The Use of ToC & LFA vs Considerations for a Unified Logic Model Approach (ULMA) in Humanitarian and Development Interventions

Scoffy N. Wangang

IJISRT24JUL1919 www.ijisrt.com 2923

TABLE OF CONTENTS

1	Table of Figures	2926
2	Table of Tables	2927
3	Declaration by Author	2928
4	Acknowledgements	2929
5	Dedication	2930
6	Author	2931
7	Executive Summary	2932
Cl	HAPTER ONE : INTRODUCTION AND BACKGROUND OF THE STUDY	2933
	Introduction	2933
	Overview of Logic Models in Humanitarian Interventions	
	Objectives of the Study	
	Background	2933
	Historical development of ToC and LFA	
	Prevalence of ToC and LFA in Current Humanitarian and Development Practices	
	Theoretical underpinnings of Toc and LFA	
	Statement of the Problem	2935
	Challenges faced by project staff in developing logic models	
	The Dilemma of choosing between ToC and LFA	
	Potential Consequences of the Choice on Intervention's Outcomes	
	. Research Goal & Research Questions	2936
	Research Goal	
	Key Research Questions to be Addressed	
	Hypotheses and Assumptions	2025
	Significance of the Study	2937
	Scope of the study / added value	
	Limitations of the Study	
	Description of the Study Area	
	Justification for Area Selection	2020
	HAPTER TWO: LITERATURE REVIEW	2939
	Theory of Change	2939
	Conceptual Foundations of ToC	2939
	The Application of ToC in Humanitarian and Development Interventions	
	The Demerits of ToC	20.41
	The Logical Framework Approach (LFA)	2941
	Conceptual Foundations of LFA	
	The Demerits of the LFA	
	The Independence and Interdependence of the ToC and the LFA	
•	The Interdependence of the ToC and the LFA	
•	The Independence of the ToC and the LFA	
	The Implications of Using the ToC or the LFA in Isolation	20.42
	Policy Implications Regarding the Use of the ToC and/or the LFA	2943
	Time Constraints in Project Management	2944
	Evaluability and Measurability OF the ToC and the LFA	2944 2945
	. Practical Examples of the ToC and the LFA HAPTER THREE : RESEARCH METHODOLOGY	
		2950
	Primary Data Collection Data Analysis Techniques	2953 2953
	Data Analysis Techniques The Use of Statistical Software for Data Analysis	2953
	The Use of Statistical Software for Data Analysis The Use of Frequency and Thematic Analysis of Qualitative Data.	2954
	ToC and LFA Harmonisation Approach	2954
	HAPTER FOUR: RESEARCH RESULTS	2955
	The Effects of Time and Resource Constraints	2955
	The Use of the LFA and the ToC Independently in Project Delivery	2956
	The Importance and Significance of the Unified Logic Model Approach (ULMA)	2957
	HAPTER FIVE : DISCUSSION	2959
	The Effects of Time and Resource Constraints	2959
	The Use of the LFA and the ToC Independently in Project Delivery	2959
	The Importance and Significance of the Unified Logic Model Approach (ULMA)	2959
	1	=/0/

https://doi.org/10.38124/ijisrt/IJISRT24JUL1919

CHAPTER SIX : CONCLUSION AND RECOMMENDATIONS	2960
A. The Effects of Time and Resource Constraints	2960
B. The Use of the LFA and the ToC Independently in Project Delivery	2960
C. The Importance and Significance of the Unified Logic Model Approach (ULMA)	2960
ANNEXES	2965
REFERENCES	2966

Volume 9, Issue 7, July – 2024

ISSN No:-2456-2165

TABLE OF FIGURES

Figure 1: The Application and use of ToC Thinking	2940
Figure 2: The Explanation of the Different Components of the Logframe	2941
Figure 3: The Influence of the Choice of the Model(s) by Independent Variable Moderated by the	Relationship between the
Models	2942
Figure 4: Krejcie & Morgan Sample Size Determination Formula	2952
Figure 5: Sample Size Determination using Krejcie & Morgan Table	2952
E' (The Decoration of Dec	. 11' TI D

Figure 6: The Proportion of Respondents who Indicated Preferred Logic Model(s) Under Tight Deadlines vs The Proportion of Respondents Who Indicated the Most Effective Logic Model when Faced with Resource Constraints 2956

Figure 7: Number of Participants Who Declare that they Use a Single Logic Model, Either the ToC or the LFA 2957

Volume 9, Issue 7, July – 2024

ISSN No:-2456-2165

TABLE OF TABLES

Table 1 : Practical Example of a Theory of Change	2946
Table 2: Practical Example of the Logical Framework Approach	2947
Table 3: Chi-Square test of Time/Resource Constraints on the Choice of Logic Model in International Developm	nent 2955
Table 4: Chi-Square Test of the Association Between the Use of a Single Logic Model Independently and the A	ttainment of
Project Outcomes	2956
Table 5: The Significance of the Unified Logic Model in Project Delivery	2958
Table 6: The Unified Logical Model Approach (ULMA), Pioneered by Scoffy N. Wangang	2961

DECLARATION BY AUTHOR

This work is composed of my original work and contains no material previously published or written by another person except where due reference has been made in the text.

I have clearly stated the contribution of others to my document, including statistical assistance, survey design, data analysis, significant technical procedures, and any other original research work used or reported.

The content of my work is the result of the effort I have carried out and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any student centre, neither has been developed for my daily work. I have clearly stated which parts of my work, if any, have been submitted to qualify for another award.

I acknowledge that I have worked under a Creative Commons License and an electronic copy of my work can be uploaded on the Institute's webpage.

Scoffy N. Wangang, PMP®

ACKNOWLEDGEMENTS

This endeavour would not have been possible without my supervisor Prof. Carlos Afonso Gallegos who diligently took the time to provide invaluable insights, feedback and motivation through the research cycle. Additionally, this study would not have been completed without the team at Kalu Institute making this Master's degree programme very affordable to thousands who could not afford to pay for such a rich programme through complementary educational establishments with backbreaking tuition and admission procedures. I sincerely thank you so much for this wonderful opportunity.

Many thanks to my vibrant classmates, especially the committed and supportive June 2023 batch for their constant contributions and willingness to support and answer questions in our study group. You have been a veritable part of this journey and now, we complete it together with pomp and pageantry.

Lastly, I am delighted to recognise the support of my family for the wonderful prayers and emotional support provided throughout this period and for the constant encouragement and motivation. For the late-night call when I get tired and bored, and for the tolerance and care, I say thank you immensely.

DEDICATION

With deep respect and admiration, this work is dedicated to all Humanitarian and Development Organisations around the World striving to improve the lives of the most vulnerable people affected by conflicts and disasters and to those working towards a peaceful and more sustainable World.

AUTHOR



Scoffy N. Wangang (23 October 1983) is the Regional MEAL Advisor for Caritas International covering the Lake Chad Basin (Cameroon, Nigeria and Chad). He has over 11 years of experience in humanitarian and development work. He holds the prestigious Project Management Professional (PMI-PMP) credential and has an MBA in Project Management. He founded Advocates for Social Inclusion and Community Development (ASICD), a local non-profit organisation operating in the North West Region of Cameroon.

Scoffy is a Cameroonian national who grew up in the country's North West and South West Regions. He has worked extensively at the international and local levels in Abu Dhabi, United Arab Emirates, Chad, Cameroon and Nigeria on donor projects which include the WFP, UNFPA, UNDP, EU, ECHO, SIDA, UNHCR, BMZ, and GFFO. Some of the Organisations he has worked with include Caritas International, also called Caritas Germany, International Rescue Committee (IRC), Plan International, and the Community Initiative for Sustainable Development (COMINSUD). He is a devoted humanitarian, father and husband.

EXECUTIVE SUMMARY

Humanitarian and development workers often various challenges in developing and applying logic models in their interventions. Faced with a wide array of logic models that are often confusing, time and resource constraints further compound the decision to use a particular logic model or models, especially in emergencies. The decision of whether or not to use a single logic model such as the LFA or the ToC is not an easy one. Factors prevalent in the sector do not make this task an easy one. The question of whether the use of a single logic model independently should suffice to deliver the desired outcomes of the intervention remains paramount. Some humanitarian professionals and scholars argue that the use of a single logic model cannot sufficiently deliver the results of the intervention while others hold an opposing view. We sought to understand how time and resource constraints affect the choice of logic modes, the possibilities of using each logic model (ToC or LFA) independently to achieve projects/programme objectives as well as to make recommendations on the possibilities of uniting the key features of the ToC and the LFA into the Unified Logic Model Approach (ULMA) for better planning, implementation, monitoring and evaluation of humanitarian and development interventions.

Primary data was collected as the main method of study between June and July 2024 with humanitarian and development professionals focused on the development of these tools and their use. Some of the categories of professionals interviewed included humanitarian and organisational CEOs, directors, coordinators, business development professionals, grant management professionals, programme and project managers, project officers, monitoring and evaluation specialists and assistants, sector leads and officers. These professionals from around the world were reached both online in their professional WhatsApp Groups and offline in their respective organisations (both local and international organisations). The survey questionnaire was structured to contain closed and open-ended questions and was informed by the core problems and the research hypothesis. The sample size included 284 participants and the data was analysed using the Chi-square (X^2) test of independence and descriptive statistics to determine the level of association and significance of the findings. The open-ended questions were analysed thematically to find relevant themes to further support the statistical analysis.

A total of 285 participants responded to the survey. The responses were distributed by gender with 28.4% females and 71.6% males. The distribution also looked into the different roles held by the respondents in their respective organisations. This 7% of the respondents belonged to the CEO/Coordinator/Director category, 52.3% of respondents were MEAL or M&E Advisor/Manager/Officer/Assistant, and 27% belonged to the project/programme development, project/programme managers/Officer/Coordinators category. In comparison, 13.7% belonged to the Others groups. To determine the Effects of Time and Resource Constraints on the choice of the logic model, the result showed a significance at X^2 (3, N=285)= 36.591, P= 0.00. The Cramer's V value of 0.358 showed a strong relationship between time/resource constraints and the choice of the logic model(s) leading. Also, to investigate the Use of the suitability of the use of the LFA and the ToC Independently to deliver the desired project outcomes, the result showed a significance at X^2 (2, N=285)= 6.382, P= 0.041. The Cramer's V value of 0.150 showed a weak relationship between the use of single logic models and the attainment of project outcomes. Lastly, to investigate the Importance and Significance of the Unified Logic Model Approach (ULMA) and its use as the unique logic model, the result shows a significance at X2 (1, N=285)= 118.641, N=0.00, a Continuity Correlation value of 98.757 showed a strong relationship between the Unified Logic Model Approach (ULMA) and the improvement in planning, implementation, monitoring, evaluation, and control of humanitarian and development projects.

Time/resource constraints play a vital role in determining the choice of logic model(s) in humanitarian and development interventions. The use of a single logic model independently supports the achievement of the desired project outcomes. The integration of the ToC and the LFA into the Unified logic model is found to be very significant in improving planning, implementation, monitoring and evaluation. Our results suggest the rejection of the null hypothesis (H_{a0}) and to acceptance of the alternate hypothesis (H_{a1}) which states that "time and resource constraints have significant effects on the choice of a logic model(s) used in international development". Also, we reject the null hypothesis (H_{b0}) in the second instance and accept the alternate hypothesis (H_{b2}) which states that "the use of a single logic model, either the Toc or the LFA has a positive association with the attainment of project outcomes/impact". Further investigations lead us to conclude that "there is a significant benefit to unifying the ToC and LFA into a single model in project delivery (H_{c1})" reject the null hypothesis (H_{c0}). However, further research is recommended with Randomised Control Trials (RCTs) and case studies to determine the effectiveness and efficiency of the ULMA as a robust planning, implementation, monitoring and evaluation tool.

CHAPTER ONE INTRODUCTION AND BACKGROUND OF THE STUDY

A. Introduction

Previous literature has highlighted the strengths and weaknesses of the Theory of Change and Logframe approaches. Both models of practice bring about different effects. Still, it is clear that over time, the critical analysis and understanding of the theory and practice have evolved and some have eventually realized that there are far too many assumptions being made, especially when following a strict Logframe approach. The Theory of Change (ToC) embodies the pathways to change while the Logical Framework Approach (LFA) builds upon this foundation. Time constraints, pressure and scarce resources faced by project teams oftentimes raise significant questions about the development and implementation/use of these logic models.

Can either of the approaches stand alone and deliver optimal results in humanitarian and development interventions? This study aims to examine the independence and interdependence of both logic models (ToC and LFA), with a special focus to examine is the Theory of Change can be integrated into the LFA to create a unified tool with clear causal pathways and evaluability of humanitarian and development interventions. This study seeks to provide insights that could streamline project implementation and inform policy as well as enhance project outcomes and ease operations by examining both logic models in detail. The evaluability of these models and the management of time constraints will be central to this study shedding light on the best use of both tools in project planning, implementation, monitoring and evaluation.

➤ Overview of Logic Models in Humanitarian Interventions

An overview of logic models used in humanitarian and development interventions provides us with a clear understanding of the importance of these tools in project planning and implementation, monitoring and controlling. It helps us understand the pathways to change and the outcomes expected from these interventions. Generally, logic models serve as essential tools in mapping out project/programme processes, and activities, in determining intermediate and long-term results or changes expected from the interventions, as well as long-term goals of the interventions. They help us understand how the interventions will determine the success and failure of its objectives. Both tools offer visual representations¹ (Theory of Change vs Logic Model: Two Sides of Impact Strategies | Sopact, 2024) of the causal relationships between inputs, activities, outputs, outcomes and impact which are key components in the planning, implementation, monitoring and evaluation of humanitarian and development projects/programmes.

By using logic models such as the Logical Framework Approach and Theory of Change, organisations can effectively communicate intervention strategies/logics, plan and monitor resources, identify key outcomes for monitoring and evaluation, and enhance the understanding of how interventions are intended to function within complex humanitarian contexts. It can help project staff to be more accountable to the affected persons and to the intervention funders. Also, incorporating logic models in project management not only streamlines decision-making processes but also facilitates a comprehensive assessment of the effectiveness and impact of interventions, thereby contributing to informed and clear policymaking and improved project outcomes. It aids in proper risk planning and management as well as in capturing, documenting and using lessons learnt.

Objectives of the Study

This study aims to critically analyse the Logical Framework Approach (LFA) in comparison with the Theory of Change (ToC) as important logic models in project management looking at the merits and demerits.

Specifically, the study seeks to explore the correlation between LFA and ToC, investigating their interdependence and independence to generate insights that can inform policy, simplify decision-making, and stimulate discussions on the strengths and weaknesses of both methodologies. By determining whether the ToC approach can be used stand-alone or if it can be effectively integrated into the LFA to develop a unique logic model with clear causal pathways, and evaluability of projects/programmes. This study examines and addresses pressing concerns faced by project staff under time constraints, and a tight budget, offering potential solutions for streamlining project planning, monitoring and evaluation.

B. Background

The ToC approach provides detailed pathways to change, while the LFA builds upon this by creating a structured and static framework for implementing projects. Project staff often face time constraints and scarce resources, making it challenging to develop and apply both tools comprehensively and sequentially. Theories of Change help the programme teams to understand how to measure activities and intended results, analyse and interpret the outcomes of a project/programme, and provide insights on how to adjust the intervention and resources (Connell et al.,1998).

IJISRT24JUL1919 www.ijisrt.com 2933

¹ Theory of change vs logic model: two sides of impact strategies | sopact. (2024). Sopact.com. https://www.sopact.com/guides/theory-of-change-vs-logic-model

https://doi.org/10.38124/ijisrt/IJISRT24JUL1919

This study aims to determine if ToC or LFA can be used independently to achieve desired project/programme results and if the ToC can be integrated into the LFA for a unified logic model approach (ULMA) with clear evaluability, measurability and operationalisation of the causal pathways in a single tool. By researching the interdependence and independence of ToC and LFA, this study seeks to provide insights that can streamline project management practices, inform policy adjustments, and open discourse on the strengths and limitations of each approach (Cedric Saldanha et al., 1998).

➤ Historical Development of ToC and LFA

Some schools of thought believe that the Theory of Change originated in the 1950s from the works of Kirkpatrick who wrote the Four Levels of Learning Evaluation Model. Others believe the concept originated in the 1990s as a method of analysing the theories that motivate programmes and initiatives to work well. However, the strongest evidence shows that the ToC originated from the works of Peter Drucker in his 1954 book, The Practice of Management² in which he first published "Management by Objectives". According to Stein and Valters 2012,5 (as cited in Prinsen & Nijhof, 2015) the ToC "grew out of the tradition of logic planning models such as the logical framework approach". It suffices us to say out of necessity, the LFA inspired the creation of the ToC as a strategic model that

The earliest emphasis as it is today is based on the understanding of the pathways to change (i.e. the relationship between results areas) and the underlying assumptions/hypotheses which are the building blocks for risk identification and management on the projects/programmes. In recent years, this tool has gained prominence and is currently being taunted as a viable alternative to the static logframe approach. However, it is used more as a strategic planning model rather than an operational model which the LFA is. It is safe to say the LFA operationalises the ToC.

According to Cracknell, 1989, The Logical Framework originated from the US military before it was adopted by NASA, and the US Space Agency before being used by development organisations such as USAID and CIDA.

The independence and interdependence of these two logic models (ToC and LFA) remain a subject of debate, thus suggesting that both tools can be effectively used on their own.

Jody Zall Kusek et al., (2004-06-15) stress the possibility of integrating the models to create a comprehensive logic model that ensures evaluability and measurability of causal pathways to implementation of humanitarian and development interventions. By understanding the historical evolution of ToC and LFA we understand the valuable insights into their respective merits and demerits, and the ability to guide project teams in choosing the most suitable approach for successful implementation of projects/programmes.

➤ Prevalence of ToC and LFA in Current Humanitarian and Development Practices

In contemporary humanitarian and development practices, the use of the Theory of Change (ToC) and Logical Framework Approach (LFA) varies depending on the context and organizational preferences. Based on the advantages and disadvantages of technical competence, organisations make the choice that most suits their needs. As seen earlier, the ToC provides a robust framework for understanding the pathways to change, while LFA offers a static structured approach to project planning, implementation, monitoring and evaluation. However, the question remains whether these tools can be independently applied to achieve the desired outcomes (intermediate and long-term results). Some schools of thought believe that by combining the ToC and LFA, we can create a standard logic model that ensures the evaluability and measurability of the causal pathways to implementation. By studying how well and how widespread these tools are adopted in current humanitarian practices, we can gain insights into the effectiveness of each approach, how well they perform on their own, and their potential for integration to enhance project design and evaluation processes (Linda G. Morra-Imas et al., 2009).

> Theoretical Underpinnings of Toc and LFA

The theoretical foundations of the Theory of Change (ToC) and the Logical Framework Approach (LFA) remain very important in influencing project management strategies within humanitarian and development projects. Taking a closer look at Motivation Crowding Theory, Social Exchange Theory, and Transaction Cost Theory (Clarke et al., 2023), we understand that they offer a foundation for understanding community engagement strategies and the possibility of crowdsourcing in developing innovative solutions and addressing fundamental human problems.

Morganstern (2009, p.4) extrapolates that "logic models and theories of change are planning tools that allow stakeholders to collectively identify the long-term goals of social change initiatives, define all the building blocks required to bring this change about and clarify the steps to get there." Also, the molecular framework elaborated in the study on cytoskeletal cross-talk (Oberhofer et al., 2020) underscores the importance of intricate interactions in reaching macroscopic cellular outcomes, reflecting the interconnected nature of components of project/programme logic models. Project teams can navigate the challenges of implementing the ToC and the LFA by recognising the need and strategically aligning the two logic models to achieve project results and facilitate meaningful change in humanitarian and development interventions.

IJISRT24JUL1919 www.ijisrt.com 2934

 $^{^2\} https://www.goodreads.com/book/show/48018. The _Practice_of_Management$

³ https://en.wikipedia.org/wiki/Management_by_objectives

C. Statement of the Problem

The Theory of Change and Logical Frameworks remain the most useful logic models in humanitarian and development interventions. They have become increasingly more useful as humanitarian and development organisations seek to standardise projects/programme implementation approaches and to properly capture the logic of the intervention and ensure the desired outcomes and impacts are achieved on the interventions.

This is not without its challenges in the implementation of these approaches. Humanitarian interventions for one come emergencies in high-pressure environments where project/programme teams are caught up with tight schedules, deadlines, limited resources and insufficient capacity to effectively and efficiently produce ToCs and logframes for their intervention. These problems bring to mind the questions of whether or not it is not feasible to design a unified logic model (Samiran Nundy et al., 2022), that captures the merits of both tools and elaborates the ToC's causalities, assumptions, and results as well as the logframe's unique ability to implement, measure and evaluate intervention goals.

On another note, can one of these models be independently used without the other to achieve the same expected results of the intervention? Are the merits of one such that they can be integrated into another or one independently used to achieve the same results as the other?

➤ Challenges faced by project staff in developing logic models

The process of developing projects/programmes logic models is a daunting one with project staff often facing significant challenges in the development of Theory of Change (ToC) and Logical Framework Approach (LFA) in humanitarian and development interventions. These challenges include time constraints, the scarcity of resources, and high pressure to meet deadlines. The Healthy Eating Active Living Convergence Partnership's toolkit (Morganstern et al., 2009) underpins the complexity of creating multi-sectoral environmental change strategies, a process that needs thorough and elaborate logic models. These challenges present and emphasize the need for project teams to have models that help them navigate project planning, implementation, monitoring and evaluation without burnout and stress.

> The Dilemma of choosing between ToC and LFA

The dilemma of choosing between the Theory of Change (ToC) and the Logical Framework(LFA) Approaches adds to the burnout faced by project teams. Choosing the right model has to align with the organisation's strategy, project/programme constraints, resource availability, technical know-how of the project and monitoring and evaluation staff as well as senior management's commitment. This process has to take into consideration the team's ability to apply either the ToC the LFA or both to achieve desired outcomes. The role of senior management and support is particularly crucial for without this, the strategic direction of the team is blurred which can result in conflicts and delays in project/programme delivery.

This study aims to open discourse on the feasibility of integrating the Theory of Change and the Logical Framework Approach to streamline and enhance their applicability, evaluability and measurability of causal pathways to implementation.

➤ Potential Consequences of the Choice on Intervention's Outcomes

The decision to choose either a ToC or an LFA presents significant challenges to the project team and may come with additional consequences to the attainment of the objectives of the humanitarian and development intervention. This decision should come with a full understanding of the desired approach as well as the right technical staff backed by senior management's support.

- Clarity and Alignment of the Model: The ToC presents a comprehensive roadmap that emphasises relationships or causal pathways (Clark, 2012) to change as well as the assumptions or hypotheses (the foundation for risk identification) of the interventions. This model helps foster alignment of stakeholders to the intervention's goal with the clarification of the logic of the activities thereby getting buy-in. Clark, (2012) further explains that the LFA focuses on the inputs, activities, and outputs (direct results from the activities) and does not explicitly address the underlying assumptions (Clark, 2012) of the intervention which is addressed in the ToC. This lack of clarity in assumptions may lead to misalignment of the project team and other stakeholders.
- Adaptability and Flexibility of the Model: The ToC inspires project teams to use adaptive management through positive feedback from the project participants, it encourages project learning, and course correction which can enable project teams to adjust implementation strategies based on evidence and changes in the context (Onmelvin, 2021). The static or seemingly rigid nature of the LFA as a result of predefined indicators makes it less adaptable to unforeseen circumstances (Simeone et al., 2023) during implementation such as using project learnings to make project adjustments. However, it still presents an excellent method for implementing and evaluating the intervention objectives. The LFA provides a more structured approach that can be used to guide project planning, implementation, monitoring and evaluation more effectively (Dennet al., 2001).

- Measurement and Evaluation of the Logic Model: The ToC informs the development of the measurement indicator. According to Clark (2014), it supports robust evaluations by explicitly the intervention's outcomes and measurement indicators. On the other hand, the logframe focuses more on the intervention's indicators thus overlooking the impact assessment. Because of its static nature, if the evaluation approach is not properly designed to measure the impact and determined in the ToC, the team risks failing to properly assess the level of attainment of objectives. Additional time and resources are required to train the project staff to be proficient in using the logframe to measure the outcomes planned in the ToC.
- The Limitations of the Logic Models: The importance of the Toc and the Logframe cannot be overemphasised. Despite their unique and interdependent advantages, these logic models have their limitations that should be considered by the teams in choosing either or both of the models for their interventions. For example, the logframe could be limited in operationalising the ToC thereby not fully being able to be used in implementing and evaluating the the causal pathways defined in the strategic ToC. Both models may overemphasise quantitative measurements at the expense of qualitative measurements, hence fully capitalising on the impact of the intervention in terms of intended and unintended impact. The notion of causality and assumptions are limited in the logframe.

D. Research Goal & Research Questions

> Research Goal

The goal of this study is to conduct an empirical study of the ToC and the Logframe as dependent and interdependent logic models in project/programme management. It will study the relationship between the two logic models establishing the interdependence and the independence of the two approaches. Specifically, it will study the feasibility of independently applying one approach without the other to obtain the desired results. This study also seeks to open discourse on the feasibility of creating a unified ToC and LFA that can enhance project/programme delivery with sound operationalisation of the logic of the intervention, causality, assumptions, evaluability, and measurability thus contributing to reshaping policy in the humanitarian and development fields

➤ Key Research Questions to be Addressed

The research questions to be addressed are centred on the independent and interdependent application of the Theory of Change (ToC) and Logical Framework Approach (LFA) in humanitarian and development interventions. It is important to analyse whether the ToC or LFA can be used independently without the other to achieve the desired outcomes. Is either of the logic models sufficiently structured to be able to define the intervention logic, pathways, risks and assumptions, to efficiently measure and evaluate the intervention? The research questions also focus on the feasibility of unifying both models to have a common model capable of streamlining interventions and easing project work. This shall provide insights into the practicality, effectiveness and efficiency of each logic model separately and their potential synergies when used in combination with humanitarian and development interventions (Salkind, 2012).

- > Specifically, the Research Questions Include:
- How do time and resource constraints affect or determine the choice of the logic model?
- Can the Theory of Change and the Logical Framework Approach be used independently of each other? Or must they be used together to achieve the best results?
- How feasible and acceptable is it to unify the ToC and the Logframe to have one model that is both strategic and operational?

By addressing these key questions, this study aims to contribute valuable insights for project teams, policymakers, and relevant stakeholders involved in decision-making processes regarding project management strategies in humanitarian and development interventions.

> Hypotheses and Assumptions

Extrapolating from Spörrle et al., (2008) we understand how evolutionary assumptions of habitat selection and parental investment influence adult decision-making in selecting sleeping sites for children. This study emphasises the importance of ensuring safety and kinship considerations. Similarly, the work by Abramowitz et al., (2007) challenges traditional assumptions in deriving inequalities related to energy density and pressure in static solutions, highlighting the need for critical examination and refinement of hypotheses in scientific analyses. Integrating these perspectives into this study on the ToC vs the LFA in humanitarian and development interventions necessitates the formulation of a robust hypothesis to enhance understanding, analysis, and comparison, to answer the research questions stated above.

 \succ To This Effect, this Study Considers the Null (H_0) and Alternative (H_1) Hypotheses as Follows:

- H_{a0}: Time and resource constraints have no significance on the choice of a logic model(s) used in international development
- Hal: Time and resource constraints have significant effects on the choice of a logic model(s) used in international development
- **H**_{b0}: The use of a single logic model either Toc or LFA has no association with the attainment of the intervention outcomes/impact.
- H_{b2}: The use of a single logic model, either the Toc or the LFA has a positive association with the attainment of project outcomes/impact
- **H**_{c0}: There is no significant benefit in unifying the ToC and LFA in project delivery
- **H**_{cl}: There is a significant benefit to unifying the ToC and LFA into a single model in project delivery.

E. Significance of the Study

The significant because it may help open discourse on harmonising the ToC and the Logframe by integrating the ToC into the LFA (Samiran Nundy et al., 2021-10-23) in humanitarian and development interventions. The study has the potential of providing findings that may correlate the ToC to the LFA and show the suitability of using one approach without (the independent nature of the model) the other as well as finding if these two models are absolute necessity (interdependence) on every humanitarian and development intervention.

This study might be of great interest to project and programme managers, the monitoring and evaluation core, as well as the donor agencies who are integral stakeholders in the humanitarian and development sectors. It might guide policy formulation and the development of new projects by streamlining conception and implementation through a harmonised logic model that operationalises both the strategic nature of the ToC and the operational nature of the LFA. It seeks to broaden discourse on their respective strengths and weaknesses to assist project teams in choosing the most effective approach(es). This unified model proposed by this study seeks to extend and fill the gap in inadequate literature for future scholars in this domain of choice and unification discourse of the ToC and the LFA.

This study may facilitate understanding of the the association of the ToC to the LFA and assist programme teams to examine if their intervention is linked to the fundamental pathways and logic in the LFA and if they can fully implement, evaluate and measure results as expected in the ToC.

This study will possibly incite policymakers (programme staff and donors) into combining the strengths of both models, to make more informed decisions, optimize resource allocation, save time, and drive sustainable change within humanitarian and development interventions, thus, leading to more effective and meaningful outcomes (Flyvbjerg et al., 2008).

Given time constraints and pressure on project staff in emergencies, it is essential to investigate if either ToC or LFA can be effectively applied independently to deliver successful projects (NORAD et al., 1999). This study seeks to evaluate the feasibility of integrating the ToC approach into the LFA to create a standardised logic model with evaluability and measurability of causal pathways, thus streamlining project planning and evaluation processes in humanitarian contexts.

F. Scope of the Study / Added Value

The scope of this study focuses on the comparison of interdependence and independence of the Logical Framework Approach (LFA) against the Theory of Change (ToC) approaches as logic models for project management and Monitoring, Evaluation, Accountability and Learning (MEAL) on humanitarian and development interventions. Additionally, it will focus on examining the correlation of the two models and determine if one can be used independently of the other while studying the feasibility of integrating the ToC into the LFA to provide a unified model that can be used to serve both the strategic and operational purpose of the ToC and LFA thus sampling project development and implementation. To create a more cohesive and standardised logic model with enhanced evaluability and measurability of programme objectives. This study seeks to address the inherent pressures, time and resource constraints faced by programmes and MEAL teams in developing logic models examining the feasibility of one model's ability in independently delivering successful intervention results. The research will focus on contributing sound recommendations which can potentially reshape project management policies and practices in the humanitarian and development sectors. This study further focuses on generating insights that shape policy, provide relevant information to project teams in choosing the right approach/logic model(s), and drive meaningful conversations on the merits and demerits of the ToC and the LFA.

Furthermore, the audience of interest is the project/programme teams and monitoring and evaluation teams within the international M&E communities of practice. At least 279 professionals will be surveyed online and offline using questionnaires at a 95% confidence level and a 5% margin of error.

G. Limitations of the Study

We must recognise some limitations of the study. This includes potential biases in the selection of participants for the surveys and interviews. The biases may also stem from respondents' subjective understanding of the survey questions. The limitation of subjective understanding of the questions needs to be triangulated through a case study which is not possible at this time due to another limitation stemming from the study timeframe. Additionally, the study faces limitations in accessing comprehensive literature on the interdependence, dependence, and integration of the ToC into the LFA to have a unified model that standardises and streamlines project planning, implementation, monitoring and evaluation.

> Some Specific Limitations Include:

Research Methodology

Initially, the research methodology included primary data collection triangulated with a case study. However, due to limited time in conducting the study, the case study was suspended. By addressing methodological constraints and considering sample size extension, the study could gain stronger reliability and validity. The integration of ToC and LFA requires careful methodological considerations and in-depth study and triangulation of information to ensure the feasibility and applicability of the research findings.

• The Generalisation of findings

It is likely that the generalisation of the findings as is practice within the humanitarian and development interventions may not reflect the true nature of some schools of thought. However, the generalisation of findings within the humanitarian sector helps influence the applicability and transferability of project/programme outcomes. For this study to be generalisable, we seek to sample a large number of both monitoring and evaluation and programme staff in the development and humanitarian sector to obtain results that can be used to tailor policy and facilitate the adoption of the study findings. However, according to Herbermas (1973 as cited in Byrne & Sahay, 2007), "public opinion is formed through discussion". This necessitates the integration of case types of research to solidify and triangulate the results from the qualitative survey. However, as mentioned above, this is again limited by the timeframe for conducting the study. To improve the generalisability of this study, the study will improve the sampling criteria and variability of the sample population integrating responses from multiple subgroups suggested in motor trials to achieve more broadly applicable and relevant results to support decision-making in humanitarian and development interventions.

Despite these limitations, this research will provide valuable insights into the effectiveness of ToC and LFA in project planning and evaluation, providing insights into their potential synergies and distinct contributions in the field of humanitarian and development interventions. It will explore the feasibility of combining both models for more efficient and effective delivery of interventions in all contexts. Future research is necessary to explore these topics to enhance the understanding of logic models in project/programme management.

H. Description of the Study Area

The study area of this research is not limited by space or geographic location. The monitoring and evaluation core and the humanitarian and development project/programme development and management are global with similar challenges and concerns. Practitioners in the field have been organised into professional groups and communities of practice online on different social media platforms thanks to easy accessibility to the internet. Some of the social media platforms on which we can locate most especially M&E communities of practice include, LinkedIn, professional WhatsApp Groups, Professional Telegram Channels, and Facebook Groups. For this study, we shall limit the study area to M&E professional groups on WhatsApp, Telegram and LinkedIn. In addition, we shall conduct face-to-face interviews in Northeast Nigeria, the Far North of Cameroon and the North West and South West Regions of Cameroon.

> Justification for Area Selection

Identifying the right study area for impactful research as this one that aims to shape policy and decision-making, requires careful consideration for a representative sample that can yield results for generalisation and application across different cultures and geographies. Inherently, some of the justifications for selecting wide study areas with a large presentative sample include:

Reduced Sampling Error:

Because samples will never be the same as the population they represent, some scholars believe there is no such thing as a perfect sample. This is the origin of sampling error. Sampling error is a disparity between results from the sample and the population's real values (Dunn, G., & Bale, R., 2007). A large representative sample helps the researcher to ensure that the sampling error is reduced and the findings better represent the studied population.

• Increased Statistical Power:

Larger research samples provide greater statistical power. Statistical significance is a strong requirement for generalising research results. It refers to the ability of the researchers to correctly reject the null hypothesis (Cohen, J., 1988). To detect the statistical significance of a true relationship (or "power" – the probability of correctly detecting the presence of a significant relationship something like an effect size). Therefore, this approach is aimed at reducing the sampling error while increasing statistical Power.

CHAPTER TWO LITERATURE REVIEW

A. Theory of Change

The ToC provides a comprehensive approach for documenting and understanding the pathways to change on humanitarian and development projects. However, this useful strategic tool adds another responsibility on project staff increasing their pressure and time constraints, thus making it challenging to develop and operationalise both the ToC and the logframe simultaneously. For this reason, this study seeks to understand if one approach can be used independently for effective project/programme delivery. It also seeks to understand if the ToC can be integrated into the LFA or vice versa to create a unified model that can ensure the operationalisation of the causal pathways and the evaluability and measurability of the project results. By studying the interdependence and interdependence of the ToC and the LF methods, this study aims to provide key insights that can guide policy, save time, and open discourse on the strengths and limitations of the ToC and the LFA within humanitarian and development spheres.

B. Conceptual Foundations of ToC

The United Nations Development Group states that a ToC explains how a project or programme plans to implement a specific developmental or social change by using the causal pathways defined within the intervention (United Nations Development Group, 2017). The ToC is a strategic document that outlines the vision of the intervention and how to achieve it. The UNDG therefore believes that it must be based on sound analysis and developed in consultation with stakeholders. The theory of change as a strategic document also identifies the key assumptions/risks that are further developed in the risk management plan during project implementation. The ToC is an important foundation for project/programme evaluations. It provides us with a solid foundation for evaluation based on the results pre-determined in the ToC and transferred to the logframes.

With this understanding arises the question of whether or not the ToC can be independently applied without the logframe. Another key question that will be examined by this study is the feasibility of of applying the ToC without the logframe. Can the ToC evaluate its causal pathways, outcomes and the risks and assumptions determined in the strategic document? These questions prompt this study to further examine the merits and demerits of the ToC.

➤ The Application of ToC in Humanitarian and Development Interventions

The figure below presents the thinking behind the application of the theory of change as elaborated by Vogel, (2012) in Review of the Use of 'Theory of Change' in International Development. It elaborates on the application of the Theory of Change in programmes, in implementing organisations and in grant-making programmes. It confirms the Toc sets the foundation for monitoring and evaluating humanitarian and development interventions, provides a vision that links multiple projects to a higher ToC, clarifies multiple pathways within the intervention and region of implementation as well and identifies tradeoffs which are with risks and assumptions. This notion is particularly true of the Toc as a strategic document that sets the vision of the intervention and how the team envisions achieving set outcomes on their projects.

Vogel (2012) also elaborates on the application of the ToC by Civil Society organisations and International non-profit and non-governmental organisations. Here, Isabel Vogel confirms that the ToC is used in elucidating the relationship between organisational values, vision, mission, and programme strategies. Here, it can be further understood that the ToC provides the roadmap for developing the monitoring and evaluation framework on the project/programmes, linking the project/programme to the organisational vision and mission as well as hypothesising the desired impact of the interventions.

To buttress it further, the study reveals that the ToC is applied by monitoring and evaluation (M&E) trainers, consultants and specialists in organisational development. And lastly, it is applied by donors and foundations with a mandate for grant-making for funding humanitarian and development interventions.

The Theory of Change is believed to support adaptability in a changing project environment.

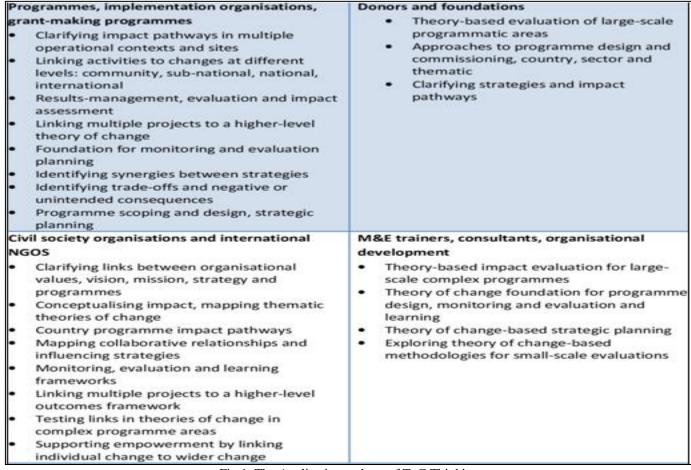


Fig 1: The Application and use of ToC Thinking

• Note: Adapted from Review of the Use of 'Theory of Change' in International Development by Vogel, I. 2012. https://www.researchgate.net/publication/259999430_Review_of_the_Use_of_'Theory_of_Change'_in_International_Development

According to Arora et al, (2019), as cited in Borel *et al*, (2021), adaptive management places a strong recognition on the ToC as it helps explain not only causality but also provides the opportunity for adjustment in the intervention when the pre-conditions and the underlying assumptions no longer holds. Remember that the success of a project or intervention relies strongly on the realisation of the hypothesis or assumptions defined in the ToC.

This sums up the application of the ToC in international development with a clear picture of why the importance of this tool should not be undermined.

➤ The Demerits of ToC

The Theory of Change is not without its limitations. The ToC is a complex strategic model with knowledge of the desired pathways to change, causality, assumptions, and expected outcomes. Being a complex model, it requires thorough capacity building to develop and apply it in development and humanitarian interventions. This knowledge is often lacking in project teams thus making it impossible to develop and use the model.

The ToC requires time and is resource-consuming, endangering sustainability expectations. This paper makes us understand that the ToC oversimplifies social realities (Mountain-EVO, 2017). This is particularly true as social phenomena do not occur in linearity. They are influenced by the context, culture and beliefs as well as externalities defined either by the state or other stakeholders operating in the context. The ToC tries to capture some of these externalities in the assumptions but fails to make ample predictions of how the social change itself will be perceived and accepted or not in the communities. The theory of change fails to take into consideration the indicators needed to measure the planned outcomes, this on its own raises the question of how well the ToC can be used as an evaluation tool in the context of humanitarian and development interventions. The fact the ToC prides itself as a tool built on adaptability to changing contexts to be able to realise the defined outcomes makes it vulnerable to abuse and possible misunderstandings by the project teams. This could potentially lead to the project team derailing from the overall objective of the intervention in an attempt to capture the changing needs of the communities they service.

One major limitation of the ToC is its lack of uniformity in international development. Different organisations have adopted different ToC structures. The ever-changing nature of the ToC and lack of standardisation makes it susceptible to misunderstandings and wrongful use. For some organisations, what they refer to as the ToC is the effect of the logical framework⁴ or some other structure with much complexity and a tendency to be misused by implementing teams. This could be a fundamental reason why most project staff do not revisit the ToC once developed and donor funding is secured.

C. The Logical Framework Approach (LFA)

The Logical Framework (Logframe) is a matrix-based tool that outlines the relationships between a program's inputs, activities, outputs, outcomes, and impact. It provides a structured approach to planning, monitoring, and evaluating program effectiveness. A Logical Framework is a logic model that describes the key features of the project (objectives, indicators, measurement methods and assumptions) and highlights the logical linkages between them. As a rigorous methodology, it provides causal linkages (relationships) between project/inputs, activity, outputs, and desired outcome (or Goal). This makes the logframe a powerful operational tool and an input for developing the MEAL plan. The distinct from ToC in that Logframe focuses on the project/programme's operational strategies required to achieve the different hierarchy of results in the RF and the ToC. It operationalises the causal pathways defined in the logframe to achieve the intervention's different result levels (Outputs, Intermediate, strategic and goal).

Each assumption/hypothesis defined in the ToC is monitored in the logframe, to ensure that the conditions are either occurring in the external environment or not occurring and their effects on the project that lead to the achievement of the results or the non-achievement of results from one level to another.

A logical framework is traditionally a 4x4 matrix developed in the 1970s by Leon Rosenberg and colleagues (Solem, 1987, as cited in Gasper, 2000), with different result levels on the first leftmost column and under the objective statements and the control features (indicators, means of measurements and assumptions on the right columns from the first.

Below is an illustration of an LFA extracted from Gasper, (2000), Logical Frameworks: Problems and Potentials.

INTERVENTION LOGIC	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFI- CATION	ASSUMPTIONS
OVERALL OBJECTIVE The longer-term benefits to (target-group) beneficiaries and wider benefits to other groups	INDICATORS Measures (direct or indirect) to verify to what extent the overall objective is fulfilled	Data sources for indicators for overall objective	[This cell is empty in the EC version but some versions put here: Important events, conditions or decisions necessary for sustaining objectives in the long run]
2. PROJECT PURPOSE Benefits to be received by the project beneficiaries or target group	INDICATORS Measures (direct or indirect) to verify to what extent the project purpose is fulfilled.	Data sources for indicators for project purpose	ASSUMPTIONS Important events, conditions or decisions outside the control of the project which must prevail for the overall objective to be attained
3. RESULTS Services to be delivered to the intended beneficiaries or target group	INDICATORS Measures (direct or indirect) to verify to what extent the results are produced	Data sources for indicators for results	ASSUMPTIONS Important events, conditions or decisions outside the control of the project management, necessary for the achievement of the project purpose
ACTIVITIES The activities that have to be undertaken by the project in order to produce the outputs	5. INPUTS Goods and services necessary to undertake the activities		3. ASSUMPTIONS Important events, conditions or decisions outside the control of the project management, necessary for the production of the results
	the activities		

Fig 2: The Explanation of the Different Components of the Logframe

• Note: Extracted from Gasper, (2000), Logical Frameworks: Problems and Potentials. https://repub.eur.nl/pub/50949/Metis 165267.pdf. Copyright 2000 by Gasper D.

IJISRT24JUL1919 www.ijisrt.com 2941

⁴ https://en.wikipedia.org/wiki/Theory_of_Change

➤ Conceptual Foundations of LFA

The Logframe provides a structured framework for project planning, implementation, monitoring and evaluation building on the Theory of Change in a result-based M&E structure taking into account the causality/pathways to change defined by the ToC. The results-based M&E structure includes the inputs needed to implement the activities and the outputs which are the direct results of the activities. This could be tangible or intangible. The outcomes or intermediary results follow the outputs. In other words, results are expected in the short term while the last level is the impact level or result expected in the long term. Usually, this is referred to as the goal of the intervention.

In emergencies, project teams often face time limitations coupled with limited resources and poor technical knowledge in developing the using the ToC and LFA. Two models which require sound understanding, time and readily available resources to realise.

Bringing together the conceptual framework from the ToC and the LFA, we can deduce some of the key predictor and explanatory variables that will aid in explaining the results of the study. In humanitarian interventions, project teams often face time constraints which could impact their choice of the logic model(s) to adopt for the intervention. Their choices may be informed by the time available to them, their skill sets, organisational policies and preferences. This choice could further be influenced by the interdependence and independence of the ToC and the LFA. On the other hand, choosing to use a harmonised or unified logic model approach (ULMA) could be informed by the availability of a simple ULMA. This process could further be influenced by the organisational policies and donor requirements.

Subject to these, Mountain-EVO (2017) examines some key strengths of the ToC with one being its ability to establish conceptual clarity. With the right knowledge of the core requirements of the team, the project team could choose between using the ToC or the LFA. As the saying goes, "*Knowledge is Power*". With the right knowledge of the team's needs. However, Mountain-EVO (2017) also takes into account a limitation of the ToC which is time and resource constraints. While the LFA operationalises the ToC and implements a results-based approach believed to be flexible, it is much more rigid than the ToC.

Previous studies show that most people face challenges in separating the ToC from the traditional logframe. This could be explained by the fact that both models stem from the same familiar approach programme definition. Some survey participants felt that the ToC was born out of the necessity to queue into the original vision of the logical framework (Vogel, 2012). This study recognises that there has been a significant shift from the early logframe model with different variations over the years thus making it difficult to keep the original vision of the model. This therefore informed the development of a more tragic model, the ToC.

The conceptual framework of this study attempts to determine the causality between the dependent and the independent variables that inform the major research questions. The diagram below depicts the relationships among these variables.

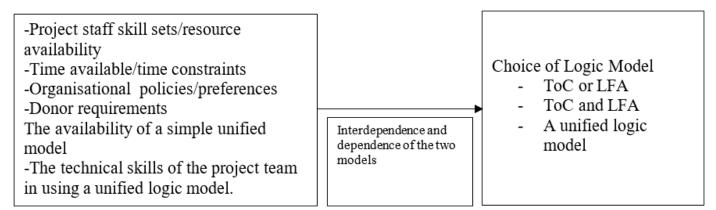


Fig 3: The Influence of the Choice of the Model(s) by Independent Variable Moderated by the Relationship between the Models

➤ The Demerits of the LFA

The LFA is not without its limitations. Some of the disadvantages of the model according to NORAD, (1990), include the understanding that project management may become a static process as a result of outcomes and externalities set at the planning stage of the intervention. In addition, NORAD believed that the LFA as an analytical tool is policy-neutral. That is to say, it does not take into consideration questions such as income contribution, access to resources, time constraints, cost and feasibility strategies and technology or technological failures (NORAD, 1990). The major problems with the LFA are from its users' poor application of the tool (Solem, 1987 as cited in Gasper, 2000). Gasper further believes that the LFA is generally good and we only need more capacity building to be able to use it as intended.

From another school of thought published by the Word Bank, it is understood that the Logframe does not consider baseline data and is not emphasised. Additionally, the logframe does not take into consideration unintended outcomes and the scope is limited to the stated objectives of the project.

Baseline data are not emph (Morra et al., 2009).

D. The Independence and Interdependence of the ToC and the LFA

To fully understand the grasp the concepts and research aims, it is important to understand how well these two models are interconnected. Project staff often face challenges and time constraints when developing logic models and choosing the right logic model(s) for their intervention. This raises the question of whether one model can be effectively applied to achieve the project objectives without the other. Taking a step further, the study examines the possibility of integrating the ToC into the LFA to have a unified and standardised model that enhances planning, implementation, monitoring and evaluation.

➤ The Interdependence of the ToC and the LFA

While the ToC is more strategic and the Logframe is more operational building on the ToC to inform project management, monitoring and evaluation, both of the models are much inter-related in managing the causal pathways to change in humanitarian and development interventions. A well-developed ToC informs a more structured logical framework. The outcomes or results are determined in the ToC and broken down into more measurable aspects called the indicators in the LFA. The horizontal and vertical relationships defined in the logframe are informed by the vertical logic from the ToC while the horizontal relationship is determined by the assumptions established in the ToC. The activities and outputs measured in the Lofgrame are first identified in the ToC.

Areas of Dependence/Overlap: The ToC and the LFA are two models that are very useful during the planning stage of every humanitarian and development intervention as they help shape the vision and mission of the intervention. They both offer distinct, yet complementary approaches to planning, implementation, monitoring and evaluation of projects. Some areas of overlap include:

- Both models make use of a common result framework emphasising the causality of the result pathways.
- Both models defined the different result levels from inputs to activities to outputs, outcomes and the Goal (strategic objective) of the intervention.
- Both models take into consideration the externalities required to achieve the intervention objectives. These externalities are referred to as assumptions hypotheses or risks.

The interconnected nature of the ToC and the logframe recognised here enhance the understanding of the overall logic thus informing possibilities of developing a harmonised model for project planning and management. According to Morra et al., (2009), by understanding the commonalities of these two models project staff can leverage the strengths to effectively and strategically drive impactful change in humanitarian and development interventions (Morra et al., 2009).

➤ The Independence of the ToC and the LFA

After having seen the areas of overlap above, understanding the independent nature of the ToC and the LFA helps to further understand areas of consolidation in terms of developing a unified and standardised model. Once again, the ToC provides a clear causal narrative with a clear and comprehensive understanding of the intervention.

On the other hand, the logframe builds upon the Theory of Change and provides a framework for project planning, management, monitoring and evaluation, including specific indicators for measurement (NORAD et al., 1990). Project staff face time constraints in developing the ToC and the logframes simultaneously with a huge burden of resource constraints and limited technical know-how. By understanding their independence, provides us with a unique opportunity to explore how well these two models can be combined and standardised for e more efficient and effective use.

• Circumstances where the ToC can be used Independently

The reason why the ToC can be independently used without the LFA lies in the understanding that it provides a more comprehensive pathway change without taking into consideration the static nature of the logframe.

In volatile and rapidly changing contexts with a great need for flexibility, the ToC is most suited because of its adaptability to reflect the changing needs and objectives of the project. Where measuring social changes with loads of qualitative information is important, the ToC comes in handy. This feature makes the ToC lovable in complex humanitarian interventions and settings with the need for frequent changes.

• *Circumstances* where the LFA can be Used Independently

There are practical situations where the logframe can be developed and implemented independently from the ToC. This is common with small-scale projects, without complexities. Another scenario could be with projects that have measurable outcomes with straightforward or linear causal pathways to change. Here, the logframe provides a clear structured method for planning, implementing, monitoring and evaluating the intervention.

In situations and projects where the focus is on operational efficiency and in measuring immediate outcomes, such as quantifiable results rather than qualitative results, a logframe will be most suitable. When there is a strong need for narrative reporting, the ToC stands is best suitable while in situations of great statistical need, the LFA is most suitable.

The Implications of Using the ToC or the LFA in Isolation

There are some benefits and risks associated with using either the theory of change or the logframe methods independent from each other. Some of these include:

- When the ToC is used in isolation, it provides a clear path for achieving the required results by following the defined pathways to change.
- An independent use of the ToC makes it easier for narrative reporting without the need to change or modify the logframe to align with it.
- Using the LFA in isolation could lead to the intervention derailing from its objective. The static nature of the logframe makes it difficult to modify with changing circumstances to meet the required objectives.
- Whilst the ToC is good in narratives and in understanding perceptions, it is limited in the scope of the qualitative data it can analyse with frequency. Analysing qualitative data at high frequency is burdensome and time-consuming. It could lead to additional stress for the project team resulting in burnout.

E. Policy Implications Regarding the Use of the ToC and/or the LFA

Policy Implications from the use of the ToC and the logframe are central to informing decision-making and implementation practice in humanitarian and development interventions. It is the role of the policy analysts (M&E professionals to and extend the project managers) to ensure that these tools are properly used, and policies are adequately researched, analysed and well communicated. Kos et al, (2018) emphasize the intersection between research, policy and practice and state that understanding the impact of the policies and recommendations is essential. The understanding of the unique advantages and disadvantages of the logframe and the theory of change leads to interrogating whether or not using them in isolation presents a weakness or not. This study shall examine the general understanding of when and where a ToC or logframe should be used independently and whether or not unifying the ToC and a logframe to create a standardized logic model presents a unique advantage to project staff. Policies such as adopting time-saving strategies that are time-sensitive on time-constrained projects and environments are important in optimising project outcomes and in encouraging productivity and accountability in humanitarian and development interventions.

Policy Implications on Project Management Practices: The juxtaposition of the ToC and the LFA has policy implications on project management practices. These models will determine if the project team adopts a strong results-based project management approach or not. Project management practices such as the waterfall method, the agile approach and adaptive management can be hindered or promoted by the organisational policies linked to the policy analyst's view of the use of the ToC and the LFA. According to (Himmelstein et al., 2017), "managing a ToC based project is different from one that is designed around the logframe or results framework." This informs us that the method chosen policy-wise would determine the project management approach to be used. Most humanitarian projects in the last decade made use of the results-based project management approach. The results-based project management approach is better linked to the Theory of Change with its adaptive, continuous reflection and continuous learning features as opposed to the logical framework presumed to be more predictive and static.

F. Time Constraints in Project Management

According to the Project Management Institute (PMI), "a project is a temporary endeavour undertaken to create a unique product, service, or result," while project management is "the application the application of knowledge, skills, tools, and techniques to project activities to meet project requirements" (What is Project Management, Approaches, and PMI, 2022). Within the framework of the classical triple constraint, a project is limited by time within a specified scope and cost to deliver specific measurable results. The time-bound nature of a project is one of the reasons why projects fail, are considered late, or outdated. In very volatile emergencies, beneficiary needs change fast demanding timely projects that meet the needs within a specific cycle of volatility. Once these projects get delayed at the level of conception, the team risks deploying an intervention that could be considered outdated within the changing context. Thus, time constraints present a significant challenge for project teams in international development.

This, including other factors often puts a lot of pressure on the project staff with tight schedules to conceive and deliver high-impact projects within limited time constraints. In international development, time-saving strategies in choosing and applying the right models linked to project management methodologies become paramount to address project delays and skills gaps. In a study conducted by (Reddy Goda et al., 2023), the findings highlight the importance of "dynamic programming methodologies to improve the efficiency and effectiveness of resource allocation within the context of a project that is affected by time and financial restrictions." We draw the inference here that it is important to adopt methods that help streamline the development and use of logic models to overcome or reduce time constraints and effectively contribute to improving the achievement of project objectives.

It is crucial to explore methods that can streamline the development and utilization of logic models to navigate time constraints effectively and contribute to improved project outcomes.

G. Evaluability and Measurability OF the ToC and the LFA

Understanding the measurability and evaluability of the Theory of Change and the Logical Framework Approach will inform us on the best approach or approaches to adopt. This will also inform us on how best a Unified Logic Model Approach (ULMA) can be developed by bringing the ToC and the LFA together into a single mode.

Once the ToC has been developed, the team examines it to assess its quality from different perspectives, Imas M. et al., (2009). The study believes that some of the viewpoints from which the ToC should be evaluated include but not limited to; the logic and the plausibility of the logic, in terms of social needs, comparison of the research practices, and comparing the ToC with relevant scientific theories. The exacted below from the Roal to Results: Designing and Conducting Effective Development Evaluations published by the World Bank:

- ➤ The Theory of Change Should be Able to Answer the Following Questions:
- Is the model an accurate depiction of the program?
- Are all elements well-defined?
- Are there any gaps in the logical chain of events?
- Are elements necessary and sufficient?
- Are relationships plausible and consistent?
- Is it realistic to assume that the program will result in the attainment of stated goals in a meaningful manner? Imas M. et al., (2009).

H. Practical Examples of the ToC and the LFA

Below is a practical representation of a ToC extracted from a training module on the monitoring and evaluation logic models developed by Scoffy Wangang in 2023. The ToC is translated into an LFA.

Table 1: Practical Example of a Theory of Change

PROJECT TITLE: FOOD SECURITY AND MALNUTRITION OF HOUSEHOLDS AFFECTED BY CONFLICTS AND DROUGHT IN SANTA AND BAFUT SUBDIVISIONS OF THE NWR OF CAMEROON IS IMPROVED

LOCATION: Santa and Bafut Subdivisions of the NWR of Cameroon

DURATION: 2 Years

DORATION, 2 Teats						
2. THE PROBLEM	3. PEOPLE/	4. INPUTS/RESOURCES	5. ACTIVITIES	6. OUTPUTS	7. OUTCOMES	1. IMPACT/GOAL
2.(NEXT WRITE OUT	STAKEHOLDERS	4. Identify influencers and power	5. What practical steps will	6. State the	7. List the preconditions	1.(BEGIN BY WRITING
THE CORE	3. Identify the most	holders to work with and state	you implement to start	immediate outputs	needed to realise the	DOWN YOUR LONG-
PROBLEM(S))	affected people and those	some of the key resources for use	bringing about change?	that will be produced	project/programme	TERM GOAL)
	who will help you with the	in the communities. E.G., mothers		to start conveying	goals/impact	
	work, and those you need to	listen more to other mothers		change in the		
	influence			communities.		
What is the problem	Who is your key audience?	What is your entry point to	What steps are needed to	What is the	What are the wider benefits	What is the long-term
you are trying to solve?		reaching your key audience?/What	bring about change?	measurable effect of	of your work?	change you see as your
		resources are needed?		your work?	•	goal?
POOR HARVEST DUE TO PERSISTENT DROUGHT AND GRAZERS-FARMERS CONFLICTS INADEQUATE KNOWLEDGE IN BALANCE DIETING IN	-Household heads of affected homes, - Community leaders, - Trained lead mothers, - Government agencies representatives - Malnourished children - Suppliers - Grazers - Farmers	-Local governance (local councils, lead mother meetings, grazers and farmers unions, cooperative societies etc.) -Government agencies -Malnutrition treatment centre.	-Identification and training of lead mothers -Food distribution in communities -Screening of children below 23 months for malnutrition -Training on balanced dieting	-Most vulnerable households receive food support -Lead mothers work malnutrinion treatment centers -Lead mothers to organize cooking demonstrations -Communities participate in peace campaign -People participate in awareness-raising campaigns	-Households get enough food to sustain them during lean seasons -Malnutrition of children below 23 months is reduced -Less malmourished children available in the communities -Grazers-Farmers conflicts decline -Children sufficient dietary nutrients intake fewer reported malnutrition-related deaths	IMPROVE THE FOOD SECURITY OF VULNERABLE HOUSEHOLDS IN KAYA & MAMDI DURING LEAN SEASONS REDUCE MALNUTRITION AND INFANT MORTALITY FROM MALNUTRITION- RELATED DISEASES IN KAYA & MAMDI BY 20230
Key Assumptions ONLY IF:	Key Assumptions ONLY IF:	Key Assumptions ONLY IF:	Key Assumptions ONLY IF:	Key Assumptions ONLY IF:	Key Assumptions ONLY IF:	Stakeholders
There is still droughts, grazers-farmers conflicts and inadequate knowledge of balanced dieting.	The different affected people and other stakeholders accept the existence of the problem and fully commit to the success of the intervention	The local governance systems function as expected, local malnutrition treatment centres are available and accept to work with lead mothers, and government agencies are about resolving the issue	Mothers, household heads, and local leaders are willing to take the lead and actively participate and government structures care enough to support the intervention	Lead mothers to disseminate knowledge as trained, families accept children to be screened and communities participate in peace and awareness- raising campaigns	-The households do not sell the food items, -Households continue to prepare balanced diets, -Grazers and farmers continue to co-habit peacefully -Malnutrition treatment centres continue to provide needed support	HEADS OF HOUSEHOLDS, COMMUNITY LEADERS, CLUSTER/SECTO R, GOVERNMENT AGENCIES, LOCAL COUNCILS, CONCERNED

• *Note*. Extracted from the Monitoring and Evaluation (M&E) Plan and its component training module developed by Scoffy N. Wangang,PMP® ©2023

Table 2: Practical Example of the Logical Framework Approach
PROJECT TITLE: FOOD SECURITY AND MALNUTRITION OF HOUSEHOLDS AFFECTED BY CONFLICTS AND
DROUGHT IN SANTA AND BAFUT SUBDIVISIONS OF THE NWR OF CAMEROON IS IMPROVED

LOCATION: Santa and Bafut Subdivisions of the NWR of Cameroon

DURATION: 2 Years MEAL BUDGET: 10% (xaf 12,700,000)

		CDGL1: 10% (xai 12,700,000)		
CODES	OBJECTIVE STATEMENTS	INDICATORS	VERIFICATION METHODS	ASSUMPTIONS
Impact	The food security of vulnerable homalnutrition and child mortality due to Department of Wes	If and only if relevant household heads, community leaders, cluster/sector, government agencies, and local councils are involved, the project is supported		
Strategic Objective 1	Malnutrition and child mortality due to malnutrition-related diseases in Santa and Bafut are reduced.	60% of households report a reduction in malnutrition in the community by the end of the project	Baseline/endline survey	If and only if the treatment of malnutrition in the centres continues to provide the necessary support
Strategic Objective 2	Households receive enough food to meet their needs during lean periods malnutrition is reported	80% of households report an improvement in food sufficiency by at least 40% during the lean season	Baseline/endline survey	If only if households do not sell food products,
	INT	ERMEDIATE RESULTS		
Intermediate result 1	Malnutrition of children under 23 months is reduced	5% reduction in GAM rate at community level	Baseline/endline survey	
Intermediate result 2	Fewer malnourished children available in communities and a reduction in malnutrition-related deaths.	-90% of households report fewer malnourished children and an improved recovery rate. - A reduction of the death rate linked to malnutrition by over 95%	Baseline/endline survey	If only if households continue to prepare a balanced diet,
Intermediate result 3	Conflicts between breeders and farmers are decreased	60% of grazers and farmers report improved social cohesion and communal life after participating in conflict management activities.	Baseline/endline survey	If only if breeders and farmers IGAee participate in conflict management and continue to coexist peacefully
		PRODUCT		
Objective Strategic 2	Households receive enough food to meet their needs during lean periods malnutrition is reported	-6,000 most vulnerable households receive food aid20 community mobilizers identify and train in awareness-raising and peacebuilding techniques	Registration list, food distribution lists, pictures, reports and attendance	
Product 1	Malnutrition of children under 23 months is reduced	-30 mother leaders have been identified and trained (12 in Santa and 18 in Bafut)	Pre-and-post test results Training reports	If only mother leaders spread knowledge, families

		- 1000 malnourished	Pictures	accept	t that children			
		children identified and linked with treatment centres	Attendance sheets	CO	creened and mmunities ipate in peace			
		- 50 culinary demonstration sessions organized on the composition of a balanced diet based on the types of foods available in the communities		and	l awareness ampaigns			
		-5,000 households are made aware of good eating practices and the importance of a balanced diet						
D 1 12	Fewer malnourished children available in communities and a	-600 malnourished children were identified and treated in treatment centres	Evaluation reports Discharge					
Product 2	reduction in malnutrition-related deaths.	- 500 families and guardianship homes for malnourished children assisted with IGA	documents for IGA support					
		-10 peace committees (10 in Santa and 10 in Bafut) to promote peace and social cohesion between breeders and farmers are created	Reports					
Product 3	Conflicts between breeders and farmers are decreasing	-200 conflicts between breeders and farmers are resolved.	Pictures Community testimonies					
		-50 peace campaigns and strengthening of social cohesion are organised	testimomes					
		-Number of participants in awareness sessions on peace and peaceful cohabitation.						
	ACTIVI	TIES			NNUAL ARGETS			
	1101111			2024	2025			
Objective Strategic 2	on is rep	orted						
A.OS.2.1	2500	3500						
A.OS.2.2	20	0						
Activities result 1	·							
A1.1	30	0						
A1.2	A1.2 Screening for malnutrition in 1000 malnourished children							
A1.3	Organize 50 cooking demonstration sessions in Mandi and Santa on the composition of a							

A1.4	Raise awareness among 5,000 households about good eating practices and the importance of a balanced diet.	2000	3000
Activities result 2	Fewer malnourished children available in communities and a reduction in malnutrition		
A2.1	Identification and treatment of 600 malnourished children in treatment centres	300	200
A2.2	A2.2 Support 500 families and guardianship homes for malnourished children with IGA		150
Activities result 3	Conflicts between breeders and farmers are decreasing		
A3.1	Create 10 peace committees (10 in Santa and 10 in Bafut) to promote peace and social cohesion between breeders and farmers	6	4
A3.2	10 Peace Committee resolves 200 conflicts between herders and farmers		80
A3.3	A3.3 Organized 50 peace campaigns and strengthening social cohesion (30 in Bafut and 20 in Santa)		20

[•] *Note*. Extracted from the Monitoring and Evaluation (M&E) Plan and its component training module developed by Scoffy N. Wangang,PMP® ©2023

CHAPTER THREE RESEARCH METHODOLOGY

A. Primary Data Collection

Primary data helps researchers to collect good primary data for analysis that supports decision-making. Within the scope of this study, primary data will be collected to help us understand the practical implications and effectiveness of choosing either a ToC, LFA, both approaches or a ULMA. We believe that by conducting interviews and surveys with concerned project stakeholders, we shall gather valuable information with respect to the application, challenges and benefits of using either of the approaches mentioned above. (Rose et al., 2019) elaborates that data collection can provide a sense of understanding of how project staff can understand and use the ToC and the Logframe. This sheds light on the feasibility of unifying the ToC and the Logframe. This study aims to use primary data to inform on the possibilities of informing policy adjustments, improving knowledge in project management, and driving meaningful discourse on the best models or a combination of models for use in international development.

> The Survey and Interview/Ouestionnaire Design

According to (Lau, 2017), a survey is "a popular means of gauging people's opinion of a particular topic, such as their perception or reported use" of a service. Meanwhile (Herbert Mc. Closky, 1969 as cited in KHAN, 2019) defines a survey "as any procedure in which data are systematically collected from a population or a sample thereof through some form or direct solicitation, such as face-to-face interviews, telephone interviews or mail questionnaires". However, it should be noted that with the advent of the internet and modern technology, the methods of administering surveys have considerably shifted from the traditional methods of face-to-face interviews, telephone or mail to include emails, Professional WhatsApp Groups, professional Telegram channels, making use of web forms such as Kobo Collect, CommCareHQ, Survey Monkey, Open Data Kit (ODK), Microsoft forms, Google forms and more. Christopher & Udod (2020) propound that the research design is a "schema or blueprint for data collection before the actual study".

• Survey Method(s):

This study uses two survey approaches. The descriptive and the explanatory survey approaches. The *descriptive survey approach* is used to "describe the perception of respondents and association of a characteristic" (Lau, 2017) with a service, system, approach or idea. In our case, we hope to use the descriptive study to examine the views, and opinions of international development personnel concerning adopting either the ToC, the LFA, both approaches or a unified model in project/programme planning and management as a measure to safe time and meet up with scarce resources while achieving the intervention's core objectives. We shall also assess the participants' views and correlation between the skills of the project staff, resource availability, time constraints, organisational policies and preferences, donor requirements the availability of a simple standardised model, the technical skills of the project team in using a unified logic model and the choice of the logic used in international development interventions. This will mostly take the quantitative approach.

In addition to the above, this study is also designed to be *explanatory* to help us predict hypothesised relationships (Lau, 2017), the variables under consideration. This will help us understand how different factors within the international development sphere determine the choice of the logic model(s) used in project development and management.

• Questionnaire and Interview Design

Understanding the difference between and survey and a questionnaire is very important in scientific research. While a survey guides us to measure opinions on a particular topic, questions tend to be a data collection method used in a survey in which research participants respond (Lau, 2017) to open-ended or closed-ended questions. An interview on the other part is a face-to-face exchange (Quad, 2016) that happens between the interviewer (often the researcher) and the interviewee (the research participants or subject under study). In a survey, the researcher collects data through a questionnaire interviews or, methods such as emails or by post.

This study makes use of a bilingual questionnaire to collect data from surveyed participants. The bilingual nature of the questionnaire is designed in English and French languages to reach the most audience as possible to ensure the right data is collected. The questionnaire is designed on Kobo Toolbox and deployed as web forms from which participants fill in their responses. The questionnaire is a mixed type. It is both open-ended and closed-ended.

Administration of the questionnaire takes 2 approaches. 70% of the questionnaire will be administered to participants online through professional WhatsApp Forums, professional Telegram channels and professional LinkedIn groups. 30% of the questionnaire will be administered in person through face-to-face interviews.

> The Study Population and Sampling Techniques:

• The Study Population

ISSN No:-2456-2165

for this research is made up of three core professional groups in the field of international development. This includes; the business developer, the project managers/implementation teams as well as the monitoring and evaluation core. It should be noted that in most humanitarian and development organisations, these are not distinct sectors but professionals who inter-play the role of business development as well as programme/project implementation. This makes the sample for this study homogenous as the participants are similar in nature of work, work environment and general characteristics of their projects within the international development sphere. Despite the heterogeneous nature of the sample diverse by geographic regions, organisations, age groups, and more, the common understanding makes their homogenous nature stronger in their common mission of humanitarian and development work.

Another strong homogeneity recognised within the sample population is their organisation into professional communities of practice on WhatsApp, Telegram, LinkedIn and other social media platforms. Here, the group members share a common understanding of principles and knowledge of work thus providing this study with a rich blend of professionals from which to draw a random sample for optimal research results. The study population is not limited to these online professional groups where it is easier to have access to a blend of international development professionals. Survey participants will also be drawn randomly in person from North Cameroon, Northeast Nigeria, as well from the North West and South Regions of Cameroon. These are regions with a heavy presence of humanitarian and development actors accessible to the research team. This further deliminates the scope of the research and the sampling frame.

• *The Sampling Technique(s):*

Sampling for a study is considered the second most crucial thing in designing survey research (KHAN, 2019). The sample determines the extent to which we shall engage with the population of interest and the volume of data to be collected to inform our analysis and the extent of the generalisation of the study findings. To obtain a representative sample worthy of the generalisation of the study results, this study is designed to implement a simple random sampling. The study aims to do a simple random sampling (McCombes, 2019) by randomly interviewing individuals from international development professionals in different WhatsApp, LinkedIn, and Telegram groups. This technique permits us to randomly select the different and appropriate cluster groups both online and offline in organisations in the Northeast of Nigeria, Far North of Cameroon and in the NWSW regions of Cameroon from which to survey participants. Simple random sampling thus helps us to select and collect data from large geographically widespread groups (Bhandari, 2021).

• Sample Size Calculation:

Sample size helps us determine the number of observations or individuals to survey or interview (Singh & Masuku, 2014). This helps to ensure the validity and reliability of the research results. Singh & Masuku, (2014) advised that the "sample size should be carefully fixed so that it will be adequate to draw valid and generalised conclusions." We can not agree more with this as this study aims to inform policy shift and generalisation is a key focus. Calculating the sample size of a simple random sample is a complex process that will take us through 3 stages.

✓ Step 1: Determine the Required Level of Precision and the Level of Confidence

Here, we are going to determine the level of precision. The level of precision is also referred to as the margin of error (Naing et al., 2022). This study is conducted at a confidence interval of 95% with a margin of error (MOE) of $\pm 5\%$. The research aims for a level of confidence that enforces the reliability of the study. To this effect, if the "survey is repeated 100 times, 95 times the observed prevalence will be within the stated confidence interval" (Elbers et al., 1995).

✓ Step 2: Sample Size Calculation using the Empirical Works Krejcie and Morgan Table

Taherdoost (2016) informs that a sample needs to be adequate in size for the study to be generalisable. Taherdoost further makes us understand that the importance lies in the absolute size sample size from the population of interest in relation to its complexities. These complexities are what help us determine the absolute sample size of this study coupled with the study objectives. To limit bias, we aim to select a large representative sample that will also permit the generalization of the study findings.

The Krejcie & Morgan, (1970) Table provides a simple and efficient way of determining sample size for a chosen population. In the Krejcie & Morgan table method, no calculation is required. The Krejcie & Morgan table is constructed with the following formula:

 $s = X^2 N P(1-P) \div d^2(N-1) + X^2 P(1-P).$

s = required sample size.

 X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Fig 4: Krejcie & Morgan Sample Size Determination Formula

• Note: Source Krejcie & Morgan, (1970)

It shows the sample size for different sample populations with the population denoted *N* while the sample size for consideration is denoted *S*. In our case, we considered a population of interest of 1100 organised in different professional WhatsApp Groups with 20% to be conducted in face-to-face interviews. The professional groups of interevent constitute humanitarian and development workers involved in project development, implementation, monitoring and evaluation.

N	5	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1.500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384
Note.—N	is population size.	S is sample size.			

Fig 5: Sample Size Determination using Krejcie & Morgan Table

• Note: Adapted from Krejcie & Morgan, (1970)

Using this approach, we confidently determined the sample size of 284 participants made up of humanitarian and development professionals across the globe.

> Ethical Considerations in Data Collection

Ethical considerations in research help us to understand the ethical principles we want to uphold while collecting data from research participants, in using the data, analysing, communicating, and sharing it. These are the moral codes our study adheres to. The ethical considerations upheld by this study are aimed at "protecting the rights of the research participants", "enhancing research validity" and "maintaining the scientific and academic integrity" (Bhandari, 2021) of this study. The ethical considerations in strong use in data collection for this study include; informed consent, confidentiality, and and for intended purpose only.

- **Informed Consent:** The researcher designed an informed consent question into the questionnaire informing participants of the intended purpose of the data collection exercise and how the researcher intends to use their data. Research participants are expected to consent by selecting yes to consent to provide their information or no to return to a blank page there they are expected to exit for lack of consent.
- Confidentiality: Again, the informed consent note above explains to the participants how the information provided will be held confidential. The study shall not divulge whole or part of the data provided by the survey participants under any circumstances. All data shall be provided anonymously. There is no question in the questionnaire aimed at collecting personally identifiable details from the participants that can be traced back to them.
- **Intended use/purpose:** The data collected from the participants is intended to inform policy changes based on the study findings and to make appropriate recommendations to practitioners in the international development space. Other than these, no other secondary aim is attached to the process of data collection, analysis and use.

B. Data Analysis Techniques

The study seeks to make sense of the data collected from the above process. This process helps us to "answer the research questions, test the hypothesis" (Islam, 2020) and provide solid policy recommendations to the issues raised by the study. In this study, we shall perform descriptive statistics to determine the measures of central tendency (mean, median and mode), Chi-Square (X^2) Test, and Cramer's V.

The use of the central tendency goes in hand with the distribution of the dataset. This type of descriptive statistics helps us to determine the distribution of the dataset for the sampled population. Using frequencies, a normal or symmetrical distribution tells us that there is no skew and that the mean, mode and median are all the same. The curve in a normal distribution has a dome shape. A skewed distribution informs the researcher(s) that the mean, median and mode differ from each other with data either positively or negatively skewed (Bhandari, 2020).

The chi-square (X^2) Test was put forward by Karl Pearson in the 1900s taking two formats; the goodness of fit and the test of independence (Rana & Singhal, 2015). Turney, (2022) the X^2 goodness of fit test is used to "test whether the frequency distribution of a categorical variable is different from your expectations" while the X^2 of independence is used to "whether two categorical variables are related to each other." In this study, we shall make use of the X^2 test of independence. The Chi-Square test is a test of significance (McHugh, 2013) that will help us establish the relationship or association between time and resource constraints and how it affects the choice of the logic model(s), the relationship between the choice of the logic model (ToC, LFA or unified model) and how it affects attainment of project outcomes. Lastly, the X^2 will also be used to if there is any significant benefit in unifying the ToC and the LFA to have a unified model in planning and delivering humanitarian and development assistance. Kearney, (2017) explains that when we find a significant Chi-Square this this situation, it provides evidence that the association found between the categories is not by mere chance.

Since the X^2 test of independence is a test significance, and to further explain the association found, this study shall make use of Cramer's V (1946) to test the strength (McHugh, 2013) of the significance. Cramer's V is also referred to as the Cramér's phi and denoted φ c. It is used to determine the intercorrelation⁵ between normal variables with a value strength range of 0 to +1. When a Cramer's V of 0 is found it means no association or intercorrelation has been found while a Cramer's V value of +1 means strong or complete association or intercorrelation (Wikipedia Contributors, 2024).

C. The Use of Statistical Software for Data Analysis

The Statistical package used to analyse collected data for this study is the IBM SPSS Statistical Package. The use of IBM SPSS to test the hypothesis of this study provides significant potential in enhancing the understanding of the study results and effectively answering the research questions. IBM SPSS is a widely used and accepted software package within the field of social sciences. Leveraging the statistical power of SPSS helps us uncover significance, associations, and independence with large amounts of data that are not easy to quickly analyse without the use of similar software. This software helps us to conclude and present results that are sound and help support the choice of a logic model for use in humanitarian and development interventions.

IJISRT24JUL1919 www.ijisrt.com 2953

Wikipedia Contributors. (2024, March 28). Cramér's V. Wikipedia; Wikimedia Foundation. https://en.wikipedia.org/wiki/Cram%C3%A9r%27s_V

D. The Use of Frequency and Thematic Analysis of Qualitative Data.

The data analysis also made use of frequencies to determine the counts and percentages of represented groups and responses to specific questions. The thematic analysis looked into recurring themes and patterns from open-ended questions to support the statistical analysis.

E. ToC and LFA Harmonisation Approach

Unifying the Theory of Change (ToC) and the Logical Framework Approach (LFA) present significant potential in enhancing the effectiveness and efficiency of humanitarian interventions. By unifying or combining the structural results frameworks of the LFA with the causal pathways of the ToC, a more comprehensive and robust logic model can be developed, providing clarity on both the intended outcomes and the steps needed to achieve them. This has the potential to significantly improve the measurability and the evaluability of international development interventions. This integration can address the challenge of time and resource constraints faced by project staff, offering a streamlined approach that accounts for the complexities of implementation. Additionally, unifying the ToC and the LFA can improve the evaluability and measurability of causal pathways, enhancing monitoring and evaluation processes. Ultimately, this integrated approach has the potential to drive more meaningful conversations on project management strategies and inform policy adjustments that optimize project outcomes.

➤ Feasibility of combining ToC and LFA

The ToC and the LFA present clear possibilities for combination or integration. The ToC is built on causal result pathways which identify the key problems, the inputs, activities, the short-term or intermediate results as well as the long-term results of the goal of the intervention. The LFA follows a similar result-based structure except for the causal pathways. However, it includes the indicators for measuring the attainment of the results at each result level as defined in the ToC. In both approaches, the foundation of risk management on the interventions is in strong consideration with the identification of assumptions. An integrated approach has a strong potential to enhance planning, monitoring and evaluation of the planned results. However, further research is needed to carefully examine the arguments for combining both models, the proposition of possible outcomes from the integration process, and the applicability of such a model in tailored and controlled vs uncontrolled case studies.

CHAPTER FOUR RESEARCH RESULTS

The data collection ended with 285 participants responding to the survey. The responses were distributed by gender with 28.4% females and 71.6% males. The distribution also looked into the different roles held by the respondents in their respective organisations. This 7% of the respondents belonged to the CEO/Coordinator/Director category, 52.3% belonged to the MEAL or M&E Advisor/Manager/Officer/Assistant, and 27% belonged to the Project Manager/Officer/Coordinator category. In comparison, 13.7% belonged to the Others group.

A. The Effects of Time and Resource Constraints

The study set out to address whether or not time and resource constraints affect or determine the choice of the logic model. This was verified through the use of the following set of hypotheses:

- H_{a0}: Time and resource constraints have no significance on the choice of a logic model(s) used in international development
- Hal: Time and resource constraints have significant effects on the choice of a logic model(s) used in international development

A Chi-Square test of independence was conducted to evaluate the relationship of time and resource constraints on the choice of the logic model(s). The observed frequencies showed that 5 respondents declared that time and resource constraints have never affected their choice of a logic model, 59 reported that time and resource constraints often affect their choice of a logic model, 11 declared that these rarely affect their choice while 116 said time and resource constraints sometimes affect their choice of a logic model. Still, under the assumption that time and resource constraints have no significance on the choice of a logic model(s) used in international development, the expected frequencies showed that 14 participants believed that time and resource constraints have never affected their choice of a logic model, 48 said it often affects, 19 said it rarely while 111 said it sometimes. This was examined against declaration from participants if they had ever faced situations when they did not have enough time and resources to develop a logic model (Yes or No).

Table 3: Chi-Square test of Time/Resource Constraints on the Choice of Logic Model in International Development

	Value	df	Asymptotic Significance (2-sided)		
Pearson Chi-Square	36.591a	3	.000		
Likelihood Ratio	35.594	3	.000		
N of Valid Cases	285				
a. 0 cells	a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.93.				

The result shows a significance at $X^2(3, N=285)=36.591$, P=0.00. The Cramer's V value of 0.358 showed a strong relationship between time/resource constraints and the choice of the logic model(s).

To further investigate which logic model(s) is/are most suitable under time and resource constraints, the participants were asked to select which logic model they find most effective under tight time constraints as well as the one they found most effective when faced with limited financial and human resources including limitations in skill sets.

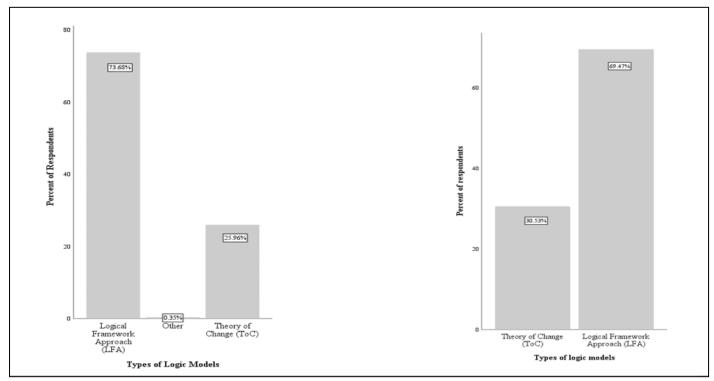


Fig 6: The Proportion of Respondents who Indicated Preferred Logic Model(s) Under Tight Deadlines vs The Proportion of Respondents Who Indicated the Most Effective Logic Model when Faced with Resource Constraints

Both charts above show that 73.68% of respondents preferred the LFA when faced with tight deadlines while only 25.96% preferred the ToC when faced with tight deadlines. On the other hand, 69.47% found the LFA most effective when faced with resource constraints while 30.53% preferred the ToC in s similar situations.

B. The Use of the LFA and the ToC Independently in Project Delivery

On another note, the study set out to answer the research question of whether or not a Theory of Change (ToC) and the Logical Framework Approach can be used independently of each other to significantly achieve desired project results. This question was verified with the use of the following set of hypotheses:

- **H**_{b0}: The use of a single logic model either Toc or LFA has no association with the attainment of the intervention outcomes/impact.
- H_{b2}: The use of a single logic model, either the Toc or the LFA has a negative or positive association with the attainment of
 project outcomes/impact

Similar to the above, a Chi-Square (X^2) test of independence was conducted to examine the relationship between the use of a single logic model and the attainment of the project outcomes. Here, the belief that a single logic model can positively influence the attainment of project objectives (Yes and No) was cross-tabulated with the overall success of the interventions using the single logic model of choice (very successful, moderately successful, slightly successful and not successful). The observed frequencies showed 132 for very successful, 102 for moderately successful 7 for slightly successful and none for not successful. Contrary to this, the expected frequencies showed 124 for very successful using a single logic model, 8 for slightly successful using a single logic model and none for not successful.

Table 4: Chi-Square Test of the Association Between the Use of a Single Logic Model Independently and the Attainment of Project Outcomes

	Value	df	Asymptotic Significance (2-sided)		
Pearson Chi-Square	6.382a	2	.041		
Likelihood Ratio	6.455	2	.040		
N of Valid Cases 285					
a. 1 cells (16.7%) have an expected count less than 5. The minimum expected count is 1.39.					

The result shows a significance at $X^2(2, N=285)=6.382$, P=0.041. The Cramer's V value of 0.150 showed a weak relationship between the use of single logic models and the attainment of project outcomes.

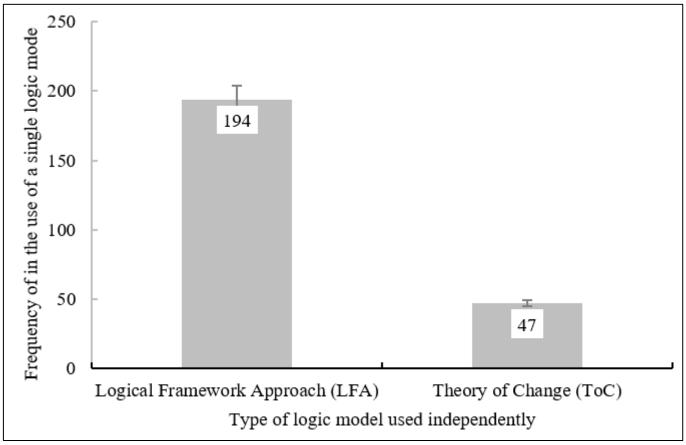


Fig 7: Number of Participants Who Declare that they Use a Single Logic Model, Either the ToC or the LFA

To further test the use of a single logic model in project/programme implementation, the participants were asked to select the type of logic model they used independently to plan, implement, monitor, evaluate and control their interventions. 241 participants responded to this question of which 194 declared they use only the LFA and 47 said they use only the ToC in their projects.

C. The Importance and Significance of the Unified Logic Model Approach (ULMA)

To answer the last research question "How feasible and acceptable is it to unify the ToC and the Logframe to have one strategic and operational model?" The participants were asked if they had ever seen and/or used a ULMA. A unified logic model combines both features of the ToC and the LFA into a single model for better strategic and operational use. 285 participants responded to this question. 91% of the participants declared to have never seen or used a unified logic model while the 9% that declared to have seen or used a unified logic model could not provide a substantial reference to the existence of such a model.

- > To Further Answer This Research Question, the Following Set of Hypotheses were Used:
- **H**_{c0}: There is no significant benefit in unifying the ToC and LFA in project delivery
- **H**_{cl}: There is a significant benefit to unifying the ToC and LFA into a single model in project delivery.

Participants were asked in two sets of questions if they think a unified logic model that combines the features of the LFA and the ToC could improve the planning of humanitarian and development interventions (response with Yes or No). In another question, they were asked if they think the same unified logic model that integrates the features of the ToC and the LFA could improve the measurability and evaluability of humanitarian and developmental projects (responses Yes or No). A cross-tabulation provided insights into the significance of unifying the ToC and the LFA to improve project/programme delivery.

The observed frequencies show that 271 participants said yes, that they think the use of a unified logic model can improve the planning, implementation, measurability and evaluability of humanitarian and development interventions, while it was observed that 14 said no. These same values were recorded on the expected frequencies respectively.

The table below shows the computation of the Pearson Chi-Square, the Continuity Correlation, the Likelihood ratio, Fischer's Exact Test and the level of significance. This test was conducted with a 2x2 table.

Table 5: The Significance of the Unified Logic Model in Project Delivery

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)				
Pearson Chi-Square	118.641 ^a	1	.000						
Continuity Correction ^b	98.757	1	.000						
Likelihood Ratio	39.080	1	.000						
Fisher's Exact Test				.000	.000				
N of Valid Cases	285								
a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is .29.									
		b. Computed o	nly for a 2x2 table						

The result shows a significance at X^2 (1, N=285)= 118.641, P= 0.00, a Continuity Correlation value of 98.757 showed a strong relationship between the Unified Logic Model approach and the improvement in planning, implementation, monitoring, evaluation, and control of humanitarian and development projects.

CHAPTER FIVE DISCUSSION

A. The Effects of Time and Resource Constraints

From the data, we understand that the observed frequencies deviate from the expected frequencies. This is supported by Cramer's V value of 0.358 which shows a medium association between time/resource constraints and the choice of logic model. The P value of 0.00 which is less than 0.05 informs us that there is statistical significance between time/resource constraints and the choice of logic model. This evidence leads us to reject the null hypothesis and accept the alternate hypothesis (H_{al}) which states that "time and resource constraints have significant effects on the choice of a logic model(s) used in international development" Morganstern et al., (2009) propounded that the challenges faced by project staff include time and resource constraints and high pressure to meet deadlines. These challenges thus push the project development teams to choose the most easy to choose the most feasibly logic models under such circumstances.

Overall, the logical framework stands out as the most preferred logic model when it comes to project planning under tight timeframes, limited resources and capacity. On average, 76% of respondents preferred the LFA in both situations of tight deadlines and limited resources and capacity while 24% preferred the use use of the ToC when faced with similar challenges.

B. The Use of the LFA and the ToC Independently in Project Delivery

The result shows statistical significance at X^2 (2, N=285)= 6.382, P= 0.041. The Cramer's V value of 0.150 showed a weak relationship between the use of single logic models and the attainment of project outcomes. The P value of 0.041 shows marginal statistical significance with the Cramer's V value showing a small effect of the use of a single logic model and the delivery of project results. This could however be a result of the need to increase the sample size in future studies to better test this phenomenon. Overall, we reject the null hypothesis and accept the alternate hypothesis (H_{b2}) which states that "the use of a single logic model, either the Toc or the LFA has a positive association with the attainment of project outcomes/impact".

The Cramer's V value of 0.15 supports the proposition of an integrated logic model that unifies the features of both the ToC and the LFA for better project planning, implementation, monitoring and evaluation.

C. The Importance and Significance of the Unified Logic Model Approach (ULMA)

The results above showed a statistically significant between unifying the ToC and LFA into a single model in project delivery ($P \ value = 0.00$). This is supported by the Chi-Square test which found a statistically significant relationship between the variables. Thus, we reject the null hypothesis (\mathbf{H}_{c0}) which states that there is "there is no significant benefit in unifying the ToC and LFA in project delivery" and accept the alternate hypothesis (\mathbf{H}_{c1}) which states that "there is a significant benefit to unifying the ToC and LFA into a single model in project delivery".

The results strongly suggest that the significance of unifying the ToC and the LFA for better planning, implementation, monitoring and evaluation did not occur by chance or randomly. This statistically significant association tilts the data with a strong positive association and influence towards the unification of the ToC and the LFA for better planning, implementation, measurability and evaluability of international development interventions.

Using this evidence, this study has provided a recommended ULMA in the recommendations section below.

CHAPTER SIX CONCLUSION AND RECOMMENDATIONS

A. The Effects of Time and Resource Constraints

The p-value < 0.001) shows a strong association between time/resource constraints and the choice of logic model. This informs us that there is a strong need to consider improving the timeframes allotted for the development of these logic models. Organisations should recruit adequate and competent personnel to support timely development and planning using these models. These findings align with Morganstern et al. (2009) by highlighting how time pressure and limited resources push project teams towards readily available or less complex logic models. Samiran Nundy et al., (2022) underscored the challenges faced by humanitarian workers in high-pressure environments where project/programme teams are often caught up with tight schedules, deadlines, limited resources and insufficient capacity to effectively and efficiently produce ToCs and logframes for their interventions. This necessitates the notion of the effective use of a single logic model in programming and the operationalisation of interventions.

B. The Use of the LFA and the ToC Independently in Project Delivery

From the analysis and the interpretations above, we rejected the null hypothesis (H_{b1}) and accepted the alternate hypothesis (H_{b2}) . However, it is worth noting that several factors could have determined the marginal significance of the result. These are factors that are primordial in determining the choice of logic model from the perspective of participants. Some of these factors in order of magnitude include; humanitarian resource availability observed as the most predominant factor confirmed by 22.11% of respondents, technical expertise/skills of the project development staff in the development of logic models observed as the second most predominant factor that influences the choice of the logic models with 18.25% of participants saying yes to it while the third most predominant factor observed is the complexity project confirmed by 11.58% of respondents. The fourth most dominant factor is the time available for the development of the logic model 10.53% of respondents, and the 5th most dominant factor that participants considered as a factor that determines the choice of the logic model is the availability of a simple unified model with 11.23% of respondents. This is closely followed by donor requirements (10.18%), the influence of organisational policies/preferences (9.47%) and the availability of financial resources (6.67%) in the 8th position.

The use of a single logic tilts more towards preference for the LFA in planning and operationalising projects. This model operationalises the causal pathways of the ToC as confirmed by Mountain-EVO (2017) in the literature with considerations that the LFA operationalises the ToC and implements a results-based approach.

However, increasing the sample size and conducting Randomised Control Trials (RCTs) could help determine if truly these factors have a significant bearing on the choice of the logic model in international development projects.

(NORAD et al., 1999) tasked us to investigate the efficacy of either the ToC or the LFA as a tool that could be used independently in emergencies to successfully deliver project results. Suffice it to say that the findings from this study show a good association between the use of a single logic model and the effective delivery of project results. This evidence points more towards the use the LFA independently as opposed to the ToC. Considering the static nature of the LFA, a more dynamic model (unified logic model) that combines the features of both could be a better option for effective planning, implementation, measurement and control of the projects and the project environments.

C. The Importance and Significance of the Unified Logic Model Approach (ULMA)

The analysis of the results and the interpretations above depicted a very strong association between the use of a unified logic model and the use of a unified (model that unites the features of the ToC and LFA) into a single model and the effectiveness in project planning, implementation, monitoring and evaluation.

From the 284 respondents who responded to this question, 94.74% of respondents believed that the use of a unified logic model could be very beneficial in project planning and delivery while 5.26% of respondents said no. However, the 15 respondents who said no expressed 3 major fears or issues that could affect the adoption of a unified logic model. These factors include; *resistance to change*. This is very valid. Rehman et al. (2021) state that "in implementing a change, one of the biggest problems an organization faces is resistance from its employees". Responses from the survey such as "Everyone wants to do things in a hurry", "hardly give time to develop" and "rigidity in decision making" highlight a potential resistance to change within the organizational system. People might be concerned about the time investment required to develop and implement a new system. However, like every other endeavour that is aimed at systems strengthening and improving quality, capacity building and passing the right message remains pivotal in the adoption of the Unified Logic Model Approach (ULMA).

The second issue raised is the *existence of internal Standards and Power Dynamics*. Four responses mentioned existing internal standards and tools ("internal standards," "organization standards tools," "My organisation has its standard ToC and LFA used globally"). This suggests a preference for established standards and potential concerns about losing control or flexibility if a new system is introduced. Additionally, statements about "seniors using the ToC" hint at power dynamics where senior management might be comfortable with current methods. However, with proper training and clear communication of purpose and benefits, the adoption of the ULMA will prove beneficial with time.

The last major concern raised is the *complexity and Lack of Perceived Value*. Concerns raised about "the interpretation of the model," and "the complexity," suggest a perception that a unified system might be cumbersome or difficult to understand and use. This fear is well-founded. There is an expressed lack of clarity on the approach and the benefits of the proposed model. Yet again, this should be resolved with proper research, development of training content, conducting organisational capacity building and several pilot tests.

Overall, the results strongly answer the research; How feasible and acceptable is it to unify the ToC and the Logframe to have one model that is both strategic and operational? With a P value =0.000, the use of the Unified Logic Model Approach (ULMA) is deemed a very significant means of improving the quality of programme planning, implementation, monitoring and evaluation and should be strongly considered by humanitarian and development organisations.

This research thus proposes the following model and a prospective ULMA for use in humanitarian and development interventions. This example is built from a practical project ready for implementation and depicts how this could be used on both small and large-scale humanitarian and development projects/programmes.

- PROJECT TITLE: FOOD SECURITY AND MALNUTRITION OF HOUSEHOLDS AFFECTED BY CONFLICTS AND DROUGHT IN SANTA AND BAFUT SUBDIVISIONS OF THE NWR OF CAMEROON IS IMPROVED BY 2026
- LOCATION: Santa and Bafut Subdivisions (NWR of Cameroon)
- DURATION: 5 Years
- MEAL BUDGET: 10% (xaf 12,700,000)

Table 6: The Unified Logical Model Approach (ULMA), Pioneered by Scoffy N. Wangang

2. THE	4.INPUTS/RE	5.	6.	<mark>7.</mark>	8.	<mark>9.</mark>	1. IMPACT	<u>10.</u>	11.
PROBLEM	SOURCES	ACTIVITI	OUTPU	OUTPUT	OUTCOM	OUTCO	/GOAL	IMPACT	IMPACT
2.(NEXT	Identify	ES	TS	INDICAT	ES	ME	1.(BEGIN	INDICAT	CONTRIB
WRITE	influencers and	5. What	6. State	ORS	8. List the	INDICAT	BY	ORS	UTION
OUT THE	power holders	practical	the		preconditio	ORS	WRITING	(max 3)	STATEM
CORE	to work with	steps will	immedia		ns needed		DOWN		ENTS
PROBLEM(and state some	you	te		to realise		YOUR		Prospective
S))	of the key	implement	outputs		the		LONG-		but could
,,	resources for	to start	that will		project/pro		TERM		also be
	use in the	bringing	be		gramme		GOAL)		retrospectiv
	communities.	about	produce		goals/impa				e for each
	E.G., mothers	change?	d to start		ct				impact
	listen more to		conveyin						level Goal
	other mothers		g change						ievei Goai
			in the						
			commun						
			ities.						
What is the	What is your	What	ities. What is	How will	What are	How will	What is the	How will	Write the
What is the problem you	What is your entry point to	What steps are		How will you	What are the wider	How will you	What is the long-term		Write the IMPACT
			What is						IMPACT
problem you	entry point to	steps are	What is the	you	the wider	you measure	long-term	you	IMPACT STATEM
problem you are trying to	entry point to reaching your	steps are needed to	What is the measura	you measure	the wider benefits of	you measure	long-term change you	you determine	IMPACT STATEM ENT to
problem you are trying to	entry point to reaching your key	steps are needed to bring	What is the measura ble	you measure the results	the wider benefits of	you measure the results at the outcome	long-term change you see as your	you determine that the interventi on has	IMPACT STATEM ENT to show that your
problem you are trying to	entry point to reaching your key audience?/Wha	steps are needed to bring about	What is the measura ble effect of	you measure the results produced	the wider benefits of	you measure the results at the	long-term change you see as your	you determine that the interventi on has	IMPACT STATEM ENT to show that your
problem you are trying to	entry point to reaching your key audience?/Wha t resources are	steps are needed to bring about	What is the measura ble effect of your	you measure the results produced at the	the wider benefits of your work?	you measure the results at the outcome	long-term change you see as your	you determine that the interventi on has contribute d to	IMPACT STATEM ENT to show that your interventio
problem you are trying to	entry point to reaching your key audience?/Wha t resources are	steps are needed to bring about	What is the measura ble effect of your	you measure the results produced at the activities/	the wider benefits of your work?	you measure the results at the outcome level?	long-term change you see as your	you determine that the interventi on has contribute d to	IMPACT STATEM ENT to show that your interventio
problem you are trying to	entry point to reaching your key audience?/Wha t resources are	steps are needed to bring about	What is the measura ble effect of your	you measure the results produced at the activities/ output level? (Indicator,	the wider benefits of your work?	you measure the results at the outcome level? (Indicator,	long-term change you see as your	you determine that the interventi on has contribute d to achieving	IMPACT STATEM ENT to show that your interventio n has contribute
problem you are trying to	entry point to reaching your key audience?/Wha t resources are	steps are needed to bring about	What is the measura ble effect of your	you measure the results produced at the activities/ output level?	the wider benefits of your work?	you measure the results at the outcome level? (Indicator,	long-term change you see as your	you determine that the interventi on has contribute d to achieving the stated impact?	IMPACT STATEM ENT to show that your interventio n has contribute d/aims to contribute
problem you are trying to	entry point to reaching your key audience?/Wha t resources are	steps are needed to bring about	What is the measura ble effect of your	you measure the results produced at the activities/ output level? (Indicator,	the wider benefits of your work?	you measure the results at the outcome level? (Indicator,	long-term change you see as your	you determine that the interventi on has contribute d to achieving the stated impact? (Indicator,	IMPACT STATEM ENT to show that your interventio n has contribute d/aims to contribute
problem you are trying to	entry point to reaching your key audience?/Wha t resources are	steps are needed to bring about	What is the measura ble effect of your	you measure the results produced at the activities/ output level? (Indicator,	the wider benefits of your work?	you measure the results at the outcome level? (Indicator,	long-term change you see as your	you determine that the interventi on has contribute d to achieving the stated impact?	IMPACT STATEM ENT to show that your interventio n has contribute d/aims to contribute

									goal stated
									in level 1.
POOR HARVEST DUE TO PERSISTE NT DROUGH T AND GRAZERS . FARMER S CONFLIC TS	1. Local governance (local councils, lead mother meetings, grazers and farmers unions, cooperative societies etc.) 2. Government agencies	1. Organise awareness -raising campaigns 2. Organise 30 dialogue forums/pe ace rallies and workshops to sensitise/a dvocate and share ideas on peace improvem ent processes and activities. 3. Developm ent of 6 peace and advocacy documents in dialogue forums/pe ace rallies (1 per communit y) 4. Distributio n of seeds and agricultura 1 inputs to 500 farmers	1. Communities participa te in peace campaig n 2. Community members participa te in awarene ssraising campaig ns 3. Farmers and herders actively involved in food producti on for improve d livelihoo ds	1. Number of awareness -raising campaign s organized in communit ies B: 200 T: 750 2. Number of communit y members participati ng in peacebuil ding activities (e.g., peace rallies, dialogue forums, workshop s) B:0 T:1000 3. Number of farmers and headers inclusive participati ng in agricultur al activities. B:0 T:500	cohesion with reduced Grazers- Farmers conflicts	after receiving information from awareness -raising campaign s B: 0 T: 70% 2. Percentage decrease in reported incidents of violence between Grazers and Farmers in the communit y B:0 T: 80% 3. Proportion of farmers who improved harvest by at least 20% as a result of the	IMPROVE MENT IN THE FOOD SECURITY, NUTRITIO NAL HEALTH AND SUSTAINA BLE PEACE/SO CIAL COHESION OF VULNERA BLE COMMUNI TIES IN SANTA & BAFUT BY 2026	e of traditional and religious leaders, herders/ agricultur al associatio ns who report improved food productio n, and peace/soci al cohesion in the vulnerable communit ies. B: 0	in level 1. 1. An improveme nt in food security and sustainable peace/socia l cohesion will result in more sustainable livelihood, improved households ' income, improved health, reduced forced displaceme nts and contribute to improved life.
INADEQU ATE KNOWLE DGE IN BALANCE DIETING	3. Malnutrition treatment centres.	5. Identify and train 22 lead mothers on malnutriti	4. Lead mothers are trained and can screen	4. Number of lead mothers trained on malnutriti	3. Malnutritio n of children below 60 months and			2. Percentag e household s below poverty	A reduction in household malnutritio n by 80% is achieved by 2026 in

						 		l
AND THE	on .	women	on .	pregnant	pregnant			low-income
PREVALE	screenin	_	screening	lactating	and		at reast	communitie s through a
NCE OF	balance		and	mothers is	lactating		80%	comprehen
MALNUT	dieting		balanced	reduced by	mothers		change in	sive
RITION	and food		_	5% from	who		dietary	balanced
	composi		B:0 T: 22		report that		diversity	diet
	on	compete	5.	baseline	the		score	education
	6.	nt to	Number	4. Children	programm		following	programme
	Conduc	-	of	with	e helped		participati	
	screenin		individual	sufficient	them			empowers
	of 2500		s screened	dietary	reduce			families to
	children		on MAM	nutrient	malnutriti		arcting	make informed
	59 month		and SAM	intake	on by 5%		education	food
	and 100		B:250 T:	fewer	from the		al	choices.
	pregnan		3500	reported	2020		programm	
	and	PHC to	6.	malnutritio	baseline		e B:0:	
	lactating	-	Number	n-related	B:15% T:		T:90%	
	mothers		of	deaths	80%			
	on	ion.	individual	5.	5. %			
	malnutri		s screened	Vulnerable	reduction			
	on	mothers	for severe		in the rate			
	7. Referr		acute	are able to	of			
	and care	_	malnutriti	plan and	malnutriti			
	for	cooking	on	prepare	on from			
	identifie		referred to	balanced	the 2020			
	malnour		PHC and	diets	baseline			
	hed	6. Most	treatment	improve	of 20%			
	children	•	expenses	their Food	B:20% T:			
	pregnan		were paid.	Consumpti	20%			
	and	househol	B:0	on Scores	6.			
	lactating		T:1000		Percentag			
	mothers		7.		e of HHs			
	primary		Number		below the			
	health	living	of persons		poverty			
	centres		participati		line that			
	8. condu		ng in		improved			
	60	poverty	cooking		their FCS			
	cooking	·	demonstra		by at least			
	demonstr		tions in 6		30% from			
	tions in		project		household			
	project		locations		baseline			
	location	* *	B: 0 T:	1	B:18%			
	on the	to meet	2000	1	T:90%			
	balance		8.	1				
	composi		Number					
	on of loc		of	1				
	food	needs	household					
	items.		S idantici a	1				
	9.		identified	1				
	Distribut		as living					
	n of casi		below the	1				
	transfer	S	poverty					
	using		line	1				
	AMTs t	U	receive					
	3000 familia	,	cash	1				
	families	·	transfers	1				
	living		to meet	1				
	below th		80% of	1				
	poverty		their					
	line		dietary	<u> </u>				

	1	1			Ī	1		F	,
				caloric					
				needs.					
Key	Key	Key	Key	VERIFIC	Key	VERIFIC		VERIFIC	Key
Assumption	Assumptions	Assumptio	Assumpt	ATION	Assumptio	ATION	STAKEHOL	ATION	Assumptio
S	ONLY IF:	ns	ions	METHO	ns	METHO	DERS	METHO	ns
ONLY IF:		ONLY IF:	ONLY IF:	DS	ONLY IF:	DS		DS	ONLY IF:
droughts, grazers- farmers conflicts and inadequate knowledge	governance systems function as expected, local malnutrition treatment	household heads, and local leaders are willing to take the	mothers to dissemin ate knowled ge as	Attendanc e sheets, pictures, reports 2. Records	households do not sell the food items, - Household	survey, feedback/ testimonie s, 2. & 3 baseline/e	HOUSEHO LDS, COMMUNI TY LEADERS, CLUSTER/S	2. Testimoni	the peace-
of balanced dieting.	treatment centres are available and accept to work with lead mothers, and government agencies are about resolving the issue	take the lead and actively participate and governme nt structures care enough to support the interventio n	ge as trained, families accept children to be screened and commun ities participa te in peace and awarene ssraising campaig ns	Records from organizers of peace campaign s, communit y leaders testimonie s, reports, pictures, Policy reports, and advocacy instrumen ts 3. Distributi on lists, pictures, reports	Household s continue to prepare balanced diets, -Grazers and farmers continue to co-habit peacefully - Malnutritio n treatment centres continue to provide needed support	baseline/e ndline surveys, reports, participan ts testimonie s	ECTOR, GOVERNM ENT AGENCIES, LOCAL COUNCILS, CONCERN ED The different affected people and other	communit y/	and use the knowledge gained from the balanced dieting education programme

ANNEXES

- > Survey Questionnaire
- https://ee-eu.kobotoolbox.org/x/SHPO41gy
- ➢ Glossary
- Theory of Change (ToC): A strategic planning tool used in humanitarian and development interventions. It maps out the pathways to change and contains the logic of the intervention. It emphasizes understanding the relationships between different result areas and the underlying assumptions/hypotheses which serve as the building blocks for risk identification and management.
- Logical Framework Approach (LFA): A 4x4 matrix-based tool that outlines the relationships between a programme's inputs, activities, outputs, outcomes, and impact (the result pathways). It provides a structured approach to planning, monitoring, and evaluating program effectiveness. The LFA operationalises the ToC by defining the causal linkages between these elements.
- MEAL (Monitoring, Evaluation, Accountability, and Learning): A framework used in humanitarian and development projects to ensure that interventions are being implemented as planned, to measure their effectiveness, and to learn from the implementation process to improve future projects.
- Causal Pathways: The sequences of events, conditions, and mechanisms through which an intervention is expected to bring about its intended outcomes. Both the ToC and the LFA map out these pathways to illustrate how change will occur.
- Assumptions/Hypotheses: Underlying conditions or external factors that are presumed to be true and are necessary for the
 successful implementation of a project. They are a critical component of both the ToC and LFA, influencing the outcomes of
 humanitarian interventions.
- Inputs: Resources that are used to conduct activities in a project. They include finances, human resources, materials, and time. In the LFA, inputs are detailed to show what is necessary to achieve the project's activities and outputs.
- Outputs: The immediate results of project activities. These are usually tangible products or services delivered as part of the intervention, such as training sessions conducted or food distributed.
- Outcomes: The short-term and medium-term effects of the project outputs. They represent the changes that occur as a result of the project's activities, which are necessary to achieve the long-term impact.
- Impact: The long-term changes or benefits that result from the project. Impact refers to the ultimate goal of the intervention, such as improved food security or reduced malnutrition in a community.
- Evaluability: The extent to which a project or program can be evaluated reliably and credibly. Both the ToC and LFA frameworks aim to enhance evaluability by clearly defining objectives, assumptions, and causal pathways.
- Adaptability: The ability of a project to adjust its strategies and activities in response to changes in the context or new information. The ToC is often praised for its adaptability, allowing for adjustments to better meet the project's goals.
- Static: Refers to something that does not change. The LFA is often criticized for being too static, meaning it does not easily accommodate changes in the project's environment or unexpected challenges.
- Interdependence: A situation where two or more elements are dependent on each other. In the context of ToC and LFA, interdependence refers to how these frameworks can be integrated to complement each other.
- Independence: A situation where an element can function on its own without reliance on others. This term is used to explore whether the ToC or LFA can be effectively used independently in project management.
- Donor Requirements: The specific needs or conditions set by funding organizations that must be met by project implementers. Both the ToC and LFA are often shaped by these requirements to ensure continued funding and support.
- Risk Identification and Management: The process of identifying potential risks that could impact a project's success and developing strategies to manage these risks. This is a critical component of both the ToC and LFA.
- Strategic Planning: A long-term approach to setting priorities, focusing energy and resources, and ensuring that stakeholders are working toward common goals. The ToC is often used as a strategic planning tool in humanitarian interventions.
- Operational Planning: A detailed plan outlining how to achieve specific objectives in the short term. The LFA is used for operational planning by defining specific activities, outputs, and outcomes.
- Stakeholders: Individuals or organizations that have an interest in the outcome of a project. Stakeholders can include community members, government agencies, donors, and implementing partners.
- Logframe: A commonly used abbreviation for Logical Framework, referring to the structured matrix used in the LFA to map out the relationships between a project's elements.
- Result-Based Management (RBM): A management strategy focusing on performance and achievement of outputs, outcomes, and impacts. Both the ToC and LFA frameworks aim to support RBM by providing clear frameworks for planning and evaluation.
- Unified Logic Model Approach (UMLA): A strategic and operation model used for project planning, monitoring and evaluation. It provides a clear link between the causal pathway from the intervention logic to the measurement of the results. Pioneered by Scoffy Ndi Wangang, PMP®

REFERENCES

- [1]. Theory of change vs logic model: two sides of impact strategies / sopact. (2024). Sopact.com. https://www.sopact.com/guides/theory-of-change-vs-logic-model
- [2]. Connell, J., & Kubisch, A. (1998). Applying a Theory of Change Approach to the Evaluation of Comprehensive Community Initiatives: Progress, Prospects, and Problems. https://cnxus.org/wp-content/uploads/2022/04/08071320ApplyingTheoryofChangeApproach.pdf
- [3]. Using the logical framework for sector analysis and project design: a user's guide | Wageningen University and Research Library catalogue. (2024). Library.wur.nl. https://library.wur.nl/WebQuery/titel/959552
- [4]. SALDANHA, C. WHITTLE, J. (1998): Using the Logical Framework for Sector Analysis and Project Design: A User's Guide. Manila: Asian Development Bank
- [5]. Prinsen, G. & Nijhof, S. (2015). Between logframes and theory of change: reviewing debates and a practical experience. Development in Practice. ResearchGate. https://doi.org/10.1080/09614524.2015.1003532, https://www.tandfonline.com/doi/abs/10.1080/09614524.2015.1003532.
- [6]. Cracknell, B. (1989). Evaluating the effectiveness of the Logical Framework system in practice. *Project Appraisal*, 4(3), 163–167. https://doi.org/10.1080/02688867.1989.9726727
- [7]. Results Management in Norwegian Development Cooperation A practical guide. (n.d.). Retrieved April 26, 2024, from https://www.norad.no/globalassets/import-2162015-80434-am/www.norad.no-ny/filarkiv/vedlegg-til-publikasjoner/results-management-in-norwegian-development-cooperation.pdf
- [8]. Jody Zall Kusek, Ray C. Rist. (2004). Ten Steps to a Results-Based Monitoring and Evaluation System. World Bank Publications.
- [9]. Linda G. Morra-Imas, Linda G. Morra, Ray C. Rist. (2009). The Road to Results. World Bank Publications. http://books.google.com/books?id=NEsg-BtinIsC&dq=2.+Prevalence+of+ToC+and+LFA+in+current+humanitarian+practices&hl=&source=gbs_api</u
- [10]. Clarke, K.M., Barari, A., Hogue, A., & Dubrowski, A. (2023). Using a Delphi Method Approach to Select Theoretical Underpinnings of Crowdsourcing and Rank Their Application to a Crowdsourcing App. SIMULATION IN HEALTHCARE: JOURNAL OF THE SOCIETY FOR SIMULATION IN HEALTHCARE.
- [11]. Morgenstern, A. M., Putnam-Walkerly, K., & Malekafzali, S. (n.d.). *Healthy Eating Active Living Convergence Partnership Making the Case and Getting Underway: A Funder Toolkit to Support Healthy People in Healthy Places*. https://putnam-consulting.com/wp-content/uploads/Putnam-Making-the-Case-Toolkit.pdf
- [12]. Oberhofer, A., Reithmann, E., Spieler, P., Stepp, W. L., Zimmermann, D., Schmid, B., Frey, E., & Ökten, Z. (2020). Molecular underpinnings of cytoskeletal cross-talk. *Proceedings of the National Academy of Sciences*, 117(8), 3944-3952. https://doi.org/10.1073/pnas.1917964117
- [13]. Clark, H. (2012). INTERVENTION LOGIC AND THEORIES OF CHANGE. HTTPS://WWW.THEORYOFCHANGE.ORG/WP-CONTENT/UPLOADS/TOCO LIBRARY/PDF/EUPRESENTATION.PDF
- [14]. Onmelvin. (2021). *Logic Models vs Theories of Change Center for Research Evaluation*. Center for Research Evaluation. https://cere.olemiss.edu/logic-models-vs-theories-of-change
- [15]. Simeone, L., Drabble, D., Morelli, N., & de Götzen, A. (Eds.). (2023, April 25). Strategic Thinking, Design and the Theory of Change. (L. Simeone, D. Drabble, N. Morelli, & A. de Götzen, Eds.). Edward Elgar Publishing. http://doi.org/10.4337/9781803927718
- [16]. Dennis J. Cohen, Robert J. Graham. (2001). The Project Manager's MBA: https://books.google.cm/books?id=2btShfK4LwsC&printsec=frontcover&source=gbs_atb#v=onepage&q&f=false
- [17]. Neil J. Salkind. (2012). 100 Questions (and Answers) About Research Methods. SAGE Publications. Google Books. https://books.google.cm/books?id=fbY2N-jHqrMC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false
- [18]. Spörrle, Matthias, Stich, Jennifer. (2008). I want (my) children to sleep in a safe place: Experimental analysis of human sleeping site preferences from an evolutionary point of view. https://core.ac.uk/download/12172183.pdf
- [19]. Abramowitz, Aikawa, Andréasson, Andréasson, Andréasson, Andréasson, Andréasson, Baumgarte, Binney, Bondi, Bondi, Bowers, Buchdahl, Böhmer, Christodoulou, Christodoulou, Fraundiener, Guven, Heintzmann, & Herrera. (2019). *Sharp bounds on \$2m/r\$ of general spherically symmetric static objects. Core.ac.uk.* https://core.ac.uk/works/958025, https://doi.org/10.1016/j.jde.2008.05.010
- [20]. Samiran Nundy, Kakar, A., & Bhutta, Z. A. (2022). How to Practice Academic Medicine and Publish from Developing Countries? In *OAPEN (The OAPEN Foundation)*. https://doi.org/10.1007/978-981-16-5248-6
- [21]. Bent Flyvbjerg, Priemus, H., & Bert van Wee. (2008, February). *Decision-Making on Mega-Projects: Cost-Benefit Analysis, Planning and Innovation*. ResearchGate; Edward Elgar. https://www.researchgate.net/publication/235951761_Decision-Making_on_Mega-Projects_Cost-Benefit_Analysis_Planning_and_Innovation
- [22]. Elaine Marie-Therese Byrne, & Sahay, S. (2007). Generalizations from an interpretive study: the case of a South African community-based health information... ResearchGate; unknown.

- $https://www.researchgate.net/publication/229038302_Generalizations_from_an_interpretive_study_the_case_of_a_South_African_community-based_health_information_system$
- [23]. Dunn, G., & Bale, R. (2007). Basic statistics: A primer for social science students. Oxford University Press.
- [24]. Cohen, J. (1988). Statistical Power Analysis for the Behavioural Sciences (2nd ed.). Erlbau
- [25]. United Nations Development Group. (2017). *Theory of Change*. https://unsdg.un.org/sites/default/files/UNDG-UNDAF-Companion-Pieces-7-Theory-of-Change.pdf
- [26]. Vogel, I. (2012). Review of the use of "Theory of Change" in International Development Review Report. https://www.theoryofchange.org/pdf/DFID_ToC_Review_VogelV7.pdf
- [27]. https://www.researchgate.net/publication/259999430_Review_of_the_Use_of_'Theory_of_Change'_in_International_Development
- [28]. Borel, L., Brett, J., & Bryld, E. (2021). *APPLYING ADAPTIVE THEORY OF CHANGE IN FRAGILE AND CONFLICT-AFFECTED SETTINGS*. https://eba.se/wp-content/uploads/2021/12/WP-November-2021_Adaptive-ToC-webb.pdf
- [29]. Mountain-EVO (2017). Theory of change as a tool for managing and evaluating multistakeholder projects. Retrieved from http://paramo.cc.ic.ac.uk/espa/
- [30]. Gasper, D. (2000). "LOGICAL FRAMEWORKS": PROBLEMS AND POTENTIALS https://repub.eur.nl/pub/50949/Metis_165267.pdf
- [31]. NORAD, (1990), *The Logical Framework Approach (LFA); Handbook for Objectives Oriented Planning.* (Fourth Edition). The Norwegian Ministry of Foreign Affairs. http://www.ccop.or.th/ppm/document/home/LFA%20by%20NORAD%20Handbook.pdf
- [32]. Morra, L., Ray, I., & Rist, C. (2009). *Designing and Conducting Effective Development Evaluations ROAD RESULTS TO*. https://documents1.worldbank.org/curated/en/400101468169742262/pdf/The-road-to-results-designing-and-conducting-effective-development-evaluations.pdf
- [33]. Kos, R. P. (2018). *Policy and the K–12 Music Teacher: A Literature Review Ronald P. Kos*, 2018. Update: Applications of Research in Music Education. https://journals.sagepub.com/doi/10.1177/8755123318758837
- [34]. Himmelstein, J., Gray, J., Nakhai, M., & Sumner, D. (2017). Theory of Change Based Project Monitoring, Measurement, Learning and Adaptation: Guidance and Methodology Theory of Change Based Project Monitoring, Measurement, Learning and Adaptation: Guidance and Methodology Written and edited by. https://www.fsnnetwork.org/sites/default/files/Theory%20of%20Changed%20Based%20Project%20Monitoring%2C%20 Measurement%2C%20Learning%20and%20Adaptation%20Guidance%20and%20Methodology.pdf
- [35]. What is a Project, Examples and the Project Lifecycle | PMI. (2022). Pmi.org. https://www.pmi.org/about/what-is-a-project
- [36]. Reddy Goda, D., Reddy Vadiyala, V., Yerram, S., & Reddy Mallipeddi, S. (2023). Dynamic Programming Approaches for Resource Allocation in Project Scheduling: Maximizing Efficiency under Time and Budget Constraints. *ABC Journal of Advanced Research*, *12*(1). https://pdfs.semanticscholar.org/f28c/4eed3cf69b2735526727fcf08ec098427d66.pdf
- [37]. Morra Imas, Linda G.; Rist, Ray C (2009). *The road to results: designing and conducting effective development evaluations (English)*. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/400101468169742262/Theroad-to-results-designing-and-conducting-effective-development-evaluations
- [38]. Rose, H., Mckinley, J., & Jessica Briggs Baffoe-Djan. (2019, November 28). Data Collection Research Methods in Applied Linguistics.

 ResearchGate;
 Bloomsbury
 Academic.
 https://www.researchgate.net/publication/330542292_Data_Collection_Research_Methods_in_Applied_Linguistics
- [39]. Lau, F. (2017, February 27). *Chapter 13 Methods for Survey Studies*. Nih.gov; University of Victoria. https://www.ncbi.nlm.nih.gov/books/NBK481602/
- [40]. KHAN, R. (2019). Survey research method. Academia.edu. https://www.academia.edu/37953075/Survey research method?auto=download
- [41]. Christopher, I.C., & Udod, E. (2020). *The determinants of survey design in a research undertaking*. Vol. 7, Issue 1, pp: (29-37). Paper Publications. https://www.paperpublications.org/upload/book/THE% 20DETERMINANTS% 20OF% 20SURVEY-1467.pdf
- [42]. Lau, F. (2017, February 27). *Chapter 13 Methods for Survey Studies*. Nih.gov; University of Victoria. https://www.ncbi.nlm.nih.gov/books/NBK481602/
- [43]. McCombes, S. (2019, September 19). Sampling Methods / Types, Techniques & Examples. Scribbr. https://www.scribbr.com/methodology/sampling-methods/
- [44]. Bhandari, P. (2021, August 16). *Multistage Sampling | Introductory Guide & Examples*. Scribbr. https://www.scribbr.com/methodology/multistage-sampling/
- [45]. Singh, A., & Masuku, M. (2014). International Journal of Economics, Commerce and Management Licensed under Creative Common SAMPLING TECHNIQUES & DETERMINATION OF SAMPLE SIZE IN APPLIED STATISTICS RESEARCH: AN OVERVIEW. https://ijecm.co.uk/wp-content/uploads/2014/11/21131.pdf
- [46]. Naing, L., Rusli Bin Nordin, Hanif Abdul Rahman, & Yuwadi Thein Naing. (2022). Sample size calculation for prevalence studies using Scalex and ScalaR calculators. *BMC Medical Research Methodology*, 22(1). https://doi.org/10.1186/s12874-022-01694-7
- [47]. Elbers, A. R. W., Stegeman, J. A., M.F. de Jong, Lambers, J. H., R. de Koning, & W.A. Hunneman. (1995). Estimating sample sizes for a two-stage sampling survey of seroprevalence of pseudorabies virus (PRV)-infected swine at a regional level in the Netherlands. *The Veterinary Quarterly*, 17(3), 92–95. https://doi.org/10.1080/01652176.1995.9694540

- [48]. Taherdoost, H. (2016). Sampling methods in research methodology; How to choose a sampling technique for research. *Social Science Research Network*. https://doi.org/10.2139/ssrn.3205035
- [49]. Quad, A. (2016). RESEARCH TOOLS: INTERVIEWS & QUESTIONNAIRES Research Methodology in Education. Trubox.ca. https://lled500.trubox.ca/2016/225
- [50]. Bhandari, P. (2021, October 18). Ethical Considerations in Research / Types & Examples. Scribbr. https://www.scribbr.com/methodology/research-ethics/#:~:text=These%20principles%20include%20voluntary%20participation,when%20collecting%20data%20from%20 others
- [51]. Islam, M. (2020). Data analysis: types, process, methods, techniques and tools. *International Journal on Data Science and Technology*, 6(1), 10. https://doi.org/10.11648/j.ijdst.20200601.12
- [52]. Bhandari, P. (2020, July 30). *Central Tendency | Understanding the Mean, Median & Mode.* Scribbr. https://www.scribbr.com/statistics/central-tendency/
- [53]. Rana, R., & Singhal, R. (2015). Chi-square test and its application in hypothesis testing. *Journal of the Practice of Cardiovascular Sciences*, *I*(1), 69. https://doi.org/10.4103/2395-5414.157577
- [54]. Turney, S. (2022, May 23). *Chi-Square* (X²) *Tests* / *Types*, *Formula & Examples*. Scribbr. https://www.scribbr.com/statistics/chi-square-tests/
- [55]. McHugh, M. L. (2013, June 15). *The Chi-square test of independence*. ResearchGate; Croatian Society for Medical Biochemistry and Laboratory Medicine. https://www.researchgate.net/publication/253336860_The_Chi-square_test_of_independence
- [56]. Kearney, M. W. (2017, December 20). *Cramér's V*. ResearchGate; unknown. https://www.researchgate.net/publication/307963787_Cramer's_V
- [57]. Wikipedia Contributors. (2024, March 28). *Cramér's V*. Wikipedia; Wikimedia Foundation. https://en.wikipedia.org/wiki/Cram%C3%A9r%27s V
- [58]. Rehman, N., Mahmood, A., Ibtasam, M., Murtaza, S. A., Iqbal, N., & Molnár, E. (2021). The Psychology of Resistance to Change: The antidotal effect of organizational justice, support and Leader-Member Exchange. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.678952