EXTERNAL EXAMINER'S REPORT

External Thesis examination report for M. SC. thesis entitled: "Analysis of Sorghum Market Chain in Isiolo County, Kenya"

General remarks: The thesis meets minimum requirements for approval. However, there are errors in the thesis which must be corrected as pointed out in the thesis and in this report. This thesis is brief with 16920 words. What is the minimum requirement?

PAGE ix-x- Abstract: The abstract lacks Target population and Research design.

CHAPTER ONE

- ✓ This chapter is written fairly with current literature on the subject.

- ✓ The thesis can be improved by having a short chapter overview followed by a section on Agricultural sector in in Kenya (contribution , challenges and strategies) before transiting to sorghum production and consumption trends which should clearly indicate scenarios at global , regional/African and Kenyan arena.

- ✓ The problem statement should show the research gap

- ✓ Use spell check and grammar function to improve the thesis

- ✓ Can the author devote a paragraph or two to highlight sorghum production and consumption trends in Isiolo

- ✓ General objective is not well stated; it should be a restatement of the title.

CHAPTER TWO

- ✓ This chapter is generally well done except for sequencing which can be improved starting with Theoretical literature followed by conceptual literature and finally end with empirical studies on the topic.

- ✓ Section 2.1 on sorghum production and marketing should be taken to chapter 1
- ✓ Review models used in past studies and give reasons for choosing the on employed in this study.
- ✓ Figure 2.2 on page 20 gives the conceptual framework. It should be refined. The current conceptual framework is not correct. The DV and IVs are not clear. Furthermore there are many panels not related to study objectives.
- ✓

CHAPTER THREE

- ✓ This chapter is generally well written.
- ✓ Exploratory research design was employed. This is not correct description of the research undertaken.
- ✓ What is the target population in this study?
- ✓ How many famers and traders were sampled?
- ✓ How was sampling done?
- ✓ Which tools were used to study market conduct, where are the results in the thesis?
- ✓ Formulae on page 26 and 27 should be numbered and sources indicated.
- ✓ Equations on page 28 and 29 should be numbered and sources cited
- ✓ Multinomial logit model described is not specified in te thesis. This is a serious omission.
- ✓ This chapter should be beefed up to exhaust relevant matters such as gross margin analysis, measurement of variables, expected signs.

CHAPTER 4

- ✓ **Only age, gender and education were reported under descriptive statistics. Where are the other variables?**

- ✓ Is it correct to say that men produce sorghum while women market it? Results on market structure conduct and performance are given in 4.3 on page 35. Discuss your results please. How much sorghum was produced and sold in Isiolo? What do your results show?

- ✓ **The table 4.3 is not correctly done. How were the figures herein arrived at? How many wholesalers were sampled? Why not use measures of central tendency in reporting this aspect?**

- ✓ **Correct computation should be done for retailers. Compute GM for each trader and use measures of central tendency to present results.**

- ✓ Table 4.4 is not correctly done. Questionnaire used lacks cost items and losses reported in this table. Did the author generate results?

- ✓ Table 4.5 on Producer's GM is totally wrong. What is the unit of analysis? What is the lowest GM, what is the mean GM, what is the TVC? THE APPROACH USED IN COMPUTING GM IS WRONG.

- ✓ MARKET conduct is not discussed appropriately since no meaningful assessment was carried out on this aspect in this study. Kindly expunge it from the thesis.

- ✓ Determinants of producer and trader supply are given in two tables all labeled table 4.11. The candidate should interpret all significant results and rigorously discuss their significance highlighting similarities or differences with past studies. Avoid overgeneralization. Value added by these regressions is low. The usual determinants of agricultural supply were ignored.

- ✓ Section 4.10 is on MNL results. If the model was not correctly specified what follows in form of results is not acceptable.

CHAPTER 5-

- ✓ This chapter should provide summary of study findings, conclusions and recommendations.

- ✓ It should be re-written in line with study objectives and findings.

- ✓ This chapter should be rewritten elegantly to reflect corrections required as pointed above.

CONCLUSION: I recommend that the thesis be approved subject to the corrections pointed out.

INTERNAL EXAMINER'S REPORT 1

RE: EXTERNAL EXAMINATION FOR MSC THESIS: "ANALYSIS OF SORGHUM MARKET CHAIN IN ISIOLO COUNTY, KENYA" – MTH-058-2023

Title of the thesis:

Observation: Ok

Recommendation: Retain as it is.

Preliminaries

- **Declaration:** Check for the correct rubrics how can you be **swearing**? To whom are you swearing? There are standard rubrics. Please ensure you use the correct rubrics that are provided in thesis development guidelines for SAED/SAES
  - **Recommendation:** Amend with the provided correct rubrics
- **Dedication:** Remove the word genuine support. Is there support that is not genuine?

- **Acknowledgement:** requires a lot of rephrasing for example, "First and foremost, I thank the almighty God for providing me with the gift of life and the opportunity to further my education at Kenyatta University. For granting me a bursarship so I may complete my master's in agribusiness management and their unwavering support throughout my studies, I am indebted to my sponsor Kenya Climate Smart Agriculture Project (KCSAP). **Very confusing kindly rephrase or look for an English editor. Please refer to the thesis for more typos and grammar.**

- **Table of content:** Ok
- **List of Figures:** Ok
- **List of Tables:** Please label tables appropriately for example Table 4.2.: Gender of sorghum producers in Isiolo County. Please label the tables appropriately.
- **List of Abbreviations:** Ok
- **Operational definitions of terms:** some of the terms are inappropriately defined and not communicating to the reader for example:
  - **"Market efficiency** – refers to the goal of increasing the input-output ratio. What is the input/output in a marketing function? Please check other suggestions in the thesis.

- **Small-scale farmers** are those whose operations are not big enough to fascinate all the services they require to boost productivity significantly. Farmers practicing on less than 2 acres. Why should they fascinate? Depends on the physical location for example, in Kiambu two acres is a lot of land.

Abstract:

- The abstract is poorly written- Inadequate results have been presented.
- The problem/change theory is not clearly articulated in this section
- What is the research problem? Is it localized to Isiolo County?
- The abstract should contain the following;
- ✓ Background to the problem.
- ✓ Change theory
- ✓ Justification.
- ✓ Objectives.
- ✓ Methods.
- ✓ Results.
- ✓ Conclusion
- ✓ Policy implication
- ✓ The recommendations are far-fetched and weak to drive any policy agenda. You have a very sweeping recommendations that appears not to be from your research. For example, "Furthermore, in order to lessen the likelihood of a closed and uncompetitive market, the government must put in place an institutional structure to control sorghum contracts and assist market participants in contractual arrangements. Haven't see results about contractual marketing in your study?
- ✓ The abstract is usually one page and should bring out the outlined contents above
- ✓ Please refer to your thesis for additional comments and suggestions.
- Recommendations should emanate from your research findings and not general/ political knowledge

Chapter One: Introduction

- The knowledge gap/ change theory is not clearly brought out in this section but rather the candidate has spent the entire introductory part discussing the physical problem of challenges

facing Sorghum production and marketing in Isiolo County. This begs the question what is the research problem that this study aimed to fill. Knowledge gap not clearly articulated.

o There are several works cited that have no connection to the current research. For example, "Progressively it is becoming a part of the foundation of successful food and beverage enterprises (Floros *et al.*, 2010). But their study did not focus on sorghum this is misleading. How relevant is this study to you current work? Additionally, the sentence is hanging because of lack of connector.

o What is the research problem that this studied aimed to solve?

o What is known? What is not known?

o This section does not explicitly introduce the research problem that the researcher aimed to address.

o Most of the references in the text are not cited in the bibliography please check. Please consider using Mendeley or any other reference management system to avoid such serious omissions. For example, (Ochieng *et al.*, 2011). (Mwangi *et al.*, 2009) on page 2 among several others that I have highlighted in the thesis.

o There are quite a number of very long sentences that do not communicate to the reader. For example, "A number of initiatives, including the Kenya Climate Smart Agriculture Project (KCSAP) and organizations like the International Fund for Agricultural Development (IFAD), have taken lead on orphan crop promotions in ASALs to **encourage the growth of crops** like sorghum, among others, in acknowledging the role they take part in foods' security" on page 2. Very long sentence which does not seem to add any value to your study. Please expunge or rephrase. How can NGOs encourage growth of crops maybe growing and not growth? Recommended that you look for an English editor to edit your thesis because it is depressing to a reader.

o There are several redundant statements that I have proposed to be deleted because they don't add value to the current study.

o There is a clear lack of connectivity of sentences and paragraphs in this section for example, page 2 Para" 1 & 2 lacks connection. The candidate needs to paraphrase.

o Please follow the funnel approach in introducing your research problem i.e. start global- SSA-Kenya- and localize the problem/situation in Isiolo County. In the current state there is lack of flow with several repetitions that mixes up the reader back and forth.

- The referencing style is not appropriate and inconsistent for example Mwadalu et al., 2013 should be cited as Mwadalu and Mwangi, 2013 since they are only two authors. Only use et al when there are more than two authors. Check the rest of the document and stick to that referencing.
- There are several redundant statements that I have proposed to be deleted because they don't add value to the current study.
- Please refer to the thesis for additional comments and suggestions.

Statement of the problem

- No citations required here it's the statement of the problem and should remain so any other thing needs to be relocated to introductory section. For example, sentence 1 para 1 "Efficient coordination of economic transactions is greatly facilitated by agricultural markets (Edwards *et al.*, 2006). So what?
- Quite a number of very long sentences that are not communicating- see the thesis.
- The knowledge gap is not clearly articulated- what the research problem? Is it low productivity or lack of markets for Sorghum? There are quite a number of contradictory statements that confuses a reader for example the author says there is ready market for Sorghum by EABL and farmers are not able to meet the demand and at some point says farmers are lacking market for their Sorghum.
- This is the nerve-centre of any research work, which should be adequately comprehended by the researcher at the onset.
- The problem must be clearly and conspicuously stated in just **one paragraph**.
- It should be clearly focused, without unnecessary preambles and ambiguity. For example, what is the research problem? It is not clear much efforts spend describing the physical problem albeit with much contradictions for example if there are cheaper and easily available alternatives to sorghum for processing why promote it remember farmers' and traders are rational
- Please refer to the thesis for additional comments.

Recommendation:

- The problem needs to be recasted, without unnecessary preambles and ambiguity.
- Its needs to be shortened in to half a page at most and citations removed.

○ It should clearly bring out the research problem/ change theory and limit the discussion of the physical problem of challenges facing Sorghum production and marketing.

Research Objectives

○ The overall objective is ambiguous, "*The overall goal of this study was to examine sorghum market chain as a commodity in Isiolo County*". How do you examine market chain as a commodity? what do you want to find out should be the basis

○ The objectives looks like working steps i.e. "To establish the determinants of marketing channels choice and selection among smallholder sorghum farmers in Isiolo County" --------- the question is so what? What does it aim to achieve?

○ There are not objectives but working steps that does not say much of what the author really needs to do

○ Methodology for each objective not clearly documented.

○ Kindly state them in SMART way.

Research Questions

○ In their current state they are SMART unless the objectives are clearly restated for example, "How is the sorghum commodity market in Isiolo County structured, run, and performing?. The question is running where??

Justification of the study

○ This section needs to address the importance of this study and to whom are the outcomes addressed to. Who needs such a study?

○ This section is very lengthy need to be refocused.

○ If this study was not carried out for example what would happen to Pigeon pea production among smallholder farmers in Machakos? Would it worsen or improve? Who need such a study? These are some of the arguments that should drive this section.

○ The candidate should prove that the research findings would be beneficial to the targeted consumers besides making a contribution to the existing knowledge.

○ The section is very lengthy and written with emotions buttressing the physical problem to low Pigeon pea production.

o The main change theory here is that if this study was not carried out what would happen or not happen to marketing of sorghum Isiolo County? How will farmers and traders benefit from this study?

o What is novel about your study and how can it be used to influence policy?

o Research being expensive in both in terms of money and time, it is imperative that its relevance is established at the onset in order to save the researcher unnecessary expenses.

o One should prove that the research findings would be beneficial to the targeted consumers besides making a contribution to the existing knowledge.

Scope of the study

o This is a review of the extent the research has taken. It is pegged on the geographical and intellectual area of study, the time taken, the resources used and the research design.

o It justifies what, when and why the work was done as expressed.

o It portrays the established results under the given circumstances.

o The candidate needs to re-write this section to capture the three (3) points above

Chapter 2: Literature Review

o There is widespread use of very old and irrelevant literature in this section. There are more recent and robust studies on the subject which can buttress this section. The literature has just been merely presented to the reader without providing a critique.

o Most of the sections 2.1-2.4 should be relocated to the introduction or methodology section.

o This section should provide a critical analysis of the selected works that reveals what has already been researched on exhaustively and the missing links that need to be filled through further research. It should provide background information, which jump-starts the research exercise.

o The review should clearly follow the objectives of the study for example what others have done around the objectives, which methods they use etc.

o There are several works cited that have no connection to the current research. Please refer to the thesis.

o Most of the references in the text are not cited in the bibliography please check. Please consider using Mendeley or any other reference management system to avoid such serious

omissions. For example, on page 12 (Lundy *et al.*, 2008) and Tung et al. 2010 among several others indicated in the thesis have not been referenced.

- In section 2.1-2.4 the author repeats what he/she has written in Chapter one which does not add value to the section. For example, "Sorghum in Kenya is a crucial crop both as an income generating crop for households and security. It is mainly grown by small-scale farmers, who commit less than 2 Ha to the production" This has been said over and over in the previous section. Please refer to the thesis for additional suggestions and expunge unnecessary repetitions.

- Figure 2.1 on page 14 does not communicating any message please expunge. What is the relationship? What leads to what? Does structure leads to conduct or vice-versa. The paradigm is not clear.

- The conceptual framework section should emanate from theories that exist on tackling a given research problem.

- In establishing a suitable theoretical/ conceptual framework, you should consider both outdated and modern theories, reveal the merits, demerits and limitations of each.

- The researcher should then choose either one whole already established framework, or a modification of one or several frameworks for solving the research problem at hand.

- The choice of the framework should be convincingly justified. A clear mental plan or contemplation on how to steer the work and should be shown here. How are the variables related in your current study the variables depicted in the adopted framework have not been utilized in your analysis.

- This section is important because it relates and co-ordinates the literature review, the problem, the significance of the study and the objectives to the applied methodology.

- The section should always come after literature review

- Figure 2.2 relates remotely what it is meant to address, you need to show the relationships between variables.

- A conclusion is not reached on the weaknesses of the literature visited which would have clearly brought out the gaps in knowledge that the study envisaged to address. No knowledge gap is brought out by the author in this section.

- **Overall**: The candidate need to rework on this section with a clear focus that; It is a critical analysis of the selected works that reveals what has already been researched on exhaustively and the missing links that need to be filled through further research. It would help the student to carry out literature review as per the objectives otherwise they are swamped up.

Chapter 3: Research Methodology

- The selection of Sorghum and the study area are not clearly justified for example, "*This study was conducted in Isiolo County. Sorghum has been selected as one of the most important marketable farms produces here*". This begs the question on what basis? This has to be very clear from the on-set.

- The candidate makes some attempt to present this section of the study. However, the research design is not clearly presented. For example, **Exploratory research design** was employed since there are no similar earlier studies conducted in the study area.

- The description of the study area/ region should resonate with your study rather that explaining everything about Isiolo from markets to villages?

- How many sub-counties are there in Isiolo? How did you choose the three??

- Avoid superfluous statement that does not communicate any message to the reader. For example, on page 21 "*The goal was to provide insight for future information use and provide basis for literature review or similar studies in future. After grounding a clear picture of the sorghum market chain this study aimed at refining a more systematic formulation and development of further research gaps in the future*".

- Which objective was secondary data used for?

- See other comments in the thesis.

Chapter 4: Results and Discussions

- The candidate needs to be conversant with the analytical steps. For example, "The results start with the sociodemographic factors and characteristics, followed by econometric analysis and finally model analyses. What is the difference between econometric analysis and model analysis? What is model analysis?

- Avoid implausible explanations of your study findings. For example, on page 33 "*The lower age of Isiolo sorghum farmers can be explained by the intense climate change which has made the production of other crops in the region next to impossible thus more people opt for sorghum which is hardy and more suitable for the prevailing weather conditions*". How now can age be explained by climate change avoid such superfluous statements and use more plausible explanations?

- Most of the study findings have been largely attributed to other authors throughout the section for example Ogeto *et al.*, 2013.

- What is gender gap? And what is gender imbalance?

- The results on page 32-36 does not relate to any of the objectives postulated for this study. For which objective do the results belong to? Furthermore these results have just been merely presented without discussing their implications. Furthermore there is too reference and comparison to a study by Ogeto *et al.*, 2013.

- On page 37 subsection 4.3.1.1 it is not clear what in the reference period the candidate is referring to. It is not clear How can the average traded sorghum be 114.92 yet the minimum traded per trader is 6000kgs?. It is further not clear how the candidate computed the Gini Coefficient yet there is no data captured for the same in the questionnaire.

- Gross Margins are usually presented per unit area i.e. Ha/ kg etc. Otherwise the figure can be very misleading since it will depend on the volume that the individual farmer is producing or traded by a trader. You need to explain clearly how you arrived at your figures. For example on tables 4.3 & 4.4 how can transport cost be in kg/ha and loading and off-loading cost be in Litres/ha? Please recheck your units of measurements.

- The data collected as per the appendixed questionnaire cannot enable reliable GM analysis the candidate needs to re-visit.

- How was the profit computed? Is it per Ha? It not standardized it can easily invalidate the findings of this study.

- These results cannot drive any policy agenda. Please re-visit and compute

- The results need to be presented by the order of the objectives. The author needs to align his/her reporting to the objectives.

- It is not clear how **marketing efficiency and market conduct** was computed/analysed yet the questionnaire does not capture data to enable such an analysis.

- On page 45 figure 4.11 the figures are misleading since the candidate purports that the dependent variable is a continuous variable yet it was captured as a categorical variable in the questionnaire. Misleading please reanalyze your data and get proper interpretation.

o Data collected as per the attached questionnaire are inadequate to address all the objectives.

o Please check thesis for more specific comments.

Chapter 5: Summary, Conclusions and Recommendations

o Too much repletion from what has been presented in chapter 4 is presented here again in form of summary.

o The recommendations are too sweeping and need refocusing based on the results of the study and directed to the owners of the processes. For example, "*First, to make the market more competitive policies that advocate for value addition and product differentiation of sorghum should be developed*". What are these policies at this level you need to be very specific and avoid blanket statements since you have carried out the research? In which results did you find out that enhancement of value addition/ product differentiation will increase competitiveness for example

o There is a mix of every results here which do not tie up to any of the objectives

o Please reanalyze your data and present factual recommendations based on your research findings and not pedestrian knowledge. Avoid writing this section with emotions.

o On page 56 last para "*Lastly since the marketing efficiency value (MEI) was positive 0.32, it can be concluded that additional marketing services that boost the degree to which the current market prices would reflect all available, relevant information about the actual value of the sorghum traded that offers maximum possible opportunities for traders to buy and sell without incurring additional transactional can be applied*". The interpretation does not serve to drive any policy agenda which mirrors on how the analysis was carried out.

o Policy implications related to sorghum market which was the focus of this study are clearly missing or inadequate in this section
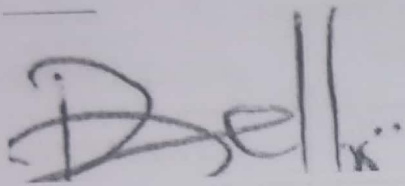
General observation and recommendation about the dissertation

o The candidate has attempted to bring out the subject of market analysis of Sorghum in Isiolo County, Kenya, Kenya to some degree of success.

o The degree should be awarded after addressing the **major** concerns raised.

References

o The list of references is reasonable in terms of the number of sources and currency. However not much of the knowledge generated by these sources has been used productively to improve on the quality of the work.

o The referencing style needs to be revisited and aligned appropriately as suggested.

===================== **THE END** =============================

26.04.2023

INTERNAL EXAMINER'S REPORT 2

INTERNAL EXAMINERS REPORT FOR M/TH/058/2023 MSC THESIS ENTITLED " ANALYSIS OF SORGHUM MARKET CHAIN IN ISIOLO COUNTY, KENYA "

PRELIMINARY PAGES

Cover Page

- ✓ The title is clear, concise and communicates what the study is all about.

Table of contents

- ✓ Well presented

List of Tables and figures

- ✓ Well presented

Operational definition of terms

- ✓ Well Presented

Acronyms and Abbreviations

- ✓ Well presented

Abstract

The abstract is generally well presented. However the candidates needs to;

- ✓ Include background to the problem, change theory/knowledge gap and justification.
- ✓ Include conclusions.
- ✓ The recommendations given should be grounded on the studied variables and the study findings.
- ✓ Recommendations for areas for further research are missing. Research is an endlessprocess identifying such areas is important to keep the process going.

CHAPTER ONE: INTRODUCTION

Well-presented and demonstrates compliance to structure. However there are several observations that need the attention of the candidate:

- ✓ The change theory/research gap is not clearly brought out in this section.
- ✓ This section failed to introduce the reader to the research problem being pursued
- ✓ This is the backbone of your study and should be written clearly and in a logical manner

Statement of the problem

- ✓ The knowledge gap is not clearly articulated and the gap that the study seeks to bridge is not very clear.
- ✓ This is the nerve-Centre of any research work, which should be adequately comprehended by the researcher from the onset.

- ✓ The indicated farm gate prize and the consumer prize is as at 2017. What is the current information on the prizes?

Research Objectives and Questions
- ✓ Well stated

Chapter two

Beef up the subsection by discussing the assumptions of the theory if any

Include a discussion of the merits, demerits and limitations of the theory chosen to anchor your study.

Provide a critical analysis of the selected works that reveals what has already been researched on exhaustively and the missing link that needs to be filled through further research.

Chapter three

- ✓ Include the total number of the target population?
- ✓ Diagnostic tests are missing

Chapter four

The candidate attempted to analyze and present the data in a logical manner. However there are several observations that need the attention of the candidate:

- ✓ Why are males dominating the sorghum production in Isiolo
- ✓ Corroborations of the findings with literature should include the studies that agree with the study and those that contradict with the study.
- ✓ The candidate hasn't done much in terms of interpretation of the results. The researchers contribution in this perspective is generally missing. There is need for the researcher to give own contribution in terms of interpretation and implications of the output results in relation to the study variables and to the study environment.

Chapter five
- ✓ The candidate should enhance the conclusions. There is need for the candidate to give own contribution to results as they are by relating the study problem and study objectives together with the context.
- ✓ Separate the findings and conclusions
- ✓ Recommendations should be presented to the groups suggested by significance of the study.
- ✓ There is general lack of own contribution from the researcher's side. The climax of a thesis is basically the interesting new knowledge that one can make out of the study.
- ✓ Recommendations should provide a possible means to how they can be achieved by the implementer.
- ✓ The recommendations for further research should come from the findings of the study

Appendices
- ✓ Use APA referencing for both in-text and end-text referencing
- ✓ Some references used in text are missing in the appendix