to give such consumers better options than local banks, unregulated lenders, and other microfinance institutions.

4.2.4.2 Financial technology companies are it important in Musanze district?

A Fintech company makes traditional financial services more accessible in Musanze district, including investments, loans, bills, automated payments, savings, etc. It can also be the channel for innovative financial processes outside traditional banking.

4.2.5 Correlations analysis between financial technology companies and agriculture sector for community development

Correlation was conducted between independent and dependent variables. The aim was to establish the nature and strength of relation between the independent and dependent variables. Correlation refers to a technique used to measure the relationship between two or more variables. When two variables are correlated, it means that they vary together. Positive correlation means that high values on one variable are associated with high values on the other, and that low values on one are associated with low values scores on the other (Kavale, 2017). In the interpretation of correlation the sign of the correlation coefficient means either a positive or negative correlation coefficient. The positive correlation coefficient means that the variables move in the same direction, while negative correlation means variables move in opposite directions. The correlation significance is indicated by a probability value of less than 0.05 or 0.01.This means that the probability of obtaining such a correlation coefficient by chance is less than five times out of 100 or is less than one times out of 100, so the result indicates the presence of a relationship.

Table 4. 10. Correlations between financial technology companies and agriculture sector for community development

			Financial technology companies	Agriculture sector for community development
	Financial technology companies	Correlation Coefficient	1.000	.798*
		Sig. (2-tailed)	.	.016
		N	120	120
	Agriculture sector for community development	Correlation Coefficient	.798*	1.000
		Sig. (2-tailed)	.016	.
		N	120	120

*. Correlation is significant at the 0.05 level (2tailed).

Spearman's correlation was used to determine the degree of association between financial technology companies and agriculture sector for community development. The results show a high positive correlation between financial technology companies and agriculture sector for community development, with r = 0.798*, p-value = 0.000 < 0.000. 0.05) existed and were found to be significant at the 5% significance level. This indicates that a high positive relationship exists between financial technology companies and agriculture sector for community development, and the proportion of financial technology companies with high agriculture sector for community development.

Credit and risk are pivotal dimensions of agriculture everywhere in the world. Two core features of agricultural production are the long time lag between input investment and profit realization, and the large covariate risks imposed on agricultural production by weather shocks. These two dimensions create a set of interlocking problems both on the supply side (financial institutions face large and systemic risks in providing credit to agriculture) and on the demand side (farmers face many risks beyond their control in trying to finance the

investments necessary to increase productivity). Fortunately, the technological landscape for the provision of financial services is shifting quickly, and the developing world appears poised to leapfrog legacy systems in a number of exciting ways. This study summarizes recent advances in the technology that can be used to underwrite credit and risk in agriculture, places in context the gaps in coverage in Asia, and concludes with a set of policy recommendations as to the types of interventions that appear most promising across the highly varying national contexts of Asia.

The potential for digital financial services to increase growth in Asia, particularly among excluded segments of the population, is substantial. Financial technology (FinTech) is generating new ways to target and collateralize credit, to price and spread risk, and to organize agricultural value chains. A 2017 ADB report finds that digital payment systems could close 40% of the unmet need for payment services and 20% of the need for credit. The same report finds that widespread implementation of digital financial services could increase GDP growth in Indonesia and the Philippines by 2%–3% per year, and in Cambodia by as much as 6% (ADB and Oliver Wyman 2017). Indeed, worldwide we see that innovative financial technologies often take off precisely in economies that have certain enabling features but do not have well-developed legacy systems. Thus, microfinance has taken off in Indonesia and mobile banking in the Philippines, both of which have relatively poorly developed formal financial systems, and digital currencies dominate in the People's Republic of China (PRC) where low credit card penetration does not permit credit card use in online commerce.

Therefore, FinTech represents a space where innovation can be made to serve the marginalized in ways that generate both welfare and economic growth. Information and communication technology is changing agriculture in many dimensions beyond financial services. Clearly, global access to mobile phones is fundamentally changing the way that

farmers access price information, search for buyers, and build brands as they attempt to move up the value chain. That said, a large number of rigorous studies conducted on the use of specific technology platforms to transmit price information or to conduct agricultural extension have arrived at surprisingly mixed results. Recent innovations in risk sharing, such as the use of index insurance, have largely fallen flat due to lack of demand. Some of the excitement around novel FinTech solutions for agriculture, such as the use of the block chain, is still largely unproven. Hence, in this paper we also provide a summary of the recent rigorous empirical evidence from field studies as to the success of FinTech innovations, and try to point the way forward for the most promising financial technologies.

4.2.5.1. Multiple linear regression analysis

A multiple regression analysis was performed to examine the effect of the independent variable (financial technology companies) on the dependent variable (agriculture sector for community development). Multiple linear regressions with 95% confidence intervals were calculated to establish relationships between independent and dependent variables. Based on the model summary, the coefficient of determination (R-squared) gives an overall measure of the strength of the association between the independent and dependent variables.

Table 4. 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.586[a]	.343	.281	.21208

a. Predictors: (Constant), Financial technology companies

Results above 4.11. The table with an adjusted r-squared value of 0.281 (28.1%) indicates that 28.1% of the variation in agriculture sector for community development was attributable to variation in financial technology companies with 95% confidence. Furthermore, this means that factors not investigated in the study accounted for 71.9% of the agriculture sector for

community development. This finding is consistent with Abdul & Aldulaimi (2016) who found that 85.6% of the total variation in the dependent variable was agriculture sector for community development at Fintech Company in Cyuve Sector.

Table 4. 12: ANOVA (Analysis of variance)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.752	118	.251	5.571	.003[a]
	Residual	1.439	2	.045		
	Total	2.191	120			

a. Predictors: (Constant), Financial technology companies

b. Dependent Variable: Agriculture sector for community development

As shown in the previous table, the F-test value is 5.571, the significance value is 0.03, and the significance level is 5%. Since the obtained p-value was less than 0.05, the F-test was significant and it was concluded that the regression model was good.

Table 4. 13: Regression coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	1.771	.775	.05	2.286	.029
Loan provision (X1)	.376	.107	.103	3.710	.002
Financial literacy (X2)	.243	.102	.142	2.383	.023
Digital literacy (X3)	.267	.084	.161	3.169	.003

Dependent Variable: Agriculture sector for community

The equation ($Y = \beta 0+\beta_1 x_1+\beta_2 x_2+\beta_3 x_3$) becomes)

Financial technology companies= 1.771 + 0.376 x 1 + 0.243 x 2 + 0.267 x 3. The above regression formula establishes that it will always be zero 1.771 when all factors (financial technology companies) in agriculture sector for community development at Fintech Company in Cyuve Sector are taken into account. Table 4.13 summarizes the results of regression analysis on the contribution of financial technology companies and agriculture sector for community development at Fintech Company in Cyuve Sector. The results show that financial technology companies has a positive and significant impact on the agriculture sector for community development at Fintech Company in Cyuve Sector ($\beta 1 = 0.376$, $t = 3.710$, $p = 0.002 < 0.05$; $\beta 2 = 0.243$, $t = 2.383$, $p = 0.023 < 0.05$, $\beta 3 = 0.267$, $t = 3.169$, $p = 0.003 < 0.05$. This shows that a 1% improvement in financial technology companies leads to 0.376, 0.243, 0.267, and 0.29% agriculture sector for community development at Fintech Company in Cyuve Sector. Based on the above insights, Model 1 (1) is presented as follows agriculture sector for community development at Fintech Company in Cyuve Sector = 1.771 + 0.376 x 1 + 0.243 x 2 + 0.267 x 3.

A core linkage between FinTech and microfinance lending is the nature of credit information sharing. Credit bureaus can serve as a critical borrower discipline device (Jappelli and Pagano 1999). Sharing information on total levels of indebtedness may be particularly important in microfinance markets where many borrowers receive loans smaller than their actual demand for credit (due to capped loan sizes necessary to maintain dynamic incentives), and so may try to borrow from multiple lenders (McIntosh and Wydick 2005). Recent empirical work shows that FinTech innovations can improve targeting of credit even for populations with very little credit history; Bjorkegren and Grissen (2017) illustrate that mobile phone call data records are strongly predictive of default behavior in Rwandan microfinance.

Despite the obvious theoretical justification behind the formation of credit bureaus, the actual sharing of credit information presents substantial strategic risks to banks and MFIs (Padilla

and Pagano 1997). The institutions that are most important to include are the largest lenders, but these organizations also potentially have the most to lose by sharing (because they reveal more information than they learn), so in practice the path toward the establishment of credit bureau coverage has been a slow and uneven one in the developing world (de Janvry et al. 2010). This combination of potentially large welfare gains with serious incentive problems in the formation of bureaus appears to make this a central area of focus for regulatory policy, since efficient sharing systems may not emerge without governmental requirements. Institutional details in the design of credit bureaus are critical. Vercammen (2015) presents a theoretical model that shows that while retention of credit information is important, imposing a statute of limitations on the time window of data recorded in the bureau is also important.

Without this, individuals may develop reputations that are either so good or so bad that they become relatively immune to recent changes in behavior, thereby dulling incentives for continuous good repayment. Bureaus can also exist at several levels of informational granularity; the most basic of these is a simple list of defaulting individuals; such bureaus are relatively easy to establish and impose some check on asymmetric information problems with respect to default, but do not allow lenders to price risk in any sophisticated way. More complete bureaus contain real-time information on current indebtedness levels of borrowers, meaning that at the time of applying for a loan the new lender can accurately price the risk of default by incorporating the pre-existing debt load. The data and technological requirements for establishing realtime data sharing are formidable for many smaller MFIs who still operate most accounts using spreadsheet programs, but as advanced management information systems and high-speed internet connectivity become more ubiquitous, these obstacles are falling away.

This leaves the regulatory hurdles as a core enabler or obstacle to the formation of information sharing bureaus in microfinance markets. Key regulatory issues in the creation of

bureaus include (i) which types of institutions are required to share information, (ii) the exact nature of the information to be shared, (iii) the circumstances under which financial institutions are permitted to query the credit of a potential borrower, (iv) exactly what information financial institutions can observe about queried borrowers, and (v) what the recourse is for borrowers who find that the bureau contains incorrect information on them. The empirical literature suggests that the introduction of credit bureaus can have a substantial impact on microfinance markets. De Janvry et al. (2010) find that the introduction of a credit bureau into Guatemalan microfinance markets led to a sharp increase in client turnover in the six months after the bureau was introduced. In the month that the bureau was introduced to a branch of the MFI, more than 60% of the pre-existing clients applying for new loans were checked, and 11% of pre-existing borrowers were refused new loans as a result.

Those refused were more likely to have defaulted on exterior loans (37% of the refused had defaulted while only 21% of those given loans again had defaulted) and were disproportionately the types of individuals with low repayment (males and more educated clients) and those with more variable repayment (males). Counterbalancing this exodus of troubled pre-existing borrowers was a huge influx of new individual borrowers who were extended credit; on aggregate, the bureau led to an increase in the number of borrowers of 27% within six months, and generated no deterioration in repayment performance. Despite this strong evidence of enhanced profits for participating microfinance institutions, the Guatemalan credit bureau did not receive strong government backing and has struggled to maintain membership because of the incentive issues described above.

CHAPTER 5: SUMMARY OF FINDINGS CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter provides an overview of our findings, conclusions, recommendations, and suggestions for future research. Results summaries and conclusions are based on field results, and recommendations are drawn from the results at the end.

5.1 Summary of findings

The respondents were required to mention their genders, male or female. The table 4.1 summarizes the gender of the respondents. Table shows that, 63.3% of the respondents were male and 36.7% female. This implies that the view collected in the research is relatively free of gender bias since view of both males and female were considered in Fintech Company in Cyuve Sector. The findings in shows that 8 representing 6.6% of respondents are single and 69 representing 57.5% of the respondents are married, 8 of respondents with 6.6% are divorced and 35 of respondents with 29.1% are widow/widower. It implies that in Fintech Company in Cyuve Sector majorities are married and mean that married are a lot to take a loans as responsible of family. The results in showed that 7 representing 5.8% are no formal education, 20 of respondents with 16.6% have done primary school, 65 representing 54.1% of the respondents have done high school, 18 representing 15% of the respondents have done bachelors' degree while 10 representing 8.3% of the respondents hold masters qualification. These findings indicated that the respondents come from different categories of educational background from primary school, high school, Bachelors' degree to master’s degree and also from other categories. This indicated that Fintech Company in Cyuve Sector have different members who have different skills by different categories of the respondents with diverse groups of educational background for using a loan gotten from Fintech Company in Cyuve Sector.

The results in shows that 80 respondents with 66.6% are doing agribusiness, 34 respondents with 28.3 % are doing business activities of selling sweet potatoes, 6 respondents with 5 % are employees of the Fintech Company in Cyuve Sector. This implies that majority of respondents are dealing with agribusiness as main activity of the cooperative. The results shows that 10 respondents with 8.3% have been a member of the cooperative in the period of less than 1 years, 20 respondents with 16.6% have been a member of the cooperative in the period of 1-3 years, 50 respondents with 41.6% have been a member of the cooperative in the period of 4-6 years while 40 of respondents with 33.3% are the members of the cooperative 7 years and above. This implies that majority of respondents are the members for many years.

5.2 Conclusion

There is a paradigm that says that the existence of Fintech can threaten the existence of the bank. But actually, how banks work will be made easier where Fintech. Fintech can maximize the function of the bank to extend that range is covered yet, especially in areas that have not received the physical presence of banking. Fintech Bank and both have a mission to give the best experience in access to financial services to customers and complement each other. Synergies and Fintech bank will ensure reduced Blind Spots of each service as a result of the fusion power of each party. The development of digital technology in the industrial era, include developments in the financial industry, it can’t be stopped development. Through technology financial (fintech), all forms of transactions to be faster, easier, more efficient at the same time, without the need to do face to face, it will make a positive contribution to the improvement of public financial inclusion in the digital era. The affordability of access to finance for the whole society will enhance financial inclusion so that the community can help drive the economy of the State.

In this article the author can draw the conclusion that fintech companies can synergize and support financial performance and other financial institutions to maximize their financial services for all Musanze district people in the current digital era. Banks and other financial institutions are expected to be more motivated to increase access to financial services for the achievement of financial services for all levels of society. With the positive synergy of fintech companies with banks and other financial institutions in Musanze district, it will certainly be very beneficial for the government to realize the level of financial inclusion of the Musanze district as a whole, because by increasing the level of financial inclusion the community will certainly be able to drive increased economic growth fair and equitable for all people of Musanze district in the industrial era. The author is aware of the many shortcomings in writing this article, this literature review article may only be able to examine and explain the problems and things that occur limited to the facts of writing and the data that is exposed to experts and related institutions.

5.3 Recommendations

In line with employees' enthusiasm and considering the objectives of this research and the conclusion coming from the analyzed findings some recommendations have been suggested for financial technology companies and partners for agriculture sector for community development in Musanze district.

5.3.1 Financial technology companies

For the long term development, the following suggestions have been proposed by researcher:

- Permitting large-scale collateralized credit to agriculture, which will typically require creation of asset registries that permit this lending to take place. Emphasis on financial deepening among input suppliers to permit them to offer capital on lease.
- Well-organized risk markets that can protect the solvency of financial institutions making large-scale investments in agricultural capacity in case of shocks to output.

Policies: government and finance institutions use re-insurance markets for tail risks ("risk layering"), catastrophe bonds, explicit underwriting of extreme risk to permit private sector lenders to deepen exposure to agriculture.

- Conceptualizing large-scale financing to agriculture as "value chain financing"; organized, systematic investments across a set of actors to create vertically integrated supply chains feeding high-value urban markets (supermarkets) and export markets.
- Establishing and financing certification entities (phytosanitary, organic, fair trade, etc.) to permit value added in agriculture.
- Contracting innovations to try to push the quality/price gradient that exists in international markets all the way down to original producers; organized intermediaries who can segregate output of different qualities throughout the supply chain.

5.4 Areas for further research

Based on the study findings revealed on previous chapter and sections, the researchers suggest that future research should conduct the studies in the areas:

i. Trust in financial transaction providers on agriculture sector for community development

ii. The role of financial technology companies on economic growth

iii. Contribution of financial technology companies on members economic transformation.

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APPENDICES

APPENDIX:I: RESEARCH QUESTIONNAIRES

Dear Respondent, my name is **MUTIJANA Corneille,** a student at Kigali Independent University (ULK), I am pursuing Master of Development Studies, I am conducting research entitled ***"Contribution of financial technology companies to agriculture sector for community development in Musanze District, a case of Fintech Company in Cyuve Sector, (2019 – 2023)".*** This questionnaire is designed for academic purposes only and information given will be treated with confidentiality, and will be an aid in obtaining necessary data for my research topic. Finally, your participation is voluntary and will highly contribute to the success and completion of this research.

Please do not hesitant to participate. Thank you.

Instructions:

- Please put a tick on the appropriate option
- Where the question requires you to explain, please write your answer in the provided space
- If you don't know or you don't have a response to the question, leave the blank and just jump to the following question.

SECTION A: GENERAL INFORMATION

1. **Gender**

Male ☐

Female ☐

2. **Marital status**

Single ☐

Married ☐

Divorced ☐

Widow/Widower ☐

3. **Educational level**

No formal education ☐

Primary ☐

High school ☐

Undergraduate ☐

Postgraduate ☐

Others (specify)/

……

……

4. Activity at Fintech Company in Cyuve Sector

1. Agribusiness man ☐
2. Business activities ☐
3. Employee at Fintech Company in Cyuve Sector ☐

5. For how long have you been a member of Fintech Company in Cyuve Sector?

Less than 1 year ☐

1- 3 years ☐

4-6 years ☐

7 years and above ☐

SECTION B: QUESTIONNAIRES

Definition of the Scale for the objectives. (1 = strongly disagree, 2= disagree, 3= Not sure, 4= agree, 5= strongly agree).

5. To identify different activities of Fintech vis a vis to the agriculture in Cyuve sector

Different activities of Fintech vis a vis to the agriculture in Cyuve sector	**1**	**2**	**3**	**4**	**5**
Fintech finance different firms and creating new markets for agriculture products in Cyuve sector;					
Fintech of Cyuve sector facilities different members of cooperative to access a loans;					
Fintech embraced development with the goal of promoting innovation and growth of the digital economy especially for agriculture products in Cyuve sector;					
Fintech helps businesses to rely on technology especially mobile money and electronic payments for agriculture products in Cyuve sector					

6. To examine the contribution of Fintech to the agriculture sector for community development in Cyuve sector

Contribution of Fintech to the agriculture sector for community development in Cyuve sector	**1**	**2**	**3**	**4**	**5**
Fintech helps to drive down the cost of financial services to the agriculture sector for community development in Cyuve sector;					
Fintech offers the ability to send and receive payments securely and gain access to savings, credit for agriculture within community development in Cyuve sector;					
Fintech is defined as using technology to fill the gaps between banks and financial institutions for agriculture within community development in Cyuve sector;					
FinTech raises labor productivity, which refers to output per worker or per hour worked, and definitely fosters agriculture activities for community development in Cyuve sector					

7. To determine the challenges faced by financial technology companies to agriculture sector for community development in Musanze district

The challenges faced by financial technology companies to agriculture sector for community development in Musanze district	**1**	**2**	**3**	**4**	**5**
Overreacting to a rapid market occurrence can cause fintech companies and financial institutions to experience severe liquidity, solvency issues and digital identities					
financial technology companies faced with the challenges of credit risk, liquidity and leverage risk to the agriculture sector for community development in Musanze district					
The challenge faced by financial technology companies to agriculture sector for community development in Musanze district is the user retention and experience					
The challenge faced by financial technology companies to agriculture sector for community development in Musanze district are system vulnerabilities and Malware attacks					

SECTION C: OPEN QUESTIONS

1. Is there any contribution of financial technology companies in your life?

Yes ☐

No ☐

Discus your answer:

……

……

SECTION D: Interview Guides

1) To what extent do financial technology companies contribute to the agriculture sector for community development? Yes ☐ No ☐

……

……

Thank you for your valuable time in answering to these questions.

MUTIJANA Corneille

APPENDIX II

SEPTEMBER 30, 2023

Master of Development Studies

Kigali Independent University

Dear Sir,

Re: Your ref/– CORNEILLE MUTIJANA – ROLL NUMBER 20210846

Reference is made to your letter dated 02/08/2023 on a request to support **Mr. CORNEILLE MUTIJANA** for data collection in connection with his research entitled ***"The contribution of financial technology companies to agriculture sector for community development in Musanze district with a case of Fintech Company in Cyuve Sector, 2019 – 2023".***

We are pleased to inform you that your request is approved. **Mr. CORNEILLE MUTIJANA** can access the data related to his research through **Fintech Company** with data of four years from **2019 – 2023** to be used with an authorized official documents and other platforms of the company.

Sincerely Yours,

MONEY PHONE AFRICA LTD
TIN : 120010091
Rwanda

Country Manager

Mr. Jean Paul MUSHUMBA