THE IMPACT OF SOCIAL MEDIA MARKETING ON MARKET PARTICIPATION AND HOUSEHOLD FOOD SECURITY FOR TOMATO PRODUCING SMALLHOLDER FARMERS IN MAZOWE DISTRICT, ZIMBABWE

A dissertation submitted in partial fulfillment of the requirements for the Master of Science Degree in Food Security and Sustainable Agricultural Policy

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DECLARATION

I hereby declare that the research project entitled "**The Impact of Social Media Marketing on Market Participation and Household Food Security for Tomato Producing Smallholder Farmers in Mazowe District, Zimbabwe**" submitted to Bindura University of Science Education, Department of Agricultural Economics, Education and Extension is a record of an original work done by me under the guidance and supervision of **Dr V T Munyati** and this work is submitted in partial fulfilment of the requirements for the award of a Master of Science Degree in Food Security and Sustainable Agriculture. The results embodied in this thesis have not been submitted to any University or Institute for the award of any degree of diploma.

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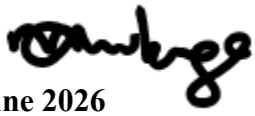
Signature: 
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DEDICATION

I dedicate this thesis to my husband, my sons and friends who stood tirelessly with me during the course of my academic journey.

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I would like to express my sincere gratitude to Dr V Munyati for the invaluable academic guidance, support, and constructive supervision provided throughout the development of this study. Your insightful comments, patience, and scholarly direction greatly contributed to the successful completion of this research.

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ABSTRACT

This study examined the influence of social media marketing on smallholder farmers' market participation and household food security in Mazowe District, Zimbabwe, with specific focus on the following objectives: (i) to identify the different types of social media platforms used by smallholder farmers, (ii) to assess the influence of social media marketing on market participation, (iii) to analyse the influence of social media marketing on household food security, and (iv) to examine gender differences in the use of social media for agricultural marketing. The study adopted a quantitative research design, and data were collected from 91 smallholder farmers using structured questionnaires. Data were analysed using descriptive statistics and paired sample t-tests. The findings revealed that WhatsApp (75.3%) and Facebook (48.3%) were the most commonly used social media platforms for agricultural marketing, while TikTok, YouTube, Instagram, Twitter/X, and Telegram recorded lower usage levels. The results further showed that social media marketing significantly improved market participation indicators, including number of customers, income from agricultural sales, volume of produce sold, frequency of sales transactions, and number of market channels accessed ($p < 0.05$). In addition, household food security improved significantly after the adoption of social media marketing, as reflected by a reduction in Household Food Insecurity Experience Scale (HFIES) scores and increases in Household Dietary Diversity Score (HDDS) and Food Consumption Score (FCS). The study also established significant gender differences in the use of social media for agricultural marketing, with male farmers showing higher levels of smartphone ownership, internet access, mobile money usage, and more frequent engagement with social media platforms compared to female farmers. The study concludes that social media marketing plays a significant role in enhancing agricultural commercialization and improving household food security among smallholder farmers. However, gender disparities and limited digital access continue to constrain inclusive participation. The study recommends strengthening rural ICT infrastructure, reducing data costs, enhancing digital literacy training, and promoting gender-responsive digital agriculture interventions to maximize the benefits of social media marketing.

Keywords: (Social media marketing, Smallholder farmers, Market participation, Food security, Gender differences)

LIST OF ACRONYMS AND ABBREVIATIONS

ICT – Information and Communication Technology

SM – Social Media

SMM – Social Media Marketing

HFIES – Household Food Insecurity Experience Scale

HDDS – Household Dietary Diversity Score

FCS – Food Consumption Score

GDP – Gross Domestic Product

NGO – Non-Governmental Organization

SMS – Short Message Service

TAM – Technology Acceptance Model

MSMEs – Micro, Small and Medium Enterprises

USAID – United States Agency for International Development

FAO – Food and Agriculture Organization

UN – United Nations

ZIMSTAT – Zimbabwe National Statistics Agency

TABLE OF CONTENTS

RELEASE FORM i
APPROVAL FORM ii
DECLARATION iii
DEDICATION iv
ACKNOWLEDGEMENTS v
ABSTRACT vi
LIST OF ACRONYMS AND ABBREVIATIONS vii
TABLE OF CONTENTS viii
LIST OF TABLES xii
LIST OF FIGURES xiii
LIST OF APPENDICES xiv
CHAPTER ONE 1
BACKGROUND 1
1.1 Background 1
1.2 Problem Statement 3
1.3 Objectives 4
1.3.1 Main Objective 4
1.3.2 Specific Objectives 4
1.4 Research Questions 4
1.5 Research Hypothesis 4
1.6 Justification 5
1.8 Outline of the thesis 6
1.9 References 7
CHAPTER TWO 9
LITERATURE REVIEW 9
2.1 Introduction 9
2.2 Definition of key concepts 9
2.2.1 Social Media Marketing 10

2.2.2 Smallholder Farmers 10
2.2.3 Food security 10
2.2.4 Market Participation 11
2.3 Theoretical Framework 111
2.4 Different types of social media platforms being used by smallholder farmers 122
2.5 Influence of social media on market participation of smallholder farmers 155
2.6 Influence of social media marketing on Food Security of smallholder farmers 166
2.7 Gendered approach in social media marketing 188
2.8 Conceptual Framework 20
2.9 Empirical Review 21
2.10 Summary of Literature Review 233
2.11 References 255
CHAPTER THREE 30
RESEARCH METHODOLOGY 30
3.1 Introduction 30
3.2 Brief Description of study area 30
3.3 Research Design 31
3.5 Data Collection Tools 33
3.6 Data Analysis Procedure 34
3.7 Ethical Considerations 35
3.8 Summary 35
3.9 References 36
CHAPTER FOUR 37
DIFFERENCE TYPES OF SOCIAL MEDIA PLATFORMS BY SMALLHOLDER FARMERS 377
Abstract 377
4.1 Introduction 377
4.2 Demographic Characteristics 378
4.3 Results 389
4.3.1 Different Types of social media platforms used by smallholder farmers 3939
4.3.2 Usage frequency of social media platform 40

4.4 Conclusion 42
4.5 Recommendations 422
4.6 References 423
CHAPTER FIVE 444
INFLUENCE OF SOCIAL MEDIA MARKETING ON SMALLHOLDER FARMERS' MARKET PARTICIPATION AND FOOD SECURITY 444
Abstract 444
5.1 Introduction 444
5.2 Results 455
5.2.1 Influence of Social Media Marketing on smallholder farmers market participation .455
5.2.2 Paired T-test analysis for the market participation metrics before and after use of social media for marketing 477
5.2.3 Influence of social media marketing on Food Security of the smallholder farmers...499
5.2.4 Paired T-test Samples for food security before and after social media marketing...5151
5.3 Conclusion 522
5.4 Recommendations 533
5.5 References 544
CHAPTER SIX 555
GENDER DIFFERENCE IN THE USE OF SOCIAL MEDIA AMONGST SMALLHOLDER FARMERS 555
Abstract 555
6.1 Introduction 565
6.2 Results 566
6.2.1 Gender Aggregation for social Media use 566
6.2.2 IT Access by Gender 577
6.2.3 Frequency of use of social media for agriculture marketing 599
6.2.4 Independent T-test sample for gender differences in social media use 60
6.3 Conclusion 61
6.4 Recommendations 61
6.5 References 63
CHAPTER 7 644

SUMMARY, CONCLUSION AND RECOMMENDATIONS 644
7.1 Introduction 644
7.2 Research Summary 644
7.3 Conclusion 655
7.4 Policy Implications and Recommendations 666
7.5 Areas for Further Studies 688
7.6 References 699
7.7 Appendices 70

LIST OF TABLES

Table 3.1 Composition of the sample size……33

Table 3. 2 Data Analysis Framework 344

Table 4. 1 Demographic Characteristics of respondents 38

Table 4. 2 Popularity of social media platforms used by smallholder farmers 390

Table 4. 3 Usage intensity of social media platforms by smallholder farmers.....411

Table 5. 1 Sample means for influence of social media on market participation metrics.....455

Table 5. 2 Paired T-test analysis for the market participation metrics before and after use of social media for marketing 4848

Table 5. 3 Sample means for influence of social media marketing on food security 500

Table 5. 4 Paired T-test Samples for food security before and after social media marketing.....511

Table 6. 1 Aggregation of frequency of use of social media by gender.....59

Table 6. 2 Independent T-test for social media use by gender 600

LIST OF FIGURES

Figure 2. 1 Conceptual Framework.....21
Figure 3. 1 Map showing study area 311
Figure 6. 1 Social media use aggregation by gender 577
Figure 6. 2 Access to mobile, social media account, regular internet and ownership of smartphone by gender 58

LIST OF APPENDICES

Appendix 1 Questionnaire 70

CHAPTER ONE

BACKGROUND

1.1 Background

Agriculture is the mainstay of global food production sustaining billions of world's populations and employing over two thirds of rural populations. Agriculture production is mainly dominated by smallholder farmers yet they are faced with persistent challenges which includes access to lucrative markets and sustainable production (Othman et al., 2022). There are limitations in the efficiency of the available markets which is dominated by middleman and inconsistent pricing mechanisms which disadvantages the farmer limiting their ability to negotiate prices. The advent of Information and Communication Technologies (ICT) has come with new opportunities in the agriculture markets connecting farmers directly with the buyers and also consumers for the products (Panda & Sinha, 2023). Social media platforms are moving away from being informal communication platforms into low-cost accessible tools for agriculture product marketing. Bernal, (2022) this has broken the geography barriers that affects the smallholder farmers to market their products through reshaping advertisements, negotiations and delivery of produce. Yadav et al., (2023) agrees that, efficiency in marketing has positive implications on livelihoods and food security status of the farmers.

World over, there has been enormous adoption of digital technologies and their implementation in agriculture value chains with social media marketing being increasingly used in the market systems. Study by (Bernal, 2022; Mapuranga et al., 2025; Palaniswamy & Raj, 2022; Yadav et al., 2023) shows that, social media marketing improves the visibility of the products and also reduces cost of marketing hence increasing farmer-buyer trust. Tshuma et al., (2024) farmers in the developed countries are leveraging on the advanced features of social media tools such as WhatsApp and Facebook market places for product braiding and also for accessing global markets. One of the key accelerators of social media marketing in agriculture was the COVID-19 pandemic where there was no physical access to agriculture markets (Masuka et al., 2020). There is however a huge gap with limited empirical research on the adoption of social media marketing globally in the effect of social media on food supply chains and on food security. This gap makes it important to study how the global trend of social media marketing translates into food access and stability at the household level.

Despite accounting for over 70% of food production smallholder farmers in the African continent face a lot of barriers which includes limited access to market information, distorted market prices and poor market infrastructure. This is evidence of deep structural problems within the continent. The adoption of ICT however is growing mainly with the introduction of affordable mobile devices within the rural communities and expansion of mobile network. However, the main use of these devices has been communication with little use of the devices for marketing. Mugwisi et al., 2020). Affordable internet and compatible smartphones have been chief reasons for the rise of the adoption of social media use. Although marketing is underused, farmers are slowly realizing the potential of WhatsApp and Facebook to directly connect with potential buyers and to market their products (Han et al., 2022). Despite these trends, there is limited evidence on whether social media marketing improves food security through higher incomes and reduced food loss. Studying this nexus provides insights into how ICT can contribute to sustainable agricultural markets and regional food security goals.

Looking at the Zimbabwean context, agriculture is the backbone of the economy and household food security with smallholder farmers dominating this sector. Tshuma et al., (2024) smallholder farmers account for over 80% of the total farmer portfolio in the country. Farmers in the country face a myriad of market related challenges which is one of the chief barrier to their prosperity. Masuka et al., (2016) there is high cost of financial transactions, limited access to reliable markets middlemen exploitation, and poor infrastructure. However, there are around 15.2 million people in the country with mobile connection which shows the potential of marketing. Mapuranga et al., (2025) A total of 2.4 million people is on Facebook with over 40% of the total population on WhatsApp. This shows the vast potential that social media has as a platform for marketing and information access. Tshuma et al., (2024) internet penetration continues to surge opening opportunities for farmers to leverage on utilizing digital agriculture marketing.

Additionally, many smallholder farmers are turning to social media platforms (especially WhatsApp groups and Facebook Marketplace) to advertise, connect with consumers, and bypass traditional intermediaries. Mugwisi, (2020) highlights that these platforms have the potential for increased income, improved market access and strengthening of household livelihoods and household food security. However, academic research in Zimbabwe has mainly majored on mobile money and agriculture extension with little traction on social media marketing and its

implication on marketing of agriculture products and food security. This is the critical gap the research seeks to address since social media has shown to have potential for other sectors as a marketing platform.

1.2 Problem Statement

Although smallholder farmers play a critical role in Zimbabwe's food systems, they continue to face persistent marketing challenges that hinder their productivity and undermine their potential to contribute effectively to national food security. According to Mapuranga et al. (2025), these challenges include lack of reliable market information, exploitation by intermediaries and middlemen, inconsistent pricing structures, inadequate market infrastructure and support systems, poor bargaining power, and high transaction costs. It is noteworthy that although more than 70% of the population depends on agriculture for living in Zimbabwe, agriculture contributes to just less than 38% of GDP in the country, implying inefficiency and lack of value creation in the sector (Tshuma et al., 2024).

Conversely, the spread of ICT in the country continues to increase and creates potential for transforming agricultural marketing. According to POTRAZ (2024), there is 93.5% mobile phone penetration in the country, as well as 65.9% internet penetration and over 1.5 million social media users, who use mainly WhatsApp and Facebook. Thereby, the increasing digital divide opens the door for farmers to directly contact buyers, get market information instantly, and reach a bigger customer base by means of social media marketing. It should be noted that whereas ICT has been widely used in agricultural extension and information dissemination, the use of social media for agricultural marketing among smallholder farmers in the country has not been sufficiently researched.

There is little information available about whether adoption of social media marketing affects farmer income, market participation, post-harvest losses, or food security. Lack of empirical evidence prevents policymakers, NGOs, and other stakeholders from realizing the full transformative potential of social media in market inefficiency and food security problems in the agricultural sector. This study therefore seeks to fill this knowledge gap by examining the impact of social media marketing on smallholder farmers' market participation and household food security in Mazowe District, Zimbabwe.

1.3 Objectives

1.3.1 Main Objective

To examine the impact of social media marketing on market participation and household food security for tomato producing smallholder farmers in Mazowe district, Zimbabwe.

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1.3.2 Specific Objectives

1. To identify the different types of social media platforms being used by smallholder farmers
2. To analyses the influence of social media marketing on smallholder farmers' market participation
3. To identify gender differences in the use of social media for agriculture marketing.
4. To analyze the influence of social media marketing on food security of smallholder farmers

1.4 Research Questions

1. What are the difference types of social media platforms by smallholder farmers?
2. What is the influence of social media marketing on smallholder farmers' market participation?
3. What is the gender difference in the use of social media amongst smallholder farmers?
4. What is the influence of social media marketing on food security of smallholder farmers?

1.5 Research Hypothesis

H_1 There are different types of social media platforms being used by smallholder farmers

H_1 Socio-economic characteristics of smallholder farmers affect the adoption of social media platforms for agriculture marketing

H_1 There are gender differences in the use of social media platforms for agriculture marketing

H_1 There is a positive relationship between social media marketing and food security of smallholder farmers.

1.6 Justification

Smallholder farmers

The findings of the study are helpful to the farmers since they provide insights on how social media marketing can increase their marketing reach and how they can mitigate the challenges associated with their current markets. This can also show evidence which can help them alleviate dependence on middlemen and thus improving their bargaining power. In addition, the findings provide evidence to demonstrate if social media has potential for increase in incomes and how it can also enhance food security.

Policy Markers

The findings of the study offer evidence on how social media as a tool can be embedded into the national agriculture policy framework which can inform the plan for Zimbabwe agriculture transformation and food security under the National Development Strategy and Vision 2030. The study is also significant since it shows the need for digital infrastructure and training programs to support rural farmers which can also add into policy formulation and implementation

Development Practitioners

The study is also important in the development especially of the rural areas since it provides practical recommendations and knowledge for the design of development programs particularly in market systems development using digital tools. This helps align projects with SDG 2 and 9 which focus on zero hunger and industry, innovation and infrastructure. In addition, the study helps to identify opportunities to build farmer capacity in digital literacy for sustainable impact.

Academia and Researchers

The study is also significant to the Academia because it adds to the limited literature on ICT and food security linkages in the Zimbabwean and African context. In addition, it provides a

foundation for future research on digital agriculture, marketing innovation, and rural livelihoods. This then encourages cross-disciplinary studies on social media, economics, and food systems.

1.7 Scope Limitations and Delimitations of the study

One limitation of this study could be its geographical location since it is limited to one district, that is, Mazowe District. This means that the findings from the study might not be applicable to other regions in the country because social media usage practices, level of digital literacy and mobile internet connectivity differ from one district to another. Furthermore, the study could suffer from response bias where the farmers might report either too little or too much information regarding their social media usage for marketing due to social desirability bias or lack of knowledge about the concepts used in the research. Another limitation of the study could be related to the changing nature of the social media platforms since the algorithms used in the marketing of products keep changing frequently.

This study is delimited to the use of social media marketing among smallholder farmers who engage in crop and livestock production in the Mazowe District of Zimbabwe. It will also consider only those farmers who are either currently using or planning to start using social media marketing as one of the ICT tools. The study focuses only on the correlation between social media marketing and market participation to household food security but no other ICTs such as radios, televisions or the old school mobile phone technology. Finally, it considers only the social media platforms that are popular in Zimbabwe such as WhatsApp, Facebook and, in some cases, TikTok.

1.8 Outline of the thesis

This thesis is made out of seven chapters. Chapter one contains the introduction of the thesis which includes the background, the research problem, the objective and the research questions of the study. This is also followed by the significance and the scope, limitations and delimitations of the study. Chapter two contains the literature review of the study whilst chapter three contains the research methodology. Chapter four, five and six contains the analysis and discussion of the

research collected on the objectives of the study. Chapter seven is the final chapter of the thesis which contains the summary, conclusion and recommendations of the study.

1.9 References

Bernal, C. (2022). *Social Media on the Farm: A Comparative Analysis of the Digital Marketing of Select Small Businesses in Agriculture*.

Han, H., Xiong, J., & Zhao, K. (2022). Digital inclusion in social media marketing adoption: the role of product suitability in the agriculture sector. *Information Systems and E-Business Management*, *20*(4), 657–683.

Mapuranga, R., Chisango, S., & Chavunduka, D. (2025). Digital and Social Media Marketing for Sustainable Agritourism. In *Agritourism Marketing in Africa: Exploring Digital and Social Media Strategy* (pp. 261–285). Springer.

Masuka, B., Matenda, T., Chipomho, J., Mapope, N., Mupeti, S., Tatsvarei, S., & Ngezimana, W. (2020). Mobile Phone Use By Small-Scale Farmers: a Potential To Transform Production and Marketing in Zimbabwe. *South African Journal of Agricultural Extension*, *44*(2), 121–135. https://doi.org/10.17159/2413-3221/2016/v44n2a406

Mugwisi, T. (2020). Communicating Agricultural Information for Development: The Role of the Media in Zimbabwe. *Libri*, *65*(4), 281–299. https://doi.org/10.1515/libri-2015-0094

Othman, Z., Abu, N. H., Mohd Shafie, S., Kamarul Zaman, N. B., Alias, E. F., & Wan Yahaya, W. A. J. (2022). Challenges of social media marketing in digital technology: a case of small traders of agricultural products in Malaysia. *Journal of Advanced Research in Applied Sciences and Engineering Technology*, *28*(3), 312–319.

Palaniswamy, V., & Raj, K. (2022). Social media marketing adoption by agriculturists: A TAM based study. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, *7*(3), 8.

Panda, R., & Sinha, B. (2023). An exploratory study on impact of social media on agriculture development from farmers growth perspective. *The Online Journal of Distance Education and E-Learning*, *11*(2), 1966–1973.

Tshuma, S., Dube, M., & Dangaiso, P. (2024). Agritourism Digital and Social Media Marketing in Africa: The Case Study of Zimbabwe. In *Agritourism in Africa* (pp. 191–211). Routledge.

Yadav, J., Yadav, A., Misra, M., Rana, N. P., & Zhou, J. (2023). Role of social media in technology adoption for sustainable agriculture practices: evidence from Twitter analytics. *Communications of the Association for Information Systems*, *52*(1), 833–851.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains the literature review of the study on the social media marketing on the market participation of tomato horticulture farmers and its influence on food security. It opens with the definition of key concepts which is followed by the theoretical framework which forms the theoretical foundation on which the study is based on. This is followed by literature on the objectives of the study and the empirical framework. the next section is on the conceptual framework which is followed by the research gap. The chapter closes with a chapter summary which paves way for the research methodology chapter.

2.2 Definition of key concepts

2.2.1 Social Media Marketing

Dadzie et al., (2022) refers to social media as the various tools such as Facebook, WhatsApp Instagram and X (Twitter) which are used for instant social communication by people. Because of their instant communication capabilities Appiah et al., (2025) highlights that many people have taken the opportunity so strategically use social media platforms for promotion, advertising and selling their services and products which led to the prominence of the term social media marketing. Wang et al., (2025) argues that in the context of agriculture, social media marketing involves the use of social media platforms by smallholder farmers to share information, marketing their products as well as connect and build relationships with buyers. Baryshnikova et al., (2022) adds that these platforms are offers opportunities for smallholder farmers to directly negotiate prices with the buyers without the necessary use of middlemen. Othman et al., (2022) highlights that social media marketing enables two-way communication and engagement between sellers and consumers, thereby improving visibility, accessibility, and market reach. In this study social media marketing is depicted as the strategic use of social media platforms such as WhatsApp and Facebook for marketing by smallholder tomato farmers.

2.2.2 Smallholder Farmers

The categorization of smallholder farmers varies across different regions and also across different authors considering the legislation in the agriculture sector of that area. Mulungu, (2025) defines smallholder farmers as farmers who cultivate small pieces of land and have little resources to invest in agriculture production. Bontsa et al., (2023) diverges a bit from the definition and highlights that stallholder farmers are more on the subsistence level and produce for consumption rather than for commercial purposes playing a critical role in the national food system. Hoang & Tran, (2023) specifies landholding size and highlights that smallholder farmers have landholdings below 2 hectares and goes on to add that there are engaged in subsistence and semi-commercial agriculture practices with their productivity largely reliant on access to productive resources, market opportunities, and institutional support.

2.2.3 Food security

Food security is a multi-dimensional concept encompassing four sub-concepts which are food availability, utilization, accessibility stability. According to Vuarzaru, (2024) food security is referred to as the ability of an individual, household, community, country to access, use and sustain sufficient, safe and nutritious food meeting their dietary needs and healthy life. Yao & Fu, (2025) further on explains that the majority of early authors defined food security as the presence of food living out the other important dimensions. Johnson, (2024) defines food availability which is one of the dimensions as the physical presence of sufficient food withing a household or region which is influenced by local production, imports and food aid. Food access is defined as the means (economic and physical) through which individuals and households obtain food. This is often influence by income, prices of the food and functions of the food market. Dadzie et al., (2022) defines food utilization as the proper use of the food biologically which centers around dietary and food preparation quality, clean water and healthcare which links nutrition and health outcomes to food consumption practices. According to Masuka et al., (2020) access to market information can support better nutrition awareness and increased food diversity choices. Lastly, food stability is referred by Dilleen et al., (2025) as the constituency in food access and it being available constantly over time. Mulaudzi et al., (2024) adds that, it centers on resilience to shocks and stresses, such as droughts, economic and market disruptions. Social media can

strengthen stability by enabling timely communication, alternative marketing channels, and real-time information sharing.

2.2.4 Market Participation

There are diverse although limited authors on market participation of stallholder farmers. The general definition involves the manner and extent in which farmers engage in the selling and buying of agriculture commodities in diverse markets which can be local, regional, physical and digital. Mulaudzi et al., (2024) Indicated that market participation includes the decision to participate and also the level and intensity of participation which also leads to discussions of volumes of agriculture commodities traded. Ntokozo et al., (2023) specifies that market participation is measured by output sold, frequency of sales, number of customers leads generated, type of marketing channels use and also the overall income and expenses incurred in the participation. Huni et al., (2020), postulates that effective market participation enhances income generation, improves access to information, and stimulates agricultural commercialization key drivers for improving household welfare and food security.

2.3 Theoretical Framework

The theoretical framework for the study centers on the Technology Acceptance Model (TAM), which was propounded by Davis (1989). This theory explains how the users accept and uses a particular technology in the case of this study, it explains how smallholder farmers accept and uses social media technology for marketing. The theory posits that perceived usefulness (PU and perceived ease of use (PEOU) are the key determinants of adoption of technology amongst users. According to the model, smallholder farmer is likely to adopt social media as a tool for marketing of their tomato produce if they believe that it is useful more than their current models and also if they believe it can be able to transform their livelihood and their marketing performance. In this study, TAM helps to understand how farmers perceive social media platforms as tools for marketing agricultural products. The theory also emphasizes the importance of user attitude, intentions and behavior in the adoption of digital marketing tools which in the instance of the study includes social media platforms. Therefore, the Technology Acceptance Model provides a strong theoretical lens for the examination of the behavioral intention of smallholder farmers towards social media marketing as a driver for increased market participation and also as a driver

One of the tenants of the model is perceived usefulness which according to Eduafo et al., (2024) is the degree to which users believe the use of technology will enhance their productivity and performance. In relation to the study this implies how smallholder farmers believe the use of social media marketing will enhance their market access and sales as well as their livelihood outcomes. Those farmers who find social media as a useful platform for marketing better than the traditional forms of marketing are more likely to adopt it. Aulelyo, (2022) highlights that farmers who find the platforms beneficial for reaching buyers, accessing marketing and price information and networking are more likely to adopt it compared to those farmers who do not perceive the usefulness. This then lead also to the information available for the users, that is in the instance of the study, information available for the smallholder farmers on social media, its usefulness and how it can enhance their market access and livelihood outcomes. This is also tied to the perceived use fullness in terms of the contribution of social media to food security outcomes where enhanced income from the use of the platforms leads to the increase in the purchasing power go the household hence the ability to access diverse foods leading to improved food security. Gwelo, (2025) argues that, the usefulness of social media extends to knowledge sharing on farming practices, climate information, and nutrition awareness, indirectly improving food utilization. Thus, perceived usefulness connects social media marketing adoption to the economic and informational pathways that enhance food security outcomes.

Additionally, another critical tenant of the TAM is the perceived ease of use refers to how effortless and convenient it is for farmers to use social media tools for marketing. The theory implies that, when social media platforms are user-friendly and easy to use for the smallholder farmers, even accessible on low cost smart phones, then farmers are likely to adopt social media use on marketing. Palaniswamy & Raj, (2022) adds that, capacity building lowers barriers to adoption since these initiatives boosts the smallholder farmers confidence on the use of these digital platforms. The ease of use of the social media platforms increases the frequency and consistence of the use of these social media platforms for marketing of their agriculture produce which in turn contributes to the increase of visibility and sales. Farmers who perceive social media as simple and reliable tend to integrate it into daily marketing and communication routines.

2.4 Different types of social media platforms being used by smallholder farmers

Social media is becoming an important transformative tool for marketing for all sort of business and sectors which also included agriculture enterprises. According to Dreist et al., (2025) social media is very critical for smallholder farmers since it enables them to communicate with vast customers with easy and also instantly, also benefiting from knowledge and information transfer and market engagements. There has been a rapid increase in mobile phone use penetration in Zimbabwe with POTRAZ reporting over 93% in Zimbabwe. This has made social media platforms very accessible in most of the rural areas at the disposal of the smallholder farmers. Uy et al., (2024) postulates that the smallholder farmers have increasingly used social media for communication with their customers increasing their market participation and also receiving real-time market updates on the platforms. This bridges the information gaps which connects producers directly with the consumers bypassing the hustle and price pilferages which are caused by the use of middlemen along the marketing chain. Panda & Sinha, (2023) adds that social media marketing enhances transparency in marketing prices which aids farmers to make informed marketing decisions for their produces. Various platforms such as WhatsApp, Facebook, Twitter/X, Instagram, TikTok, and YouTube are used for distinct yet complementary agricultural functions.

Findings from Aulelyo, (2022) indicate that, WhatsApp is one of the most widely used platforms by farmers in carrying out their marketing activities. One of the chief reasons for this is the low data requirement for its functionality as well as its user-friendly interface. Besides this, its is the most owned social media tool, making it easy for farmers to integrate marketing into this application. Sharma et al., (2025) adds to this notion indicating that, this platform allows farmers to carry out group-based marketing where the farmers are able to share pictures, their prices and also available quantities of the produce. WhatsApp group features are also used by extension officers to carry out their coordination role as well as share critical information and linking buyers to the farmers. Ntokozo et al., (2023) adds that, although not widely used by the farmers, WhatsApp has a separate business application where farmers are able to create their catalogues and also improve the visibility of their produce as well as trust from their potential customers. WhatsApp also allows for the sharing of videos and documents which enhances peer learning and exchange of agriculture best practices and advice which also strengthens farmer networks. A study by Dilleen et al., (2025) shows that WhatsApp marketing reduces transaction costs and post-harvest losses by allowing faster sale coordination.

Another key platform used by farmers for marketing their produce is Facebook which provides farmers with wider market reach allowing them to access a broader audience beyond their immediate localities. Gwelo, (2025) noted that, smallholder farmers use Facebook pages and market place features to advertise and connect with other consumers and retailers. One of the key features which is an advantage for the smallholder farmers is that Facebook allows for visual storytelling through photos and videos which can build trust since it shows the actual product quality and sometimes quantity. The platforms also has capabilities for the creation of communities which can be created by farmers and commodity associations for information sharing and also for marketing and price negotiations (Mulaudzi et al., 2024). Farmers can also harness the comment and messaging features to give real time and instant feedback to their customers which leads to improvement of customer engagement and relationships.

Additionally, Aulelyo, (2022) also highlights some recent popular social media platforms which includes Ticktock and Instagram which are more visual and creative marketing tools. Ramavhale et al., (2024) adds that these eared emerging tools which are more appealing to the younger generation of farmers who use these platforms to showcase their farming activities and produce. These two platforms are best known for creative storytelling where farmers can share short videos of their production, harvesting and all the other success stories. According to Thomas et al., (2023) the visual nature of these platforms allows the farmers to build personal brands and also attract wide range of customers. The algorithms in these platforms allows wider visibility and connection with other farmers who are also on the platforms doing similar work allowing the smallholder farmer to interact with and explore new markets (Davis et al., 1989). The visual appeal on these platforms allows aesthetic presentation of produce, particularly for high-value crops like horticulture fostering trust and interpersonal relationships.

Wang & Dong, (2023) also added that there are emerging and hybrid platforms which include specialized applications developed by NGOs which are gaining traction amongst the organized farmer groups. These platforms include those such as eMkambo and AgroMarketDay which combine e-commerce and financial services creating an opportunity for the farmers to participate in digital economies. Additionally Mohr & Kühl, (2021) noted that these hybrid applications are more concerned with traceability and transparency which are a bit limited in other social media applications and these makes them appealing to formal markets and value chain actors. Findings

from the study by Mupaikwa & Bwalya, (2024) highlight that these applications also have integration of mobile and payment services which also allows efficient transactions. The shift to these hybrid tools which includes businesses and social messaging demonstrates the movement towards digitally integrated agriculture systems which enhances inclusivity and sustainable food marketing.

2.5 Influence of social media on market participation of smallholder farmers

Social media has increasingly emerged as an important digital tool influencing market participation among smallholder farmers across the world. Market participation refers to the extent to which farmers engage in agricultural markets through the sale of produce, access to buyers, and integration into value chains (Choruma et al., 2024). Marketing systems in traditional agricultural markets in many developing countries are often associated with the lack of adequate market information, poor bargaining power, high transaction costs, and reliance on intermediaries, which decrease the profitability and participation of farmers in formal markets. Social media platforms like WhatsApp, Facebook, Instagram, and YouTube change the landscape of agricultural marketing by allowing farmers to easily connect to buyers, promote products, receive timely market information, and organize transactions (Uy et al., 2024). Social media decreases information asymmetry and improves communication in agricultural markets increasing farmers' participation in value chains (Panda & Sinha, 2023).

Many empirical studies show that social media marketing positively influences the market participation of smallholder farmers. Inegbedion et al. (2020) show that the use of WhatsApp and Instagram among farmers in Nigeria greatly improves marketing efficiency, reduces transaction costs, and increases farmers' turnover through increased customer base and demand for the products. Similarly, Huni et al. (2020) prove that social media platforms gain acceptance among small-scale farmers in Eastern Zimbabwe due to better access to buyers and market information (Khou & Suresh, 2018). Digital communication allows farmers to identify market opportunities, negotiate prices with buyers, and not to be cheated by intermediaries. Moreover, the possibility of marketing of products through digital platforms provides farmers with the opportunity to overcome limitations of physical local markets and reach urban consumers, retailers, and institutional buyers.

Furthermore, social media can positively affect the market participation of farmers through improved communication and strengthening of farmer networks. According to Dadzie et al. (2022), social networking platforms help exchange information, engage in peer learning, and build up trust among farmers, thus having a positive effect on technology adoption and market participation. Groups of farmers created through WhatsApp and Facebook allow them to exchange information on price levels, market conditions, experiences of production and customer contacts. Thus, social media helps to strengthen bargaining power of farmers and reduce uncertainty associated with agricultural markets (Balkrishna & Deshmukh, 2017).

Influence of social media marketing on market participation can also be explained by the improvements in sales performance and agricultural commercialization. Several studies prove that farmers using digital marketing platforms experience growth in the number of customers, sales volume, and market transactions (Inegbedion et al., 2021). Technologies of mobile communication help farmers sell perishable goods faster reducing post-harvest losses and market inefficiency. In Zimbabwe, researches on the use of ICT technologies among horticulture farmers prove that mobile communication technologies help farmers to make informed marketing decisions, reduce transport expenses, and improve coordination with buyers (Han et al., 2022). By making direct contact between farmers and consumers, social media platforms enhance market efficiency and improve opportunities for agricultural commercialization.

Despite the mentioned advantages, several factors continue to limit the effectiveness of social media in increasing market participation of smallholder farmers. High data costs, poor internet coverage, poor smartphone ownership rates, and low levels of digital literacy are the main barriers, especially in rural areas (Inegbedion et al., 2021). Gender disparities in the access to ICT resources can also limit participation of farmers in social media marketing, as female farmers generally have less access to smartphones, internet services, and digital skills than male farmers (Huni et al., 2020). Furthermore, trust issues and risks associated with online transactions and fraud can discourage some farmers from using social media as a marketing tool. Thus, despite the numerous opportunities provided by social media, the effectiveness of this technology depends on supportive infrastructure, cheap internet services, digital literacy education, and inclusive policy promoting equal access to digital agricultural technologies.

2.6 Influence of social media marketing on Food Security of smallholder farmers

Social media marketing becomes increasingly popular in digital agriculture with significant potential to influence the food security of smallholder farmers. The concept of food security implies the state when individuals and households have regular access to sufficient, safe, and nutritious food which covers their dietary needs and preferences for a healthy lifestyle (Vuarzaru, 2024). In many developing countries, smallholder farmers face problems such as poor market access, low agricultural incomes, post-harvest losses, and unstable food supplies influencing food security of the households. Social media platforms like WhatsApp, Facebook, YouTube, and Instagram provide farmers with opportunities to improve market access, increase agricultural sales, receive production information, and communicate with buyers and extension services (Baryshnikova et al., 2022).

Several studies have shown that digital technologies and social media platforms contribute to improved household incomes and food security outcomes among farming households. Inegbedion et al. (2020) found that social media marketing significantly improved farmers' turnover and reduced marketing costs in Nigeria, thereby increasing farmers' economic capacity to secure household food requirements. Similarly, studies on mobile phone use among horticultural farmers in Zimbabwe revealed that digital communication technologies enabled farmers to make informed production and marketing decisions, reduce transaction costs, and improve sales efficiency. Increased agricultural income resulting from better market participation strengthens households' purchasing power and enables families to access sufficient and nutritious food (Masuka et al., 2020). Social media marketing therefore indirectly contributes to food security by improving the economic wellbeing of farming households.

Social media platforms also enhance food security by improving access to agricultural information and extension services. Farmers using digital platforms are able to access information on weather conditions, pest and disease management, farming techniques, input availability, and market trends in real time. Studies conducted by Eduafo et al., (2024) in Ghana on ICT-enabled agricultural extension services established that farmers who utilized social media and mobile technologies experienced improvements in crop production and pest management practices (Bekoe et al., 2023). Improved access to agricultural information enhances productivity and reduces production risks, which contributes to increased food availability at both household and community levels. Social media therefore plays an important role in strengthening

agricultural resilience and supporting sustainable food systems among smallholder farmers (Dadzie et al., 2022).

The influence of social media marketing on food security is also linked to improvements in dietary diversity and household food consumption patterns. Increased market participation and higher agricultural incomes generated through digital marketing allow households to diversify their diets and consume a wider range of nutritious foods (Uy et al., 2024). Improving income access makes it possible to buy food items that are not grown on-farm, leading to the improvement of nutrition and dietary results. Research (Bekoe et al., 2023; Mulaudzi et al., 2024; Uy et al., 2024) on digital agriculture and food security indicates that technological changes result in reducing the experiences of food insecurity and better food consumption outcomes among farming households. Thus, social media marketing can improve food security not only because of food availability but also due to food utilization and nutritional outcomes.

However, there are several challenges that prevent smallholder farmers from using social media marketing for improving their food security. First, high expenses for internet and data usage, poor development of ICT infrastructure, lack of digital literacy, and the inability to access smartphones are the main challenges that hinder the use of digital technology for improving food security (Dilleen et al., 2025). Second, gender inequality prevents female farmers from benefiting from digital agricultural system. Finally, insufficient institutional support and unreliable internet connections can reduce the effectiveness of digital agricultural interventions (Mulaudzi et al., 2024). Despite the importance of social media marketing for improving food security, there should be supportive policies, low-cost digital services, improved infrastructure in rural areas, and capacity-building initiatives in order to achieve sustainable results.

2.7 Gendered approach in social media marketing

There are several gender differences in the use of social media marketing among smallholder farmers because access to digital technology depends on economic, social, and cultural factors. Using social media marketing, farmers can advertise their produce, contact buyers, get information about the market, and take part in agricultural value chains (Mulungu, 2025). However, men and women cannot always benefit from such opportunities equally. In many communities, men usually have access to smartphones, internet services, mobile money, and

digital training better than women (Voss et al., 2021). Such disparities affect the possibility of using social media for marketing agricultural products.

First, access and ownership of digital devices is an important aspect that affects gender disparities in social media marketing. Literature suggests that women have lower access to smartphones and internet-enabled devices in comparison to men due to the disparity in income control, assets ownership, and household decision-making process (Afia, 2024). In most farming households, men usually possess personal mobile phones, while women rely on shared family devices. Due to it, women have limited opportunities to use social media regularly since advertising, interaction with buyers and participation in online marketing activities require regular access to a smartphone and the internet. Thus, there is a gender disparity in the use of social media marketing (Voss et al., 2021).

Second, digital literacy is the key determinant of gender disparities in social media marketing. It is known that male farmers have more opportunities to undergo ICT training, extension services, and digital platforms than women do. Social media marketing implies having such skills as taking photos of the products, writing a description, sharing posts in online groups, negotiating with buyers, and using mobile money (Dilleen et al., 2025). Thus, limited digital literacy among women makes them use social media mostly for communication instead of marketing. It prevents women from benefiting fully from the commercial opportunities of such platforms as WhatsApp, Facebook, TikTok, and Instagram.

Moreover, gender differences can be found in the frequency and reasons for using social media. Men are more likely to use social media frequently for selling their products, finding buyers, comparing prices, and interacting with traders and suppliers of agricultural inputs. In contrast to men, women use social media less frequently because of domestic obligations, lack of time and limited access to data bundles (Mulaudzi et al., 2024). Moreover, some women prefer to use WhatsApp because of its privacy, simplicity, affordability, and group nature, while men use Facebook, YouTube or TikTok where there is a need for broader interactions. These aspects affect the extent of the ability of women and men to use social media for market participation and income generation (Ntokozo et al., 2023).

Literature also shows that there are gender norms and socio-cultural expectations that impact the participation of women in social media marketing. In some rural communities, women's public

appearance on the internet may be prohibited. This factor can decrease the willingness of women to sell their products publicly or contact unknown buyers (Uy et al., 2024). In addition, there are such risks for women as the experience of online harassment, the lack of trust in digital transactions, and limited control over their income from agricultural sales (Eduafo et al., 2024). They limit the level of confidence and independence of female farmers to use social media marketing tools. As a result, although women participate in social media marketing, their engagement and benefits remain lower than those of male farmers.

Nevertheless, social media marketing can be used to empower women in the sphere of agriculture if gender-sensitive support systems will be created. Digital platforms can provide women with the opportunity to bypass restrictive traditional markets, contact customers directly, increase their income opportunities, and be involved in agricultural value chains (Sharma et al., 2025). Women-targeted digital literacy training, smartphone subsidies, affordable data bundles, mobile money access and online farmer groups can reduce gender disparities in the use of social media. Therefore, knowing about gender differences in social media marketing is important to avoid increasing disparities and promote inclusive market participation and food security.

2.8 Conceptual Framework

The conceptual framework of this study represents the link between social media adoption and market participation and household food security. The independent variable is social media adoption in agricultural marketing and is evaluated based on frequency of use, platform types and intensity of engagement. The intermediate variable is market participation that is characterized by volume of sold produce, variety of market outlet access and bargaining power. The dependent variable is household food security and is estimated according to food availability, dietary diversity and income stability. The framework also takes into account moderating variables such as age, education, farm size, household size and income base.

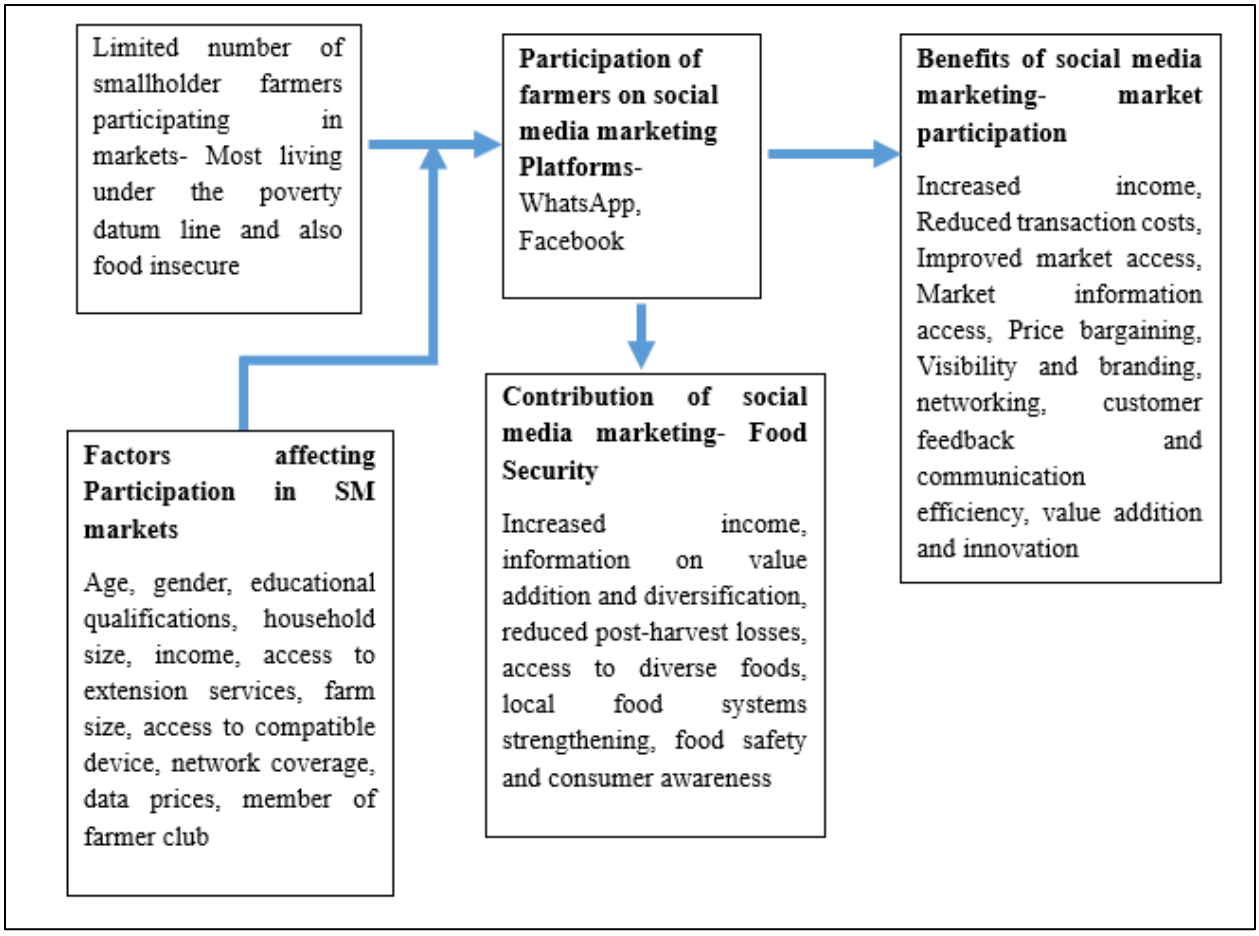

Figure 2. 1 Conceptual Framework

2.9 Empirical Review

The empirical literature on the extent of social media adoption in agricultural marketing among smallholder farmers reveals that the digital technologies are gradually being integrated into agricultural value chains in developing nations. Research studies carried out in Kenya and Nigeria by Maina et al., (2023) and Inegbedion et al., (2021) respectively show that even though many farmers own smartphones and can access social media platforms, only a few of these farmers use these digital tools for agricultural marketing. The adoption levels are known to be determined by factors like age, education levels, digital literacy, affordability of internet bundles and availability of ICT infrastructure. The younger and better-educated farmers tend to adopt the use of social media for marketing due to their high technological exposure and competence. Further, the affordability of smartphones and mobile data is a major determinant of social media

usage intensities (Uy et al., 2024). Notwithstanding the growing interest in digital agriculture in the region, evidence on the extent of social media adoption by Zimbabwean smallholder farmers is scarce, especially within Mazowe District. According to Mapuranga et al. (2025), there exists insufficient empirical data on the level of social media adoption for agricultural marketing in Zimbabwe, thus creating a significant gap in the knowledge base that this study will try to address.

Research literature concerning the impact of social media marketing on the market participation of smallholder farmers shows that the use of digital platforms enhances the capacity of farmers to participate in agricultural markets. Empirical studies done in Uganda and Ghana by Mulungu, (2025) and Eduafo et al., (2024) respectively prove that farmers who use social media platforms for marketing often benefit from low transaction costs, improved bargaining power and enhanced communication with buyers. Through social media platforms, farmers are able to access timely market information, effectively advertise their produce and directly negotiate with consumers and traders without much reliance on intermediaries (Masuka et al., 2020). Further, the digital marketing gives farmers an opportunity to access urban and regional markets which were unreachable through conventional marketing systems. This leads to increased market integration and diversification, which eventually results in higher sales for smallholder farmers. However, despite recognizing the importance of social media in increasing market participation, there is no enough empirical evidence showing the extent of social media marketing effects on agricultural market participation in Zimbabwe. Tshuma et al., (2024) state that there is a need for localized studies establishing the impacts of social media marketing on the market performance of farmers in Zimbabwe.

Finally, it is worth mentioning that there exists an important relationship between social media marketing adoption and household food security among smallholder farmers. From the literature on digital agriculture by Tshuma et al., (2024), it is evident that improved market access through ICT tools and online marketing platforms increases farmers' incomes, which in turn positively affects household food security outcomes. Higher incomes obtained from participation in digital markets give farmers the purchasing power to acquire adequate and nutritious food. Some studies carried out in East Africa show that the adoption of digital marketing technologies has led to improved dietary diversity and food consumption patterns as well as reduced food insecurity

cases in farmers' households. Thus, social media marketing may indirectly enhance household food security through increased agricultural commercialization and economic stability of farming households (Wang et al., 2025). Notwithstanding the above facts, there is still no sufficient empirical evidence about the existence of such a relationship in Zimbabwe, where food insecurity is one of the major development challenges. Masuka et al. (2020) emphasize the need for research in order to establish the contribution of digital innovations to food security of smallholder farmers in Zimbabwe.

The empirical literature on digital agriculture and its use in agricultural marketing also reveals some challenges that limit the effective application of social media for marketing purposes among smallholder farmers in Africa (Bontsa et al., 2023; Masuka et al., 2020; Ramavhale et al., 2024). They include poor internet connectivity, limited smartphone ownership, digital illiteracy and lack of trust in online transactions. The high cost of mobile data and inadequate ICT infrastructure in rural areas reduces the ability of farmers to use digital marketing platforms (Inegbedion et al., 2021). Further, the lack of training in social media marketing and limited integration of mobile money systems with online agricultural marketing platforms have been identified as the constraints to adoption. In many rural areas, farmers might not be confident in carrying out online transactions due to the fear of fraud and cyber insecurity. Mugwisi (2020) explains that the above-mentioned problems continue to hinder the digital transformation of agricultural marketing system in Zimbabwe. Therefore, understanding the nature and extent of these problems in Mazowe District will help design intervention strategies aimed at promoting the use of social media in agricultural marketing among smallholder farmers.

2.10 Summary of Literature Review

The literature review established that social media marketing has significant potential to transform agricultural marketing systems by improving access to market information, strengthening farmer–buyer linkages, reducing transaction costs, and enhancing smallholder farmers' participation in agricultural markets. Existing studies demonstrate that social media adoption among farmers is influenced by factors such as education level, age, digital literacy, smartphone ownership, internet accessibility, and affordability of data services. Evidence from other African countries indicates that social media marketing can contribute to improved sales, increased income, better market access, and enhanced household food security through improved

purchasing power and dietary diversity. However, the review identified limited empirical evidence on the extent of social media adoption, its influence on market participation, and its contribution to food security among smallholder farmers in Zimbabwe, particularly in Mazowe District. Furthermore, gender disparities, digital skills gaps, unreliable internet connectivity, high data costs, and limited access to digital resources remain major barriers affecting effective participation in digital agricultural marketing. Therefore, this study seeks to address these knowledge gaps by examining the role of social media marketing in enhancing market participation and food security among smallholder farmers while considering gender differences and adoption challenges within the Zimbabwean context.

2.11 References

Afia, O. E. (2024). Gender Participation in Agricultural Digitalization: Prospects and Challenges. E-Proceedings of the Faculty of Agriculture International Conference, 153–162.

Appiah, C. E., Quarmine, W., Osei-Amponsah, C., Okem, A. E., & Sarpong, D. B. (2025). Improving smallholder farmers' access to and utilization of climate information services in sub-Saharan Africa through social networks: A systematic review. Climate Services, 37, 100528.

Aulelyo, V. C. (2022). The Role of Social Media on the Growth of Agriculture in Zambia : A Case of Chingola District Veronica Chimuku Aulelyo. African Journal of Innovation and Entrepreneurship, 1(1), 65–91.

Balkrishna, B. B., & Deshmukh, A. A. (2017). A study on role of social media in agriculture marketing and its scope. International Journal of Management, IT and Engineering, 7(4), 416–423.

Baryshnikova, N., Altukhov, P., Naidenova, N., & Shkryabina, A. (2022). Ensuring global food security: Transforming approaches in the context of agriculture 5.0. IOP Conference Series: Earth and Environmental Science, 988(3), 32024.

Bekoe, S., Ayoung, D. A., & Danquah, P. (2023). Assessing the usefulness of the e-Agriculture programme in Ghana using the Technology Acceptance Model. Ghana Journal of Agricultural Science, 58(2), 39–55.

Bontsa, N. V., Mushunje, A., & Ngarava, S. (2023). Factors influencing the perceptions of smallholder farmers towards adoption of digital technologies in Eastern Cape Province, South Africa. Agriculture, 13(8), 1471.

Choruma, D. J., Dirwai, T. L., Mutenje, M. J., Mustafa, M., Chimonyo, V. G. P., Jacobs-Mata, I., & Mabhaudhi, T. (2024). Digitalisation in agriculture: A scoping review of technologies in practice, challenges, and opportunities for smallholder farmers in sub-saharan africa. Journal of Agriculture and Food Research, 18, 101286.

Dadzie, S. K. N., Ndebugri, J., Inkoom, E. W., & Akuamoah-Boateng, S. (2022). Social networking and risk attitudes nexus: implication for technology adoption among smallholder cassava farmers in Ghana. Agriculture \& Food Security, 11(1), 41.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). Technology acceptance model. J Manag Sci, 35(8), 982–1003.

Dilleen, G., Claffey, E., Foley, A., & Doolin, K. (2025). Investigating knowledge dissemination and social media use in the farming network to build trust in smart farming technology adoption. 8(March 2023), 1754–1765. https://doi.org/10.1108/JBIM-01-2022-0060

Dreist, D., Schulze, H., Harder, N., & Kühl, S. (2025). When will I be successful ? The use of social media in agricultural direct marketing in Germany. Agricultural and Food Economics, 13(23), 1–27. https://doi.org/10.1186/s40100-025-00367-5

Eduafo, I., Osei, C. K., Bakang, J. A., & Tham-agyekum, K. (2024). Could social media be a game-changer in improving agricultural extension delivery in Ghana ? Heliyon, 10(12), e33293. https://doi.org/10.1016/j.heliyon.2024.e33293

Gwelo, F. A. (2025). Social Media Apps and the Democratisation of Agricultural Knowledge. Journal of the Knowledge Economy, 0123456789. https://doi.org/10.1007/s13132-025-02837-z

Han, H., Xiong, J., & Zhao, K. (2022). Digital inclusion in social media marketing adoption: the role of product suitability in the agriculture sector. Information Systems and E-Business Management, 20(4), 657–683.

Hoang, H. G., & Tran, H. D. (2023). Smallholder farmers' perception and adoption of digital agricultural technologies: An empirical evidence from Vietnam. Outlook on Agriculture, 52(4), 457–468.

Huni, M. S. P., Shoko, M. J., Shoko, M. T., Dube, M., & Nyon, M. T. (2020). An empirical investigation of the use and acceptance of social media as a marketing tool by small scale farmers in Eastern Zimbabwe: The technology acceptance model perspective. EPRA International Journal of Socio-Economic and Environmental Outlook, 7(4), 1–15.

Inegbedion, H., Inegbedion, E., Asaleye, A., Obadiaru, E., & Asamu, F. (2021). Use of social

media in the marketing of agricultural products and farmers' turnover in South-South Nigeria. F1000Research, 9, 1220.

Johnson, D. (2024). Food security, the agriculture value chain, and digital transformation: The case of Jamaica's agricultural business information system (ABIS). Technology in Society, 77, 102523. https://doi.org/10.1016/j.techsoc.2024.102523

Khou, A., & Suresh, K. R. (2018). A study on the role of social media mobile applications and its impact on agricultural marketing in Puducherry region. Journal of Management (JOM), 5(6), 28–35.

Maina, F., Mburu, J., & Nyang'anga, H. (2023). Access to and utilization of local digital marketing platforms in potato marketing in Kenya. Heliyon, 9(8).

Masuka, B., Matenda, T., Chipomho, J., Mapope, N., Mupeti, S., Tatsvarei, S., & Ngezimana, W. (2020). Mobile Phone Use By Small-Scale Farmers: a Potential To Transform Production and Marketing in Zimbabwe. South African Journal of Agricultural Extension, 44(2), 121–135. https://doi.org/10.17159/2413-3221/2016/v44n2a406

Mohr, S., & Kühl, R. (2021). Acceptance of artificial intelligence in German agriculture: an application of the technology acceptance model and the theory of planned behavior. Precision Agriculture, 22(6), 1816–1844.

Mulaudzi, A. I., Olorunfemi, O. D., & Agholor, A. I. (2024). Social media utilization level among South African smallholder farmers : a case study of Mopani District , Limpopo Province Social media utilization level among South African smallholder farmers : a case study of Mopani District , Limpopo Province. Cogent Social Sciences, 10(1). https://doi.org/10.1080/23311886.2024.2356722

Mulungu, K. (2025). Gender perspectives on mobile phone ownership and use: a case study of smallholder farmers in Uganda. Gender, Technology and Development, 0(0), 1–14. https://doi.org/10.1080/09718524.2025.2557649

Mupaikwa, E., & Bwalya, K. J. (2024). The Adoption of Digital Technologies for Sharing Information on Agriculture Among Farmers: Towards an Integrated Rural Technology Acceptance Model. In Adoption and Use of Technology Tools and Services by

Economically Disadvantaged Communities: Implications for Growth and Sustainability (pp. 82–116). IGI Global.

Ntokozo, W., Zondo, S., & Ndoro, J. T. (2023). Attributes of Diffusion of Innovation ' s Influence on Smallholder Farmers ' Social Media Adoption in Mpumalanga Province , South Africa.

Ofisi, M., & Lukamba, M. (2020). Closing the gender Gap through ICT in small scale farming: Towards achieving Sustainable Development Goals. Gender & Behaviour, 18(4), 16687.

Othman, Z., Abu, N. H., Mohd Shafie, S., Kamarul Zaman, N. B., Alias, E. F., & Wan Yahaya, W. A. J. (2022). Challenges of social media marketing in digital technology: a case of small traders of agricultural products in Malaysia. Journal of Advanced Research in Applied Sciences and Engineering Technology, 28(3), 312–319.

Palaniswamy, V., & Raj, K. (2022). Social media marketing adoption by agriculturists: A TAM based study. International Journal of Professional Business Review: Int. J. Prof. Bus. Rev., 7(3), 8.

Panda, R., & Sinha, B. (2023). An exploratory study on impact of social media on agriculture development from farmers growth perspective. The Online Journal of Distance Education and E-Learning, 11(2), 1966–1973.

Ramavhale, P. ., Zwane, E. ., & Belete, A. (2024). The Benefits of Social Media Platforms Used in Agriculture for Information Dissemination. South African Journal of Agricultural Extension, 52(2), 77–90.

Sharma, M., Sharma, M., & Mehta, A. (2025). Advances in Consumer Research The Evolution of Agriculture by the use of Social Media a shift from Traditional to Digital Scenario. Advances in Consumer Research, 2(4), 5176–5185.

Thomas, R. J., O'Hare, G., & Coyle, D. (2023). Understanding technology acceptance in smart agriculture: A systematic review of empirical research in crop production. Technological Forecasting and Social Change, 189, 122374.

Tshuma, S., Dube, M., & Dangaiso, P. (2024). Agritourism Digital and Social Media Marketing in Africa: The Case Study of Zimbabwe. In Agritourism in Africa (pp. 191–211).

Routledge.

Uy, T. C., Limnirankul, B., Kramol, P., Sen, L. T. H., Hung, H. G., Kanjina, S., & Sirisunyaluck, R. (2024). Social Media adoption for agricultural development: Insights from smallholders in central Vietnam. Information Development, 02666669241261355.

Voss, R. C., Jansen, T., Mané, B., & Shennan, C. (2021). Encouraging technology adoption using ICTs and farm trials in Senegal: Lessons for gender equity and scaled impact. World Development, 146, 105620. https://doi.org/https://doi.org/10.1016/j.worlddev.2021.105620

Vuarzaru, A. A. (2024). Unveiling digital transformation: a catalyst for enhancing food security and achieving sustainable development goals at the European union level. Foods, 13(8), 1226.

Wang, B., & Dong, H. (2023). Research on the farmers' agricultural digital service use behavior under the rural revitalization strategy—Based on the extended technology acceptance model. Frontiers in Environmental Science, 11, 1180072.

Wang, S., Yang, Y., Yin, H., Zhao, J., Wang, T., Yang, X., Ren, J., & Yin, C. (2025). Towards digital transformation of agriculture for sustainable development in China: experience and lessons learned. Sustainability, 17(8), 3756.

Yao, S., & Fu, Z. (2025). Can digital transformation promote the improvement of regional food security? Empirical findings from China. Agribusiness, 41(1), 184–216.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the research methods used in the study. it opens with the brief description of the study which explains the environmental and socio-economic characteristics of the area under study. this is followed by the research design and the target population. The section on sampling follows which describes how the respondents in the study were selected. The chapter also contains the data collection section which consists of the data collection procedure, a road map on how data was collected and the description of the data collection tools. This is followed by the data analysis section which describes how the data for the objectives of the study were analyzed and also presented. The chapter closes with the ethical considerations of the study and the chapter summary paving the way for the results and discussion sections.

3.2 Brief Description of study area

The Mazowe District is found in Mashonaland Central Province, Zimbabwe and lies about 50 kilometers away from Harare, the capital city. This district is made up mostly of farming communities with agriculture being the primary occupation among residents. The small-scale farmers practice crop farming along with raising livestock where common crops cultivated include maize, tobacco, horticulture products, and small grains. It is also worth noting that the closeness of the district to Harare makes it easy for the farmers to sell their goods in various markets within the city. Nevertheless, despite the strategic positioning of the district, many farmers have encountered difficulties when it comes to accessing profitable markets due to lack of adequate infrastructure and marketing skills as well as traditional market channels (Masuka et al., 2020). The district has average internet connectivity as mobile phones and social media like WhatsApp and Facebook have been embraced by many people.

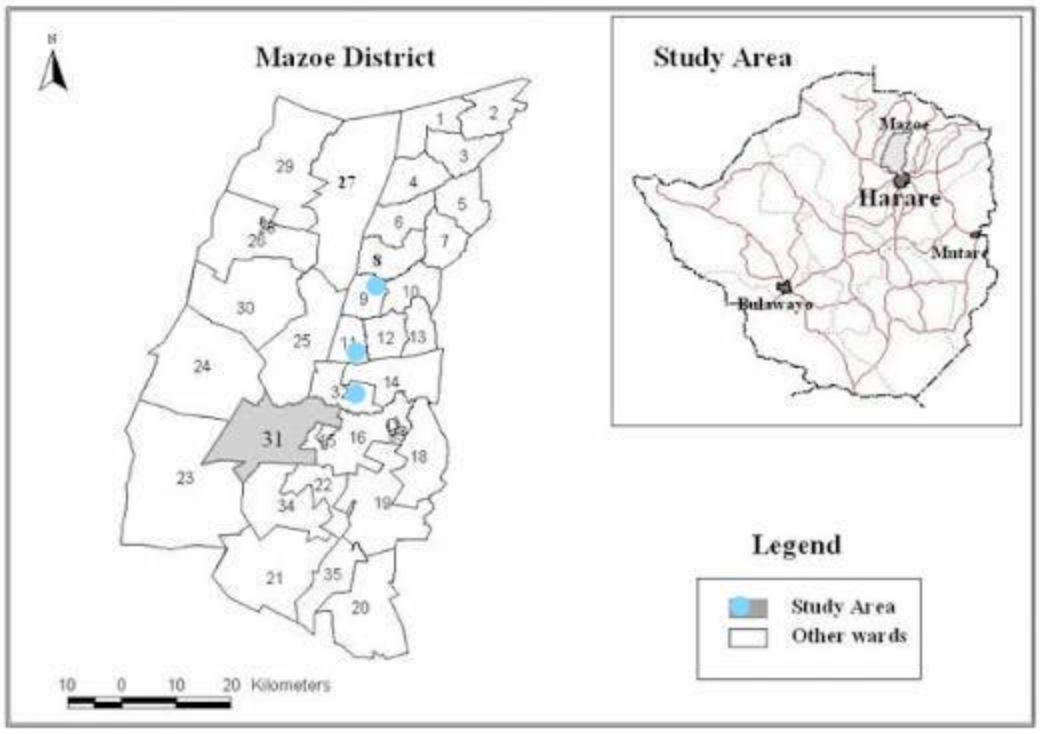

Figure 3. 1 Map showing study area

3.3 Research Design

This study will adopt a descriptive survey design to examine the impact of social media marketing on smallholder farmers' market participation and household food security in Mazowe District. The descriptive survey design is appropriate because it enables the collection of both quantitative and qualitative data from a relatively large sample of respondents, thereby providing a comprehensive understanding of the extent and patterns of social media use in agricultural marketing. This design allows the researcher to describe existing conditions, practices, attitudes, and perceptions without manipulating the study variables (Desalos et al., 2020). Through structured questionnaires and interviews, the study will capture farmers' experiences with social media platforms, their level of participation in agricultural markets, and the resulting effects on household food security. The choice of this design is justified as it facilitates the identification of relationships between social media adoption, market participation, and food security outcomes, while also highlighting the challenges faced by smallholder farmers in leveraging digital platforms for agricultural marketing.

3.4 Sampling Procedure

The study employed a purposive sampling technique to select Mazowe District as the study area. Mazowe was purposively chosen because it is one of Zimbabwe's major agricultural hubs, producing both food and cash crops, and because of its proximity to Harare, which provides farmers with diverse market opportunities. A total four irrigation schemes where selected purposively which included Negomo Irrigation Scheme Ward 9, Rukunguhwe Irrigation Scheme ward 11, Hermiston Irrigation Scheme Ward 32 and Craigengower Irrigation Scheme Ward\ 32 because this is where there is a huge concentration of smallholder tomatoes producing farmers. Despite this advantage, smallholder farmers in the district still face marketing challenges, making it a relevant context for investigating the impact of social media marketing on market participation and household food security.

From the population of 781 registered tomato producing farmers in Mazowe District (as provided by the Ministry of Agriculture), a representative sample size was determined using Slovin's formula below. Based on this calculation, the study purposively sampled 91 farmers from the list of 781. Purposive sampling was used to ensure that respondents included were smallholder farmers actively engaged in agricultural production and with potential or actual exposure to social media platforms for marketing. This approach guaranteed that the selected participants could provide relevant and reliable data for the study objective (Ames et al., 2019).

$$n = \frac{N}{1 + N(e^2)}$$

$$n = \frac{781}{1 + 781(0.05^2)}$$

$$n = 91$$

Table 3.1 **Composition of the sample size**

No	Irrigation Schemes	Sample size
1	Negomo	23
2	Hermistorm	23
3	Craigengower	22
4	Rukunguhwe	23
	Total	**91**

3.5 Data Collection Tools

The data used in the current research was collected through the combination of questionnaires, Focus Group Discussions (FGDs), and Key Informant Interviews (KIIs). The reason why the mentioned methods were employed is that there was the need to acquire a thorough insight into the effects that social media marketing can have on the smallholder farmers' market participation and household food security. More specifically, questionnaires were distributed to the 91 selected smallholder farmers in the Mazowe district with a purpose to collect the required information about their demographic background, social media marketing adoption level, their market participation, food security status of their households, as well as the challenges in applying the means of social media for agriculture marketing. As for the format of the questions, the questionnaires consisted of closed-ended and open-ended questions, allowing to gather both quantitative and qualitative data (Antwi & Hamza, 2019). In other words, the researcher received an opportunity to collect the data, which can be later analyzed statistically.

On top of that, Focus Group Discussions (FGDs) with a group of 6-10 farmers were conducted for gathering the additional information about farmers' experience, attitudes, and perceptions concerning the social media marketing effects. FGD allowed the researcher to learn about some additional information, which would remain hidden if the individual questionnaire would be used only. To complement the above-mentioned techniques, Key Informant Interviews (KIIs) with extension officers, local agricultural officers, and representatives of the farmer cooperatives were carried out for the purpose of getting their views on social media adoption, market and policy aspects of the problem.

3.6 Data Analysis Procedure

One of the most important aspects of choosing descriptive statistics is due to the fact that it was relevant when summarizing, organizing and presenting the quantitative data gathered in the objectives of the study in a manner which is useful and relevant to the objectives of the study regarding the use of social media marketing of tomatoes by smallholder farmers and its impact on their participation in markets and food security. Furthermore, descriptive statistics such as frequencies, percentages, means and standard deviations assisted in describing the distribution of the pattern and trends in the data collected.

Table 3. 2 Data Analysis Framework

Research Objective	**Type of Data**	**Data Collection Tool**	**Data Analysis Method**
1. To determine the extent of social media adoption in agricultural marketing by smallholder farmers	Quantitative	Questionnaire	Descriptive statistics (frequencies, percentages, means)
2. To assess the influence of social media marketing on smallholder farmers' market participation	Quantitative	Questionnaire,	Descriptive statistics;
3. To evaluate the relationship between social media marketing adoption and household food security among smallholder farmers	Quantitative	Questionnaire	Descriptive Statistics, T-test, Comparison of Means
4. To identify challenges faced by smallholder farmers in using social media for agricultural marketing	Mixed	Questionnaire, Semi-structured Interview, KIIs, FDG	Descriptive Statistics, thematic analysis

Thematic analysis was used in the analysis of the qualitative data collected through KIIs since it will allow the researcher to systematically identify, organize and interpret the recurring themes and patterns of participant's responses. Considering that the study will analyze the perception, experience and challenges faced by farmers while using social media for marketing agriculture products, thematic analysis will provide the researcher with an opportunity to capture the depth and diversity of views which may not be easy to quantify.

3.7 Ethical Considerations

The study will adhere to strict ethical principles to ensure the protection of participants' rights and the integrity of the research process. Prior to data collection, permission will be obtained from the relevant local authorities and the Ministry of Agriculture to access smallholder farmers in Mazowe District. All participants will be fully informed about the purpose, objectives, and procedures of the study, and their informed consent will be sought before participation. Participation will be entirely voluntary, and respondents will be assured that they can withdraw from the study at any time without any consequences. To maintain confidentiality and anonymity, personal identifiers will not be recorded in the data collection instruments, and all responses will be treated with strict confidentiality. Additionally, the study will ensure that data collection does not cause harm or discomfort to participants, and findings will be reported honestly and objectively, reflecting the experiences and perspectives of the respondents.

3.8 Summary

This chapter outlined the methodology adopted for the study on the influence of social media marketing on market participation and food security among small holder farmers in Mazowe District. This chapter described the research design, target population, study area, sampling procedures, data collection methods and data analysis techniques used to achieve study objectives Data was collected from 91 small holder farmers using structured questionnaires.

3.9 References

Ames, H., Glenton, C., & Lewin, S. (2019). Purposive sampling in a qualitative evidence

synthesis: A worked example from a synthesis on parental perceptions of vaccination communication. BMC Medical Research Methodology, 19(1), 1–9. https://doi.org/10.1186/s12874-019-0665-4

Antwi, S. K., & Hamza, K. (2019). Qualitative and quantitative research paradigms in business research: A philosophical reflection. European Journal of Business and Management, 7(3), 217–225.

Creswell, J. W. . (2017). Research design : qualitative, quantitative, and mixed methods approaches. Quality \& Quantity, 58(1), 1011–1013.

Desalos, C. B., Herens, M. C., Kuperus, N., van Veen, S., de Winne, R., van Zaal, K., Dengerink, J. D., & Wattel, C. J. (2020). Mixed methods in monitoring and evaluation of development projects: learning from the experience of practitioners.

Makwana, D., Engineer, P., Dabhi, A., & Chudasama, H. (2023). Sampling methods in research: A review. International Journal of Trend in Scientific Research and Development, 7(3), 762–768.

Masuka, B., Matenda, T., Chipomho, J., Mapope, N., Mupeti, S., Tatsvarei, S., & Ngezimana, W. (2020). Mobile Phone Use By Small-Scale Farmers: a Potential To Transform Production and Marketing in Zimbabwe. South African Journal of Agricultural Extension, 44(2), 121–135. https://doi.org/10.17159/2413-3221/2016/v44n2a406

Muyembe, B. A. (2019). Basics of Research Design: A Guide to selecting appropriate research design. International Journal of Contemporary Applied Researches, 6(5), 76–89. https://www.researchgate.net/publication/342354309 _Basics_of_Research_Design_A_Guide_to_selecting_appropriate_research_design.

Taherdoost, H. (2021). Data collection methods and tools for research; a step-by-step guide to choose data collection technique for academic and business research projects. International Journal of Academic Research in Management (IJARM), 10(1), 10–38.

CHAPTER FOUR

DIFFERENCE TYPES OF SOCIAL MEDIA PLATFORMS BY SMALLHOLDER FARMERS

Abstract

This research looked at the various social media platforms adopted by smallholder farmers for agricultural marketing in Mazowe District. A quantitative methodology was employed in this research whereby data was collected from 91 smallholder farmers through structured questionnaires and descriptive statistics were used to analyse the data. It was found out that the WhatsApp is the most commonly used social media platform used by 75.3% of the respondents followed by Facebook (48.3%), TikTok (32.6%), YouTube (21.3%) and Instagram (18.0%). X/Twitter and Telegram are the least used social media platforms (7.9% and 4.5% respectively). In regard to frequency of usage, WhatsApp was the most frequently used social media platform with a mean usage score of 4.5 (SD=1.123) while Facebook has the second highest usage frequency (Mean = 4.2; SD = 1.032). It is evident from the findings that farmers prefer social media platforms that are cheap, easy to access, highly interactive and user-friendly for purposes of communicating directly with potential buyers and passing on market information. It can be concluded from this research that social media platforms, especially WhatsApp and Facebook, are playing an increasingly significant role in agricultural marketing activities amongst smallholder farmers.

Key Words; social media platforms, small holder farmers

4.1 Introduction

This section contains the results discussion and analysis of the objective on the different types of social media platforms by smallholder farmers for marketing. The chapter opens with the demographic characteristics of the respondents as part of the background of the results. This is followed by a section on the different types of social media platforms used by smallholder farmers and the frequency of use as well as the actual use in market participation by the smallholder farmers. The conclusion section is also included together with the recommendations section in this chapter.

4.2 Demographic Characteristics

Results from table 4.1 shows that the majority of the respondents were female (60.7%) with male contributing 39.3% of the respondents in the study. Age disaggregation in the study shown in table 4.1 shows that the majority (58.4%) of the respondents where in those above 35 years constituted 41.6 % of the respondents. The results review that the majority of the respondents (55.1%) had secondary educational qualifications followed by those with primary education (25.8%). The least of the respondents (19.1%) had tertiary educational qualifications. The results also revealed that the majority of the respondents in the study had between 2-10 years farming experience constituting 57.3% whilst those with above 10 years constituted 23.6%. the least of the respondent had less than two years of farming experience.

Table 4. 1 Demographic Characteristics of respondents

Variable	**Category**	**Frequency (n)**	**Percentage (%)**
Gender	Female	54	60.7
	Male	35	39.3
Age Group	18-25	8	9.0
	26-35	18	20.2
	36-45	32	36.0
	46-65	22	24.7
	65+	9	10.1
Education Level	Primary	23	25.8
	Secondary	49	55.1
	Tertiary	17	19.1
Farming Experience	Less than 2 years	17	19.1
	2–10 years	51	57.3
	Above 10 years	21	23.6

Variable	**Min**	**Max**	**Mean**	**St. Deviation**
Household size	2	15	6.52	2.124
Annual Income	421	3150	751.12	1.112
Land size	0.75	5	1.92	1.431

4.3 Results

4.3.1 Different Types of social media platforms used by smallholder farmers

Results in table 4.2 shows that the most used social media platform by the smallholder farmers is WhatsApp with 75.3% of the respondents indicating that they used. The high usage of WhatsApp is mainly due to its affordability and ease of use as cited by some of the respondents. This is also coupled by the low data demand and usage of the application. This is supported by Sharma et al., (2025) who indicated that, the platform offers a variety of services which includes instant messaging, sharing of pictures and video and group communication which offers fluidity of communication between the buyers and sellers. The findings are consistent with Dreist et al., (2025) who highlighted that, WhatsApp enhanced marketing efficiencies and turnover amongst farmers in Nigeria. Similarly, Huni et al. (2020) established that WhatsApp was one of the most accepted and frequently used social media platforms among small-scale farmers in Eastern Zimbabwe due to its convenience and perceived usefulness.

Facebook is the second most common social media platform used for marketing of agricultural products (48.3%) followed by Ticktock (32.6%) which is the third common platform. The popularity of Facebook is linked to the availability of the online market place and business pages where farmers can advertise their produce. The results are also consistent with Eduafo et al., (2024) who indicated that Facebook is a significant place where farmers can be able to market their produce in video and also in visuals and they can also be able to get official market information from the official organizational pages. YouTube is the fourth most common platform (21.3%) with Instagram constituting 18% popularity. This suggests a shift to video-based marketing platforms by the smallholder farmers. This concurs with findings by Aulelyo, (2022) who indicated that, these platforms are rising in popularity because they allow the smallholder farmers to showcase through visuals their production processes and crop quality up until harvesting which improves customer trust and product positioning. Twitter and telegram are the least used social media platforms amongst the smallholder farmers. These findings suggest that there are less knowledge and digital literacy as well as lower perceived usefulness of these platforms to agricultural marketing.

Table 4. 2 Popularity of social media platforms used by smallholder farmers

Social Media Platform	Frequency	Percentage
WhatsApp	67	75.3
Facebook	43	48.3
Instagram	16	18.0
TikTok	29	32.6
Twitter/X	7	7.9
YouTube	19	21.3
Telegram	4	4.5

4.3.2 Usage frequency of social media platform

Results presented in Table 4.3 shows that WhatsApp recorded the highest average usage among smallholder farmers, with a mean score of 4.5 and a standard deviation of 1.123, suggesting that the majority of respondents use the platform frequently for agricultural marketing purposes. These findings are consistent with those of Ramavhale et al., (2024) who noted that the high usage level reflects the platform's accessibility, affordability, and ease of communication, which make it suitable for sharing product information, negotiating prices, and coordinating sales with buyers. The relatively low variation in responses further indicates a generally consistent pattern of high WhatsApp usage among farmers. Similarly, Facebook also recorded a high mean usage score of 4.2 with a standard deviation of 1.032, showing that it is another widely utilized platform for agricultural marketing. Facebook's popularity may be associated with its broader audience reach, marketplace features, and ability to support business pages and farmer groups that facilitate product promotion and customer interaction (Gwelo, 2025).

The results further show moderate usage of TikTok (Mean=3.8) and Instagram (Mean=3.5), suggesting that there are a few farmers who are starting to embrace the use of visual and video marketing platforms. These platforms enable farmers to showcase the farming practices, the quality of crops, and the whole process of producing products using pictures and videos. However, the slightly high standard deviations in the cases of Instagram and Twitter/X indicate variation in terms of familiarity and usage of the two platforms among the respondents. YouTube also shows moderate usage, thus suggesting that a few farmers use the social media platform for purposes of marketing and searching for agriculture related information including farming tips and trends (Uy et al., 2024). On the other hand, Twitter/X and Telegram show low mean usage of

3.1 and 2.1 respectively, thus indicating that these social media platforms are not often used for purposes of marketing agriculture products. The low usage level is consistent with the findings by Rana et al., (2025) who attribute it to poor digital literacy skills, lack of knowledge about the marketing power of the social media platform, or the complexity of the same.

Overall, the results suggest that smallholder farmers in Mazowe District predominantly prefer social media platforms that are easy to use, highly interactive, and accessible through mobile phones. The dominance of WhatsApp and Facebook indicates that farmers favor platforms that support direct communication, group engagement, and low-cost information sharing. The findings also demonstrate an emerging shift toward multimedia-based marketing through TikTok and Instagram, although adoption remains relatively moderate. These results are consistent with the Technology Acceptance Model (TAM), which argues that users are more likely to adopt technologies they perceive as useful and easy to use. The findings also support studies by Huni et al. (2020) and Inegbedion et al. (2020), which found that WhatsApp and Facebook are among the most commonly used social media platforms for agricultural marketing due to their convenience, affordability, and effectiveness in connecting farmers to markets and customers.

Table 4. 3 Usage intensity of social media platforms by smallholder farmers

Social Media Platform	Min Usage	Max Usage	Mean Usage	St. Deviation
WhatsApp	4	5	4.5	1.123
Facebook	4	5	4.2	1.032
Instagram	2	5	3.5	1.143
TikTok	4	5	3.8	1.001
Twitter/X	3	5	3.1	1.132
YouTube	3	5	3.3	1.021
Telegram	1	4	2.1	1.045

4.4 Conclusion

It can be concluded from the findings of the study that WhatsApp and Facebook are the most commonly used social media tools amongst the smallholder farmers and also, they are the most frequently used social media platforms by smallholder farmers in Mazowe District. The study also establishes that usage of social media platforms is mostly based on the affordability and usability of the applications. In addition, the study concludes that social media platforms are on the increase in terms of use in marketing of agricultural products and are important for customer engagement, market information access and sharing as well as expanding of market participation amongst the smallholder farmers. There is also a growing trend in the use of Tick Tock, Instagram and YouTube which indicates a gradual shift towards visual and multimedia agricultural marketing. This is despite the usage levels being low compared to WhatsApp and Facebook. Lower utilization of Twitter/X and Telegram suggests that digital literacy, awareness, perceived usefulness, and platform complexity continue to influence the adoption and effective use of social media platforms among farmers.

4.5 Recommendations

- The government, NGOs, and agricultural extension organizations must come up with digital literacy programs for farmers to enable them to harness different social media tools for agricultural marketing purposes.
- Telecommunication companies and the policy makers must consider ways to reduce cost of access to the internet and data in rural areas to facilitate wide adoption of social media technologies by small scale farmers.
- Stakeholders in the agriculture sector should encourage the use of visual-based social media sites like TikTok, Instagram, and YouTube through training the farmers in content development and digital branding.
- The ICT and internet facilities in the rural areas should be developed in order to facilitate the integration of digital marketing technologies in small scale agriculture value chain.

4.6 References

Aulelyo, V. C. (2022). The Role of Social Media on the Growth of Agriculture in Zambia : A Case of Chingola District Veronica Chimuku Aulelyo. *African Journal of Innovation and Entrepreneurship*, *1*(1), 65–91.

Dreist, D., Schulze, H., Harder, N., & Kühl, S. (2025). When will I be successful ? The use of social media in agricultural direct marketing in Germany. *Agricultural and Food Economics*, *13*(23), 1–27. https://doi.org/10.1186/s40100-025-00367-5

Eduafo, I., Osei, C. K., Bakang, J. A., & Tham-agyekum, K. (2024). Could social media be a game-changer in improving agricultural extension delivery in Ghana ? *Heliyon*, *10*(12), e33293. https://doi.org/10.1016/j.heliyon.2024.e33293

Gwelo, F. A. (2025). Social Media Apps and the Democratisation of Agricultural Knowledge. *Journal of the Knowledge Economy*, *0123456789*. https://doi.org/10.1007/s13132-025-02837-z

Ramavhale, P. ., Zwane, E. ., & Belete, A. (2024). The Benefits of Social Media Platforms Used in Agriculture for Information Dissemination. *South African Journal of Agricultural Extension*, *52*(2), 77–90.

Rana, M., Islam, M. T., Abdelwaheb, S., Islam, H., & Alam, S. M. S. (2025). Modeling the adoption of financial technology for sustainable agricultural development in Bangladesh using the technology acceptance model. *Discover Sustainability*, *6*(1), 1191.

Sharma, M., Sharma, M., & Mehta, A. (2025). Advances in Consumer Research The Evolution of Agriculture by the use of Social Media a shift from Traditional to Digital Scenario. *Advances in Consumer Research*, *2*(4), 5176–5185.

Uy, T. C., Limnirankul, B., Kramol, P., Sen, L. T. H., Hung, H. G., Kanjina, S., & Sirisunyaluck, R. (2024). Social Media adoption for agricultural development: Insights from smallholders in central Vietnam. *Information Development*, 02666669241261355.

CHAPTER FIVE

INFLUENCE OF SOCIAL MEDIA MARKETING ON SMALLHOLDER FARMERS' MARKET PARTICIPATION AND FOOD SECURITY

Abstract

This study analyzed the effect of social media marketing on market participation and household food security among smallholder farmers in Mazowe District based on a quantitative research method. Information was gathered from 91 smallholder farmers using structured questionnaires and analyzed using descriptive statistics and paired sample t-tests. The results showed substantial improvement in market participation after the adoption of social media marketing. The mean number of customers rose from 4.25 before the use of social media to 7.63 after its adoption. The income received each month from agriculture sales was USD 185.4 to USD 342.75. The amount of produce sold rose from 265.5 kg to 458.3 kg while the sale frequency increased from 5.18 to 8.94 sales per month. Besides, the number of market channels used increased from 1.84 to 3.46 after the adoption of social media marketing. The study further established that social media marketing positively influenced household food security. The Household Food Insecurity Experience Scale (HFIES) improved from a mean of 13.42 before adoption to 8.16 after adoption, while the Household Dietary Diversity Score (HDDS) increased from 4.85 to 7.38. The Food Consumption Score (FCS) also improved significantly from 28.64 to 46.82 after the use of social media marketing. The study concluded that social media marketing significantly enhances market participation, agricultural income, and household food security among smallholder farmers by improving market access, increasing sales opportunities, and strengthening household purchasing power. The study recommends strengthening digital agricultural extension services, improving rural ICT infrastructure, reducing internet and mobile data costs, and promoting digital literacy programmes to enhance the effective use of social media marketing among smallholder farmers.

5.1 Introduction

Social media plays a critical role in the market participation of smallholder farmers. As well as food security. This chapter contains the results analysis and discussion of the two objectives namely the influence of social media marketing on market participation of smallholder farmers

and the influence of social media marketing on food security of the smallholder farmers. The section also contains the conclusion as well as the recommendations based on the findings of these two objectives

5.2 Results

5.2.1 Influence of Social Media Marketing on smallholder farmers market participation

Results presented in Table 4.4 indicate that the average number of customers or buyers per week increased significantly after the adoption of social media marketing, rising from a mean of 4.25 buyers before use of social media to 7.63 buyers after adoption. This means that the social media marketing helped increase the visibility of farmers' products and allowed the farmers to reach out to a greater customer base beyond the physical markets. This is due to the fact that platforms like WhatsApp and Facebook have been used by the farmers to reach out to many more customers through direct communication, promotion and networking. The standard deviations are relatively low which means that the improvement occurred for many of the farmers. This means that through social media marketing, the market outreach increases while reducing the reliance on local customers and intermediaries. This finding corroborates the findings of Moonsammy & Moonsammy, (2020).

Table 5. 1 Sample means for influence of social media on market participation metrics

Market Participation Metric	Period	Mean	N	Std. Deviation	Std. Error Mean
Number of Customers/Buyers/ week	Before use of social media	4.25	91	1.82	0.191
	After use of social media	7.63	91	2.11	0.221
Income from Agricultural Sales (USD/month)	Before use of social media	185.4	91	75.62	7.93
	After use of social media	342.75	91	118.34	12.4
Volume of Produce Sold (kg/month)	Before use of social media	265.5	91	120.45	12.63
	After use of social media	458.3	91	165.72	17.37
Frequency of Sales Transactions	Before use of social media	5.18	91	2.04	0.214

	After use of social media	8.94	91	2.48	0.26
Number of Market Channels Accessed	Before use of social media	1.84	91	0.73	0.077
	After use of social media	3.46	91	1.05	0.11

Moreover, the results showed that the mean income generated from the sales of agriculture produce increased from USD 185.4 to USD 342.75 when social media marketing was introduced. The huge increase indicated that the introduction of social media marketing positively contributed to income generation of farmers through facilitating easy access to buyers, improved price negotiation and minimized inefficiencies in marketing processes. The increased income could also be attributed to efficient market participation and reduced cost of physical searching of markets. The increased standard deviation after adoption of social media marketing suggests variability of income earned by farmers after adoption of social media. The results confirm the arguments provided by Sharma et al., (2025) that digital marketing platforms would enhance the economic performance of smallholder farmers by increasing agricultural commercialization and access to profitable markets.

It is also found that the volume of produce marketed per month increased from 265.5 kg to 458.3 kg when social media marketing was adopted. The results indicated that farmers managed to sell higher volumes of produces after adoption of social media marketing. The increased sales volumes could be attributed to effective reaching of customers, quick dissemination of product information and facilitation of coordination between farmers and buyers. These findings are supported by (Dreist et al., 2025) whose results indicate that social media platforms help minimize the post-harvest loses by allowing farmers to get buyers more quickly, especially for fresh agricultural produce such as vegetables and horticulture crops.

The research findings further suggest that the frequency of sales transactions increased from 5.18 to 8.94 transactions after adoption of social media marketing. It is evident that the increased transactions frequency was experienced by farmers after adopting social media marketing. The increased transaction frequency could be explained by the improvement of communication with buyers, facilitation of delivery process and provision of real-time market information through the use of digital platforms. The findings indicate that social media marketing facilitates increased

participation in agricultural markets. The increased transaction frequency is an important measure of the enhanced market participation, where the increased market participation refers to active involvement in agricultural markets and engagement with the customers (Eduafo et al., 2024). The results corroborate the findings provided by Gwelo, (2025) that social media marketing facilitates improvement of reliability of market interactions among smallholder farmers.

Finally, it is established that the number of market channels available for farmers increased from 1.84 to 3.46 after social media marketing was adopted. The results show that social media marketing helped farmers diversify their sales channels and move beyond traditional local markets. Social media marketing allowed farmers to access new markets segments such as urban customers, retailers and online customers. These findings are supported by Ramavhale et al., (2024) who argued that the increase of market channels indicates improvement of market integration and reduces dependency on one or few markets that subject farmers to price exploitation.

5.2.2 Paired T-test analysis for the market participation metrics before and after use of social media for marketing

The outcomes of the paired samples t-test displayed in Table 4.5 reveal that there was a statistically significant increase in the number of buyers as a result of social media marketing for smallholder farmers. The mean difference between the periods before and after social media marketing was 3.38 buyers, $t = 18.54$ and significance of 0.021 that is below the 0.05 level. It shows that the application of social media marketing greatly affected the customer base of the farmers. The increased number of customers can be explained by greater product visibility, better communication with possible buyers, and expanded market reach through such social media networks as WhatsApp and Facebook. The results of the test conducted by the author agree with the work of Thomas et al. (2023), stating that social media marketing increases market connectivity and farmers' involvement in the agricultural market.

Table 5. 2 Paired T-test analysis for the market participation metrics before and after use of social media for marketing

Paired Variables	Mean Difference	Std. Deviation	t-value	Sig. (2-tailed)
Number of Customers (After – Before)	3.38	1.74	18.54	0.021
Income from Sales (After – Before)	157.35	96.21	15.61	0.034
Volume of Produce Sold (After – Before)	192.8	134.55	13.67	0.012
Frequency of Sales (After – Before)	3.76	2.11	16.98	0.038
Market Channels Accessed (After – Before)	1.62	0.88	17.54	0.016

The paired t-test results further revealed a statistically significant improvement in income from agricultural sales after the adoption of social media marketing. The mean income difference was USD 157.35, with a t-value of 15.61 and a p-value of 0.034, indicating that the increase was statistically significant. The findings imply that farmers experienced notable economic benefits from using social media for marketing agricultural produce. Increased income levels may have resulted from access to a larger customer base, improved bargaining power, reduced reliance on intermediaries, and enhanced access to better-priced markets. The results support the argument that digital marketing platforms can improve financial outcomes and commercialization opportunities for smallholder farmers as postulated by Sharma et al., (2025).

Furthermore, the study established that there was a significant increase in the sales volume of the produce after the adoption of social media marketing. The paired sample t-test indicated a mean difference of 192.8kg with a t-value of 13.67 and a significance level of 0.012. From this, it can

be observed that the use of social media platforms helped the farmers increase the quantity of produce being sold compared to the period when they had not adopted social media marketing. The increase in sales volume has been facilitated by easier access to buyers, fast dissemination of product information, and reduction in post-harvest losses by coordinating the market processes (Eduafo et al., 2024). Such findings conform to those by Dreist et al., (2025) where the authors argued that social media platforms help positively in agriculture productivity and market efficiency among smallholder farmers.

The results also indicate a significant increase in the frequency of sales transactions after the adoption of social media marketing. The mean difference recorded was 3.76 sales transactions with a t-value of 16.98 and a p-value of 0.038, which confirms its significance. It shows that the adoption of social media marketing enhanced the frequency of transactions in market transactions conducted by the farmers. Increased sales transactions could have been caused by easier communication with buyers, consistent online interaction, and quick dissemination of information about product availability through digital channels. Such findings agree with those by Gwelo, (2025) where the author argues that social media marketing facilitates market participation regularity and consistency among farmers.

Lastly, it was also established that the number of market channels accessed increased significantly after the adoption of social media marketing. The mean difference obtained was 1.62 market channels while the t-value was 17.54 and significance level was 0.016. This shows that farmers were able to utilize alternative market channels for their produce after the adoption of social media marketing. They were thus able to diversify from traditional physical market outlets to other alternative market channels such as buyers within urban areas, buyers in online platforms, retailers, and farmer groups. This helps diversification of market channels and reduces the vulnerability of smallholder farmers to market fluctuation and market exploitations by intermediaries. This finding agrees with the results obtained by Ramavhale et al., (2024) where the authors demonstrate significant market diversification through social media marketing.

5.2.3 Influence of social media marketing on Food Security of the smallholder farmers

Results presented in Table 4.6 indicate that the Household Food Insecurity Experience Scale (HFIES) significantly improved after the adoption of social media marketing among smallholder farmers. The mean HFIES score declined from 13.42 before the use of social media marketing to

8.16 after adoption, suggesting a reduction in household food insecurity experiences. Since lower HFIES scores indicate lower levels of food insecurity, the findings imply that households became more food secure after farmers integrated social media into their marketing activities. The findings are supported by Gwelo, (2025) who linked the reduction in food insecurity to increased household income, improved market participation, and enhanced access to reliable markets through social media platforms. These findings also concurs with Ramavhale et al., (2024) who indicated that that social media marketing can contribute positively to improving food access and reducing vulnerability among smallholder farming households.

Table 5. 3 Sample means for influence of social media marketing on food security

Food Security Indicator	**Period**	**Mean**	**Std. Deviation**
Household Food Insecurity Experience Scale (HFIES)	Before	13.42	4.25
	After	8.16	3.61
Household Dietary Diversity Score (HDDS)	Before	4.85	1.52
	After	7.38	1.71
Food Consumption Score (FCS)	Before	28.64	8.74
	After	46.82	10.15

The findings further reveal that the Household Dietary Diversity Score (HDDS) improved considerably after the adoption of social media marketing. The mean HDDS increased from 4.85 before adoption to 7.38 after adoption, indicating that households were able to consume a wider variety of food groups after farmers began using social media for agricultural marketing. Dietary diversity is an important indicator of nutritional quality and household food utilization; therefore, the increase suggests improvements in nutritional wellbeing among farming households. The improved dietary diversity may have resulted from increased incomes and enhanced purchasing power, enabling households to access more nutritious and diversified foods Johnson, (2024). The findings are similar to Dadzie et al., (2022) who noted that social media marketing indirectly contributes to better household nutrition outcomes by strengthening agricultural incomes and market access.

Results also show that the Food Consumption Score (FCS) improved significantly after the use of social media marketing. The mean FCS increased from 28.64 before adoption to 46.82 after adoption, reflecting substantial improvements in household food consumption patterns and overall food security status. The increase in FCS suggests that households consumed food more frequently and accessed nutritionally richer diets after the adoption of social media marketing. Improved market participation and increased agricultural sales likely enhanced households' economic capacity to secure sufficient food throughout the consumption period. The higher standard deviation after adoption indicates some variation in the extent of improvement among households, possibly due to differences in production capacity, digital literacy, and level of engagement with social media platforms. Overall, the findings are supported by Masuka et al., (2020) who provided evidence that social media marketing positively influences food security by improving food availability, dietary diversity, and household food consumption among smallholder farmers.

5.2.4 Paired T-test Samples for food security before and after social media marketing

Results from the paired sample t-test presented in Table 4.7 indicate that there was a statistically significant improvement in the Household Food Insecurity Experience Scale (HFIES) after the adoption of social media marketing among smallholder farmers. The mean difference between the period before and after social media use was -5.26, with a t-value of -14.68 and a significance level of 0.021, which is below the 0.05 threshold. The negative mean difference indicates a reduction in food insecurity experiences after farmers adopted social media marketing. These findings are supported by Dilleen et al., (2025) who suggested that improved market access, increased agricultural income, and enhanced sales opportunities obtained through social media platforms contributed to reducing household vulnerability to food shortages. The findings imply that social media marketing positively influences household food access and overall food security among smallholder farmers.

Table 5. 4 Paired T-test Samples for food security before and after social media marketing

Paired Variables	Mean Difference	Std. Deviation	t-value	Sig. (2-tailed)

HFIES (After – Before)	-5.26	3.42	-14.68	0.021
HDDS (After – Before)	2.53	1.64	14.71	0.001
FCS (After – Before)	18.18	9.84	17.61	0.002

Moreover, the paired sample t-test also shows that there is a statistically significant improvement in the Household Dietary Diversity Score (HDDS) as a result of the adoption of social media marketing. The mean difference was 2.53, the t-value was 14.71, and the p-value was 0.001, which means that there was a highly significant improvement in the dietary diversity of households. The improvement in HDDS shows that households managed to consume a larger variety of food groups as a result of integrating social media marketing into the agricultural activities. Such improvement can be linked to the growth in household income and active market participation that contributed to greater diversity and nutrition in the diets of households. The findings of the research support the conclusions of Masuka et al., (2020) that social media marketing not only helps to achieve some economic gains but also promotes nutritional wellbeing and proper use of food among farming households.

It should be noted that the Food Consumption Score (FCS) has also become significantly higher after the implementation of social media marketing practices. The paired t-test shows that the mean difference was 18.18, the t-value was 17.61, and the significance level was 0.002, meaning that there was a statistically significant improvement in food consumption among households. The improvement in FCS indicates that households managed to establish more stable food consumption patterns as a result of the implementation of social media marketing practices. It can be related to the growth in agricultural sales, increase in household income, and decrease in post-harvest losses due to effective market coordination. The findings support the idea suggested by Dadzie et al., (2022) that social media marketing is important for promoting food security through food access and food consumption among smallholder farmers.

5.3 Conclusion

The research concludes that there is a significant positive impact of social media marketing on market participation among smallholder farmers in Mazowe District. As a result of the implementation of social media marketing practices, the farmers observed an increase in the

number of customers contacted, income from agricultural sales, volume of produce sold, frequency of sales transactions, and number of market channels used. The use of platforms such as WhatsApp and Facebook helped farmers to contact potential buyers directly, expand market boundaries, and reduce dependency on intermediaries. The paired sample t-test confirmed the statistical significance of these improvements, proving that social media marketing contributes to the process of farmers' integration into agricultural markets and commercialization opportunities of smallholder farmers.

Finally, the research proves that social media marketing has a positive impact on food security among smallholder farmers. The study revealed that there were significant improvements in Household Food Insecurity Experience Scale (HFIES), Household Dietary Diversity Score (HDDS), and Food Consumption Score (FCS) after the implementation of social media marketing. The increase in agricultural income and active market participation led to an improvement in the accessibility of food that provided households with more varied and nutritious diets and food consumption patterns.

5.4 Recommendations

1. Government and agricultural development stakeholders should promote the integration of social media marketing training within agricultural extension programmes to improve farmers' digital marketing skills and market participation.
2. Telecommunication companies and policymakers should develop strategies to reduce internet and mobile data costs in rural areas to improve farmers' access to digital marketing platforms.
3. Agricultural institutions, NGOs, and farmer cooperatives should encourage farmers to diversify their use of social media platforms beyond WhatsApp and Facebook to expand market opportunities and customer reach.
4. There is need for investment in rural ICT infrastructure and digital financial systems to strengthen farmers' participation in online markets and enhance the contribution of digital agriculture to household food security

5.5 References

Dadzie, S. K. N., Ndebugri, J., Inkoom, E. W., & Akuamoah-Boateng, S. (2022). Social networking and risk attitudes nexus: implication for technology adoption among smallholder cassava farmers in Ghana. *Agriculture \& Food Security*, *11*(1), 41.

Dilleen, G., Claffey, E., Foley, A., & Doolin, K. (2025). *Investigating knowledge dissemination and social media use in the farming network to build trust in smart farming technology adoption*. *8*(March 2023), 1754–1765. https://doi.org/10.1108/JBIM-01-2022-0060

Gwelo, F. A. (2025). Social Media Apps and the Democratisation of Agricultural Knowledge. *Journal of the Knowledge Economy*, *0123456789*. https://doi.org/10.1007/s13132-025-02837-z

Johnson, D. (2024). Food security, the agriculture value chain, and digital transformation: The case of Jamaica's agricultural business information system (ABIS). *Technology in Society*, *77*, 102523. https://doi.org/10.1016/j.techsoc.2024.102523

Masuka, B., Matenda, T., Chipomho, J., Mapope, N., Mupeti, S., Tatsvarei, S., & Ngezimana, W. (2020). Mobile Phone Use By Small-Scale Farmers: a Potential To Transform Production and Marketing in Zimbabwe. *South African Journal of Agricultural Extension*, *44*(2), 121–135. https://doi.org/10.17159/2413-3221/2016/v44n2a406

Ramavhale, P. ., Zwane, E. ., & Belete, A. (2024). The Benefits of Social Media Platforms Used in Agriculture for Information Dissemination. *South African Journal of Agricultural Extension*, *52*(2), 77–90.

Sharma, M., Sharma, M., & Mehta, A. (2025). Advances in Consumer Research The Evolution of Agriculture by the use of Social Media a shift from Traditional to Digital Scenario.

Advances in Consumer Research, *2*(4), 5176–5185.

CHAPTER SIX

GENDER DIFFERENCE IN THE USE OF SOCIAL MEDIA AMONGST SMALLHOLDER FARMERS

Abstract

The study investigated gender differences in the adoption of social media platforms for agricultural marketing by smallholder farmers in Mazowe District using a quantitative research design. Data was collected from 91 smallholder farmers using structured questionnaires and analyzed using descriptive statistics and independent sample t-tests. The findings of the study showed that there were more male farmers (57.1%) who adopted the use of social media for agricultural marketing compared to females (42.9%). It was also found out that there were notable gender differences in access to digital technologies where more males (88.5%) than females (69.2%) owned smartphones and had regular access to the internet (82.7% vs. 61.5%). The same was true for ownership of personal social media account (84.6% males vs. 66.7% females) and access to mobile money services (90.4% males vs. 71.8% females). Furthermore, male farmers were more frequent users of social media platforms compared to their female counterparts since 61.5% male farmers used social media platforms on a daily basis for agricultural marketing while 43.6% female farmers did not do so regularly. Finally, based on independent sample t-test results, there were statistically significant differences in scores for social media platform utilization (Mean = 4.12; SD = 0.74) for male farmers and female farmers (Mean = 3.58; SD = 0.81) and the difference was statistically significant ($t = 2.87$; $p = 0.005$). The study found out that although both men and women adopt the use of social media platforms for agricultural marketing purposes, gender inequalities in access to digital technologies, internet connectivity, financial resources and ICTs continue to inhibit participation of women in digital agricultural system.

6.1 Introduction

The study was aimed at analyzing gender differences in the usage of social media platforms for agriculture marketing among smallholder farmers in Mazowe District. Gender has a big impact on access to digital technology, internet access, finance, and ICT skills, all of which determine involvement in digital agriculture. Even though social media has become increasingly popular tools for enhancing market access, communication and commercialization of agriculture, gender gap in access and usage of this technology has remained a big issue in rural communities (Mulungu, 2025). Knowledge of these differences is crucial for ensuring inclusive digital agricultural transformation and benefits from social media marketing opportunities for both genders of farmers.

6.2 Results

6.2.1 Gender Aggregation for social Media use

Data provided in Figure 4.1 shows the presence of some gender difference in usage of social media platforms for agriculture marketing among smallholder farmers in Mazowe District. It can be seen that 57.1% of the users were male farmers, while 42.9% of users were female farmers indicating the active role of men in using social media platforms for marketing agricultural products. This can be explained by their better access to smartphones, internet connection, money, and ICT education opportunities. On the contrary, women can be restricted by lack of digital devices' ownership, high cost of data, lack of ICT education, and other obligations. However, despite all difficulties, the relatively high percentage of female users indicates increasing involvement of women in digital agriculture and awareness of the importance of social media platforms for improving access to markets and earning opportunities. These results are consistent with the conclusions made by Voss et al., (2021) who pointed out that social media marketing provides equal opportunities for men and women farmers, but gender gap in access to digital resources and technological skills continues to play its role.

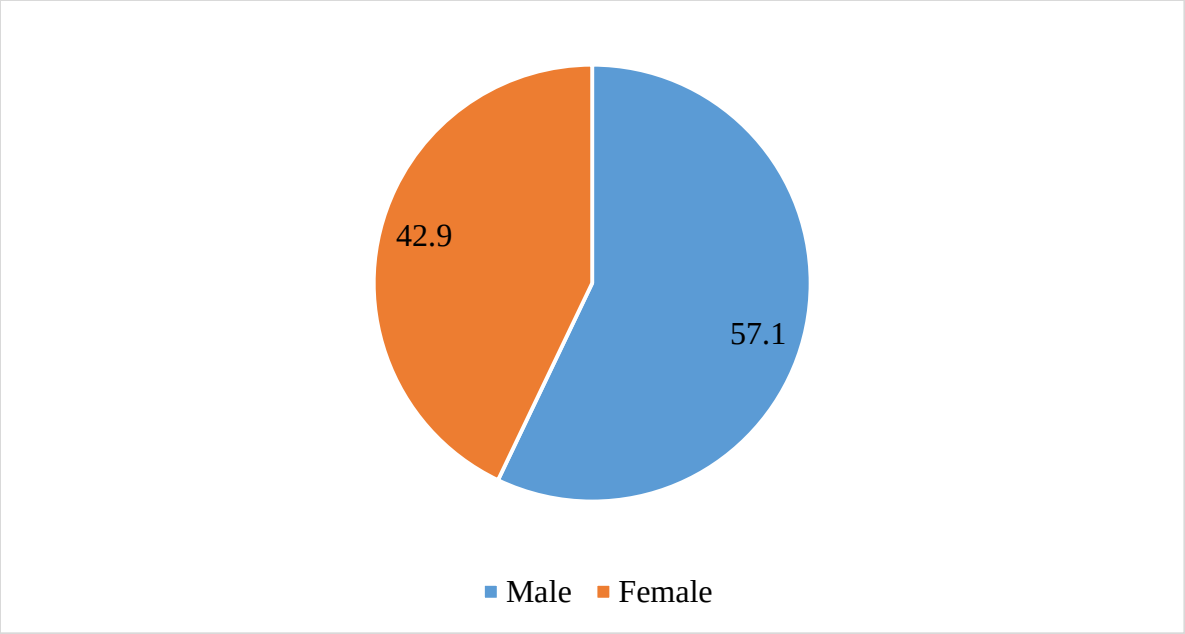

Figure 6. 1 Social media use aggregation by gender

6.2.2 IT Access by Gender

The results displayed in Figure 4.2 show that there are significant gender disparities in the ownership of smartphones in Mazowe district by smallholder farmers. The data show that 88.5% of male farmers owned smartphones while only 69.2% of female farmers had smartphones. This implies that male farmers tend to have more access to technology needed to engage in social media marketing and other ICT-driven agricultural practices. This disparity in the ownership of phones may be due to higher financial power, higher incomes, and access to technologies by men. The low ownership of smartphones by women hinders their engagement in agricultural digital markets and acquiring market information through the internet. This is supported by Ofisi & Lukamba, (2020) who revealed the presence of a gender digital divide that still hinders the involvement of women in digital agriculture.

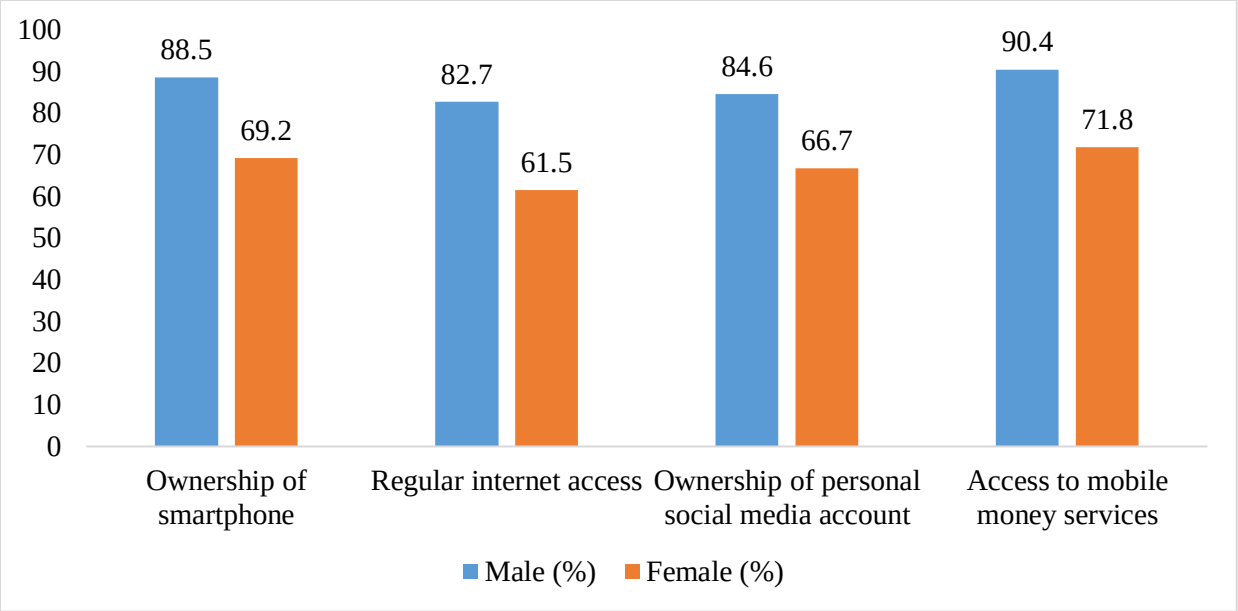

Figure 6. 2 Access to mobile, social media account, regular internet and ownership of smartphone by gender

In addition to these, the results show gender differences in the access to regular internet connection with 82.7% of male farmers accessing it regularly while only 61.5% of female farmers accessing regular internet connection. From this, one can conclude that male farmers are more inclined to accessing internet services on a regular basis and participating actively in social media marketing activities. Such low access to internet among women can be explained by such reasons as expensive data charges, low level of digital literacy and lack of access to ICT infrastructure. The results are consistent with Voss et al., (2021) who argue that internet accessibility plays a significant role as a determining factor of digital participation and can affect the efficiency of farmers' use of social media platforms for agricultural marketing. Limited access to the internet among women will therefore prevent them from benefiting from digital agriculture opportunities (Mulungu, 2025).

In addition to this, results also indicate that 84.6% of male farmers had personal social media accounts while only 66.7% of female farmers had personal social media accounts. This shows that men are more actively represented in social and marketing platforms than women. It is important that farmers own personal social media accounts since this allows them to independently interact with buyers, advertise products and get market information immediately. The lower percentage of female farmers owning personal accounts is consistent with the findings

of Voss et al., (2021) who say that this is due to the issues such as digital illiteracy, lack of confidence in the use of technology and limited access to digital technologies. These disparities can therefore mean that women are offered less opportunities for independent participation in online marketing than men (Ofisi & Lukamba, 2020).

Last but not least, the results show that the access to mobile money services was higher among male farmers (90.4%) compared to female farmers (71.8%). The use of mobile money services is crucial in terms of digital agricultural marketing as this allows to make online payments and facilitate financial transactions, making communication with farmers and buyers easier. This implies that the level of financial integration into digital marketing system among male farmers is much higher. This limited access to mobile money services can limit the possibilities of women to effectively participate in online trade and benefit from digital market opportunities (Mulungu, 2025).

6.2.3 Frequency of use of social media for agriculture marketing

The results presented in Table 4.8 show the existence of some gender differences in terms of the frequency of using social media platforms for agricultural marketing among smallholder farmers in Mazowe District. In particular, the results show that 61.5% of male farmers used social media platforms daily compared to 43.6% of female farmers showing that male farmers use these platforms more frequently. This frequent use of social media can help the farmers to contact buyers, get market information, advertise products and coordinate sales activities. Such higher frequency of use among men can be explained by the following factors as higher access to smartphones, internet access, digital literacy and lack of time constraints among men compared to women.

Table 6. 1 Aggregation of frequency of use of social media by gender

Frequency of Use	Male (%)	Female (%)
Daily	61.5	43.6
Weekly	25	35.9
Monthly	9.6	15.4
Rarely	3.9	5.1

Further findings indicate that female farmers showed relatively high percentages in the weekly (35.9%), monthly (15.4%), and rarely (5.1%) groups when compared to male farmers, with percentages of 25%, 9.6%, and 3.9% respectively. Therefore, women farmers appear to utilize social media much less for agricultural marketing compared to men. Ineffective digital marketing strategies can be caused by the low usage frequency, which is critical for establishing customer relations and making responses to market opportunities. The findings agree with those by Voss et al., (2021), where gender differences were identified not only in access to digital technologies but also in the intensity of social media utilization.

6.2.4 Independent T-test sample for gender differences in social media use

Findings in Table 4.9 show that there is statistically significant gender difference in social media utilization in agricultural marketing in Mazowe district. Men had higher mean utilization score (Mean = 4.12; SD = 0.74) than women (Mean = 3.58; SD = 0.81). Therefore, male farmers seem to utilize social media more compared to women. The independent samples t-test further found that the difference in the mean utilization score between men and women was statistically significant (t = 2.87; p = 0.005). Therefore, the gender plays a vital role in determining the level of social media utilization in farming. It is likely that males use social media more because they have better access to smartphones, internet connectivity, and other digital skills and funds compared to females, who face some constraints like limited ICT access, household responsibilities, and lower digital literacy level. The findings support those by Afia, (2024) stating that despite the participation of both men and women in digital agricultural marketing, gender inequalities still persist.

Table 6. 2 Independent T-test for social media use by gender

Gender	Mean Score	Std. Deviation	t-value	Sig. (2-tailed)
Male	4.12	0.74	2.87	0.005
Female	3.58	0.81		

6.3 Conclusion

It is evident from the study that there are marked gender differences in the use of social media in agricultural marketing amongst smallholder farmers in Mazowe District, where male farmers had better access to smartphones, internet connectivity, social media and mobile money services in comparison to their female counterparts. In addition, the study found out that male farmers used social media in a much frequent and intense manner compared to female farmers, which resulted in greater use of social media in agricultural marketing. It is clear that gender is still a determinant of digital participation in agriculture. Such differences can be explained in terms of unequal access to financial resources, digital technology, ICT training and social responsibilities.

In conclusion, the study has found that although there are some gender inequalities in the area of agricultural marketing through social media, there is an increased participation of women farmers in such marketing due to the realization of its potential. Nevertheless, there are certain structural limitations such as high prices for data, low digital literacy, poor ICT infrastructure and household workload, which hinder the effective engagement of women into digital agricultural system. Thus, it is evident that the involvement of women farmers into digital agriculture without certain interventions would remain low.

6.4 Recommendations

1. Government and development organizations should implement gender-sensitive digital literacy and ICT training programs specifically targeting female smallholder farmers to improve their confidence and capacity in using social media for agricultural marketing.
2. Policymakers and telecommunication companies should promote affordable internet access and subsidized digital devices for rural women farmers to reduce barriers associated with smartphone ownership and high data costs.
3. Agricultural extension services and NGOs should establish women-focused digital farmer groups and online marketing platforms to encourage peer learning, networking, and greater participation of women in digital agricultural markets.

4. There is need for improved rural ICT infrastructure and mobile financial inclusion programs to enhance women's access to internet services, mobile money systems, and digital agricultural opportunities.

6.5 References

Afia, O. E. (2024). Gender Participation in Agricultural Digitalization: Prospects and Challenges. *E-Proceedings of the Faculty of Agriculture International Conference*, 153–162.

Mulungu, K. (2025). Gender perspectives on mobile phone ownership and use: a case study of smallholder farmers in Uganda. *Gender, Technology and Development*, *0*(0), 1–14. https://doi.org/10.1080/09718524.2025.2557649

Ofisi, M., & Lukamba, M. (2020). Closing the gender Gap through ICT in small scale farming: Towards achieving Sustainable Development Goals. *Gender & Behaviour*, *18*(4), 16687.

Voss, R. C., Jansen, T., Mané, B., & Shennan, C. (2021). Encouraging technology adoption using ICTs and farm trials in Senegal: Lessons for gender equity and scaled impact. *World Development*, *146*, 105620. https://doi.org/https://doi.org/10.1016/j.worlddev.2021.105620

CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter highlights the conclusions, summary, and recommendations of the study that explores the impact of social media marketing on market participation and food security among smallholder farmers in Mazowe District. The chapter includes a synthesis of the main results regarding the research objectives which include types of social media platforms utilized by farmers, influence of social media marketing on market participation and food security and differences between male and female smallholder farmers in terms of social media utilization for agricultural marketing. The chapter draws conclusions and makes recommendations based on these results to various stakeholders, including the government, agricultural extension services, telecommunication firms, NGOs and farmer organizations. The chapter also includes recommendations for further research in order to develop knowledge on digital agriculture and social media marketing.

7.2 Research Summary

The study revealed that there is an increasing trend of social media utilization for marketing purposes among smallholder farmers in Mazowe District. The study results revealed that WhatsApp was the most frequently used social media platform followed by Facebook, TikTok, YouTube and Instagram whereas Twitter/X and Telegram had lower usage frequencies. Farmers preferred social media platforms which were affordable, easily accessible and allowed direct interaction with buyers. The results also show that WhatsApp and Facebook had high usage intensity levels, demonstrating that the platforms have become significant digital tools for conducting agricultural marketing and communication among smallholder farmers (Afia, 2024).

The study revealed that the adoption of social media marketing had a significant positive impact on market participation among smallholder farmers. Smallholder farmers had notable improvements in customer reach, income from agricultural sales, volume of produce sold, sales frequency and number of market channels after adopting social media marketing (Mulungu, 2025). The paired sample t-test results revealed that the changes were statistically significant. Moreover, the results indicated that social media marketing had a significant positive impact on

household food security. Improvements were recorded in the Household Food Insecurity Experience Scale (HFIES), Household Dietary Diversity Score (HDDS) and Food Consumption Score (FCS).

The study revealed that there were significant gender differences in social media marketing practices among smallholder farmers. Male farmers had higher access to smartphones, internet services, personal social media accounts and mobile money accounts compared to women. Additionally, male farmers had higher social media utilization scores and more frequent use of social media than women (Ofisi & Lukamba, 2020). The results demonstrate that although female farmers are participating in digital agricultural marketing practices, the lack of equality in terms of ICT resources, skills, finance and access to internet continue to restrict the participation of women in digital agricultural systems. In conclusion, the study revealed that social media marketing plays an important role in agricultural commercialization and food security among smallholder farmers.

7.3 Conclusion

The study concludes that social media platforms have become important instruments for agricultural marketing among smallholder farmers in Mazowe District. Social media platforms such as WhatsApp and Facebook were the most used because of their affordability and ease of communication. The results reveal that farmers are incorporating digital technologies in their marketing practices in order to improve communication with buyers and access market information. The increasing use of social media by farmers demonstrates the ongoing digital transformation in agricultural value chains and potential of ICTs in agricultural commercialization.

The study further concludes that social media marketing has a significant positive impact on market participation and household food security among smallholder farmers. Smallholder farmers who adopted social media marketing experienced improvements in customer reach, income from agricultural sales, volume of produce sold, sales frequency and number of market channels. Additionally, improvements in the HFIES, HHDS and FCS demonstrate that social media marketing contributes to food security. Therefore, the study reveals that digital marketing platforms can play an important role in improving livelihoods and reducing food insecurity among smallholder farmers.

The study further concludes that gender disparities have continued to impact social media based agricultural marketing practices. Male farmers had higher access to smartphones, internet services, social media accounts and mobile money accounts compared to women. Furthermore, men had higher social media utilization scores and more frequent use of social media than women. This demonstrates that the disparities exist due to the structural barriers such as the limited access to digital technology, low ICT skills and lack of affordability (Voss et al., 2021). The study concludes that although social media marketing opens up opportunities for agricultural development and food security, inclusive participation can only be achieved through interventions addressing gender inequality in digital access and utilization.

7.4 Policy Implications and Recommendations

Governments and Policy Makers

- The government should ensure that rural ICT infrastructure is improved through enhancing internet connectivity and network coverage to increase digital inclusion among smallholder farmers in remote rural regions.
- Supportive policies should be developed by policymakers to promote digital agriculture and include social media marketing as part of national agricultural development and food security policies.
- Governmental bodies should work together with telecommunication companies to lower mobile data charges to increase the accessibility of internet services for farmers in rural regions.
- There is need for the development of government programmes that promote gender inclusion in digital agriculture by increasing the ability of women to access smartphones and internet services.

Agricultural Extension Services

- Extension officers should include social media marketing training in extension programmes to enhance digital competences of farmers.
- Extension services should develop farmer digital support centers and online farmer groups to share knowledge and disseminate market information.

- The extension officers should keep educating farmers about proper and safe usage of social media for agricultural marketing and transactions.
- The extension Programme should target women and youth to promote inclusive participation of farmers in digital agriculture systems.

Telecommunication Companies

- The telecommunication firms should introduce agricultural data bundles that are affordable for farmers to enhance wider usage of social media marketing.
- The network companies should enhance the coverage of internet and mobile networks in rural areas to reduce digital agricultural participation constraints.
- The mobile service providers should partner with agricultural institutions to create localized digital platforms and apps to enhance market access for farmers.
- The telecommunication companies should engage in campaigns promoting digital literacy among farmers to increase their competences in using online marketing platforms.

NGOs and Development Organizations

- The NGOs and development partners should engage in developing digital literacy capacity building programs aimed at increasing social media marketing skills among farmers.
- The development organizations should help farmers gain access to affordable smartphones and ICT devices, especially women and vulnerable farming households.
- NGOs should engage in promoting women-focused digital empowerment programs to counteract the gender inequalities in access to digital agricultural technologies.
- The development agencies should engage in supporting farmer cooperatives and farmer digital groups that will collectively market produce through social media platforms.

Farmer Cooperatives and Associations

- Farmer associations should promote digital marketing initiatives to enhance market access, bargaining power, and information sharing among farmers.

- The cooperatives should organize regular workshops on the use of social media for agricultural marketing and customer interaction.
- Farmer groups should create online marketing platforms and digital networks that link farmers directly to consumers.
- Farmer associations should promote information sharing on market prices, customers' demand, and marketing opportunities through social media channels.

7.5 Areas for Further Studies

- Future studies should evaluate the long-term sustainability of social media marketing impact on agricultural productivity, income stability, and food security of smallholder farmers.
- Future studies should look at the impact of emerging digital technologies such as AI, e-commerce platforms, and mobile agricultural apps on the agricultural marketing system.
- Further research should study the impact of various social media platforms such as TikTok, Instagram, and YouTube on agricultural marketing and farmer-consumer interactions.
- Comparison studies from different districts and provinces in Zimbabwe are recommended to see the regional differences in digital agricultural adoption and food security impacts.
- Further studies are needed to analyze the barriers affecting women participation in digital agriculture and the strategies for promoting gender inclusiveness in digital transformation.

7.6 References

Afia, O. E. (2024). Gender Participation in Agricultural Digitalization: Prospects and Challenges. *E-Proceedings of the Faculty of Agriculture International Conference*, 153–162.

Mulungu, K. (2025). Gender perspectives on mobile phone ownership and use: a case study of smallholder farmers in Uganda. *Gender, Technology and Development*, *0*(0), 1–14. https://doi.org/10.1080/09718524.2025.2557649

Ofisi, M., & Lukamba, M. (2020). Closing the gender Gap through ICT in small scale farming: Towards achieving Sustainable Development Goals. *Gender & Behaviour*, *18*(4), 16687.

Voss, R. C., Jansen, T., Mané, B., & Shennan, C. (2021). Encouraging technology adoption using ICTs and farm trials in Senegal: Lessons for gender equity and scaled impact. *World Development*, *146*, 105620. https://doi.org/https://doi.org/10.1016/j.worlddev.2021.105620

7.7 Appendices

Appendix 1 Questionnaire

Introduction

My name is Memory Chikweve, a Master's student in Food Security and Sustainable Agriculture at Bindura University of Science Education, under the Faculty of Agriculture and Environmental Science. I am conducting a research study entitled "**THE IMPACT OF SOCIAL MEDIA MARKETING ON MARKET PARTICIPATION AND HOUSEHOLD FOOD SECURITY FOR TOMATO PRODUCING SMALLHOLDER FARMERS IN MAZOWE DISTRICT**." The purpose of this study is to assess how the use of social media platforms influences agricultural marketing and contributes to improving food security among smallholder farmers. Specifically, the study seeks to identify the types of social media platforms being used, factors influencing their adoption, gender differences in their use, and how social media marketing impacts household food security. You have been selected to participate in this study because your insights and experiences as a smallholder farmer are valuable in helping to understand how digital tools can strengthen agricultural marketing and food systems. Your participation is voluntary, and all responses will be treated with the strictest confidentiality. Information collected will be used solely for academic purposes and reported in aggregated form without identifying any individual respondent.

SECTION A: RESPONDENT & HOUSEHOLD CHARACTERISTICS (DEMOGRAPHICS)

A1. Respondent name (optional): _____

A2. Sex of respondent:

□ Male □ Female

A3. Age (years): _____

A4. Highest level of education:

□ No formal

□ Primary

□ Secondary

□ Vocational/Certificate

□ Tertiary

□ Other: _____

A5. Relationship to household head:

□ Head

□ Spouse

□ Child

□ Other: _____

A6. Household size (number of people living in household): ____

A7. Number of dependents (under 18): ____

A8. Main occupation of respondent:

□ Farming

□ Trading

□ Formal employment

□ Casual labour

□ Other: _____

A9. Main crops grown (tick up to 3):

□ Maize

□ Vegetables

□ Tobacco

□ Groundnuts

□ Beans

□ Tomatoes

□ Other: _____

A10. Do you belong to a farmer group/cooperative?

□ Yes □ No

If Yes, A10a: Name/type: _____ A10b: Role in group:

□ Member

□ Committee

□ Leader

SECTION B: FARM & PRODUCTION CHARACTERISTICS

B1. Size of land cultivated (approx. hectares): _____

B2. Type of farming:

□ Subsistence

□ Semi-commercial

□ Commercial

B3. Average annual production sold (estimate in kg or crates for tomatoes): _____ (specify crop) _____

B4. Main buyer types you sell to:

□ Local traders/market

□ Middlemen

□ Retailers

□ Consumers (direct)

□ Cooperatives

□ Processors

□ Other: _____

B5. Typical marketing channels used for tomatoes (tick all that apply):

□ Local market

□ Farmgate

□ Trader

□ Mobile phone call/SMS

□ Social media

□ E-marketplace

□ Other: _____

SECTION C: SOCIAL MEDIA USAGE & PLATFORMS

C1. Do you personally own a mobile phone?

□ Yes □ No

C2. If yes, phone type:

□ Basic phone

□ Feature phone

□ Smartphone

C3. Do you have internet access on your phone?

□ Yes □ No

C4. Do you have a social media account?

□ Yes □ No

C5. Which social media platforms do you use? (tick all)

□ WhatsApp
□ Facebook
□ Instagram
□ TikTok
□ Twitter/X
□ YouTube
□ Telegram
□ Other: _____

C6. For each platform tick frequency of use (Daily / Weekly / Monthly / Rarely / Never)

- WhatsApp: □ Daily □ Weekly □ Monthly □ Rarely □ Never
- Facebook: □ Daily □ Weekly □Monthly □ Rarely □ Never
- Instagram: □ Daily □ Weekly □Monthly □ Rarely □ Never

C7. Do you use social media to market agricultural produce?

□ Yes □ No

C8. What marketing activities do you do on social media? (tick all)

□ Post product photos
□ Share prices/availability
□ Receive buyer enquiries
□ Negotiate price
□ Arrange deliveries
□ Create product catalogues
□ Run paid ads
□ Accept orders/payments online
□ Other: _____

C9. How long have you used social media for marketing?

□ <6 months
□ 6–12 months
□ 1–2 years
□ >2 years

C10. On average, what proportion of your produce is sold via social media channels?

□ None
□ <10%
□ 10–25%
□ 26–50%
□ >50%

C11. If you do not use social media for marketing, why? (tick all)

□ No internet/device
□ High data cost

□ Lack of skills

□ Prefer local markets

□ Distrust online buyers

□ Other: _____

SECTION D: FACTORS INFLUENCING ADOPTION

Instruction: For each statement below, indicate your level of agreement: 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree.

Table: Factors Influencing Adoption of Social Media Platforms for Agricultural Marketing

Code	Statement	1	2	3	4	5
D1. Perceived Usefulness						
D1.1	Using social media helps me find buyers more easily.	□	□	□	□	□
D1.2	Using social media increases the prices I obtain for produce.	□	□	□	□	□
D1.3	Social media reduces time between harvest and sale.	□	□	□	□	□
D2. Perceived Ease of Use & Digital Skills						
D2.1	I find social media easy to use for marketing.	□	□	□	□	□
D2.2	I can create posts with photos and descriptions without help.	□	□	□	□	□
D2.3	I know how to use messaging features to negotiate with buyers.	□	□	□	□	□
D3. Infrastructure & Cost Factors						
D3.1	Internet/data bundles are affordable for me.	□	□	□	□	□
D3.2	Network connectivity in my area is reliable.	□	□	□	□	□
D3.3	I have access to a smartphone when I need it.	□	□	□	□	□
D4. Social, Institutional & Market Factors						
D4.1	My peers or group members encourage using social media.	□	□	□	□	□
D4.2	Extension officers or NGOs have trained me on digital marketing.	□	□	□	□	□

D4.3	I trust buyers contacted via social media.	□	□	□	□	□
D5. Risk & Security Concerns						
D5.1	I worry about fraud when selling through social media.	□	□	□	□	□
D5.2	Mobile money and payment options for online sales are available and reliable.	□	□	□	□	□

Open question D6: In your own words, what are the three main reasons you (do / do not) use social media for marketing?

1. _____
2. _____
3. _____

SECTION E: GENDER DIFFERENCES & DECISION-MAKING

E1. Who in your household usually owns the phone used for social media marketing?

□ Respondent
□ Spouse
□ Shared
□ Child
□ Other: _____

E2. Who decides how income from farm sales is used?

□ Respondent
□ Spouse
□ Joint decision
□ Other: _____

E3. Have women in your community used social media to sell produce?

□ Yes □ No □ Don't know

E4. In your view, who benefits more from social media marketing in the household?

□ Men

□ Women

□ Both equally

□ Depends — explain: _____

E5. Does the respondent face any gender-specific constraints in using social media? (tick)

□ Time constraints (domestic work)
□ Limited device access
□ Harassment online
□ Lack of training
□ Cultural restrictions
□ Other: _____

E6. Please indicate (for respondent) the number of hours per week spent on social media for marketing: _____

E7. Compare access: Who in the household has more frequent access to the internet/social media?

□ Male □ Female □ Equal

Open question E8: If the respondent is female: What would help you use social media more effectively? (training, device, credit, group support, privacy measures?)

_____

SECTION F: MARKET PARTICIPATION & OUTCOMES

F1. Since you began using social media for marketing (or in the last 12 months if non-user), how has the following changed? (Improved / No change / Worsened)

- Volume of sales: □ Improved □ No change □ Worsened
- Number of buyers: □ Improved □ No change □ Worsened
- Prices received: □ Improved □ No change □ Worsened
- Frequency of sales: □ Improved □ No change □ Worsened

F2. In the last 12 months, estimate the % change in your average monthly income from farm produce due to social media marketing:

□ Decrease >10%
□ No change
□ Increase 1–20%
□ Increase 21–50%
□ Increase >50%
□ Don't know

F3. Do you use social media to access non-local or urban buyers?

□ Yes □ No

If Yes: F3a. How often do you get orders from urban buyers through social media?

□ Often
□ Sometimes
□ Rarely

F4. Do you use social media to coordinate group or bulk sales?

□ Yes □ No

If Yes: F4a. Has this reduced transaction costs?

□ Yes □ No □ Not sure

F5. Have you experienced any reduction in post-harvest losses because of social media (faster sales / pre-orders)?

□ Yes □ No

If Yes, give example: _____

Open question F6: Give one or two specific examples where social media helped you sell produce or avoid losses. _____

SECTION G: HOUSEHOLD FOOD SECURITY

Part 1 – Household Food Insecurity Access Scale (HFIAS) – last 30 days

For each question, circle the frequency: 0=Never, 1=Rarely (1–2 times), 2=Sometimes (3–10 times), 3=Often (>10 times).

Code	Question	0 = Never	1 = Rarely (1–2 times)	2 = Sometimes (3–10 times)	3 = Often (>10 times)
G1	In the past 30 days, did you worry that your household would not have enough food?	□	□	□	□
G2	In the past 30 days, were you or any household member unable to eat preferred foods due to lack of resources?	□	□	□	□
G3	In the past 30 days, did you or any household member eat a limited variety of foods?	□	□	□	□
G4	In the past 30 days, did you or any household member eat foods that you preferred not to eat because of lack of resources?	□	□	□	□

G5	In the past 30 days, did you or any household member eat smaller meals than needed?	□	□	□	□
G6	In the past 30 days, did you or any household member skip meals?	□	□	□	□
G7	In the past 30 days, did you or any household member have no food of any kind in the household?	□	□	□	□
G8	In the past 30 days, did you or any household member go to sleep hungry?	□	□	□	□
G9	In the past 30 days, did you or any household member go a whole day and night without eating?	□	□	□	□

Part 2 – Household Dietary Diversity Score (HDDS) – last 7 days

HDS: Indicate whether household consumed the following groups in past 7 days (Yes/No). Sum Yes = HDDS (0–12)

G10. Cereals & grains □ Yes □ No

G11. Roots & tubers □ Yes □ No

G12. Vegetables □ Yes □ No

G13. Fruits □ Yes □ No

G14. Meat/poultry □ Yes □ No

G15. Eggs □ Yes □ No

G16. Fish □ Yes □ No

G17. Legumes/nuts □ Yes □ No

G18. Dairy products □ Yes □ No

G19. Oils/fats □ Yes □ No

G20. Sweets/sugary foods □ Yes □ No

G21. Condiments/beverages □ Yes □ No

SECTION H: CHALLENGES, SUPPORT & RECOMMENDATIONS (mix qualitative & ratings)

H1. What are the main challenges you face when using social media for marketing? (open)

_____

H2. Rate the following support services in terms of how helpful they would be to improve your social media marketing (1=Not helpful … 5=Very helpful):

Support Service	**1 = Not Helpful**	**2=Less Helpful**	**3 =Neutral**	**4=Helpful**	**5 = Very Helpful**
Affordable data bundles	□	□	□	□	□
Smartphone/device provision	□	□	□	□	□
Digital marketing training	□	□	□	□	□
Access to mobile money / payment systems	□	□	□	□	□
Market linkages / aggregator support	□	□	□	□	□

H3. What recommendations would you give to local authorities/NGOs to help farmers use social media better? (open) _____