

P.O. Box 236, Tororo, Uganda Gen: +256 - 45 444 8838 Fax: +256 - 45 4436517 Email: info@adm.busitema.ac.ug www.busitema.ac.ug

## FACULTY OF AGRICULTURE AND ANIMAL SCIENCES DEPARTMENT OF AGRIBUSINESS AND EXTENSION

# DETERMINANTS OF CHOICE OF MARKETING CHANNEL AMONG TOMATO SMALL HOLDER FARMERS IN BUNGOKHO SUBCOUNTY, MBALE DISTRICT.

BY

AKERA PASIS OUMA BU/UP/2021/0202 Email: akerapasisouma@gmail.com TEL: 0789356812

### SUPERVISOR: MR. APPELI SAIDI

A SPECIAL PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF AGRIBUSINESS AND EXTENSION IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF BACHELOR OF AGRIBUSINESS OF BUSITEMA UNIVERSITY

OCTOBER, 2024

## DECLARATION

This is my original work and has not been submitted for the award of a degree in any other University.

i

Signature

Date 19111012024

AKERA PASIS OUMA.

#### APPROVAL

This Special Project Work has been presented to the Department of Agribusiness and Extension with approval of the University supervisor.

#### **DEDICATION**

I dedicate this work to my family for their unconditional love, inspiration, encouragement and unending support thought out my academic journey.

#### **ACKNOWLEDGEMENTS**

Firstly, I thank the Almighty God for the preservation and sustainability upon my life and having enabled me complete all my semesters.

Secondly, I would like to extent my sincere appreciation to my family especially my father Mr. Ouma Richard and mother Ms. Lamunu Margret for their continued support throughout my entire journey of Education.

Thirdly, my appreciation goes to my University Supervisor Mr. Appeli Saidi and Ms. Namudu Sharon for their guidance and encouragement throughout the course of conducting this study. I also thank my fellow classmates for the motivation and moral support.

Lastly, I would like to extend my gratitude to the Agricultural Production Officer of Bungokho Sub- County Mbale district Madam Rose for her assistance and to the interviewed farmers for sharing their experiences and practices; your input into this study made it a success.

### TABLE OF CONTENTS

DECLARATION	i
APPROVAL	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF APPENDICES	ix
LIST OF ABBREVIATIONS AND ACRONYMS	x
ABSTRACT	xi
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the study	1
1.2 Statement of the problem	2
1.3 Objectives of the study	2
1.3.1General objective	2
1.3.2 Specific objectives	2
1.4 Research questions	3
1.5 Significance	3
1.6 Justification	3
1.7 Scope	4
1.8 Limitations of the study	4
CHAPTER TWO: LITERATURE REVIEW	5
2.1 Origin of Tomatoes	5
2.2 Global production of tomatoes	5
2.3Tomato production in the sub-Saharan Africa	5
2.4 Tomato production in Uganda	6
2.5 Tomato Marketing Channels	6
2.2 Determinants of choice marketing channels	8
2.4 Summary of reviewed literature	9
CHAPTER THREE: METHODOLOGY	
3.1 Study Area	
3.2 Research design	
3.3 Study population	
3.4 Sample size and Sample techniques	

3.4.1 Sample size	10
3.4.2 Sampling techniques	11
3.5 Data collection methods and data collection tool	11
3.5.1 Data collection methods	11
3.5.2 Data collection tool	11
3.6 Data Analysis	11
3.7 Ethical considerations in this study	12
CHAPTER FOUR: PRESENTATION AND DISCUSSION OF RESULTS	13
4.0 Introduction	13
4.1 Types of marketing channels considered in this study	13
4.2 Distribution of the characteristics of the respondents	14
4.3 Determinants of choice of marketing channel	18
4.4 Barriers and opportunities available when using different marketing channels	21
4.5 Barriers available when using the different marketing channels	21
4.6 Discussion of results	22
CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATION	24
5.1 Conclusion	24
5.2 Recommendations	24
REFERENCES	25
APPENDICES	29

### LIST OF TABLES

Table 4.1. Characteristics of participants	15
Table 4.2: Results of multinomial logistic model for factors associated with choice of	
marketing channels	19
Table 4.3: Opportunities available when using the different marketing channels	21
Table 4.4: Barriers involved when using the different marketing channels	22

### LIST OF FIGURES

Figure 1: Conceptual framework underlying this study	9
Figure 2: A clustered bar graph showing the different types of marketing channels	13

### LIST OF APPENDICES

Appendix I: Research Questionnaire	.29
Appendix II: Map of Bungokho Sub- County	.33

### LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
BAB	Bachelor of Agribusiness
FAO Kg	Food and Agriculture Organization Kilograms
Km	Kilometers
MNL	Multinomial Logit
Mr	Mister
SPSS	Statistical Package for Social scientist
SSA	Sub-Saharan Africa

#### ABSTRACT

Marketing channel choices play an important role to the incomes and livelihood attributes among the small holder farmers in developing countries such as Uganda. However, recent evidence indicates that the sales of agricultural products such as tomatoes have declined over the last three years which could for be attributed to the choice of marketing channel. Therefore, this study sought to examine the factors associated with the choice of marketing channels among tomato smallholder farmers in Bungokho sub-county Mbale district.

This was cross-sectional research design study that utilized primary data. A structured questionnaire was used to collect qualitative and quantitative data from 149 tomato small holder farmers. A Multinomial logistic regression model was used.

Of the 149 farmers, 52.35% sold their tomatoes to wholesalers, 26.85% to retailers and 20.81% sold to individual consumers. The results further indicated that the divorced compared to the single farmers were less likely to sell their tomatoes to wholesalers rather than to retailers. Those with larger farm sizes had higher likelihood of selling to wholesalers rather than to retailers. Farmers belonging to association have higher likelihood of selling their tomatoes to wholesalers, and individual consumers rather than to retailers. Lastly, farmers who transport their tomatoes to market by foot are more likely to sell to individual consumers rather than retailers compared to their counter parts that use bicycle, whereas those that use motorcycle are less likely to sell to individual consumers rather than retailers compared to those that use bicycle. The main opportunities enjoyed by the tomato smallholder farmers in Bungokho Mbale district were higher profit margins, increased sales volume, time saving and paying immediately. The main barriers faced by the tomato small holder farmers in Bungokho sub county Mbale district were high transport costs, price fluctuations, difficulty in assessing marketing information, lack of storage facilities and lack of bargaining power.

This study highlights that the determinant of choice of marketing channel among tomato smallholder farmers in Bungokho sub county, Mbale district is mainly driven by both sociodemographic and infrastructure/ farm related factors, therefore interventions directed towards improving and optimizing tomato marketing channels by the Ugandan government and other key stakeholders should consider these differentials. It is crucial to address main barriers faced by the tomato small holder farmers in Bungokho sub county Mbale district. Future studies on this subject should examine the profitability of these marketing channels.

xi

#### **CHAPTER ONE: INTRODUCTION**

#### 1.1 Background to the study

Tomato (Solanum lycopersicum L.) is one of the most widely cultivated and extensively consumed horticultural crops globally with the estimated annual production of 182 million tons from 4.8 million hectare(Causse et al., 2010). The crop is believed to have originated from the wild in Peru, Ecuador, and other parts of tropical Americas(Medina *et al.*, 2017). According to Frusciante *et al.*, 2007,the nutritional and economic importance of the crop has led to its global production and it's also a reliable source of food security and employment.

The sub-Saharan Africa (SSA) produces 21 million tons from 1.3 million hectares (Gabriel, 2021). In EastAfrica, 1.9 million tons of tomato are produced annually with Tanzania and Kenya leading as producers followed by Uganda (Gabriel, 2021). The crop is significant in human diets in account of its naturally enriched vitamins and minerals nutrient sources (Fredrick, 2020) and it is mainly grown by small holder farmers who sell fresh fruits in regional and domestic markets in their localities to generate income (Gabriel, 2021).

In Uganda, 40,124 tons of tomatoes are produced from 6,671 hectares (Tiwari et al., 2020). Tomato is consumed by 3 million households in their most meals due to its fruit nutritional value. It can be processed and combined in many different dishes and eaten in different ways, such as tinned paste, fresh vegetable, tomato juice, sauce or soup(Ajibare et al., 2022). Tomato is also known for its nutritive value ;it is rich in vitamin C and contains lycopene, a very vital antioxidant which prevents cancer(Dorais et al., 2008). The tomato demand increase in regional markets like South Sudan and Rwanda is also responsible for increasing demand in regional level. This has caused a shortage of tomato in the domestic market. However, in the recent past, the short supply in tomato with in the domestic market has provided an opportunity for small holder farmers to engage in tomato farming, which has led to 14.8% increase in production(Sinesio et al., 2021). This increase is made possible by the numerous research advances made along the entire value chain.

Marketing channel refers to an institutional arrangement through which goods and services are exchanged (Mutura et al., 2016). Early research on marketing channels is derived predominantly from work in economics which views channels of distribution as flows of goods and services (Watson et al., 2015). There is an increasing participation of smallholder farmers in the production of agricultural products including tomato production as well as in markets which is dynamically linked to the economic and poverty reduction in the rural areas (Haile et

#### REFERENCES

- Ajibare, D. B., Anthony, L., Alabi, O. O., Njoku, V. O., Ukaoha, C. A., & Oluleye, O. D. (2022). Resource Use Efficiency and Profitability Analysis of Tomato Production (Lycopersicum Esculetum Species) in Federal Capital Territory, Nigeria. *European Journal of Agriculture and Food Sciences*, 4(5), 75–82. https://doi.org/10.24018/ejfood.2022.4.5.539
- Akinbola, A. E., Borokini, E. A., Ijigbade, J. O., & Ilesanmi, J. O. (2023). Economic
  Analysis of Tomato (Solanum lycopersicum) Marketing in Ondo State, Nigeria. In *Asian Journal of Agricultural and Horticultural Research* (Vol. 10, Issue 4).
  https://doi.org/10.9734/ajahr/2023/v10i4280
- Atuhaire, A., Kaye, E., Mutambuze, I. L., Matthews, G., Friedrich, T., & Jørs, E. (2017). Assessment of Dithiocarbamate Residues on Tomatoes Conventionally Grown in Uganda and the Effect of Simple Washing to Reduce Exposure Risk to Consumers. https://doi.org/10.1177/1178630217712218
- Branthôme, F.-X. (2020). Global Consumption of Tomato Products 2018 / 2019 Edition Written by Françis-Xavier Branthôme (Editor, Tomato News) with funding from WPTC. January.
- Candemir, A., Duvaleix, S., & Latruffe, L. (2021). Agricultural Cooperatives and Farm Sustainability – a Literature Review. *Journal of Economic Surveys*, 35(4), 1118–1144. https://doi.org/10.1111/joes.12417
- Causse, M., Friguet, C., Coiret, C., LéPicier, M., Navez, B., Lee, M., Holthuysen, N., Sinesio, F., Moneta, E., & Grandillo, S. (2010). Consumer Preferences for Fresh Tomato at the European Scale: A Common Segmentation on Taste and Firmness. *Journal of Food Science*, 75(9), 1–25. https://doi.org/10.1111/j.1750-3841.2010.01841.x
- Ddamulira, G., Isaac, O., Kiryowa, M., Akullo, R., Ajero, M., Logoose, M., Otim, A., Masika, F., Mundingotto, J., Matovu, M., & Ramathani, I. (2021). Practices And Constraints Of Tomato Production Among Smallholder Farmers In Uganda. *African Journal of Food, Agriculture, Nutrition and Development*, 21(2), 17560–17580. https://doi.org/10.18697/ajfand.97.19905
- Dibb, S. (2020). Marketing Channels. *Marketing Briefs: A Revision and Study Guide*, 2014(1019), 147–151. https://doi.org/10.4324/9780080511085-35
- Dijkxhoorn, Y., van Galen, M., Barungi, J., Okiira, J., Gema, J., & Janssen, V. (2019). The Uganda vegetables and fruit sector. In *Wageningen Economic Research*.

- Dorais, M., Ehret, Æ. D. L., & Papadopoulos, Æ. A. P. (2008). *Tomato ( Solanum lycopersicum ) health components : from the seed to the consumer*. 231–250. https://doi.org/10.1007/s11101-007-9085-x
- Elijah, Y. I. Z. A. N. G. (2021). the Impact of Road Transport on Tomato Production and Marketing in Nigeria. *Journal of Nigeria Transport History (JNTH)*, *1*(July), 1–8.
- Fredrick, O. (2020). Factors Influencing Marketing of Vegetables Among Small Holder Farmers : a Study of Tomato.
- Frusciante, L., Carli, P., Ercolano, M. R., Pernice, R., & Matteo, A. Di. (2007). Antioxidant nutritional quality of tomato Research Article Antioxidant nutritional quality of tomato. May. https://doi.org/10.1002/mnfr.200600158
- Gabriel, D. (2021). PRACTICES AND CONSTRAINTS OF TOMATO PRODUCTION. 21(2), 17560–17580.
- Gastélum-Barrios, A., Bórquez-López, R. A., Rico-García, E., & Soto-Zarazúa, G. M. (2011). Tomato quality evaluation with image processing : A review. *African Journal of Agricultural Research*, 6(14), 3333–3339. https://doi.org/10.5897/AJAR11.108
- Haile, K., Gebre, E., & Workye, A. (2022). Determinants of market participation among smallholder farmers in Southwest Ethiopia: double-hurdle model approach. *Agriculture* and Food Security, 11(1), 1–13. https://doi.org/10.1186/s40066-022-00358-5
- Hardesty, S. D., & Leff, P. (2010). Determining marketing costs and returns in alternative marketing channels. *Renewable Agriculture and Food Systems*, 25(1), 24–34. https://doi.org/10.1017/S1742170509990196
- Issah, G., Ayambila, S. N., & Sedem Ehiakpor, D. (2022). Determinants of Choice of Marketing Channels Among Smallholder Irrigated Tomato Farmers in the Kassena-Nankana Municipality of Ghana. 6(2). www.ijirad.org
- Katja Lovrakovic. (2020). Digital Marketing: Developing a Customer Acquisition Strategy for a B2C Start-up Company. August, 53.
- Kawala, M., Hyuha, T. S., William, E., Walekwa, P., Elepu, G., & Kalumba, S. C. (2018).
  Determinants for Choice of Fish Market Channels: The Case of Busia (Uganda/Kenya)
  Border. *Journal of Agricultural Science*, *10*(8), 118.
  https://doi.org/10.5539/jas.v10n8p118
- Mamo, T., Haji, J., Bekele, A., Teklewold, T., Berg, S., Moore, H. L., & Hodge, C. (2021). Determinants of milk marketing channel selection by urban and peri-urban commercial dairy producers in Ethiopia. *Ethiopian Journal of Agricultural Sciences*, 31(3).

Medina, T., Gabriela, S., Figueroa, A., Gustavo, J., & Cauih, D. (2017). Origin and evolution

of tomato production Lycopersicon esculentum in México.

- Mercy, A. (2018). marketing channel levels and sales performance in the agribusiness industry in uganda: a case study of uhuru fruit juice company a dissertation submitted to the school of business administration, in partial fulfillment of the requirements for the award of the degree of master of business administration of nkumba university.
- Mutura, J. K., Nyairo, N., Mwangi, M., Wambugu, S. K., K.Mutura, J., Nyairo, N., Mwangi, M., & Wambugu, S. K. (2016). Analysis of Determinants of Market Channel Choice among Smallholder Dairy Farmers in Lower Central Kenya. *International Journal of Agricultural and Food Research [IJAFR]*, 5(1), 1–13.
- Mwangi, T. M. (2023). Analysis of Tomato Market Diversity among Rural Smallholder Farmers in Kirinyaga County, Kenya. Open Access Journal of Agricultural Research, 8(4), 1–14. https://doi.org/10.23880/oajar-16000324

Ntale, T. (2016). effect of marketing channels on the sales performance of monitor publications limited, uganda by timothy ntale reg. no: may 15 / emba / 0508u supervisor dr. dan ayebale a proposal submitted in partial fulfillment of the requirements for the award of a. 1–41.

https://utamu.ac.ug/docs/research/studentresearch/masters/proposals/effect of marketing channels on the sales performance of monitor publications limited.pdf

- Nwafor, C. U. (2020). The market channel preference among smallholder cocoyam farmers in South Africa: A food security perspective. March, 1–23. https://doi.org/10.20944/preprints202003.0062.v1
- Openjuru, G. L., & Ph, D. (2019). the Cost Burden of Bacterial Wilt Disease in Tomato Production in Central and Western Uganda. June, 540009.
- Scott, G. J., Rosegrant, M. W., & Ringler, C. (2000). Global projections for root and tuber crops to the year 2020. In *Food Policy* (Vol. 25, Issue 5). https://doi.org/10.1016/S0306-9192(99)00087-1
- Shahrokh Esfahani, M., & Dougherty, E. R. (2014). Effect of separate sampling on classification accuracy. *Bioinformatics*, 30(2), 242–250. https://doi.org/10.1093/bioinformatics/btt662
- Sinesio, F., Cammareri, M., Cottet, V., Fontanet, L., Jost, M., Moneta, E., Palombieri, S.,
  Peparaio, M., Romero, R., Civitelli, E. S., Spigno, P., Vitiello, A., Navez, B., Casals, J.,
  Causse, M., Granell, A., & Grandillo, S. (2021). Sensory Traits and Consumer 's
  Perceived Quality of Traditional and Modern Fresh Market Tomato Varieties : A Study
  in Three European Countries.

- Taher, M. A., MennatAllah, E. A., Tadros, L. K., & Sanad, M. I. (2020). The effects of new formulations based on Gum Arabic on antioxidant capacity of tomato (Solanum lycopersicum L.) fruit during storage. *Journal of Food Measurement and Characterization*, 14(5), 2489–2502. https://doi.org/10.1007/s11694-020-00496-z
- Tiwari, I., Shah, K. K., Tripathi, S., Modi, B., & Shrestha, J. (2020). Post-harvest practices and loss assessment in tomato (Solanum lycopersicum L.) in Kathmandu, Nepal. 3, 335–352.
- Watson, G. F., Worm, S., Palmatier, R. W., & Ganesan, S. (2015). The Evolution of Marketing Channels: Trends and Research Directions. *Journal of Retailing*, 91(4), 546– 568. https://doi.org/10.1016/j.jretai.2015.04.002
- Xaba, B. G., & Masuku, M. B. (2012). Factors Affecting the Choice of Marketing Channel by Vegetable Farmers in Swaziland. *Sustainable Agriculture Research*, 2(1), 112. https://doi.org/10.5539/sar.v2n1p112